

TEACHING IN THE PANDEMIC:

LEVERAGING BEST PRACTICES FOR VIRTUAL ENVIRONMENTS

VOICES FROM THE FIELD

RESEARCH FROM THE SPECIALIST
PROGRAM IN BILINGUAL EDUCATION



JOSEPHINE TAYLOR SERIES EDITOR

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PRESENTATION

María Lucía Casas Pardo

**President, Institución Universitaria
Colombo Americana, ÚNICA**

When ÚNICA launched VOICES FROM THE FIELD six months ago, we were convinced that we would make an important contribution to education and educators by disseminating knowledge that had been developed by the graduate students in our program. Still, we did not realize the extent to which our contribution would impact others. Because of the relevance of the main topic addressed – inclusion – and the quality of the studies, it showed those student-researchers, mostly school teachers who had never seen themselves as researchers, that their voices could be used to make important findings, design pedagogical interventions, document and share their projects, and help better the quality of education in Colombia.

We are pleased to present this second volume of **Voices From The Field**, aimed to address one of the most important issues in current education in Colombia: bilingualism or the teaching and learning of English either as a foreign or a second language. In this issue, the editor carefully selected some of the numerous student research papers that address the topic from very different perspectives and that, woven together, help us understand what is happening in our country regarding this matter. This issue starts by highlighting the attitudes and beliefs of teachers and then moves towards evaluating the impact of different kinds of interventions and methodologies; finally, it illustrates the factors that shape the effectiveness of strategies and policies. The diverse studies in this issue comprise a very rich and state of the art contribution to education, educators, administrators, parents and policy makers.

English Language And Bilingual Programs In Development was possible thanks to the invaluable work of Josephine Taylor, and also to the dedication and commitment of the professors and students in the Especialización en Educación Bilingüe offered by ÚNICA.

María Lucía Casas Pardo is the President of ÚNICA, the first bilingual Teachers College in Colombia. She earned an undergraduate degree in Modern Languages and Education and a Master's degree from the *Universidad Javeriana*, in Bogotá. Ms. Casas has worked as a school teacher, and Professor of English and Pedagogy in the *Universidad Javeriana*. She was Academic Director of the *Gimnasio Campestre* and IB Coordinator at the *FUNDEFA-Gimnasio del Norte*. She was also the Dean of the Business School and Director of the International Relations Office in CESA, Director of Education in Compensar, and Coordinator of the Colombian National Bilingualism Committee. She has acted as advisor for the National Ministry of Education in Colombia, and the *Universidad Católica de Chile*.



INTRODUCTION

Josephine Taylor

Teaching in the Pandemic: Leveraging Best Practices for Virtual Environments is the fourth volume of the series Voices from the Field: Research from the Specialist Program in Bilingual Education, published by the Institución Universitaria Colombo Americana – ÚNICA. The series shares collections by topic of final research projects by students in the Specialist Program in Bilingual Education. The studies reflect the broad curricular scope of the program in terms of course offering, including topics like inclusion, neuropsychology and learning, social and emotional learning in classroom management, assessment, curriculum and technology, and previous volumes have been devoted to academic and social inclusion, bilingual and English language programs in development, as well as metacognition and learning strategies.

As we go to press, the COVID-19 pandemic is still with us although in Colombia cases continue to decrease as vaccination efforts bear fruit. It may be difficult or painful to think on the loss we've experienced over the past two years, or the adaptations we were forced to make to the simplest of activities. In retrospect, one of the major areas of disruption and adaptation was in education, and teachers arguably bore the brunt of the responsibility to modify, innovate and deliver quality instruction in the midst of the challenges. Today, eased restrictions have allowed us to return to some semblance of normal life, including the possibility of no longer requiring masks at school. For teachers, we have become all too aware during the pandemic of the importance of in-person education, especially for the youngest children. The possibility to see each other's faces would also no doubt help children in classrooms all over the world. As we emerge from the pandemic, a review of our work during this time is necessary and valuable, in order to document and sum up the important lessons learned.

In retrospect, the lessons for educators after teaching virtually for so long are innumerable. Teachers all over the world, as well as teachers in training in the Specialist Program in Bilingual Education at ÚNICA, who work in all levels of education, in all subjects and in all types of institutions, persevered and were able not only to innovate their practice in the remote environment, but were also able to stay focused on learners and account for their needs. Through their creativity and the documentation of their experiences, their studies clearly demonstrate that learning can indeed happen in adverse conditions. Further, it was possible to gain insights into students' ways of working as well as home and family factors that affect education.

The studies in this volume cover a wide range of educational contexts, academic subject areas and ages of students. The thread that unites the studies is the possibility to innovate and promote learning within the challenge of the online learning scenarios of the pandemic. All the teachers in this publication faced not only curricular and learning challenges that gave rise to the pedagogical innovations, but also the added dilemma of achieving this while trying to deliver classes remotely. In all cases, students, teachers and institutions



were all previously unfamiliar with the intricacies and priorities of online learning, and this represented an additional level of learning and innovation. Still, the research speaks to the innovative spirit of teachers, even facing the most difficult of challenges, and of the flexibility of teaching delivery modes to accommodate any subject.

In **Chapter 1, “The Effect of a Project on Possible Worlds on Fourth Graders’ Conception of Difference,”** **María Alejandra Ochoa** explored the concept of difference among fourth grade girls. Reviewing the research, the author identified this moment in life as critical to explore difference and possibly promote inclusion, as the evidence suggests that students generally adopt exclusionary attitudes and practices around fifth grade. By the time youth reach adolescence, which is when exclusionary violence generally occurs, it may be too late to change the underlying attitudes. Ochoa also cites important critical theory and research that challenge more classical views of exclusion as a normal part of adolescent and human development. In an intervention called, “An Alien in the Classroom,” students encountered difference and explored the effect of difference on an individual, the Alien in this case. In a series of online lessons, the class narrated their Alien in a series of aspects, events and incidents. Difference emerged as a key trend to narrate the aliens, along lines of hegemonic expectations, leaning always towards the normative in fat-thin, hetero-homosexual conceptualizations of difference. Still, it was possible to develop deep and critical awareness of difference in these same students through the project. The positive impact illustrates that it is possible to deeply engage learners in online environments with complex issues.

This volume of *Voices from the Field* offers two studies on creativity. **Chapter 2** features the first, by **David Navia, “Exploring the Effects of a Digital Painting Workshop on Students’ Artistic Skills, Creativity, and Human Development.”** This study was perhaps best suited for learning remotely in terms of the technology of digital art. Students enrolled in a private course in digital painting, which covered the basics and was suitable to a wide range of abilities and experiences. Learners worked especially on artistic skills in the digital environment, with group classes as

well as individual feedback sessions with the teacher-researcher. Even though these experiences seemed well suited to remote, virtual learning, issues of self-care, human development and isolation came up as a significant part of the experience, especially in moments of working through motivational lapses. In general, areas impacted were participants’ creativity in general, their artistic skills in digital painting, as well as their attention to their own social and personal needs during the pandemic.

In **Chapter 3, “Using the Sheltered Instruction Observation Protocol (SIOP) to Address Second Language Development and Foster Mathematical Communication and Thinking in Fourth Grade Mathematics Lessons,”** **Brayan Leguizamón** faced numerous challenges teaching fourth grade math virtually in English. Through the design of engaging, communication- and thinking-based online tools, the teacher-researcher was able to foster communication and thinking about math in English, and was further able to positively impact students’ engagement with the subject. The author implemented SIOP-based lessons featuring a range of communicative routines with the entire class as well as in pairs and small groups. These routines established the basis for talking about math, and Leguizamón was able then to propose thinking and sharing routines when solving word problems in math. These actions helped promote communicative abilities in the second language and established the vital link between mathematics and real life.

Chapter 4 shares the second study on creativity, **Francy García’s “The Effect of Creative Problem-Solving and Artistic Creativity Strategies with Ninth Grade Fine Arts Students.”** During the pandemic, we have become much more aware of so many aspects that we took for granted, such as the availability of materials, adequate work spaces, and the close contact between members of the learning community. In the processes of engaging learners in creative processes, and accompanying students during the process of creative exploration, problem-solving and exhibition, these elements make a difference. In their absence, the teacher-researcher innovated to provide individual studio time during synchronous online class sessions as well as online spaces for exhibitions of artwork. In



the midst of limitations and obstacles, it was possible to engage high school students in creative processes, using a shared source of inspiration, and to also invite learners to reflect on what it means to be creative and to do creative work.

As learning moved from the relatively autonomous space of the on-site classroom to the virtual environment, the role of the home and of parents and caretakers' involvement in the learning process became much more apparent. In **Chapter 5, the “The Effect of Second Language Oral Experiences on the Development of Early Literacy Skills in Kindergarten Students,”** **Laura García** faced the enormous challenge of supporting early literacy in the second language while teaching remotely. The teacher-researcher observed and determined that the school's literacy program was too ambitious for children who not only did not master the second language, but who were also in the very first stages of literacy development in their first language. Through the implementation of a series of strategies and routines for supporting language development, and especially oral language ability in the second language, García promoted literacy development, engagement and meaning making among children. In the process of monitoring students' evidences of literacy stages, it was possible to determine the influence of the home, and in keeping with literature reviewed, to see how support for early literacy in the home directly influenced students' progress at school. On the other hand, parents and caretakers' tendency to interfere during synchronous online class sessions by telling the child what to write, or actually writing the answers themselves represented a unique opportunity to educate parents about their role in children's learning.

In **Chapter 6, “Promoting Critical Global Citizenship Education with the Cambridge Global Perspectives Curriculum: A Case Study,”** **Andrea Espinosa Wang** faced the challenge of engaging high school students in a critical approach to global citizenship education. This task was all the more difficult in the online classroom, where students routinely left their cameras turned off, causing the teacher-researcher to perceive a growing distance between herself and the class, and among the members themselves. This perceived distance appeared to be exacerbated by

learners' apparent apathy about social movements and their own involvement in such activities. In spite of high schooler's apparent disengagement, findings demonstrated that students were in fact reflecting on their role as active global citizens, and applied their critical awareness to their own motivation in the online classroom, highlighting issues of a combination of isolation as well as an unwillingness to show themselves online. In spite of the challenges, learners were able to see themselves as participants in social movements, with a more active role as global citizens, moving beyond more passive acts of charity like donations of food and clothing.

The issue of motivation, especially in the virtual classroom, also caught the attention of **Susana Mariño** in **Chapter 7, “The Application of Theory- and Research-based Motivational Strategies in the Second Grade Classroom: A Case Study.”** Mariño had observed for some time chronic cases of low motivation and participation in her students and had linked these behaviors and attitudes to poor academic performance. Interested in moving beyond simple rewards and punishments as mediators of motivation, the teacher-researcher sought to develop a set of teaching strategies and routines based on theory and research. It was her hope that such actions that might impact students more deeply and generate long-term improvement. Though thoughtful and rigorous data analysis, it was possible to identify particular teaching practices and strategies that impacted student motivation and performance jointly, and to pinpoint particular lessons and moments in lessons when these strategies were needed most. Specifically, the need for more structured lessons for challenging subject matter and tasks, as well as the benefit of one-on-one teacher support emerged as particularly important elements of a full range of routine motivational strategies and practices.

Our volume includes a range of age groups, grades, settings and academic subjects, which makes clear the impact of teaching the pandemic on all aspects of school life. In addition to academics, the challenge of teaching physical education and coaching sports in the pandemic must be highlighted. **Chapter 8** features **Carlos Sánchez'** exploration of **“The Effect of Online Proprioceptive and Balance Play-Based**

Training on the Development of Juggling Soccer Skills in Third Grade Elementary Children Players.”

It may be difficult to recall, but for several months in the pandemic, our society lived in complete lock-down, unable to go outside for exercise, and children were not allowed to play in the park. The young soccer players in Sanchez’ case study needed to practice in spaces in their homes no larger than 3 x 3 meters. The challenge of providing meaningful practice opportunities within these restrictions set the basis for an important innovation in training, focusing on balance and proprioception, or the awareness of position and body movements. Through the implementation of play-

based instructional practices featuring these skills, it was possible to motivate young players in the virtual classroom, promote an exercise routine, and also to improve the important skill of juggling the ball.

Josephine Taylor holds a BA in English and French from Emory University and an MS in Teaching English as a Second Language from Georgia State University. She has taught for over 30 years and is currently a full-time professor, editor and curriculum specialist at ÚNICA.

THE EFFECT OF A PROJECT ON POSSIBLE WORLDS ON FOURTH GRADERS' CONCEPTION OF DIFFERENCE

Maria Alejandra Ochoa

The concept of difference is under study and review, changing as we speak. Otherness, difference, and perceived values attributed to these are of great interest to sociologists and educators. In a world where groups and subcultures form and are in constant flux, defining themselves in relation to others, students and classrooms are constant reminders of the effect of our perceived differences on acceptance and inclusion, or indifference and rejection. This study asks itself how it might be possible to raise students' awareness of difference through a pedagogical activity, "The Alien in the Classroom." María Alejandra Ochoa manages to engage fourth graders in a girl's school in Bogotá in this activity featuring a sequence of reflective exercises about difference and empathy. This project was carried out in the first semester of 2020, in the context of virtual learning in the pandemic.

The purpose of this study was to understand how fourth graders in a school in Bogotá define and act towards difference and how a project focused on imagining other possible worlds might transform the meaning of difference for them. The research was developed as a part of the social studies curriculum of fourth grade in an all-girls school. Sixty-six students carried out the project as part of the class, and 17 agreed to participate in the study. The pedagogical intervention was framed in a project called "An Alien in the Classroom: Creating Other Possible Worlds." By the end of this project, students imagined the best possible world where everyone would be able to be together. During the intervention, focus groups, discussion groups and questionnaires, it was found that students perceived that being labelled as different was a legitimate reason to be excluded by the group. For students, the idea of difference was related to an idea of normality, which has been constructed from a white, heterosexual and slim matrix of domination. Students agentically appropriated these discourses, and some even constructed critical positions towards them. As the project advanced, some of the students started transforming their view towards difference and began to include empathy towards others in their discourses.

Keywords: Difference, Exclusion, Action research, Primary school



RESUMEN

El propósito de este estudio fue comprender cómo las estudiantes de grado cuarto de un colegio femenino de Bogotá definen y actúan frente a la diferencia y de qué manera un proyecto enfocado en otros mundos posibles puede transformar el significado de la diferencia para ellas. Esta investigación acción hizo parte del currículo de la clase de ciencias sociales para las estudiantes de grado cuarto. 66 estudiantes participaron en la investigación acción y 17 aprobaron formar parte de este estudio. La intervención pedagógica se desarrolló en el marco de un proyecto llamado 'Un alienígena en el salón: creando otros mundos posibles'. Al final de este proyecto las estudiantes imaginaron el mejor mundo posible en donde todos pudiesen vivir en comunidad. Durante la intervención se desarrollaron grupos focales, discusiones grupales y cuestionarios. Se concluyó que para la gran mayoría de las estudiantes ser considerado diferente es una razón legítima para ser excluido. La noción de la diferencia, para los estudiantes, está asociada a una idea de normalidad construida a partir de una matriz de dominación blanca, heterosexual, católica y de delgadez. construida a partir de una matriz de dominación blanca, heterosexual, católica y de delgadez. Las estudiantes se apropian de los discursos producidos en esta matriz de dominación, algunas incluso construyendo posiciones críticas frente a ellos. A lo largo del proyecto algunas estudiantes comenzaron a transformar positivamente sus apreciaciones sobre la diferencia y comenzaron a mostrar empatía en sus discursos hacia los otros como un vehículo de aproximación a ellos.

Palabras Claves: Diferencia, Exclusión, Investigación acción, Escuela primaria

INTRODUCTION

In Western civilization differences have been used to exclude others and perpetrate crimes, to bully or legitimize violence. In the last 20 years, hate crimes have continued to make headlines in major news outlets around the world. According to the BBC, hate crimes have doubled in England and Wales between 2012 and 2019 ("Hate crimes recorded by police up 10%", 2019). In 2019 in England, 103,379 offences were recorded motivated by race, religion, or gender identity. According to *The Guardian*, hate crimes towards the gay community rose 36% in France during 2019 (Agence France Presse, 2019). Hate crimes are directly related to the negative connotation of difference in our civilization. By looking closely at these crimes, it is evident that being labelled as different as an essential characteristic has been used to legitimize the establishment of power domination relationships among people, therefore, giving rise to hate crimes.

The social construction of difference can be traced from a very early age as children understand and use differences to exclude classmates. Classic socio-developmental theories such as Erikson's (1968) explain this behaviour pattern as normal as young people can become intolerant and cruel in their exclusion of others during this period of life. For him, this behaviour is not only unavoidable but natural as both group and individual identities need an essential Other to construct their own identity. Therefore, during adolescence, there is an intensification of exclusionary practices. This view is debated by authors such as Lesko (1996) and Slater (2013), who argue that this process of identity construction based on essential differences is socially and historically constructed. Specifically, they argue, it belongs to a white colonial matrix of domination that structures Western societies. For Slater (2013), exclusion processes intensify during adolescence as this represents a policed border zone, when children are expected to become normative adults.

Recent research supports Lesko's (1996) and Slater's (2013) criticism of Erikson (1968) as they explore how essential differences are socially constructed based on understandings of race, class, ability and gender. These matrices of domination intersect and construct an idea



of normality. People who do not perform normality are victims of exclusion practices and even violence. Research in Colombian schools has described how the establishment of “normality” is related to Catholicism and Catholic cultural practices. In US schools, studies conclude that racial “normality” is related to whiteness. Sexual orientation is another element that is used by students to exclude classmates who are non-heterosexual.

Understanding exclusion practices in this age as socially constructed and not as something natural or unavoidable opens a space to think about exclusion within primary schools as something that can be transformed by rethinking difference with students. Studies have attempted to resignify difference, changing its negative connotation to something positive, creating possible spaces for social transformation and resistance (César & Santos, 2006; Evans, 2017; Sreenivas, 2004; Vanderlinden, 2008). Specifically, the research also highlights the importance of questioning students, making the position in which they are standing visible, comparing and contrasting the perceptions of one another, and sharing and discussing with other students to be able to transform oneself into something different. By doing this, difference may mean the possibility of opening third spaces, becoming another and constructing other possible worlds.

Problem Statement

As a primary teacher in third, fourth and fifth grade in an all-girls school in Bogotá, it has been possible to identify many changes during this period of time in terms of students’ personality, their way of relating to friends, and even group dynamics. For example, it was possible to identify an intensification of exclusion practices towards students who the majority of the group call different. It was even possible to notice how students with learning needs, for example, begin to tend to lose their friends starting in fifth grade.

This tendency to identify difference and exclude at an early age is supported in the research. Still, this teacher-researcher found it alarming to notice that exclusionary practices thought to occur in adolescence actually begin much earlier. For this reason, it was thought to

be important first to explore and document fourth graders’ understanding of difference, and if possible, to reduce the exclusion practices that are evident in fourth and fifth graders. It was hypothesized that this might be possible by opening spaces to challenge ideas of difference as something negative. The pedagogical intervention in this project was called “An Alien in the Classroom: Creating Other Possible Worlds,¹” and aimed to understand how students define difference and how they can challenge these notions.

PURPOSE OF THE STUDY

This study aimed to understand how fourth graders in a school in Bogotá define and act towards difference and how a project focused on imagining other possible worlds can transform the meaning of difference for them.

LITERATURE REVIEW

Research on the significance of difference for children and adolescents is abundant around the world, and predominant studies have been conducted in Colombia, the United States, United Kingdom, Argentina, Australia and Poland. These studies explore difference on four levels: difference in general terms, specific types of difference (race, class, gender, ability), the effects of difference in terms of inclusion and exclusion in classroom scenarios, and resignifying difference through action research. In general, the researchers concluded that students tend to exclude those who they call different and that differences are produced in the intersection of race, class and gender.

Difference in General

The studies reviewed in this section explore difference in general terms and relate it to the process of creating distance with other students or people, or

¹ Un alienígena en el salón: Creando otros mundos posibles

otherness. These studies were produced mostly in countries of Latin America such as México, Brazil, Peru, Colombia and Venezuela and focus on children between 10 and 16 years of age. They emerge from the need to understand exclusion processes within schools and most claim that the process of otherness causes exclusion, bullying and violence. These studies are useful as they reveal different dimensions of the process of constructing differences, such as the association of difference to physical, cultural and environmental traits (Alvyra, 2014; Turrent & Villaseñor, 2009), the social interactions which outline the process (Alvyra, 2014; González, 2008; Rabello De Castro, 2004), and the violence embedded (Sierra, 2016) in such processes.

Research by Alvyra (2014) and Turrent & Villaseñor (2009) explored the elements that constructed the imaginary of “the Other” in schools. Alvyra (2014) explored pupil’s perceptions of otherness when learning under conditions of inclusive education in Poland. The author asked her students to write an essay. After analysing the texts, it was concluded that otherness manifests itself in four main areas: body, personal identity, cultural context, and social construct. Turrent and Villaseñor (2009) arrived at similar conclusions as they compared students from two alternative schools in Mexico City. The research aimed to identify elements that construct the imaginary of the Other among the children of two schools. The authors established that students constructed difference when they distinguished being part of a group or not, depending on specific physical or social attributes. The research also found that students from both schools associated differences with physical characteristics, cultural practices and environments. Hence, difference was normally constructed from specific physical and cultural characteristics considered to be “normal” and others considered not to be normal.

González (2008) and Rabello de Castro (2004) explored the social interactions surrounding the concept of difference. Their main question was how children and youth come to construct self and other relations, especially focusing on how difference plays an important role in children’s interactions which construct social inequalities. In total 105 children between 8 and 16 years old took part in this study,

volunteers from five different schools in Rio de Janeiro, Brazil. The study concluded that students tended to exclude those who are different, and that difference was normally embodied in concrete individuals. As such, the possibility of identifying or creating social bonds with different people was completely cut off (at least discursively). Social bonds were constructed mainly based upon sensorial aspects such as body image. The author also explored the notion of identity and concluded that identity was sometimes regarded as wholesome and congruent, but was constantly put into question by the same students. When students were given concrete identities by others, there was always a denial of being that.

Gonzalez (2008) wanted to explore the role difference played in the construction of social interactions among the children, and in teacher-student relationships. His study took place in a school in Carabobo, Venezuela. He concluded that difference is fundamental in the creation of the notion of the self, and therefore, is the keystone for the construction of identity, which is part of every educational process. According to him, every social interaction is held by the notion of the Other. Gonzalez (2008) and Rabello de Castro (2004) agree that difference made up part of social interactions. However, while Gonzalez (2008) explained that the identity is closed, coherent and necessarily created in the process of distancing from the different, Rabello de Castro (2004) concluded that the identity created is contradictory, and constantly put into question by students.

Sierra (2016) explored the role of violence as intrinsic in the process of constructing difference. His study aimed to identify and analyse the social representations towards the recognition of the other and its relation to processes of school violence in *El Colegio la Amistad* in the locality of Kennedy in Bogotá, Colombia. The author concluded that different representations of the other were created and used in scenarios of school violence. When the victimizer spoke about the victim, he or she legitimized the violence using an *identitarian* characteristic as an excuse. Therefore, aggression was shown as legitimate as the victim was labelled as different. Students also used labels to legitimize violence, in the case of this study, *nerd*, *fatso*, *campesino* or *negro*.

The literature reviewed (Alvyra, 2014; González, 2008; Rabello De Castro, 2004; Sierra, 2016; Turrent & Villaseñor, 2009) demonstrated how the process of creating difference was related to the tendency of social groups to determine certain characteristics as normal or non-normal or different. People tended to exclude those who did not perform normality, establishing power relationships that legitimize and create violence. Normality is produced in the intersection of different matrices of domination which are constructed in race, gender, class and ability. Therefore, legitimizing violence by establishing an essential identitarian characteristic demonstrated how differences gained negative connotation and established hierarchical power relationships among people.

Specific Types of Difference

The studies reviewed in this section aimed to learn more about children's actions and understandings of differences related to race, ethnicity and ability. This research was carried out in a wide range of countries such as the United States, United Kingdom, Australia and Colombia. Two of these studies focused on children from early childhood, two more focused on students between 12-17 years of age, and one focused on children between 8-12 years of age. The studies arrived at different conclusions; nevertheless, most showed how the creation of normality was strongly related to the Western, white and colonial matrix of domination.

Both Park (2011) and Lewis (2001) developed research related to the construction of differences through racial understandings. Park (2011) aimed to identify children's understandings and values regarding racial differences through close examination of their language and interactions with peers in early childhood. Through participant observations and semi-structured interviews, the author concluded that the identity of students was commonly associated with race via physical markers assigned by the same students. After analysing the classroom's physical environment, it was evident that it provided tools (symbols, vocabulary storylines) that developed an understanding of racial diversity. Students also took their learning into their own hands and appropriated discourses of race in their own agentic ways.

Lewis (2001) examined children's, parents' and teachers' understandings of race. The study was conducted in an all-white, upper class, private school in California over a period of two years with a 4th grade class that moved on to 5th grade. The author concluded that children were not colour-blind; exclusion was mostly based on skin colour and an idea of race. For students, blackness was denoted as something negative. The author describes the school's "colour-blind" ideology, which worked through two mechanisms: designating race as un-important and de-racializing all racial incidents that happened during this period of time. Colour-blind ideology established that whiteness was racially neutral and outside the racial hierarchy. Lewis and Park both found a construction of racial "normality" related to whiteness. Exclusion processes within schools happened in relation to an idea of race-related physical markers.

Not only does race emerge as a constructor of difference, but the processes of distancing between students also occurs within representations of ethnicity. One study in Colombia explored ethnicity and difference (Agúdelo, González & Valencia, 2017). Through action research, the investigators aimed to resignify students' imaginaries of ethnic and cultural differences in the *Institución Educativa Fe y Alegría Luis Amigo y Antonio Derka*, in Medellín, Colombia. The research concluded that students signified ethnic differences as physical markers, as ways of life, and as beliefs. Students tended to associate physical characteristics to places of origins, and these physical characteristics gave rise to stereotypes. Towards the beliefs, there was a very strong social imaginary, in which traditional ritual practices from non-Catholic beliefs (the majoritarian religion in Colombia) were believed violent and dangerous. In terms of ways of life, researchers found out that students signified the ways of life of ethnic groups in Colombia in strict relationship to poverty, need and disempowerment.

Another study explored dynamics of creating distance with others in relation to Japanese people in the USA. Inokuchi and Nozaki (2005) identified the features and styles of the discourse(s) in students' writings, and examined the ways the discourse of othering and Orientalism operated in these texts,

exploring the specificity of contemporary American identity formation in relation to the imaginary boundary between Japan (“them”) and the United States (“us”). The study was done between 1991 and 1993 in three Midwest suburban schools in the US. Inokuchi and Nozaki (2005) concluded that students erased the differences between people from the USA when talking about Japanese. Japan was discursively signified by students as an Other, which is external and completely different. The authors also argue that by othering the Japanese, there was a normalization of the national identity of the United States, which instantly ethnicizes and racializes the image of the nation.

Difference raised by racial markers or by ethnic traits both work by establishing a “normal” or dominant way of acting, denying and rejecting all other possibilities. In the case of Colombia, “normal” in terms of ethnic belonging would be following Catholicism and Catholic cultural practices. Slater (2013) explored the construction of these normative standards in the intersection of race, ethnicity, ability and class. In her thesis, she wondered about the dangers young disabled people faced if normative discourse were to remain unquestioned. The study also posits that disability researchers may share stories of young disabled people in order to reposition them as active and politically resilient. Further, she inquired as to what disability and the lived-experiences of young disabled people can teach us about youth, and what youth and the lived-experiences of young disabled people can teach us about disability.

Slater’s study was carried out with people who were labelled as disabled. A part of the thesis was conducted with seven young people from the UK labelled intellectual impaired, three workshops with 20 people labelled with physical, sensory or intellectual impairment. Ethnography was also applied with a group of disabled political activists running an independent living centre in Iceland. Slater concluded that young disabled people faced dangers if normativity ideas were not challenged, especially related with the dangerous relationships between sexuality, disability and youth, as disabled people’s bodies were constantly considered as childlike, asexual or property of others (a subject of intervention). Slater also confirmed that

Western conceptions of adulthood gave priorities to the ways of living that were most similar to the “neoliberal man.” Those lives not within that framework were devalued, excluded and suffered from different forms of oppression. Slater also found that different expectations were put upon different young people, depending on a host of intersectional identities which included race, class, gender, sexuality and ability.

The Effects of Difference on Inclusion and Exclusion in Classroom Scenarios

When difference constructs hierarchical relationships based on an idea of normality, it has been found to cause exclusion, rejection and even violence in classroom scenarios. Studies reviewed from the USA and England focused on students between 12 and 19 years of age. The studies reviewed centred on the effects of exclusion based on gender, social groups and class. In general, all of the studies concluded that students did not judge exclusion as morally wrong. Rather, exclusion for many students was an unavoidable part of social relations. Further, students who suffered exclusion tended to have low self-esteem and academic performance.

Exclusion was also deemed as not morally wrong in Horn (2003), who asked students to give a moral judgement on exclusion practices in school based on the membership of social groups. Horn surveyed 379 students from 9th and 11th grades in a US high school. The study concluded that these students saw exclusion of social groups based on peer group membership as not morally wrong. Horn arrived at similar conclusions in a second study 10 years later on exclusion and sexual orientation.

Heinze and Horn (2014) and Warrington and Younger (2011) also explored exclusion constructed according to sexual orientation. While Heinze and Horn (2014) looked at attitudes and reasoning on the exclusion of peers based on sexual orientation, Warrington and Younger (2011) researched the components of gender exclusion. The studies included 1069 adolescent students between 14 and 18 years of age from two different schools. The study concluded

that participants reported that sexual orientation was an acceptable factor to exclude classmates.

Warrington and Younger (2011) arrived at similar conclusions by analysing the characteristics and effects of exclusion on students, and the strategies used by students to be included. The authors worked with 100 students between 14 and 15 years of age, from three co-ed schools in different parts of England. Researchers worked with one class from each school and carried out different activities about sexual orientation and exclusion. The study found that students judged those who were different according to appearance, personality, behaviour, and ability to *do the girl or boy*. In relation to the consequences of exclusion, it mostly affected the self-image and self-perception of the students who did not perform according to peer norms. Excluded students had to put up with abuse and bullying. In many cases, students were mostly afraid of being called the outcast, loner, misfit, and tried to perform “normality” to be able to fit in the group. Many of the strategies to perform normality were related to physical appearance.

Molina Dearteano (2017) analysed the ways in which different exclusion practices legitimized social inequalities. He worked with adolescents between 12 and 19 years of age, who came from four different neighbourhoods belonging to different social classes. The study created and used certain typologies to analyse the data: discrimination, tolerance, acceptance and pluralism. The study concluded that lower classes tended to verbalize more suffered discrimination or exclusion. The middle and upper-class students criticized exclusion but argued that it is unavoidable.

These studies show the tendency to naturalize exclusion as an unavoidable part of social relationships. In most of the cases, exclusion is even thought by students as necessary. They see it as a mechanism to preserve social structures as it legitimizes violence against those who do not fulfil the peer norms. In general, all of the studies reviewed so far show how students denote difference in a negative way, use it to create hierarchies, and as a mechanism to preserve social inequalities.

Re-thinking Difference through Action Research

A number of studies were found and reviewed that try to resignify difference, changing its negative connotation to something positive to make possible spaces for social transformation and resistance. Researchers, teachers and policymakers around the world have pointed out that difference, when used to legitimate domination over another group, has a terrible impact on society. In countries like the U.S, Portugal, Colombia and the U.K, abundant research has aimed at re-signifying, deconstructing or re-thinking difference in schools and universities. The studies reviewed here proposed and implemented strategies to transform the way in which students conceived Others. All of the research shared in this review reported positive results. Some of the strategies implemented included student narrating, interviewing, dialogues, questioning, putting in context, reflecting on one’s own place, collaborating, and imagining other possible worlds. Strategies implemented focused on text as well as social interaction. Two of these studies centred on elementary school children, one on high school, three on university students, and one on the researchers’ own experiences.

Research by Davis, Mac Naughton & Smith (2009), Vanderlinden (2008), Krumer-Nevo (2012) and Sreenivas (2004) focused on textual strategies to resignify difference and exclusion practices. Davis, Mac Naughton and Smith (2009) analysed how discourses of whiteness were performed and spoken by young children, as well as the way they could be transformed (or at least de-stabilized) with the use of specific texts. The study took place in Melbourne, Australia with 84 preschoolers (3-5 years of age) from different racial backgrounds. The study used different texts to have conversations about race and were produced in non-normative sites that allowed students to rethink “normal” power relations. The authors concluded that having conversations about race with the help of texts that showed race as something socially constructed helped challenge the idea that white is the normal and proper way to be and do race.

Vanderlinden (2008) and Sreenivas (2004) used images to signify differences in non-hierarchical ways. These studies were both carried out in US universities as

part of the class curriculum, using *National Geographic* magazine critically to approach difference in a non-othering way. Vanderlinden's (2008) study departed from the question of how to represent difference without essentializing otherness by analysing *National Geographic* photographs. The classroom exploration was done in the course "Mass Media and Culture," a required subject for the degree in Anthropology in the Texas Christian University. Three-fourths of all TCU undergraduate students were white and came from relatively affluent households. The author concluded that students' readings of images changed as the unit developed, shifting from an initial affinity and even reverie of the magazine and its meanings to a critical view where they identify the colonizing effect of the magazine's images. Finally, students re-engaged and attempted to propose a plan of action (other possibilities for the magazine) in order to represent the Other in less essential colonizing ways.

Sreenivas (2004) collected her own experiences while teaching an elective course, "Global Perspectives on Women's Lives," at a public university in New Jersey. The aim of the paper was to show the strategies used to address women's lives from other parts of the world without othering them. The researcher taught this course for four years before writing the paper, in which she reflected on how the program changed along these years in order to address her main problem. The author reported that asking students to read texts from women around the world was not a very successful strategy to get them close to other women as students tended to fall either into cultural relativism or an absolutely ethnocentric point of view, which only increased the distance between the students and the women from around the world. The course normally enrolled 25 students each semester, most of whom were women. The class used a student-centred pedagogy which used magazine imagery to create debate about what it means to analyse gender in transnational contexts. Sreenivas found that to study women from other parts of the world without othering them required students to play an active role in the class. They were not able to be understood as recipients of knowledge but rather must constantly be asked to question themselves and their own privilege. Therefore, to approach different women, they have to constantly reflect on their own position

by asking themselves how we know what we know, and why we are saying what we are saying. Second, the author concluded that her class needs to localize global issues. This means finding the context, the power struggles, and the silences.

Both Sreenivas (2004) and Vanderlinden (2008) conclude that similar strategies are needed to approach difference. They both claim the need to reflect upon one's position and contextualize the other position. To reflect, students have to question their own power positions. To contextualize, students have to try to understand the context, power struggles and silences that surround the person they are trying to approach.

One contrasting view is shared in Krumer-Nevo and Sidi (2012), who used text as a way to denote difference in a more positive way. The research exemplifies three modes of resisting othering through three types of texts: narrative, dialogue and reflexivity. Krumer-Nevo and Sidi describe the narrative mode as a way of writing which locates the participant in the context of a story, giving the person the role of the protagonist. The authors propose dialogue as another type of writing which reduces otherness. Re-writing the dialogue from an interview by inviting the interviewee to interpret their own text is one of the strategies used by the authors to create a non-othering dialogue. Reflexivity is a strategy to use while researching, in which the researcher opens a space for the interviewee to not only show her experiences and emotions but also her analysis regarding the circumstances and relationships. The authors concluded that these strategies should involve the reconstruction of the context of the people described. Further, it opens a space within the research for participants to state not only their opinions but their capacity to construct knowledge.

Overall, the studies that focus on textual strategies to reduce otherness tend to use similar movements in order to signify difference. All of them claim the importance of questioning one's position, understanding the context of people we claim to be different, and questioning the way in which people construct their knowledge on other people. These three movements are key to addressing difference in a more positive way with the help of different types of texts.



Not only is difference addressed through textual strategies, but researchers also try to transform the connotation given to difference by fostering specific types of social interactions among the students. Slater (2013), Taylor (2007), César and Santos (2006) and Evans (2017) fostered specific social interactions with people the students considered to be different. These studies picture a wide range of ages, from primary school students all the way to university students.

Taylor (2007) explored the findings of the “Subculture Adaptation Project” conducted with third-semester students in the bilingual education program at the *Institución Universitaria Colombo Americana* in Bogotá, Colombia. The project asked students to follow their personal process of adaptation into a new subculture. In general, students used different strategies such as participant observation, informal interviews through informants which were part of the group, and class discussions to share their findings and reflections. The project was developed in four different stages: students chose a culture, then analysed the fieldwork comparing the similarities and differences in the interpretations of an event. Later on, the students placed themselves on a scale of cultural adaptation. Finally, students wrote a report explaining to what extent adaptation was possible. At the end of the project, all of the students concluded that they felt they had been successful at their adaptation to the subculture. The researcher (teacher) also noticed that students had been able to adapt through a combination of theory, which implied theoretical awareness of the culture, the development of specific skills and strategies, and the emergence of on-going dialogic encounters which opened a place for third spaces.

Using similarities and differences to approach people each student considers to be different is one of the strategies used by Evans (2017) in her book project with third-grade students in the U.S. The aim of this action research was to disrupt the students’ constructions of otherness. To do so, the teacher developed and implemented a plan to engage children in a book project that held language, culture, and diversity central in building understandings of others. This book was an interdisciplinary project between arts, technology and English literacy development. One-third of the class

spoke English as the first language, one-third spoke Spanish as the first language, and the other third spoke either English and Spanish as the first language. Some initial class conversations asked students, “When do you speak English?” “When do you speak Spanish?” Then, students conducted interviews with others in which they were asked to find out their similarities and differences with one another, analyse them, and produce an essay. Students reported on differences and similarities, bilingualism, and learning to read and write in two languages.

In Evans (2017), social interactions among students were fundamental, not to erase difference but to construct something from the differences. During the whole process, students worked in dyads. César and Santos (2006) researched this use of dyads in a school in Portugal to construct significant mathematical knowledge and to establish more inclusive social relations. César and Santos aimed to show how collaborative work could be a strategy to create an inclusive learning setting in the classroom. The research was part of a larger project called “Interaction and Knowledge,” which began 12 years before the study was carried out. The study used critical ethnography and daily peer interactions. In the first stage, students were asked to create a dyadic contract; they were asked individually what they expected from the collaborative group. The students were placed in dyads, and then later the dyads were joined together. Between each stage, interviews and questionnaires were done with the students, to check on the way they felt about their collaborative groups. The study concluded that collaboration facilitated positive behaviours towards academic learning and also promoted students’ socialization. Students explained that working with peers to solve problems helped them to learn how to respect each other and deal with their own contradictory identities. At the end of this one year project, students reflected on the importance of not evaluating others by the first glance as this is a pattern that generates exclusion. Diversity, in so far as having different opinions, was also seen as valuable for the students, who could profit from one another’s characteristics.

Slater’s (2013) thesis differs slightly from the previous studies as all of them aimed to transform the connotation of difference for students. In her case, the

aim was to understand how normative conceptions of youth and disability impact the lives of young disabled people and consider how young and disabled researchers can position young people as active and politically resilient. This action research developed a 10-week art project with seven young people in the UK with the label of intellectual impairment. This project asked the participants to create together a “best possible world,” which resulted in The Best-Ever Future Worlds Project. The project departed from utopian thinking as a way for children to show their critical standpoint on the present, “offering an alternative vision of the future cannot take place without a simultaneous critique of the present” (Slater, 2013, 107). This study argued that the future was different from the present and that the future imagined by children was brighter, nicer, more peaceful and different. Her aim was not related to giving a new meaning to difference; rather, difference was understood as the possibility of the people and of the world of becoming something better. Utopian thinking was a possibly strategy to give another meaning to difference, which did not imply a domination power relationship.

In conclusion, all of the studies reviewed managed to signify difference in positive ways in terms of Deleuze (1994), in which difference means the possibility of opening third spaces, becoming another, constructing other possible spaces. They also agreed on strategies that aimed to transform the way people gave meaning and acted towards difference. All of these action research studies highlighted the importance of questioning one’s position and understandings, of comparing and contrasting the perceptions of one another, trying to locate and contextualize these perceptions, sharing and discussing with people in a dialogue and finally transforming into something different.

METHODOLOGY

Research Design

This study was an action research project carried out with fourth-grade students in a girls’ school in Bogotá, Colombia. The pedagogical intervention took place in the social studies class as part of the regular curriculum. Throughout the action research process, participants were engaged in an individual and collective processes of reflection and transformation of their own practices.

In this school, the social studies curriculum aims to develop a critical perspective in students based on their reality, and most of the curriculum is designed in a project-based methodology; fourth graders study the conquest of America. By the end of the school year, students are expected to identify the colonial legacy in Colombian society today. The program gave students the tools either to value certain legacies and identify possible problematic effects of inherited practices. Discrimination by skin colour and social class is one of the inherited practices which was explored. Within this framework, in the action research, students were invited to deconstruct this legacy. The development of this action research used some of the elements of critical pedagogy as the pedagogical encounter revolves around students’ experiences (Cohen, 2018).

Context

The study took place in a private all-girls school in Bogotá, Colombia. The school is located in the north of Bogotá, and most of the families come from high-income backgrounds. It was founded in 1963 by a Catholic religious order from the United States. Since 2010, the school has been accredited as part of Council for International Schools (CIS). It is an urban school with over 1000 students. The mission of the school aims to develop an integral formative process, guided by Catholic principles in a global context. The population of the school is mostly Colombian, Catholic and belongs to the city upper class.

The study took place during an atypical historical moment. It happened in May 2020, while Colombia was held in quarantine due to the COVID-19 pandemic.



All of the classes were led virtually from March to the end of the school year in June; as such, the research also occurred place virtually. Virtuality transformed the ways in which data was collected, e.g., focus groups and class discussions were done through Google Meet. Permission from the school was sought and obtained to carry out the project

Participants

Sixty-six fourth graders in the social studies class were invited to participate in the project, and 17 of them were approved by their parents to be part of this study. Nine agreed to participate in the focus groups. Both the name of the students and the name of the school have to be kept anonymous following the school's policies on *habeas data* and child protection. The students knew since the start of the project that the teacher was collecting data for a research paper, and the class discussed the research question of the study in a class scenario.

According to Cohen et al (2018), the sample of a qualitative study needs to be representative of the population studied. In this research, the population studied is fairly homogeneous; all of the students are girls, come from Catholic backgrounds and belong to high-income families. Therefore, following this high homogeneity, the sample could be as little as 16.6% of the population to be representative. In the case of our population which encompasses 66 students, 11 students would be a representative sample.

Researcher Positionality

Conducting research is a situated cultural practice, which means that the researcher's personal views, biographies, values, social interactions with the students, beliefs and ideas are incarnated in the research work. Therefore, it is necessary to make some of these elements and position the author visible. In the case of this teacher-researcher, I was 27 years old at the time of the study, sociologist who had been teaching for the last three years in private schools in Bogotá.

My background as a sociologist, as someone close to feminism and post-structuralism, explains my closeness to concepts like Otherness. I attended a private school in Bogotá because I was awarded a scholarship to that school. During my school years, I always felt different; I am not sure if it was because I felt I didn't belong to the social class of my classmates, or because I generated practices of self-exclusion based on a criticism of many of the practices that surrounded me. I eventually became part of a group of friends, and we called ourselves "The Weirdos." Many of my friends were non-heterosexual, non-aesthetically correct according to a white colonial matrix, and we had "strange" tastes in music or literature. Of course, our "weirdness" was constructed from a power and privileged position. We were never a target of bullying as we built ourselves a completely coherent identity of the "Smart but Weird." In fact, we felt superior to others.

In the end, this sense of superiority never allowed us to exchange views, dialogue or even try to understand others' points of view. Ever since, the difference has been one of my fascinations. I try to understand how heterosexuality, whiteness and classism manifest themselves, how they produce "normal" subjects, and how differences (not as fixed or coherent, as we did) but as a multiplicity as a possible becoming can be a place of resistance.

I have been teaching this group of girls since 2018 and have been able to establish relationships of caring and trust with them. Although the relationship is close, I have taught the students, meaning that a power relationship is evident and structures the whole project. Students' answers and reflections might be affected by what they expect I want to hear. To reduce this sort of interference, students were told that the project would have no impact on their academic performance. The names of the students on the projects were also kept anonymous in order to reduce the interference of personal bias on the data.

Data Collection Instruments

In order to answer the research questions, different techniques were used, including reflective journal, questionnaire, student artefacts and focus groups.

Reflective Research Journal

Reflective journals are instruments used by the researcher to record observations on fieldwork which aim to reflect on the social processes and interactions that occur during the different moments of the study (Cohen, et al. 2018). Due to the context of virtual learning, observations took place during class time during the *Google Meet* encounters. The discussions were held with all of the students in different moments during the project. These observations were carried out within the role of participant observation as the teacher-researcher was part of the class and assumed fundamental role within the project. As the students handed in different stages of the project, the reflective journal kept a record of all the reflections raised after checking each of the stages.

Questionnaire

The students filled out a questionnaire at the start and the end of the project. In the initial questionnaire, students were asked to answer the question, “What is difference?” At the end of the project, the students were asked the same question. The initial questionnaire was answered anonymously by the 66 students. The final questionnaire was only answered by ten of them as it was the end of the school academic year most of the students did not hand in the questionnaire. By repeating the questionnaire at the beginning and end of the project, it was possible to determine a baseline description of students’ perceptions of difference, which could then be compared throughout the project and at the end.

Student Artifacts

Two student artefacts were collected: a worksheet of the best possible world project and a final creative piece where they show the best possible world. The final worksheet allowed students to build records of their transformations during the intervention, and recorded the changes of practices, discourses and social relationships. It also allowed both the research and the student to have an ongoing process of reflection. The

creative piece was an invitation for students’ creativity and imagination to show other possible worlds. The students created short videos in collaborative groups. The videos were uploaded to the platform *Flipgrid* where everyone from the class was able to see everyone else’s videos.

Focus Group

According to Cohen, et al. (2018) focus groups aim to discuss topics outlining collective views rather than individual perspectives. At the end of the intervention, two focus groups took place in which participants were asked to reflect upon the process and their definition of difference at the end of this process. These final focus groups helped evaluate the impact of the intervention. Only students who were given permission by their parents participated in the focus groups.

Pedagogical Intervention

The intervention was framed in a project called “An Alien in the Classroom: Creating Other Possible Worlds.” The project aimed for students to be able to imagine the best possible world where everyone can be together. The pedagogical intervention was carried out in Spanish as the Social Studies subject is studied in this language. This project was divided into four stages: description of the alien, being the alien, creating the best possible world for aliens and students, and a final reflection.

Stage 1: Description of the Alien

The story began with the sudden appearance of an alien at school. In the first stage, the story narrated the time when students returned from the quarantine and came in the classroom to find a very strange living being. They realized that the being came from another world. In the story, all the students reacted in different ways, from screams to fainting. Students were asked then to describe the alien’s characteristics in their own words. They were also asked to draw the alien and note possible differences between the alien and themselves.

By imagining and describing this strange being, students embodied their conception of non-normality; therefore, a clear picture of what otherness means for the students was outlined in this stage. What students defined as different was incarnated in their drawings of the aliens. According to different research and theory, (Alvyra, 2014; González, 2008; Inokuchi & Nozaki, 2005; Olmos, 2009; Rabello De Castro, 2004), for people who have been brought up in a Western matrix of domination, the Other is produced in the middle of different matrices of domination which include race, class gender and ability.

Stage 2: Being the Alien

In the second stage of the project, the story continued. The day after students encountered the alien, they woke up and noticed that had become the alien. In this section, students narrated a day in the life of themselves as the alien. They created the alien's Instagram profile to explore the similarities between the alien and themselves. This stage's objective was to deconstruct otherness by using three strategies: narration, proposed by Krumer-Nevo and Sidi (2012), situating the Other (Krumer-Nevo and Sidi 2012; Sreenivas, 2004; Vanderlinden, 2008), and the recognition of similarities between the alien and themselves (Evans, 2017).

For Krumer-Nevo and Sidi (2012), narration is a research technique in which the researcher is asked to narrate from the point of view of the person who is being interviewed. Between the interviewed and the researcher, they create a life narration from the point of view of the interviewed. By doing this, the authors propose a deconstruction of the Other, who becomes the protagonist of the story, and the interviewer tries to make sense of the universe of meanings of the interviewed. This technique was applied here, with certain limitations as the study framed an imaginary situation and not an actual situation where social interaction was involved. Still, in keeping with the technique, students became the alien and narrated their feelings, thoughts and possible actions. Situating the Other by inquiring about the context is a very important stage for deconstructing the Other, according to Sreenivas (2004), Krumer-Nevo and Sidi (2012), Vanderlinden (2008). By creating an

Instagram profile for the alien where students include favourite food, hobbies, and friends, students located the alien somewhere, giving meaning to its context and ways of life.

The last strategy, finding similarities and differences between the aliens and themselves, was constructed from Evans' (2017) research about creating a book on differences among students of her third-grade class. Throughout her project, students worked with a peer, got to know the peer, interviewed that peer and created a narration about that peer from the similarities and differences. According to Evans, similarities and differences were very useful to deconstruct the notion of a hierarchical Other.

Stage 3: Creating the Best Possible World for Aliens and Students

In this stage, the narrative continued. Students noticed that the alien had been excluded by many. Then, students were asked to form collaborative groups of three. The groups were randomly selected by the teacher. The students brainstormed the characteristics of a world where no one is ever excluded. Then, the students developed a creative piece showing the main characteristics of the world.

The idea of imagining a world where everyone can be together emerged from Slater (2013), who carried out an action research project with young people who imagined the best possible futures. Slater (2013) explained how utopian thinking could offer an alternative vision of the world that bases itself on a critique of the present. Encouraging young people to think about different ways of living and being together in the world invites them to have a politically active perspective. By imagining other possible futures or other possible worlds, the notion of difference is not understood as something negative, but as a possibility to become something different and better. Following Deleuzian ideas (1994), this stage used difference as a possibility to become something other. It aimed to open a space for students to construct a critical perspective about the present as they imagine the best possible worlds, hence creating a place for students to think and feel beyond normative frameworks.

This stage was carried out in collaborative groups in which students were encouraged to interact with their peers to create a proposal in which everyone's ideas were to be represented. This stage proposed a resignification of difference on two levels: content and methodology. In terms of the content of the task, students were asked to use their different experiences and reflections from previous stages to create a world where not only the girls fit, but all of the aliens fit together. The differences brought by the aliens were to nurture this new world. Consequently, creating other possible worlds with the help of others might mean being influenced by others' experiences and ideas (Braidotti, 2002). In terms of the methodological approach, this stage aimed to open a space for collaboration and dialogue between different perspectives as students worked in collaborative groups. According to Evans (2017) and César and Santos (2006), collaborative groups and dialogue can allow students to solve problems collaboratively and respect others' points of view. Students were expected to profit and learn from others' characteristics and abilities in order to finish this section of the process. In Braidotti's words, this section tried to lead students into realizing that "people are not different from another other because they are essentially different but because of the way they change, they feel, they act on the world and they become" (Braidotti, 2002, p. 8).

Final Reflection

The final reflection was not only important for every action research (Cohen, 2018), but was also a fundamental strategy to resignify difference in positive terms (Screenivas, 2004). In this final reflection students were asked to write a journal entry and answered the following questions:

1. *By re-looking at your alien can you identify any prejudices or stereotypes you used to construct the alien?*
2. *How did your idea of the alien change when you learned about its tastes, feelings or hobbies?*
3. *Which was the most challenging part of creating Other possible worlds? What did you learn and what did you accomplish?*

4. *Do you think it is possible that in our real-world everyone fits together, what do you have to do so this happens?*

The objective of the reflections was to open a space for students to see their own position, which may be full of stereotypes and prejudice, produced in a specific matrix of domination. It also allowed the researcher to see to what extent the process transformed the way students felt towards the alien and the way in which students gave significance to difference at least discursively. This space of reflection aimed to raise "awareness of the effects that the participants-as-practitioners-and researchers are having on the research process, how their values, attitudes, perceptions, opinions, actions, feelings etc. are feeding into the situation being studied" (Cohen, 2018, p. 310).

Data Analysis and Interpretation

The data collected during the project was analysed guided by the principles of *grounded theory*. Glaser (as cited in Cohen et al, 2018) describes grounded theory as a systematic way to produce theory from data. In *open coding* the data is coded by reading each of the stages, and categories of analysis emerge from the same text. Actions, feelings, events are possible sources from which codes can emerge. These categories are then compared with theory and transform while the research takes place.

In the data analysis for this project, stages 1, 2, 4 of the pedagogical intervention, the focus group and questionnaire were all coded using grounded theory. This was done with the use of *Atlas t.i* software, which is used to organize qualitative data. Following grounded theory principles, the teacher-researcher coded while reading the texts. These codes were then organized by the program, which produced documents showing the category and quotations of the text. These documents were then used to create spreadsheets in Excel where conclusions could be drawn per category. Each of the stages of the pedagogical intervention produced slightly different categories, which were then triangulated to create unified categories from recurring themes. Each of the stages had certain specificities which are explained below.

Questionnaire

The questionnaire was answered by students using Google Forms. Sixty-six students answered the question *What does difference mean?*, and an Excel spreadsheet was tabulated by Google Forms. The answers were exported to *atlas ti* and were all read. As the answers were read, certain narrative patterns emerged, creating typifications of sense; these were named the categories. Then, in the case of some categories, it was noticed that there were specific and different ways of giving meaning within the category, so subcategories were created. In the case of the questionnaire, this was the matrix that helped in the analysis of data. After all the fragments of the text were coded, all the quotations from one group were read and conclusions per category were extracted.

The matrix of analysis created from the questionnaire showed that certain elements defined difference according to students. These elements included physical characteristics of people, tastes, and differences among objects. It was also evident that there was a specific relationship between people, constituted by difference, which implied a radical separation between the Same and the Other. Students also talked about a range of effects of difference, such as exclusion practices and opening a possible space for resistance.

Stage 1, 2 and 4: Textual Inputs

Stages 1, 2 and 4 of the pedagogical intervention were analysed using grounded theory as well. In Stage 1, students were asked to describe the aliens and explain their differences in relation to the alien. In Stage 2, students were asked to write a diary entry narrating a day in the life of their alien, and in Stage 4 students reflected on the pedagogical intervention. Out of the 66 students who participated in the pedagogical intervention, the information analysed used the projects from the 16 students who had informed consent from their parents. As the project was executed by stages, each week a new stage was carried out and then analysed. All textual inputs of each stage were read together, placed in one file and exported to *atlas t.i*. Then, repeated relations among the text created categories and subcategories. The software created documents summarizing each of the categories,

which were then exported to an Excel spreadsheet to create matrices, which allowed the teacher-researcher to create conclusions per category. Cohen et al (2018) refer to this stage as *memo production*. The memos or comments combined with previously seen theory, new findings, and possible questions to explore in the future. As the stages advanced, the emergent categories were compared with those that had already emerged in previous stages and were triangulated.

In Stage 1 of the pedagogical intervention, students were asked to compare themselves to the alien they had imagined previously. Their comparisons revolved around an idea of normality, and there were specific ways of stating the comparison. Some made their comparison explicit while others did not make themselves visible in the comparison.

In Stage 2 of the pedagogical intervention, students became the alien and were asked to narrate a day in the life of the alien and analyse the possible similarities with the aliens. From students' reflections, categories emerged around the reactions towards the aliens, the reasons to be rejected, and how the students compared themselves to the aliens.

In Stage 4, students were asked to reflect on their learning process during the pedagogical intervention. From students' reflections, categories emerged related to the different prejudices from which they constructed their aliens, the effects of difference, the relationship with normality, and the relationship between people which is constituted by an idea of difference.

Stage 1: Visual Inputs

In Stage 1, students were asked to draw the aliens they saw in the classroom. The drawings created visual data that was also analysed. Cohen et al (2018) explain that when analysing images through grounded theory, it is necessary to analyse these visual images as texts. In this sense, it is necessary to "gather together the visual data, then code the data, moving to generate categories, themes, key issues and features, all accompanied by the writing of memos about these, thence to formulating general concepts" (Cohen et al, 2018, p. 706). In this way, the categories which emerged from the images were

triangulated with students' descriptions of the same images, and some categories emerged as well as some comments. It was evident students' aliens featured both anthropomorphous and non- anthropomorphous figures.

Focus Groups: Textual Input

The discussions from the two focus groups were held in the Google Meet platform and then recorded using the option of recording offered by the application. Because of *Habeas data* and child protection laws enforced in Colombia, students were asked to turn off their cameras. Then, the focus groups were transcribed. As the focus groups were developed at the end of the project, many categories had already emerged. This implied a slightly different technique to analyse this section. The principles of content analysis were used and merged with the ongoing grounded theory. Ezzy (2002, as cited in Cohen et al, 2018) suggests that content analysis starts with a sample text. In this case, the text of the previous sections of the project was analysed and categories emerged (what we had already done in previous sections). Then, these categories were used to review the text (the focus groups transcriptions). However, it is important to highlight that no statistical or quantitative analysis was done from the categories, as suggested in content analysis; rather, the codes were treated as they had been previously treated in each of the sections. The quotations which belonged to those codes were organized together, read together, and conclusions or comments per category or subcategory were extracted. The focus groups also allowed certain new aspects to emerge and be verbalized by students; therefore, new categories were also created.

Stage 3: Audiovisual Creative Pieces

In Stage 3 of the pedagogical intervention, students were asked to show through a creative piece their *Best Possible World*. In collaborative groups of three or four, students created audio-visual pieces. Audio-visual material was treated as Cohen et al (2018) suggest, as a form of discourse or textuality. This means that audio-visual material conveys multiple meanings. As each of the creative pieces is a finished symbolic representation

(Bourdieu, 1965) which creates a universe of significance in itself, analysing it by fragmenting it into codes and categories as in previous sections could possibly make the pieces lose their sense of unity or meaning. This implies that each of the creative pieces should be treated as a symbolic representation, in which processes of production and reproduction of meaning are involved, following the principles of iconic hermeneutics (Gonzalez, 2016). Gonzalez explains that any textuality is a symbolic representation whose meaning is given in three levels: in relation to the conditions under which was produced, the message it conveys, and the usage that is given by those who read it. This means “the semantic moment or relationship between the sign and the objects, the syntactic moment or the establishment of relationships of the signs among themselves and the pragmatic moment or the analysis of the relationships between the signs and the user”² (González, 2016, p. 169).

Following the three levels of iconic hermeneutics, it was proposed that the creative pieces of the students should be analysed having this in mind. Therefore, each of the pieces was described semantically (the formal elements of the piece), syntactically (the message that is conveyed), and pragmatically (the relation to the user or the interpretation according to the investigators previous categories of analysis). Afterwards, conclusions about general trends or relationships seen in several pieces were completed.

RESULTS AND DISCUSSION

The present study aimed to understand how fourth grade students in an all-girls school in Bogotá Colombia defined difference. Based on the literature review, it was hypothesized that difference could be understood as something negative; therefore, the action research aimed to challenge some of these notions through the project “An Alien in the Classroom: Creating Other

² Translation from Spanish by the author “(...) *el momento semántico o de relaciones de signos con los objetos; el momento sintáctico o de establecimiento de las relaciones de los signos entre sí; también, el momento pragmático, o análisis de las relaciones entre los signos y los usuarios*”



Possible Worlds.” In this pedagogical intervention, students were asked to imagine that an alien arrived in their classroom, and then to imagine the best possible world where either they or the alien might fit together, and finally reflect on the learning process.

Throughout the pedagogical intervention, different elements emerged in terms of the ways that students acted and defined difference. Some of these elements were present throughout the intervention, and others appeared in particular moments. For example, throughout the study it was evident how participants related difference to the ways that people establish relationships with others. For some participants, people or groups were seen as radically and essentially separated. For others, differences between people were thought to exist, but they believed that people were essentially the same, meaning that they are subject to the same rights. Other participants did not conceive of a radical separation between “same” or the “other” because they viewed everyone in a constant process of transformation.

Another element that was present throughout the pedagogical intervention were the effects of difference on students’ realities. At the start of the intervention, students perceived that being labelled as different was a legitimate reason to be excluded by the group. As the project advanced, it was more evident that students began to include empathy or the importance of understanding others in their discourses, and some of them explained that difference could actually have quite positive effects on society as it brought about changes to societies and also opened up spaces to resist.

Also seen throughout the intervention were the elements that students considered to define difference. These elements were most strongly related to sexual orientation, body image, social class, tastes, race, and the intersectionality of different matrices of domination. Body image, especially the relationship between being fat or slim, was also an element students used to build exclusion practices.

Aside from these constant aspects, there were other dimensions which were not present throughout the study but which offered insights into students’ understanding of difference, for example, the relationship between difference and normality. Students related difference to

the establishment of an idea of normality. By the end of the intervention, some elements clearly shifted; for example, difference was more positively connotated than at the start. Specifically, more students believed that difference taught something or added something positive to every society.

Difference and the Relationship between Individuals

During the different stages of the pedagogical intervention, students explained that difference constituted certain relationships between human beings. The first type of relationship they mentioned implied being completely and radically separated from the other. Secondly, they explained that humans are all different and at the same time the same; different in terms of their characteristics but the same in terms of rights and obligations. The third type of relationship participants described affirmed that difference constituted the possibility for societies or people to become something else, to learn new things and transform themselves.

Other and Same as Radically Separated

Most of the students at the start of the study explained that being different meant that people or groups of people were radically separated from one another as it is shown in one student’s affirmation, “*One cannot appear like the other person in order to be oneself.*”³ According to this student, to create one’s identity there is an essential and basic need of the Other. Apparently, students appropriated in an agentic way the discourse of the I and the Other and revealed a dialectic relation in which the Self and the Other constituted enclosed and contradictory identities. It was evident how this student constructed a binary relationship between the I and the Other, and the only way of defining the Other was in opposition to the I. This binary relationship has been explained by Hegel and Leibenz (cited by Olmos, 2009), and as Judith Butler (1990) criticizes, is within the core of Western understanding of the subject and the identity.

³ All excerpts translated from the original Spanish by the author: *Uno no se puede parecer a la otra para ser uno mismo.*

Throughout the pedagogical intervention, this essentialization could be interpreted as having both negative and positive connotations. At the start of the intervention, it was more evident to find negative connotations, but by the end, no student denoted essential differences as negative. When students expressed this radical separation in a negative way, they would affirm, for example, that it was legitimate or normal to judge or exclude other people as illustrated in this excerpt: “I think that difference is when people judge you or make you feel lesser just because of your physical traits.”⁴ In this sense, there were some evident changes that occurred during the pedagogical intervention. Although it was not possible to transform students’ understanding of difference into a less binary relationship, it was possible to lead them to reflect on questioning the negativity of difference and understanding it as something which is positive to societies, as evident in this comment: “For me difference is what makes you be you, be unique. We are all different and I love differences. It’s great to live with people who are different from you.”⁵

This radical separation between the Self and the Other was also evident when students narrated their experience of being aliens. In some cases, when the students became the alien, they imagined that they met with other aliens at the school and became friends with them. This happened on more than one occasion. In this case, the radical separation between the Same and the Other was maintained. The “normal” students hung around with the normal students and the different students with “different” ones. Hanging around with the Others gave students a place to be and a place from which they could speak. Therefore, the discourse of the radical separation between Them and Us was clearly maintained.

When students denoted essential differences as something positive, they normally related this to the possibility of being unique or standing out in the crowd.

⁴ “Yo creo que la diferencia es que te juzgan o te hacen sentir menos solo por rasgos físicos”.

⁵ “Para mí la diferencia es lo que te hace ser quién eres, alguien único. Todos somos diferentes y las diferencias me encantan. Es muy bueno convivir con gente diferente a ti”

In the focus group and in other reflections at the end of the project, it was evident that although the Same and the Other were kept, there was an urgency to accept, live with, or share with the Other. Here, a change was evident as the Other had to be accepted and included:

*For me difference it’s the best anyone can have because just imagine that everyone is called Lechus, everyone has the same eyes and hair, everything would be so boring. Even though some people do not like how you are, it’s better. Also, it’s cooler to be different and to learn things that others know, learn what they like doing.*⁶

The Same but Different

The narrative that established a radical separation between the I and the Other was not the only narrative that emerged within students’ explanation that although human beings are different, they are essentially the same. If we try to make a genealogy of this idea, it contains common elements with the human rights discourse that has been adopted by most of the liberal Western nations throughout the 20th century. According to Slater (1996), liberal Western societies are constructed upon a conception of human rights which emerged in the eighteenth century. This conception asserts that individuals have rights to freedom of speech, liberty, possession of property, to have a culture and tradition, and that these rights are universal and inalienable. If we examine students’ narratives, they essentially argued that although people are all different (we have a different religion, culture, personality), they are all the same as they have access to the same rights. In this view, physical characteristics, personality or emotions can be different, but people are all the same as individuals have the same rights, deserve the same things, or are all living beings; i.e., “Even though we are different, we are the same.” It is interesting to evidence how these

⁶ “Para mí la diferencia es lo mejor que uno puede tener pues imaginense un mundo igual donde todo el mundo se llama Lechus, tienen el mismo pelo, los mismos ojos, todo igual sería tan aburrido. Y aunque algunas personas no les guste como eres, pues eso es mejor y además de todo pues es mas chevere ser diferente y aprender de los otros de las cosas que les gusta en lugar de saber todo de los otros, saber lo que les gusta.”

students appropriated the discourse of human rights to give sense to their actions and the actions of Others.

I think that difference is something that every person has and that's why everyone is unique. Difference is not bad; it doesn't matter we are different because we have exactly the same rights.⁷

This discourse was present in many students' comments at the beginning of the project, and became slightly more evident at the end of the project. However, it would be interesting to analyse the way in which this discourse was appropriated by the students. It is evident that if it had been featured throughout their formal education or as a part of the curriculum, this would have been present in the majority of students' narratives. However, the fact that only some students made this argument leads us to reflect that is a discourse constituted in particular family narratives rather than official school policy. How this discourse arrived to these students and how it had been appropriated by them is a question which lies beyond the limits of this study, but it would be interesting to explore this in a deeper way in a further investigation.

Other and Us in Constant Becoming

The radical separation between I and the Other and the idea that people can be different but the same are two discourses which were predominant throughout the pedagogical intervention. At the end of the intervention, another view emerged, which was not

majoritarian, but which showed an important shift as it departs from the essential paradigm of difference and tries to understand difference as something that constantly transforms the world. Although this was not reflected by many students, some of them actually analysed the importance of difference in the transformation of people, societies and social dynamics, especially in the final reflection section where they were asked what they learned during the project. By the end of the project, it was more evident and common for students to state that people can learn from the differences to become transform themselves into something else.

⁷ *Yo creo que la diferencia es algo que cada persona tiene por eso la hace ser única. Y la diferencia no es mala y no importa si somos diferentes e iguales tenemos los mismos derechos.*

Difference is when you are not the same as someone else, which is actually fine because in a world full of different people you learn more whereas in a world where everyone is the same no one learns anything from other people.⁸

Some students concluded that it was possible not only to accept different people, but that these individuals could also give something to the community. Therefore, being different could be desirable “*My idea changed a lot because it wasn't fair what happened to the alien.⁹ Just because he was different no one took into account its moral values and what he could give to the community.*” If we analyse this excerpt, it is evident that this student was expressing the idea that the alien could certainly improve or transform something in society. Therefore, difference is constantly transforming the world. This conception of difference can be read from a Deleuzian perspective, who argues that difference is the possibility of becoming something else as Same and Other are mutually interdependent.

In conclusion, it was also possible to discover discourse that defined the relationship between people established by difference. The predominant discourse tended to essentialize the I and the Other, creating a radical separation between them. This shows how the Western tradition of thought based on what Judith Butler calls the *metaphysics of substance* has been appropriated by students to explain reality. Another important discourse was the understanding that everyone is the same and at the same time different. This discourse keeps Same and Other as radically separated entities but placed them in the field of human rights. This discourse became stronger than the first by the end of the pedagogical intervention, which indicates that by asking students to create the best possible worlds

⁸ *“La diferencia es cuando no eres igual a alguien lo cual está bien porque en un mundo lleno de personas diferentes se aprende mas en cambio en un mundo donde todos son iguales no se puede aprender nada de los demás.”*

⁹ The student is talking about the stage of the pedagogical intervention when they became the alien for one day. For all of the students, being the alien was a horrible experience as they felt excluded and rejected, and violence was even exerted by the other students on the alien. This student criticized how in this imaginary situation, everyone had been unfair to the alien. It is very interesting to see how an imaginary situation can make students project all their fears and conceptions about how society works.

in company with aliens required them to get close discursively to the alien. They had to find similarities and establish bridges of communication. It would perhaps be possible to use these strategies with real people to get students closer to those they consider different.

Effects of Difference

Throughout the different stages of the pedagogical intervention, students showed not only that there was a radical separation between the Self and Other, or that everyone is at the same time the same and different, but also that difference has diverse effects on people and their relationships. By typifying students' discourse, we can observe how difference can cause exclusion as well as empathy and a sense of uniqueness. At the start of the pedagogical intervention, the relationship between difference and social exclusion was quite evident. However, by the end of the intervention, it was possible to discern a slight transformation, and most of the students' discourse shifted towards the ways in which difference raises empathy or contributes to society.

Difference and Exclusion

Since the start of the pedagogical intervention, there was a very strong relationship between difference and exclusion practices. This was quite evident throughout the entire project; however, it was especially strong when students were asked to narrate "A Day as an Alien," in which they were asked to imagine what would happen if they woke up being their aliens. Students were asked to write a diary entry narrating their day as the Alien. In most of the diary entries, exclusion was directly related to establishing others as inferior. Aliens were judged and even treated violently by their classmates. This is clearly shown in the following diary entry:

*In some way, I transformed into the alien and I had to go to school. Everyone was looking at me as if I was a strange sort of insect. No one wanted to play with me. They judged me and spoke about me badly behind my back. I felt really sad.*¹⁰

¹⁰ *De alguna forma, no se cual es, me convertí en alienígena, me tocó ir al colegio y todos me miraban como un bicho raro, nadie quería jugar conmigo, me juzgaban, hablaban mal a mis espaldas y yo me sentí muy triste.*

The great majority, if not all of the students, imagined their day as the Alien as a horrible experience. They felt rejected, excluded, and even had to put up with violent encounters. These findings are similar to the conclusions of authors such as Inokuchi and Nozaki (2005), Agúdelo, et al. (2017) and Lewis (2001), who all report in their research that being called different implied being rejected and excluded by others. In this way, these young adolescents normalized exclusionary practices towards those who they call different in their daily lives.

Interestingly, in none of their diary entries written in the "Day in the Life" stage did students stand up against the exclusion or rejection they received from others. Rather, most assumed a passive role against the violence inflicted. However, during the final reflections in Stage 4 or during the focus group, some students showed a divergent perspective related to exclusion.

*Difference is when someone or something is different. There are some people who do not understand and make others feel inferior just because of what they are and that's not correct. It's when we have something different from others and people start classifying.*¹¹

This entry is very interesting as it points out that difference is not the cause of exclusion, but rather that differences can be used as an excuse to exclude people. Also, by explaining that people were constantly classifying, the student acknowledged that difference is not an essential characteristic that belongs to people, but rather something that is socially constructed. Certainly, this student had some deep intuitions which allowed her to see how the domination power structure, which uses difference to establish power relationships, works. In conclusion, this perspective was evident in students' discourse by the end of the project, showing an important shift in some of the students' narratives. At the beginning of the project, most students believed that difference was a cause of exclusion and that this phenomenon was normal and even expected. However, by the end of the project some of them not only questioned the

¹¹ *La diferencia es cuando alguien o algo es diferente, hay algunas personas que no lo entienden y hacen sentir a otras inferiores solo por lo que son, y eso no está bien, es cuando tenemos algo distinto con algunas personas, y otras se ponen a clasificar.*

relationship between difference and exclusion, but also questioned the way in which the idea of difference was constructed, by explaining it as a social construction.

Difference and Uniqueness

Difference and exclusion was a discourse that was found all through the pedagogical intervention; however, it was not the only one that sought to explain the effects of being called different. For a group of students, difference was seen as a reason for individuals to feel unique and therefore have a valuable place within society. Difference makes people stand out as is shown in this excerpt: “*Difference is when something makes you stand out from others, is to have your own and unique personality.*”¹² It is very interesting that this perspective was only evident in the initial questionnaire in which students were asked what difference meant to them.

In terms of making or representing oneself as unique in contemporary societies, in recent literature the term *cult of personality* emerges to explain this type of attitude. This term emerged during the Cold War as an explanation for the cult many people felt towards rulers in countries which were a dictatorship such as China and Russia. According to Cocker and Cronin (2017), with the expansion of mass media, the cult of personality “has traditionally been understood as the outcome of concerted actions and texts across mass media technologies (...), which work together to ascribe magnetic, reverential and idealized meanings to a single social actor among a greater population” (2011, p. 2). According to these authors, in today’s postmodern consumer society, this phenomenon has changed as we see the emergence of new small-scale cults of personality, including micro-celebrities (*influencers*) who position themselves through social media. Therefore, idolatry is related to the personal “presence” of an individual in front of a small group of personal followers. This personal presence makes individuals stand out due to “their personality, beauty or accomplishments” (Crocker & Cronin, 2011, p. 4).

There is certainly a great similarity between the modern-day influencer and students’ idea of having a unique personality and standing out. The hypothesis is that the narrative in which students claimed themselves as unique, standing out from the rest, might emerge from their awareness of and desire to be these micro-celebrities. In fact, when asked, many of the students reported that they wanted to be YouTubers when they grew up. In this way, it is evident how social media may help position this idea of what is desirable and expected. However, it is also noteworthy to mention the in the diary entry, in which students narrated their days as the Aliens, no student expressed this view. The silence of this perspective in a more practical exercise, the diary, opens up questions related to the reasoning behind the silence. Why did students enunciate in a discursive way that difference is something desirable, but then in the more practical exercise, all of them denoted it negatively? It is evident that with some students, there was a disconnection between the discourse and the action. This disconnection shows the cult of personality as an idea which is not fully appropriated, which may mark an ideal but is not translated into a life practice, as no student imagined being an alien celebrity when they wrote their diary entries. Hence, within students’ narration difference can refer to highlighting from the crowd as a desire but no one actually highlighted from the crowd in a positive way when incarnating difference; it was only a desire that is not embedded in students’ representations of their actions.

Difference and Empathy

Unlike exclusion, which transformed in students’ discourse over time, uniqueness emerged at the start of the intervention but proved to be a discursive artefact that never emerged again. As for empathy, this aspect emerged only at the end of the intervention. For many students, narrating the experience of the Alien led them to reflect on their own experiences. Becoming someone else and narrating that individual’s experience transformed fear into acceptance, and into understanding. This was evident in the focus group, in which many of the participants illustrated how their idea of the alien changed when they became the alien.

¹² “*La diferencia es algo que te hace resaltar entre las otras personas, es algo que te hace tener tu propia y única personalidad.*”

When we started being him, my idea changed slightly because I got into his shoes and when I was writing that [diary entry] I remembered a stage in my childhood when I was starting school and the girls looked at me as if I was weird when I was doing the admissions process. They stared at me because I had pimples and I was a little bit fat. While I was writing, I remembered my childhood. And it was in that section of the project when I got into the role of the alien as if what happened to him had happened to me. That changed my idea about the alien, firstly from my experience, secondly by getting into the alien's shoes.¹³

Putting oneself in someone else's shoes can be a transformative practice, increasing empathy, and leading the individual to reflect on her own life experiences and project them onto another situation. This reflective practice not only moves the individual closer to the position of the Other, but also makes people see their own position, their own scars and lived experiences. Krumer-Nevo and Sidi (2012) describe this strategy as a way to deconstruct otherness by getting close to the Other and locating themselves in a social space.

Difference and Fear

Difference has been seen to cause empathy, a sensation of uniqueness, exclusion, and also fear. In the "Day in the Life" stage of the intervention, many students reported that when being the Alien, other students showed that they feared them. This was an expected effect following the conception of othering developed by Edward Said in 1978, who voiced that separating discursively the Same and the Other caused fear among people. However, what is particular here is that one student started questioning the way people use fear for different purposes. This can be seen in the following comment in the final focus group:

¹³ *Cuando ya nos metimos a ser el, ya mi idea cambi6 un poquito pues me meti en los zapatos del el y pues cuando estaba escribiendo eso me record6 una etapa de mi niñez, cuando yo estaba entrando al colegio, que las niñas me miraban como que raro cuando yo estaba haciendo las audiciones. Me miraban raro porque yo tenía lunares y era un poquito gordita, y pues ahí yo mientras escribía eso recordé esa parte de mi infancia. Pues ahí fue, en esa parte de verdad me metía en el papel de el y en serio no hubiera pasado eso. Entonces cambi6 mi vida primero desde mi experiencia y segundo metiendome en los zapatos de él en su apariencia.*

That means that we are all different and the same, and that is why we cannot treat people differently, either because of their physical characteristics, their economy or simply because they are not similar to us. Sometimes we treat them like that not only because we are shallow or stereotyped but because of the fear, the fear this person is superior to me, or gets to be more quote-unquote "popular" than me.¹⁴

Not only are class, gender and race seen as social constructions, but this student also tries to explain the important role of fear in the construction of difference and holding distance from people who are different. It is a fear of the Other, a fear of its superiority. Pushing the analysis further, this student intuited that difference was used as a social construction to create power domination structures over others and use fear as a mechanism to preserve those relations.

Several authors, especially in the last 20 years, have explored the way fear is used to create, maintain, and keep social distance from the Other. According to Pain and Smith (2008), the contemporary world, especially since 9/11, has been characterized by governments capitalizing on their citizens' fear to legitimize their own political agendas. We are seeing the "emergence of the politics of fear or decision makers' promotion and use of audience beliefs and assumptions about danger, risk, and fear to achieve certain goals" (Pain & Smith, 2008, p. 3). The politics of fear is part of the tools politicians wield in the contemporary world. It would be interesting to explore how this student arrived at such a critical reflection. It is also interesting as it shows how students can understand complex situations and question the way the world exercises power. In this sense, it is evident that teachers are not dealing with infantilized young adolescents who are confused and do not understand things about how the world works. This student is not the ideal child pictured by Erik Erikson (1968), but rather an individual with thoughts of her own, a critical perspective of the present, and capable of not only of understanding how

¹⁴ *Eso significa que todos somos diferente e iguales al tiempo y no por eso hay que tratar diferentes a otras personas de otras, por su físico o su economía o simplemente no sean iguales a nosotras. y a veces los tratamos así no solo porque somos superficiales o estamos estereotipadas sino también por el miedo el miedo que esa persona me super6 el miedo que ahora ella va a ser más popular que yo, entre comillas.*



power domination structures work but consciously resignifies it. Hence, this shows that youth is a site of cultural debate, debates about knowledge, identity, representation, and power (Lesko, 1996, p. 451).

Elements which Define Difference

Within students' discourse, it was evident that they also constructed difference from certain markers related to race, class, gender, body image and sexual orientation. Some of these elements were part of students' textual narratives, especially in reference to body image, but elements related to race, class, gender and sexual orientation were present only during the class discussion or focus groups. This may be explained as evidence of the distance between what is being said and what is being written, which is interesting in two dimensions. In the first place, this distance evidences students' ability to notice how to talk in different contexts and how different contexts imply saying different things. This means there are certain implicit codes when written that restrict students from talking about certain topics, but then in oral discussions they are able to address them. In the second place, it is also interesting that these silences in the written artifacts illustrate how data is affected by the medium in which it is collected. Students say certain things through written pieces but say other things orally as the domination relations that structure these spaces are different.

Race

At the start of the pedagogical intervention, it was evident that difference for students was for the most part related to physical characteristics, especially skin colour, but also to attributes such as being tall or short or being slim or fat. However, these physical characteristics encompass two different matrices of domination: one related to processes of racialization and another to body image and representation. Skin colour was an element that was constantly used by students not only to designate difference, but to also treat people differently, as it is evident from the statement, *"Everything done so far touches many different points, for example how people*

treat other people just for their skin colour."¹⁵ Although the construct of race did not emerge explicitly, the constant use of skin colour as a marker of difference illustrated how students appropriated racial discourse and acted according to it.

The fact that students did not talk about race openly but rather hid it among generic physical characteristics or skin colour might be related to the concept of colour-blind ideology (Lewis, 2001). According to Lewis (2001), after studying a white upper-class school in the USA, he noticed that race was reinforced by not talking about it or by de-racializing all racial events. In his study, colour-blind discourse actually ended up reinforcing racial exclusion. In this sense, the girls' discourse worked in a colour-blind way as it never openly named race, but when asked, it was evident how exclusion related to racial markers such as skin colour.

This is evident in the following assertion, *"I think that difference is that they judge you or make you feel less only for your physical characteristics."* Here, students did not speak openly about race, but they completely understood the existence of certain physical markers that belong to an idea of race which is undesirable or desirable.

As students showed an appropriation of a racial discourse through a colour-blind ideology, it is also evident how students appropriated discourses in agentic ways. Some participants were even able to take critical perspectives: *"Racism is used as an excuse to mistreat others, to be older, and excuse to enslave."*¹⁶ This illustrates how skin colour is used by society to exclude others, but by using the word "excuse," the student showed how race might be a social construction used to maintain power domination relationships. In this sense, it is proposed here that children are able not only to understand how matrices of domination work,

¹⁵ *Bueno yo creo que ese es el objetivo pues todo lo tratado hasta ahora gira entorno a muchas cosas, por ejemplo cómo trataban a la gente solo por su color de piel, qué tal si simplemente no es justo, uno tiene que mirar primero lo que está haciendo, pensar antes de actuar.*

¹⁶ *Pero se usa esa diferencia como excusa para maltratarlo, como excusa para ser mayores, como excusa para esclavizarlo.*

but some of them are even able to appropriate them in critical ways.

Body Image and Representations

In addition to race, students' attention on physical characteristics focused on attributes such as being tall or short, or having long or short hair. In fact, most students talked about the physical characteristics in relation to difference. This was such a strong narrative that it was evident from the start of the pedagogical intervention up to the final exercise. The physical characteristics mentioned by students were evidently constructed upon an idea of beauty. In this sense, the concept of body image was used to talk about those physical characteristics that constructed a desirable ideal for these students.

Appearance and body image have become a very important construct in contemporary Western societies. According to Cash and Smolak (2011), the constant pursuit of a particular body image has been an obsession of Western societies. In the last 50 years, this has been strongly influenced by social media and representations, which affirm that body image is a sociocultural construction based on an idea of beauty proper to a culture, and this idea is incarnated into individuals' bodies, who judge their body image according to these standards and try to pursue them. Cash and Smolak (2011) claim that a beautiful body image in the West is related to being white, slim and tall.

For the participants of this project, "physical" characteristics mostly referred to bodily images, such as being fat or slim, beautiful or ugly. Certain body images were evidently used as excuses to exclude others. This is shown in the comment, "*One of the criteria could be that the other is not the same as me. She cannot be in my group because he is fat and I am slim.*"¹⁷ For the girls, fat was given a negative connotation and slim a positive connotation. This implies that the image of the slim girl is the desirable body image, and if you are fat, you are undesirable. It is evident how slim is established as the norm, as the desirable bodily image to perform.

¹⁷ *Pues uno de los criterios podría ser de la diferencia a los demás el no es igual a mi, el ni puede estar en mi grupo, el es gordo yo soy flaca.*

In this case, students were specific and talked about being fat, being short, and being ugly as three possible prejudices they used to create their aliens. This is very interesting because the Colombian population is not very short or skinny in general terms. The production of these stereotypes may have a strong relationship with series, television programs and movies. It is most likely also related to the white colonial matrix in which these cultural products are embedded. "Ugliness" is also an undesirable characteristic. To be ugly is accompanied by being bad or being not normal. It would be interesting to explore what is ugly for these girls, how they define ugliness, and how ugliness is intersected by the white colonial matrix of domination we are part of.

Normativity related to body image raises questions and even resistance in students' discourse, demonstrating once again how discourses are agentically appropriated. Most students explained that other people discriminate others by their appearance. Most of them not only condemned this behaviour, but there was even one case of a student who resignified "fatness" and placed it as an element of empowerment, as a place to be and resist. This quotation is taken from the transcription of the focus groups:

*I created the badly used term of "elephant" because when you are fat people say you are an elephant and I noticed that some time ago a girl told me I am fat, and yes I am fat and nothing happens if I am fat. This term, which is badly used by people, I use it because I like people noticing that elephants are beautiful and sacred so nothing happens.*¹⁸

Here, this student accepted that she was fat, assumed it and assumed it as a place to resist, a place to enunciate herself and make a statement to the rest of the girls. In this sense, the student was empowered from the place of the non-normative Other (fat) and established this position as a valid position to say to the others, "I am here and everything is fine." Therefore, it was incredible to see how such young students were able to create their own lines of resistance out of a dominant dispositif of power, which is so normative and present in every aspect of the pedagogical intervention.

¹⁸ *Usé el término mal usado elefante por ejemplo cuando tu eres gordito y te dicen "tu eres un elefante" y pues algo que me da cuenta que no hace mucho mucho, un tiempo atrás una niña de cuarto me dijo que era gorda y pues si y que, no pasa nada si soy gorda.*

According to studies such as Frost (2001), preoccupations about weight is quite evident among young female adolescents. The findings of this research suggest that the preoccupation about body image increases much before adolescence and affects younger girls as well. As Stinson (2001, cited by Frost, 2001) claims, women from a very early age tend to be dissatisfied with their bodies, and body weight, especially the “thin imperative” is predominant among girls. According to Frost (2001), the thin imperative was visible from the 1960s, when female bodies started becoming slimmer in TV shows and movies. According to her investigation in 1999, this discourse was so predominant that approximately half of all young women in North America diet regularly.

Sexual Orientation

In students' view, having a non-heterosexual orientation was also a reason to be excluded by others. One girl explained this phenomenon in her own words, “[I can get excluded because] for example, I like women.”¹⁹ The fact that the student did not use the word homosexual or bisexual might be related to either to not knowing the actual concept but had seen the social phenomenon in her reality, knowing the concept but being afraid that talking about it openly might carry a social punishment. This social punishment might be related to the fact that the students were attending to Catholic all-girls school, where talking about lesbianism was possibly probably taboo. This might be confirmed by another excerpt

*I realized that I based myself [to create the alien] in loads of stereotypes, or in excuses that people give [to exclude others]. First of all, my alien does not have a gender it is not a boy or a girl, it is there (...) I also made a reference to the Pink Panther, as both of them sometimes act like a woman and sometimes act a man and this makes reference to people with different sexual orientation because I think that these people are treated as aliens, so why don't they treat us as aliens? Why does it have to be them and not us? There is something else, and it goes against everything the school says but I got to take it out of my chest, I think that the Catholic Church is really good, I love my dear god, I love the holy trinity and virgin Mary, but the church is really castrating as it has a very closed mind.*²⁰

¹⁹ Es por el hecho de ser de por ejemplo que a mi me gustan las mujeres,

This excerpt was from the focus groups and is very interesting because it reveals elements critical to the heterosexual matrix of domination and even the Catholic church. In this fragment, it is evident how this student was critically aware of her context and able to create deep exercises of thought. When the student affirmed that she created an alien who acts like a boy and a girl, she was clearly expressing that her alien does not adhere to the heterosexual matrix of domination. Then, she criticised the way in which this matrix constructs its normativity as she questioned why non-heterosexual people are treated as aliens. By using the Us she constructed a radical difference between Others/aliens/non-heterosexual and Us, but at the same time, she questioned that the place of the normativity is in the Us and not in the Other. This is a highly transgressive act as she not only placed her alien in a non-normative position, but also questioned how normativity works. She also positioned her critique within her school context and understood that what she said went against the school's Catholic narrative. In this sense, the student placed herself in a critical position towards the school and demonstrated that she understood the narrative as something that goes against non-heterosexual orientations. She confronted non-heterosexual orientations to the beliefs of the Catholic church by explaining that the church is castrating. It is evident that she did not want to be socially punished by what she said, which is why she tried to apologize by saying that she loves God and the Virgin Mary. In this sense, she understands that the Catholic Church is related to keeping the heterosexual matrix of domination working and being constantly cited.

²⁰ Me di cuenta que me basé en muchos estereotipos, por decirlo así excusas que da la gente (...) también hice referencia a la pantera rosa ya que a veces actúa como una mujer y a veces actúa como un hombre y esto hace referencia a las personas con distintas orientaciones sexuales y pues a mi me parece que si a esa personas las tratan como aliens, por qué ellos a nosotros no? Porque tienen que ser ellos si nosotros no. Hay otra cosa, que yo se que va en contra de todo lo que el colegio dice pero lo tengo que sacar de mi pecho, es que a mi me parece que la iglesia catolica es muy buena amo a mi diosito lindo, amo a la santísima trinidad, amo a maria bella hermosa pero es muy castrante, porque no porque tiene la mente un poco muy cerrada.

Tastes

Tastes or hobbies are other elements which structure exclusion processes according to the students. For example, the use of certain technological platforms such as Tik Tok or listening to certain music outlined friendships and groups of people. If we were to deepen this analysis, we could see how these tastes are produced by certain habitus, and are intersected by class and the cultural consumption expected. However, this topic could be an investigation on its own.

Once I felt excluded because I have very different tastes to the rest of the people and they (the friends) take it in a bad way. Sometimes I wanted to be with them but they started to treat me bad because of my tastes. They excluded me and didn't let me be with them. I also try to be with people because of its tastes or physical aspects. I remember that one day a girl wanted to be with my group and we threw her out just because of the physical aspect and tastes.²¹

The interesting part about this excerpt is that it illustrates how groups among the girls were formed based on elements such as musical tastes, and how people who did not share these tastes were excluded. It is shown how group identity can be formed through shared (or imposed) interests that a group of people assume as their own and define themselves by these tastes. Taking Erikson's (1968) ideas, we are able to observe that tastes in music or games is part of the communal identity. In this sense, the student demonstrated that being part of the group meant citing the identitarian model successfully. Being part of a group meant forming a strong collective identity through tastes or physical appearance, as this student explains.

Intersectionality

Most of students' explanations of why people excluded others illustrated the ways in which matrices

²¹ *Una vez me sentí excluida pues yo tengo unos gustos muy diferentes al resto de personas, y ellas lo toman a mal a veces y yo quería estar con ellas un día pero me comen a tratar mal por lo que por mis gustos y todo eso. Y como que me excluyeron y no me dejaron estar con ellas y yo también trato de estar con gente por sus gustos y por su aspecto, un día una niña quería estar con mi grupo y nosotras la echamos por su aspecto físico y sus gustos*

of domination intersect and shape phenomena. Intersectionality is a concept which emerged in the 1990s when Crenshaw proposed a theory to understand "the various ways in which race and gender interact to shape the multiple dimensions of Black women's experiences" (Crenshaw, 1991, p. 1244). She proposed that different matrices of domination such as race and gender intersect, shaping cultural, political and representational aspects of violence against women of colour. This theory has been widely explored in the last thirty years and has gone beyond the experiences of women of colour to explore other subjects produced in the middle of intersectional matrices of domination. In the case of the pedagogical intervention, it was clear how an idea of difference was not only constructed upon race, sexual orientation, body image and class, but was also produced in the intersection of these matrices of dominations. It was quite difficult to divide the matrices as they co-produce as shown in this excerpt:

What I wanted to ask is why do people discriminate black, being sincere they live like in places like Cauca and they are a little bit poor... being sincere I don't know why everyone thinks they are from a different race. But, only because of the skin colour how do you know he is not similar to you, that he doesn't like the same food. Everyone that sees someone black thinks he is poor, and really, I don't think is fair that he gets discriminated by the skin colour.²²

Here the student clearly showed how in her understanding of the world, race and class intersect and co-produce each other; they cannot be separated. In her discourse, being a racialized person explains poverty; of course, she tried to say that it is not fair, but in her imagining, she cannot see the racist context which explains and produces such conditions, so she assumes it is related "naturally" to skin colour. It is evident that she stood from a privileged position in terms of race and in terms of class, specifically from white Colombian upper class. And illustrated that those who are not "white" and as rich as she is are discriminated. For the

²² *Lo que yo quería decir es porque discriminan a los negros, porque siendo sincera pues ellos viven como en zonas como el Cauca y son un poquito pobres pero siendo sincera no sé porque, todo el mundo piensa que son una raza diferente. Pero solo por la piel tu como sabes que no es parecido a ti que no le gusta la misma comida. Todo el mundo que ve a un negro piensa que es pobre y la verdad eso no me parece justo, que lo discriminen por la piel.*

first time in the pedagogical intervention, a comment which is openly racist and classist appeared, to evidence how difference is produced in matrixes of domination

which include race and class. It is interesting that this comment emerged in the final focus group, showing that although some students might have transformed their views on difference, for others the discourse was not resignified into something more positive, but kept its initial racist and classist connotations.

Normality and Difference

Throughout the pedagogical intervention, participants referred to an idea of normality, which did not refer to a concrete exact reality but it changed radically from student to student: *“She is not normal, she is not similar to anyone, but I am,”*²³ *“Her colour is very weird, my colour is normal.”*²⁴ These descriptions were written in the first stage of the intervention in which students were asked to compare themselves to the alien. The idea of normality is very clear among students’ discourse when comparing themselves to the alien: they are normal while the alien is not. However, when asked to deepen these descriptions of normality in oral discussions, which took place in the classroom, students were not capable of describing in concrete ways exactly what constituted normality. Butler (1990) explains that individuals are culturally intelligible when they cite correctly socially constructed norms. These norms are built upon an idea of normality. Performing an identity which performs the norm correctly would mean that the subject is accepted while the subjects who do not perform the norm correctly would be understood as different or other. The rest of the population, which cannot comply with the “normal” criteria is excluded. For Butler (1990), normality is an idea which is actually empty. It has no specific content but rather is appropriated and acts through people. This explains why students were unable to say what normality was, but used it as a way to define themselves in reference to others who did not comply with that idea of normality.

²³ Ella no es normal y no se parece a nadie. Yo sí.

²⁴ Su color es muy raro, mi color es normal.

The idea of normality was prevalent especially at the start of the intervention and emerged clearly when students were asked to establish the difference between

the Alien and themselves. By the end of the project, there was a stronger tendency to question “normality” or the construction of normality. Students not only changed their perspectives on the aliens but questioned the use or the creation of dividing lines among beings. This is exemplified in a comment that was made in the focus group at the end of the project *“We didn’t give him a chance, just by seeing him [the Alien] we thought it was horrible. Really, how do you know it is so ugly? Is there a division among specific things that or how do you know that he is ugly or beautiful?”*²⁵ Here, it is evident that the student questioned the creation of ugly, beautiful. She denaturalized these standards by showing them as social constructions.

Changes during the Pedagogical Intervention: Interior and Exterior

At the end of the pedagogical intervention, students reflected on their own learning process throughout, specifically analysing the changes they had witnessed in their attitudes towards the aliens. Within these reflections, one unexpected finding emerged, which was that students explained that through the project they transformed their view of the alien as they stopped seeing what was on the “outside” and started seeing what was in the “inside.”

*I thought he was very nice and a good person [alien] and that we were only judging him by his exterior and not by his interior which is the most important. We did not give him a chance as just by seeing him we thought it was horrible, but why is he horrible, how do you know. Is there a dividing line that can tell you what is pretty and what is ugly.*²⁶

²⁵ *“No le dimos una oportunidad, solo con verlo nos pareció horrible, pero ¿qué es feo? En verdad, cómo lo sabes, ¿Hay una división de cosas específicas o que cómo sabes que es feo o lindo?”*

²⁶ *“Me pareció que era muy amable y era buena persona (alienígena) y que solo lo juzgamos por su exterior y no por su interior que es lo más importante. No le dimos una oportunidad solo con verlo nos pareció que era horrible, pero que es feo en verdad como lo sabes hay una división de cosas específicas o que como sabes que es feo o lindo.”*

*I was able to understand that being different didn't mean being bad and that before judging the outside, we have to get to know the inside.*²⁷

*Even if he is not similar to me physically, he is similar to me in his interior*²⁸.

These excerpts show that students constructed a division between the external and the internal being. Students drew a very clear line between these two elements, in which the internal characteristics are related to personality traits, emotions, likes and dislikes, and the external characteristics are related to physical appearance. For students, the internal is positively connotated. It is *good, beautiful, or friendly*. The external is *strange, ugly, or "gross."* Students explain that as the project unfolded, they were able to see more to the interior and not judge by the exterior.

The construction of a dividing line between the internal and the external world is a very interesting conceptual understanding of the individual which can be related to Elias' (1994) conception, as a product of the symbiosis of Catholicism and Western civilizing process. For Elias, in this historical process, the functions within societies became more and more differentiated as the population grew and competition increased. As dependency within societies grew, the actions of individuals had to be more strictly and accurately organized, individuals were compelled to regulate their actions to fulfil their social roles. To do so, stricter self-control and self-regulation are installed by the same individuals. Shame and guilt are two feelings that help in the regulation of actions. Elias explains that as self-regulations grow stronger, the individual starts feeling more and more separated from the world. Therefore, the idea of the individual as closed and separated from the world emerges.

Every other human being is likewise seen as a homo clausus; his core, his being, his true self appears likewise as something divided within him by an invisible wall from everything outside, including every human being. (Elias, 1994, p. 472)

²⁷ *"Pude entender que no por ser distintos significa que somos malos y que antes de juzgar lo de afuera, tenemos que conocer lo de por dentro."*

²⁸ *"Que aunque no se parezca a mí físicamente, es similar a mí en su interior."*

It is clear how students, with their reflections about the pedagogical intervention, actually expressed the sensation of being separated from the world, explained by Elias as a part of the civilizing process of Western societies. Students felt separated from the world as a product of this historical process. Furthermore, the element of the Catholic background of students was intertwined with this phenomenon as there was not only a division among the internal and the external reality, but this was morally judged from a good-bad perspective. Everything that is internal had to do with the soul or the godly nature of the individual was connotated as good by the students, taking these ideas from Catholicism. On the other hand, everything that had to do with the external was related to the flesh, which according to Catholicism, is sinful and connotated in a negative manner.

In conclusion, students narrated the experience of a *homo clausus*. They perceived a wall between the internal and the external being. This experience is morally judged by the Catholic principles which juxtapose the godly nature of the soul with the sinful nature of the flesh. Therefore, it is evident how students' understandings were also products of a long-standing historical process that intertwine and agentically appropriated by each.

CONCLUSIONS

This study aimed to understand how students define and act towards difference and to explore how the pedagogical intervention, “The Alien in the Classroom,” might transform their significance. At the start of the pedagogical intervention, for most of the students, differences were essential characteristics that belonged to individuals or groups of individuals. Most of them tended to essentialize the I and the Other, creating a radical separation between them. It was evident that this radical separation held a negative connotation and caused hierarchical power relationships. Students, therefore, perceived that being labelled as different was a reason to be excluded by the group. The separation of those labelled as different was created by an idea of normality, which was consolidated around different matrices of domination, such as race, sexual orientation and body image. Students explained that normality was related to being white, heterosexual and slim. Those individuals who performed the norm correctly were accepted by the group while the subjects who did not perform the norm correctly would be understood as different or the Other. The students did not talk about race openly but rather hid it among generic physical characteristics or skin colour, which might be related to the concept of colour-blind ideology (Lewis, 2011). In this sense, the girls’ discourse worked in a colour-blind way as it never openly named race, but when asked, it was evident how exclusion related to racial markers such as skin colour.

It was found that participants were not only able to reflect on how matrices of domination work, but in some cases were able to appropriate these in critical ways. It is evident that these young students are not “confused adolescents” or “unconscious kids,” a predominant characterization by developmentalist theorists, such as Erikson (1968). Rather, they are individuals who are capable of not only understanding how power domination structures work, but of consciously resignifying them.

At the start of the pedagogical intervention, the relationship between difference and social exclusion was quite evident. However, by the end of the intervention, it was possible to discern a slight transformation, and

most of the students’ discourse shifted towards the ways in which difference raises empathy or contributes to society. Exercises like creating a dialogue and placing oneself in someone else’s shoes proved to be a transformative practice as it increased empathy and led the individuals to reflect on their own life experiences. By the end of the pedagogical intervention all the students began denoting difference in positive ways, some kept the radical separation between the I and the Other, and others moved further and explained how there are no essential differences but that people are in a constant process of transformation, and that difference teaches and transforms their own daily lives.

Most of the findings of the present study concur with those in the research reviewed (Alvyra, 2014; González, 2008; Rabello De Castro, 2004; Sierra, 2016; Turrent & Villaseñor, 2009). These studies demonstrate how the process of creating difference is related to the tendency of social groups to determine certain characteristics as normal or non-normal or different. People tend to exclude those who do not perform normality, establishing power relationships which legitimize and create violence. The agentic appropriation of different matrixes of domination, as well as the capacity of children to understand how they work and be able to reflect and resignify them is also developed by Park (2011). According to Park, students can take their learning into their own hands and appropriate discourses of race in their own agentic ways. In relation with the importance of empathy and questioning one’s own position as a way to transform negative difference into positive, Sreenivas (2004), Vanderlinden (2008), Krumer-Nevo and Sidi (2012) conclude that similar strategies are needed to approach difference in a more positive way.

On the other hand, the importance of body image in the establishment of exclusion practices among students is a variable that is not included explicitly in the studies reviewed; rather, race, class, gender and ability are the main matrices explored. Probably, the emergence of body image as a main element may be related to the fact that this study took place in all-girls school. It would be interesting to study whether body representations are stronger in co-ed school or all-girls schools. The emergence of bodily image as one

of the most important elements that created exclusion practices among the students highlights the importance of focusing the curriculum or developing projects which address bodily image and violence within the school community. It would be interesting to investigate how students understand their own bodies and body representations.

Having the role of both a teacher and an investigator limited this study as the action research took place in a scenario where there was a specific power relationship. The teacher as a “judging gaze” influences and might even structure the responses of students as participants are constantly trying to imagine what the teacher wants to hear. However, mechanisms like not grading the project may reduce this limitation slightly. Another limitation of this study is the fact that it took place in a virtual scenario. Virtuality raises many questions regarding traditional methodological approaches to research; for example, the degree to which ethnography of virtual classes is possible, how virtuality may transform students’ social interaction, the influence of virtuality in a focus group or in the development of a project in which there is no direct interaction with peers. This study was also limited as it focused only on students, but left aside their contexts. This meant that difference was not approached from parents’ social positions and views or from the school’s view towards diversity. In a further study these perspectives could be explored by analysing the school curricular approach and the teaching practices towards difference.

ACTION PLAN

- After noticing the negative connotation of difference among many of the students at the beginning of the pedagogical intervention, there is the need to include differences within the curricular approach of academic subjects like social studies in different grade levels.
- The implementation of a pedagogical intervention that produced an academic product allowed the teacher-investigator to see and understand different realities of students’ contexts and behaviours and allowed her to distance herself from the power relationship between herself and the students. In this way, each student’s understandings were not judged by a rubric or number but were really heard. By doing this, the comprehension of students’ habits, thoughts, and questions grew and nurtured the pedagogical practice of the teacher. Therefore, the creation of research groups within the school that discuss, publish and reflect upon the pedagogical practice and the social problems teachers encounter is recommended.

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EXPLORING THE EFFECTS OF A DIGITAL PAINTING WORKSHOP ON STUDENTS' ARTISTIC SKILLS, CREATIVITY, AND HUMAN DEVELOPMENT

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A digital painting course lends itself easily to the virtual setting. Still, the pandemic and its effects figured strongly in some of the findings in this study, in which students developed their creativity in specific artistic skills. The digital painting course also contributed directly to participants' overall human development, indicating the benefits of the arts and arts education, especially in challenging moments and times.

ABSTRACT

This study explored the possible effects of a digital illustration workshop on artistic skills, creativity, and human development. The workshop was carried out virtually in 2020, during the first months of the COVID pandemic, with five students from Bogotá, Colombia, ages 15 to 35. The intervention included ten online workshop sessions, including one class session and multiple personalized feedback sessions every week. The study used a set of mixed methodologies to register and analyze data from a student questionnaire, a teacher's reflective journal, recordings from the class and the feedback sessions, as well as the Google Classroom visual library that contained students' artwork. The study found several positive effects, including the improvement of digital illustration techniques and software management, the promotion of creative thinking applied to image making, as well as stronger social interaction and the increase of a sense of community among participants.

Key words: Digital illustration, Concept art, Digital arts, Digital arts education, Online education, Visual storytelling, Digital painting software, Visual creativity, Creativity development, Human development



RESUMEN

El presente estudio exploró los posibles efectos que un taller de ilustración digital podía ejercer en las habilidades artísticas, la creatividad y el desarrollo humano. Este taller fue llevado a cabo virtualmente en el año 2020 durante los primeros meses de la pandemia COVID-19 con cinco estudiantes de Bogotá entre los 15 y los 35 años de edad; la intervención se llevó a cabo en diez talleres virtuales que incluían una sesión de clase y múltiples sesiones de retroalimentación personalizada cada semana. El estudio utilizó un conjunto de metodologías mixtas para registrar y analizar la información obtenida en un cuestionario de estudiante, un diario de reflexión del profesor, grabaciones de la clase y de las sesiones de retroalimentación, así como las obras de arte de los estudiantes alojadas en la biblioteca visual del Google Classroom. El estudio encontró varios efectos positivos incluyendo la mejora en las técnicas de ilustración digital y en el manejo del software; el fomento del pensamiento creativo aplicado al diseño de imagen; así como una interacción social más fuerte y un aumento en el sentimiento de comunidad entre los participantes.

Palabras clave: Ilustración digital, Arte conceptual, Artes digitales, Educación en artes digitales, Educación virtual, Narración visual, Software de pintura digital, Creatividad visual, Desarrollo de la creatividad, Desarrollo humano

INTRODUCTION

Artists across the world in the 21st century are experiencing new dynamics in their profession. Many emerging artists have developed an interest in the creative industries as their preferred working activity, including films and television, online audio-visual production, branding and advertising, video games, 2D and 3D animation, editorial illustration and design, graphic design, and virtual-reality based content, among many others. These fields all require digital painting services throughout their production processes as a means to visually represent ideas.

One of the specific applications of digital painting is concept art. Concept art focuses on brainstorming visual designs to support storytelling and narratives. Digital painting for concept art is highly relevant for artists in the 21st century as a professional field. Additionally, proficiency in digital art tools is necessary for artists to gain exposure and enhance strategic professional networking. In this context, digital art education provides highly valuable contributions to the overall development of artists in the present times.

In general, the research reviewed for the present study revealed that digital art education provides multiple benefits in artistic skills, creativity and human development. The recognized effects on artistic skills included notable improvement of composition understanding, which translates into successful placement and design of elements to direct the viewers' eye as it travels through images. Studies further identified an increase in the ability to formulate harmonic color schemes and efficiently apply them. In addition, participants gained a deeper understanding of the mechanics of lighting and their interactions with surfaces, leading to overall improvement of the artistic technical level.

Research has likewise identified that different digital art education tools provided positive effects on the overall teaching practice. With the help of software centered on digital art education, teachers in different countries have been able to communicate content related to digital and traditional painting in more organized and effective ways. In addition, studies report that it was

possible to track students' progress and archive their artwork in order to recognize artistic evolution over time. Additional benefits were also found in terms of classroom management and communication between students and educators.

Finally, the literature indicates that digital art education contributed to the lives of students and teachers from a point of view of human development. A great majority of participants demonstrated a close connection between artistic projects and their daily lives and personal concerns. It was also possible to foster collaborative work by implementing digital art educational strategies, resulting, in many cases, in enhanced and healthier relationships for participants who were previously living in isolation or lacking a sense of belonging to a community.

Problem Statement

The digital painting workshop in this project originated from personal and professional interests in my preparation as a professional artist, and consequently in my work life. As a professional, I have been focusing my career on digital art for more than seven years, working at animation studios, video game and film companies, publishing, and as a freelance illustrator. Along the journey, I have identified, on several occasions, the fact that there are many young people in Colombia aspiring to forge an artistic career in the creative industries. This fact not only takes place in my country but as demonstrated in the literature review, in several nations and contexts around the world.¹

In Colombia, different initiatives have promoted the development of digital art education. One notable case since 2010 is the Ministry of Information and Communication Technologies (MinTIC) event Bogotá ACM SIGGRAPH. This is a free-entry annual convention in Bogota where thousands of participants, including international experts who work in the animation industry, are invited to lecture, review portfolios and interact with the public in several ways

with the hopes of strengthening professional networks, creating job opportunities and incentivizing art education for the digital age.

Additionally, public and private educational institutions that offer undergraduate and graduate programs in arts have implemented digital-art components to their curricular design, offering subjects in the fields of digital illustration, digital animation, film-making, video game development among others. For instance, in my case as an educator, I have been working for more than three years at Universidad Nacional de Colombia as a teacher of the Background Design for Animation subject, at the Specialization in Animation program. However, for many students, professional art education is expensive. Dramatically high costs of art education replicate in several more educational contexts in the world, as indicated by the reviewed research and theoretical framework sources. Additionally, in the curricular aspect, programs in general offer a large number of varied subjects that are limited to an introductory-basic level, causing the majority of students not to be able to develop levels of expertise proficient enough to perform in the international professional arena.

By executing the workshop in informal settings, I was able to deliver professional-quality technical skills training along with student-centered personalized assessment, a combination of elements with the purpose of producing notorious evolution in my students. The foregoing is supported by the abundant positive findings that recent research has revealed regarding the effects of digital art education on the student's artistic skills and human development. Furthermore, the affordable cost of the digital painting workshop allows for opportunity to a broader range of Colombians to receive a high-quality education that can significantly contribute to their professional career in the creative industries.

PURPOSE OF THE STUDY

The purpose of this study was to determine to what extent a workshop in Digital Painting for Concept Art would contribute to the artistic skills of a group of

¹ Ministerio de Tecnologías de la Información y las Comunicaciones de Colombia

six students from 15 to 35 years of age from Bogota. The study also attempted to explore the effects of the workshop on the creativity of the students. Likewise, the study aimed to explore the extent to which the workshop would impact the students' human development in general.

LITERATURE REVIEW

Plentiful research from around the world has addressed the role of digital art technologies in art education. Although there is no single conclusion that unifies the findings, studies can be classified into four areas with common considerations. First, the impact of digital art technology on artistic skills takes into account technical abilities such as composition, drawing, painting, color management, and overall image-making proficiency, as well as the intellectual dimension directly related to idea generation, creativity, and expression. Second, the impact of digital art technology on art education considers pedagogy, teaching strategies, teaching practice, student learning, organization, classroom management, effectiveness, and effective curriculum. Third, the impact of digital art technology on human development looks at inclusivity, a sense of community, communication between participants in artistic projects, and relationships with others and with oneself. Finally, complementary research is concerned with the dynamics of digital art education in educational policies and their implementation, among other very specific variables hard to classify in a broader group. In general, findings in all groups highlight the importance of digital art-making as a determinant tool for art education in the 21st century. Additionally, most of the articles emphasize the multidisciplinary nature of the new media arts and its need to integrate into an interconnected, globalized world.

Impact of Digital Art Technology on Artistic Skills and Creativity

In general, studies reveal that students' artistic skills can be potentialized with the help of digital painting and drawing software, such as Adobe Photoshop and many

more programs, to obtain remarkable results in their craft, create better paintings, and foster their mastery of art-making. Most studies report improvement in the technical training of students as a result of the use of digital art technology. Samah, et al (2016) identified student improvement in digital and traditional painting after taking the Visual Art Education subject in a secondary school in Malaysia. Specifically, composition, color manipulation, interpretation, and creativity were seen to improve. Additionally, the study explored the extent to which Adobe Photoshop helped build painting skills. The results indicate that students created better paintings, both traditional and digital, due to their mastery of digital arts, and that digital painting promoted technical and artistic training in students. The study also concluded that it is essential to apply digital media education in Malaysian secondary schools in order to provide students an early start to find opportunities for their future careers in digital art.

In addition to technical skills, some studies explore intellectual and attitudinal dimension. Ho and Lin (2015) aimed to determine if the Web-based painting tool ePainting would strengthen art learning in elementary school students, specifically in terms of their attitudes towards paper-based art creation and art learning. The study took place for four weeks in a computer lab in an elementary school in Taipei, in a Saturday art creation program, with 51 students aged 10 to 12 years (36 males and 15 females). The study revealed that ePainting promoted of students' learning attitudes toward art learning; further, schoolteachers with an already crowded curriculum were able to use ePainting to provide free-choice additional support to foster engagement in art learning. The digital tool also allowed teachers to record artwork examples from students, supporting adjusted planning to the individual needs of students. Overall, the study documented a clear positive renovation of students' attitude towards learning digital arts after using the digital painting software.

Al Hashimi, et al (2018) explored the capacity of digital and social media to develop creativity and expressivity through art education, and examined how educators might use technology to enhance student creativity. The study explored how digital applications



and social media could be repurposed to promote a creative mindset in art students, to what extent these applications fostered student creativity, as well as students' preferences when interacting with social media in art education contexts. The study took place with 42 art students receiving digital painting and character design classes in Bahrain. Findings supported a new understanding of how digital and social media can support art educators in their pedagogy and demonstrated the potential benefits of repurposing social and digital media applications for art education. Specifically, social media platforms were proven to enhance students' creativity due to some of the social platforms' embedded features, such as exploring, commenting, and collecting inspirational images. The study provided ways in which students could repurpose digital tools to help in the production of their artworks, especially illustration and digital painting.

In Han (2019), a virtual world was designed to fostered student creativity. The study examined how students conveyed their creativity and what teachers did to enhance student creativity. The study involved 18 high school students from Vancouver, Canada. Findings show that creating virtual worlds provided students with a feeling of achievement and usefulness. The project gave students a greater sense of responsibility towards themselves and society. Further, virtual world creation produced a creativity-fostering environment. The data gathered suggest that teachers should show students the potential of the medium and allow them to brainstorm ideas, instead of only providing step by step instructions.

The findings from this group of studies suggest very positive results in terms of the power of digital art tools on artistic ability and creativity. This provides a positive outlook for upcoming decades, in which new curriculum design and pedagogical guidelines, oriented towards digital art education, need to be developed.

Impact of Digital Art Technology on Art Education

In general, current research indicates a favorable impact of digital art technology on pedagogical

practices in art education. The reviewed studies show improvement in the effectiveness of instruction as well as higher clarity in classroom communication. Certain aspects of assessment have also been fostered, such as keeping track of students' progress in visual terms, with the help of digital folders containing the students' digital paintings and their corresponding step-by-steps. In addition, new suggestions for effective digital art curricula and specific curricular needs have begun to be identified.

In terms of classroom application of digital arts education, Peppler (2010) documented media-art making with youths in informal settings, and identified the strengths and limitations of digital art production among young people. The study also explored digital arts education's distinct contributions to the classroom environment. The study was carried out in a digital design studio in Los Angeles, California. Findings indicate that engaging youth with technology encouraged active learning, and that new types of software reassured this process. The study also suggested new research to find ways of engaging art students with technology, leading to new curricular design and teaching practices.

In terms of the impact of digital technology, Marner (2013) explored how changes in technology saw a corresponding change in art education in schools, and how art teachers and students approached the art education subject in different ways. The study was performed in a Swedish secondary school in a middle-sized town with students from grades 7-9. The study determined that the dichotomy between digital and traditional media in art had been abolished, and that the combination of both media was the most common at the school. Findings also revealed the need for more flexible ways of teaching the subjects. Further, computers in the art rooms were seen as indispensable, as an almost-everyday tool for the art education subject, facilitating in turn classroom management and communication between students and educators.

As institution's aim to enhance art education digitally, in another institution in China, Ma (2019) explored the effectiveness of an experimental-teaching system developed in house, which consisted of art-education oriented software. The study involved 63 students between 18 and 20, taking professional art and

design classes at a university of economics and law. The study showed that the experimental teaching system of digital painting effectively supported teaching and the overall learning experience, as well as students' artistic skills, design thinking, and interest in learning digital painting.

In a literature review, Maljkovic (2017) explored how digital media art students could be better supported in their artistic learning. Overall, the studies reviewed report that traditional artistic practices are gradually and globally becoming obsolete due to the increase of digital art practices; also, the new generations are becoming accustomed to the use of the new technological tools in art education from early ages. In addition, there is a high temptation in art education to focus more on technical skills training than intellectual and aesthetic reflection, which must be faced and confronted by educators. In addition, the studies determine that exploring digital technology in relation to education is an extremely complex subject that is just beginning to be studied.

Impact of Digital Art Technology on Human Development

In terms of the impact of digital art learning on human development, most of the studies reviewed share positive results in social integration, finding that digital art projects, especially when developed in teams, strengthen a sense of community, welcoming diverse people in an inclusive learning environment.

Koizumi (2018) supervised numerous projects at a community center in Tokyo, open to people from different ages and contexts who lead an isolated life. The purpose of the study was to explore how community art projects might have significance as platforms where people connect with each other. In the study, the artistic projects allowed participants to interact and communicate at a deeper level, indicating that art projects can create all sorts of socio-cultural activities, thus connecting diverse people in an era where isolation is common. The study indicated that art projects can also revitalize communities and preserve cultural traditions.

In terms of inclusion, Madrid (2012) reflected on the effectiveness of a research methodology and strategy for inclusivity named a/r/tography, which combined art, research and teaching. The participants were eight diverse children and teenagers with interpersonal difficulties, from 9 to 14. During and after the project creating animations in a digital art workshop, the progress overall of the group showed satisfactory enhancement in their social abilities as well as their capability of conciliating differences of opinions. The study found that in order to accept differences, it was necessary to sincerely conciliate contradictory points of view with others, and between the a/r/tographers' three identities as artists, researchers, and teachers. Additionally, the study indicated that a/r/tographers need to evaluate artistic quality and participation in a more flexible way and take inclusion into account as the main variable. Finally, Madrid highlights that creating a space of inclusion demands criteria based on paradoxes, conflicts and tensions in the classroom.

Ornelas (2012) reported the successful case of an online education institution for children who are unable to finish school, most teenage mothers and their children, deprived of permanent residence. The school provided approximately 100 students the opportunity to take all of the compulsory school subjects in one year, including digital painting in their art class. In general, the project fostered a sense of belonging and connection among students, as well as teamwork enhancement. Although the school was later closed, the research supported the positive effects of the online school on itinerant students, thanks to digital art tools. These helped students know the importance of a daily drawing habit to develop creativity and skill, helping students express themselves, and enhancing their aesthetic sense and fostering teamwork and team effort.

Complementary Research

The previous findings are supported by studies from other complementary areas, showing a wider panorama of digital art education over the last ten years. In general, studies reviewed point to the relevance of standardization of digital art skills, which implies training not only of students but also of digital



and non-digital native educators. Additionally, the studies recognize the interdisciplinary role of digital art education in various aspects of life, including politics, human rights, nutrition, and ecology among others.

Black and Cap (2016) set out to find the benefits of using a human rights education approach to examine food as a theme in visual art and human ecology education. The participants were 23 senior years student teachers taking visual arts education and human ecology education in Canada. The study revealed that in general, students and teachers successfully incorporated interdisciplinarity, critical thinking and creativity to produce digital works.

Patton and Buffington (2016) investigated how art education standards approach technology as a teaching tool and artmaking medium in the US. The study analyzed the current National Visual Arts Standards, the NAEA (National Art Education Association) Standards for Art Teacher Preparation, and the NAEA Professional Standards for Visual Arts Educators. The study concluded that more suggestions are needed for art educators to better relate to art and technology; also, that if more technology in art education knowledge is shared, more professionals from the field will enhance their comprehension of the set of digital skills needed in the current times. By doing so, educators can promote in a more effective way their students' progress in arts and consequently in more subjects.

METHODOLOGY

Research Design

The aim of the study was to explore the extent to which a digital painting workshop impacted a group of students' technical artistic skills, creativity, and human development. The research approach was both exploratory and action research as it sought to identify the impact of the teaching strategies, methodology, curriculum design, content development, classroom management, and the overall pedagogical practice of the educator on the participant students, simultaneously highly appreciating students' response to lectures, artistic demonstrations and homework exercises, along

with their improvement throughout the workshop development.

Context

The study was originally intended to be carried out in a physical classroom. However, due to the worldwide sanitary crisis beginning in March of 2020, Colombia's national government established the obligatory quarantine for most of the citizens. This restriction made it impossible to carry out the workshop as it was originally conceived in a face-to-face training format. Given the circumstances, the digital painting workshop was adapted to be executed in a virtual mode, delivering classes through videoconferences. The classes were developed on Sundays from 7 to 9 a.m. from March 28- May 31, 2020. In addition to Sunday lectures, students received personalized feedback sessions on weekdays. Furthermore, three additional sessions were planned, consisting of plein-air drawing sessions, in which the group would explore several areas in Bogota, appreciating a wide variety of locations to be represented by drawing, including architectural design and urban and natural settings among other subject matters.

The digital painting workshop took place in an informal education setting, noticeably different from traditional formal institutions. This was not seen as a disadvantage; rather, according to the teacher-researcher's personal and professional experience for more than seven years in the field, it is possible to affirm that employment in the creative industries is mostly based on a candidate's artistic skills and portfolio, and formal titles hold less importance to determine an artists' work eligibility.

The workshop aimed to train students to create digital illustrations that could effectively be applied for concept art purposes. Concept art consists of a pre-production process common to multiple industries belonging to the creative field, including animation, films, editorial, video games, and others. In concept art, artists brainstorm ideas through a visual exploration of designs that successfully convey a sense of belonging to the narrative universes of productions. These concept

artworks are then delivered to project directors as part of a collaborative communicative process involving all production departments. Today, concept art is a highly sought and attractive field of work.

This digital painting workshop arose from an awareness of the situation of many Colombian aspiring artists, who cannot afford formal education in the arts. In the case of Colombia, a vast majority of formal institutions offering art programs are in private universities or academies with dramatically higher costs in relation to the average middle-class family income. Likewise, most young art students and their families are not able to provide for their own studies. The workshop also recognized the high artistic potential in young artists and encouraged them to pursue a successful art career, being constantly conscious that artistic skills significantly differ from formal titles. The workshop intended to promote art education for the digital age, acknowledging it as an essential tool for artists in the 21st-century context. Finally, the workshop prioritized a personalized teaching environment over heavy-loaded classrooms, aiming to provide mentorships where students could sense honest caring support towards their evolution as artists.

Participants

The participants of the study consisted of five students from 15 to 35 years, including two female and three male participants. The participants' educational background varied from a 9th-grade home-schooled student, professional graphic designers, and students of university programs not directly related to the arts, such as archaeology and international business. The level of expertise in regard to digital art tools ranged between beginners and experienced users, and one of the students who is a highly proficient user of Adobe Photoshop working in the digital art field. Informed consent from participants was obtained, and students also gave their express permission for their real names to be used in the written research report.

Data Collection Instruments

Reflective Journal

An informal reflective journal was used with the purpose of collecting diverse information before, during, and after the workshop development. The comments included the teacher's considerations related to curriculum design, pedagogical practice, and feedback from students among more elements converging during the overall project.

Video Recording of Class Sessions

Every session was recorded from start to finish with the support of Camtasia, a computer screen recording software, able to video register computer activity.

Artwork Archive

Online Google-Classroom drive folders were used to keep track of each student's homework deliveries and identify their evolution in visual terms.

Class Presentation Archive

Online Google-Classroom drive folders were used to store all the PowerPoint presentations used for lecturing.

Recorded Feedback Sessions

Personalized feedback sessions were also recorded with Camtasia, allowing to capture abundant information related to the individual processes of each student.

Questionnaire

Informal questionnaires were applied to students, in which they were able to report their perception of the workshop in terms of the pedagogical practice. Likewise, participants reported perceptions of

themselves in terms of their artistic skills and creativity, and their corresponding evolution. Effects on the human development component were also identified. The questionnaires consisted of open-ended questions with the aim of generating a broad answer range from students.

Intervention

The curriculum design aimed for students to complete the workshop acquiring compelling knowledge about artistic foundations applied to digital illustration. Likewise, the goal of students executing a great variety of exercises and completing two high-quality portfolio pieces was set. The two portfolio pieces, concept art illustration, were intended to create

scenes that convey successful visual composition, and a strong sense of cohesion and believability supported by architecture and natural environment design, a thorough understanding of color, lighting, materials, volume, and perspective, as well as appealing shape language design, including proportions, silhouettes and form.

In order to fulfil the curricular expectations, the teacher-researcher used Backward Design as an essential instrument. The backward design method, which consists of initially stating the desired results and consequently tracing a set of procedures that allow students to arrive at the goal, was the basis of formulating the order in session sequence, and the corresponding subject matters, as seen in Table 1.

Table 1. Class sessions

Session	Topic	Objective
1	Introduction	To introduce the workshop contents and explain the importance of values as a foundation of painting, being values the range of tones from black to white.
2	Light and volume	To demonstrate the dynamics of light and volume in digital painting, considering light direction and its interaction with topology.
3	Composition and perspective	To familiarize students with multiple visual composition strategies, including the use of perspective drawing.
4	Shape language	To explain design principles related to silhouette, shape and proportions and present their applications in concept art.
5	Color I	To approach color basic elements: hue, saturation and value and to link their understanding to digital painting and lighting.
6	Color II	To explore multiple ways to conceive chromatic schemes and apply them in the creation of concept art illustrations.
7	Color III	To analyze and interpret different kinds of materials through digital painting in color.
8	Color IV	To study various aspects of lighting settings in relationship to color, drama and storytelling.
9	Final touch-ups I	To demonstrate technical procedures to connect digital painting color with 3D modelling.
10	Final touch-ups II	To introduce techniques from matte painting, being matte painting the use of photo-manipulation in conjunction with digital painting to attain realistic environments.

Class 01 - Introduction

The class initially introduced a general map of the workshop planning, including the main component of each of the 10 lectured sessions. Equally important, the session included an overview of the communicative potential residing in a piece of concept art. Additionally, the teacher shared a brief appreciation of the main components of color, along with the introduction of the concept of values in painting, which may also be recognized as luminosity levels, and their relevance as the fundamental tool in order to represent forms and volume. Moreover, an introductory presentation of Adobe Photoshop was carried out in order to familiarize students with the software interface and basic tools. Finally, the teacher performed a one-hour demonstration of digital painting in Photoshop, in which students appreciated direct applications of the concept of painting values. The subject matters included one still-life object and one landscape, both represented in black and white in order to demonstrate how values construct any possible volume. The first session was conceived with the purpose of inviting students to experience the usage of simple art principles and appropriate them in their artistic training, hence fostering their artistic skills. To support creativity development, students selected the subject matter to be painted for homework to help them understand that the same art principles apply regardless of the image selected. By initiating the workshop with simple concepts and techniques, students were able to gain confidence in themselves and experience success in their evolution as artists.

Class 02 - Light and Volume

The session initiated by describing procedures on how to depict objects with organic and hard surface shapes. Visual demonstrations on how to approach proportions were carried out, along with topological studies, which consist of representing an object ignoring details and favoring geometrical grids covering the composing surfaces. These approaches led to a deeper understanding of geometric construction, and the concept of face direction, which in turn, was explained in terms of how light interacts with geometry depending on its direction. Dramatical effects of lighting

were also explored. The theoretical section included a 45-minute lecture, later supported by a one-hour digital painting demonstration, where the teacher highlighted the applications of the concepts and emphasized on the use of tools in Photoshop, all explained through step-by-step instructions and constant communication with students. To support creativity development, students were given the task of abstracting geometrical constructions from sources that were not evidencing topology explicitly.

Class 03 - Composition and Perspective

This session familiarized students with effective visual composition strategies, which enable the viewer to instantly identify the focal point in a concept art illustration, and lead their eyes throughout the image in deliberately preconceived directions. Composition and perspective were explained as fundamental strategies that can be applied not only in architectural designs, but in any other kind of organic form. The teacher shared the concept of visual routers and demonstrated this with several examples, along with compositional tools such as camera angle, depth, contrast and types of contrast, perspective drawing fundamentals, vanishing points, horizon lines, atmospheric perspective, lens focus among others. To support creativity development, students were given the task of developing perspective-based constructions from sources that were not evidencing perspective explicitly. The theoretical component was developed through a one-hour lecture, as well as a practical demonstration. The concepts from previous sessions provided participants the necessary cognitive background to appropriate and internalize more advanced ideas, such as composition and perspective.

Class 04 - Form Language

Form language is a key element of concept design, and constitutes the proportions, silhouettes, visual quality of forms, and psychological effects of shapes. These elements were approached once again with a theoretical lecture supported with numerous artwork samples and Photoshop digital painting demonstrations. To enhance creativity development, students were assigned the task of creating several iterations of iconic designs, proposing

innovative changes in terms of proportions, silhouette and form language, therefore creating new ideas based on previously acquired knowledge. Props were explained as all types of physical elements that reside in a scene's setting and belong to the set dressing process.

Class 05 - Color I (Color basics)

A four-session color centered cycle began with the fifth workshop and initially considered basic technical qualities of color, including hue, saturation, and value, the latter being the most determinant element to successful color construction. Emotional effects of color, as well as the concepts of color temperature, and the relationship between color and light were expounded. Equally important, different types of light, such as direct and diffuse light, as well as the conceptions of local color and relative color were explained. To foster the development of creativity, students were asked to study and reproduce color copies from other artists' work and to analyze their color decisions and color harmonies. This allowed participants to develop a deeper understanding of color harmonies and how to apply them in their artworks.

Class 06 - Color II (Chromatic Schemes)

The color cycle proceeded with explorations of chromatic schemes generated from the traditional color wheel diagram, including complementary color pairs and color triad variations. Different color composition possibilities were explored, highlighting relationships such as hue proximity, color variety among color unity, and color contrast. Overall, the session emphasized a variety of approaches when selecting a color palette for a concept art illustration. In order to contribute to the development of creativity, students were asked to create abstract color harmonies based on the color dynamics analysis developed in class.

Class 07 - Color III (Materials)

The session focused on the specificities of different families of materials, including opaque, translucent, and transparent materials, which were analyzed in optical terms, as well as the concept of surface quality.

The teacher illustrated these in digital painting demonstrations. With the aim of promoting creativity, participants were asked to create a set of different materials of their own choice, evidencing a wide range of expressive possibilities and aesthetics.

Class 08 - Color IV (Storytelling)

This session explored the relationship between storytelling and concept art illustrations with the support of audio-visual examples that displayed a wide variety of narratives, each with a specific dramatic intention. The class also viewed and analyzed several examples of the rationale of artists behind producing color-based images to uphold storytelling. In this way, students were actively engaged in activities that encouraged them to formulate a short story, which was translated into a color composition for the demonstration section. With the aim of promoting creativity, participants were assigned the creation of a brief story based on cooperative brainstorming, to later represent through conscious color choices reflecting specific moods and best supported storytelling.

Class 09 – Final touch-ups I

The session emphasized the technical procedures of 3D modelling and their connection with coloring processes in 3D software and 2D digital painting software. The teacher demonstrated a workflow connecting 3D and 2D realms, using Blender and Photoshop as the main tools. The 3D modelling software supported a wide range of freedom and experimentation. The process of overpainting textures was introduced as well. During this week, no tasks were assigned with the intention to allow students work on their pending homework. In this session, the activities were flipped, allowing for a much shorter 15-minute theoretical approach and a one-hour-and-forty-minute practical 3D modelling and digital painting demonstration.

Class 10 – Final touch-ups II

This session treated basic matte painting processes, using photographs in conjunction with digital

painting in order to attain realistic environments. The demonstration exemplified the use of varied matte painting techniques in a multimedia workflow to allow students a wider range of expressive and creative possibilities. Students were asked to reflect about the set of steps taken across the creation process and recognize which practices worked more efficiently within their workflow. By exploring practicing a great number of concepts and techniques related to digital art illustration, the workshop intended to provide in-depth insight into the technical and creative processes involved in concept art. The workshop was designed to motivate students in every session, helping them to recognize that they are able to conceive original and valuable ideas and translate successfully into high-quality artworks with the help of their artistic skills, developed along with thorough practice. By experiencing an overall sense of success and motivation, the workshop sought to foster positive effects on additional areas in the lives of students, supporting their human development in the current times of mandatory confinement.

Data Analysis and Interpretation

This study used a set of mixed methodologies in order to analyze the data obtained from several developmental stages along the workshop sessions, including a questionnaire applied to the students and reflective journals. At first instance, coding procedures were applied in order to classify the results obtained from a questionnaire answered by the six participant students and from the reflective journals; the reflective journals compiled miscellaneous information, and reflections based on registry items RIA, RIB and RIC. The coding procedures included anticipated categories based on the research questions (artistic skills, creativity and human development) along with unexpected emerging classifications originated from the material, following coding suggestions from Cohen et al (2018). “Categories are derived from theoretical constructs or areas of interest devised in advance of the analysis (pre-ordinate categorization) or developed from the material itself (responsive categorization)” (p. 668).

Registry Items

Registry Item A (RIA) consisted of a digital image library stored on the internet using Google Classroom to save students’ artworks developed throughout the workshop. Registry Item B (RIB) involved recorded personalized feedback sessions obtained with the screen recording software Camtasia 2019 and later uploaded to the Google Classroom workshop account. Registry Item C (RIC) comprised the recording of all the class sessions from the workshop. RIA provided valuable visual evidence of students’ work and progress in their class assignments while RIB and RIC contributed with verbal and non-verbal student reactions towards the workshop experience, including class participation, and a rich variety of comments from which several transcriptions were undertaken. The comments obtained from the questionnaire and reflective journals contributed to the construction of a final narrative that developed a qualitative interpretation, as suggested by Cohen, et. al (2018):

In constructing a narrative analysis (as indeed in other forms of qualitative data analysis), the researcher can introduce verbatim quotations from participants where relevant and illuminative; these can add life to the narrative and often convey the point very expressively). (p. 665)

Coding

The coding analysis began with a first reading of the materials, from which to formulate keywords that helped to identify recurrent topics. Some of the recurrent topics included the following: *academic progress, self-confidence, motivation, inspiration, imagination, visual communication, digital painting techniques, digital tools, visual composition, color, illumination, and human figure*, among several others. As the materials were scrutinized, the teacher researcher shaded excerpts with color codes established for each category resulting from the recurrent themes. This allowed for the visualization of the categories. Consequently, the identified codes were translated into a simple hierarchical map in which to organize major to minor categories and their enclosing relationships.

Multi-narrative Approach to Analysis

Additionally, a multi-narrative approach was undertaken to interpret and present the categorized information. The approach focused on creating a unifying history that included all of the personal narratives from the students, summarizing and articulating the students' experiences in terms of their emotions, learning evolution, aesthetic expressions, reactions and responses; the multi-narrative approach described common points from the students as well as their divergences. The narrative that resulted from the process can be divided into two main sections: questionnaire data analysis and reflective journals data analysis.

Questionnaire Analysis. The questionnaire data analysis was developed in Microsoft Word, elaborating from a questionnaire created in Google Forms and delivered to students' personal e-mails. The questionnaire consisted of 14 open-ended questions that allowed the study to identify the feelings of the students towards themselves as artists, their expectations, opinions, background knowledge about the workshop topics, considerations on to what extent the workshop contributed to the development of the students' artistic skills in the technical and intellectual aspects, as well as their creativity development, human development and the possible benefits of the workshop in other areas of life, including the social-emotional aspect, self-confidence, health, sporting life, and non-artistic facets of their daily lives.

Reflective Journals and Registry Items Analysis. The reflective journals data analysis was developed in Microsoft Word based on the data obtained from the registry items RIA (digital image library), RIB (recorded personalized feedback sessions) and RIC (recorded class sessions); such multimedia documents evidenced valuable information regarding the students' evolution throughout the workshop in multiple ways, including the students' self-perception towards their own artistic skills, preferences towards topics in the workshop, proficiency in their ideation of illustrations personal interests, their perception about their social integration with other students from the workshop, and suggestions for the course in terms of curriculum design and teaching methodologies among others. Furthermore,

the teacher's appreciations of the students' evolution in all the previous aspects on a constant basis conformed a vital part of the document.

RESULTS AND DISCUSSION

The study aimed to recognize the possible effects of a digital painting workshop on students' artistic skills, creativity and human development. Correspondingly, the study revealed that each student experienced evolution regarding the main variables and additional aspects, recognizing that the students' evolutionary rates varied considerably depending on their commitment throughout the workshop and their prior artistic development. In terms of artistic skills, the use of digital tools was intensively reinforced, and participants were able to expand their knowledge of different illustration techniques through software such as Adobe Photoshop and Procreate, learning new methods to use the software and meeting professional illustration techniques. The works turned into unequivocal evidence of the progress made by the students throughout the workshop. Regarding creativity, the study demonstrated that the students strengthened their creativity by incorporating new methodologies to conceive ideas and visually communicate them to the public. Additionally, group activities and student participation favored idea formulation and offered complimentary points of view among participants. In terms of human development, students experienced growth in their development as human beings, meaning that they were able to communicate, correlate and cooperate with one another in a positive digital classroom environment. Furthermore, students' passion and enjoyment of the topic was highly noticeable during all sessions. This turned into a clear example of how non-formal education can successfully offer learning environments where students willingly participate. In addition, the study identified that the workshop provided a learning environment that helped students find a source of relief, peace, emotional health, social integration, and positive experiences during the current national quarantine as a result of the Coronavirus. Finally, the study revealed additional findings in respect of motivation, class content and teaching methodology; for instance, it was

observed that the implementation of animated series, movies, video games, editorial illustrations, and several inspirational materials coming from the entertainment industry served as a highly motivating factor that fostered students' participation and commitment to the workshop.

Other findings include students' perceptions of the workshop duration as not long enough to lead to a deeper artistic development; therefore, all the students suggested a longer workshop. It was also possible to identify which class contents students favored, including color, visual composition, and form language. Likewise, participants recognized human figure and character development as highly relevant but not developed in depth during the workshop. Ultimately, the participants emphasized on the need to create a future workshop focused on these topics.




Artistic Skills

Part of the research goal was to explore the possible effects of the workshop on students' artistic

skills. The results demonstrate positive evolution for all students, with varying improvement speeds for all participants. The artistic skills involved in the study were recognized and classified into three main evolutionary stages depending on their conceptual and technical complexity. *Stage 1* focused on art foundations, including basic drawing, basic painting in black and white, perspective drawing and lighting dynamics. *Stage 2* embraced geometric understanding of surfaces, visual composition principles, form design, and entering color basics. *Stage 3* involved color palette formulation strategies, complex color and lighting conditions, and interpreting materials and textures and color for storytelling. Finally, *Stage 4* dealt with the finalizing of illustrations using digital painting in conjunction with 3D renders and photomanipulation.

To present the criteria used to assess artistic skills development, the researcher formulated the following topic descriptions accompanied by visual examples, presented in Table 2.

Table 2. Stages of artistic skills throughout the workshop

Stage	Theme Name	Theme Description	Sample Image
Stage 1	Digital drawing basics	Key elements that compose the foundations of drawing, such as proportions (relationships of size and location between the elements of a form), basic geometry and developing self-confidence when stroking.	 <p>https://ae01.alicdn.com/kf/H90de3ac57ac44485a0523a231ef72dc7T/Booculchaha-Basic-Sketch-Course-book-Gypsum-Geometry-Single-Combination-still-life-pencil-western-line-drawing-book.jpg</p> <p>(Session 01)</p>
	Black and white digital painting	Learning how to paint in black and white with the use of values. Values are defined as the level of darkness or brightness of a color. The thorough understanding and practice of values is vital for a proper painting technique.	 <p>Painting demonstration made by the teacher in session 01. Left, Black and white painting. Right, original reference.</p> <p>(Session 01)</p>
	Perspective Basics	Elemental components of perspective for environments, including horizon line, vanishing point and orthogonal lines.	 <p>https://i.ytimg.com/vi/w_LbQviO1K4/maxresdefault.jpg</p> <p>(Session 02)</p>

	Lighting dynamics	Exploring the concept of light source and its interaction with surface and recognizing more subtle elements of lighting structures, including highlights, mid tones, core shadows, cast shadows, secondary and tertiary lights, value gradations, light bounces and more.		Analysis of composing elements of light and volume. Original art by Nathan Fowkes, DreamWorks Animation. (Session 02)
Stage 2	Topology	Understanding forms using geometric grids (topology) wrapping the surfaces; this to understand directions of faces.		Topology drawing demonstration made by the teacher. (Session 02)
	Visual composition	Strategies to successfully guide the public's eye into a focal point in the composition, defining hierarchies of elements inside an illustration.		Visual composition analysis performed in Session 03, based on Shaman, short film by the animation school Gobelins. (Session 03)
	Form Language	Designing forms to visually communicate a certain intention (e.g. expressing a character's rude, friendly, or dangerous personality). All this through deciding shapes in terms of geometry and proportions.		Form language analysis performed in class, based on original designs from The legend of Zelda. (Session 04)
	Color Basics	Defining three main elements to understand color from an arts perspective: Hue, saturation, and value. As value has already been defined, hue indicates the pure spectrum of a color (e.g., yellow, red, blue, green), and saturation refers to the amount of pigment or vividness of a color, varying from absolute greys to colorful tones.		Defining hue, saturation and value. (Session 05)
Stage 3	Color Palette formulation I	Basic strategies to decide which colors to be applied in an illustration (e.g., complimentary colors and color triads).		Exploring color palette formulation strategies. Original art by Nathan Fowkes, DreamWorks Animation. (Session 05)
	Color and lighting conditions	Exploring how light sources with different intensities and colors can interact with forms in more complex ways.		Exploring complex color and lighting conditions. Teacher demonstration. (Session 05)

	Color Palette formulation II	Advanced strategies to decide which colors to be applied in an illustration (e.g., color-scripting for animation films).		Exploring color palette formulation advanced strategies. Teacher demonstration. (Session 06)
	Materials and textures	Analyzing how materials determine local colors of objects, and how they interact with light. Such properties determine the types of materials (e.g., opaque, transparent, or translucent). Such analysis involves exploring textures of materials (rough, smooth, sticky, slick, fuzzy, sharp, etc.).		Materials analysis. Teacher demonstration. (Session 07).
	Color for storytelling	Exploring color decision making and its direct applications for storytelling purposes.		Color for storytelling. Teacher demonstration. (Session 08).
Stage 4	Final touches I (Painting on 3D renders)	Examining how digital painting techniques can cooperate with 3D rendering to obtain painterly looking illustrations.		Digital painting over 3D render. Teacher demonstration. (Session 09).
	Final touches II (Matte painting techniques)	Studying how digital painting techniques and digital photo manipulation can work together to create images that emulate realism.		Matte painting. Teacher demonstration. (Session 10).

The previously described evolutionary stages served as criteria for assessing artistic skills. Consequently, among all findings obtained from the study, the following were some of the students' experiences that best exemplified their evolution in terms of artistic skills. These descriptions originate from the student questionnaire, the reflective journals, the class and feedback sessions recordings, and the Google Classroom digital image library.

Stage 1

Hogwarts Sorting Hat. A relevant example that demonstrated the artistic challenges and evolution was the creation of the following piece, performed by Sofia².

² As mentioned in the Participants section of this document, informed consent was obtained from all participants, as well as express permission to use their real names.



Figure 1. Hogwarts Sorting Hat (by Sofía, workshop student).

During the creation of her first piece for the workshop, Sofía was terrified about the challenge that represented painting the famous Hogwarts Sorting Hat from Harry Potter. She did not know how to begin her task as the model presented a great number of complexities in terms of details and textures. The leathered material of the hat generated several folds, emanating from its facial expression and from the movement of its body. Moreover, there were challenging subtle variations in the overall texture quality, sometimes smooth and other times harsh and corrugated. In the course of the first feedback session, Sofía and the teacher noticed

that it was overly time demanding for Sofía to depict the hat volume; therefore, they proceeded to explore a method to synthesize lights and shadows. The lesson from that experience allowed Sofía to recognize a more simple and effective way to approach digital painting and motivated her to pursue the acquirement of such technique. The following transcript evidenced the crucial moment when the lesson took place.

From the feedback session

- Sofía:** I just don't know how to detail the hat folds. Help me, I'm lost.
- David:** Well, alright, Sofi. In this case, what happens is that there are many issues going on at the same time regarding volume, so we need to go step by step to solve all of the problems. Please, remind me of that phrase that I always repeat to you guys.
- Sofía:** Um... I think it's... "From general to specific".
- David:** Correct! Alright, Sofi, just like that, "From general to specific". That is our golden rule if we want to learn how to

paint or draw anything, regardless of what it is. In this case, you already solved the line work, which is working very well, and we can understand that it's the hat. Excellent, Sofi! Now... What happens with the volume is that you're putting lights and shadows too strongly everywhere to detail those folds, but, because of all this light and shadow, we're losing light hierarchy.

- Sofía:** Yep. It's complex and I've been painting it like two hours already and it still doesn't look like the model. It looked better without color.
- David:** Take it easy. So, we're going to get rid of what you've done of color. Two hours of harsh work are going away in 3...2...1... erase!
- Sofía:** Oh, what a pain!
- David:** Hahaha, I know, Sofi. But this is for your own sake. And now, take a look at how, with a few brush strokes, and a big sized brush, we're going to set up the lighting of the hat. So, first, I'm gonna place a base value, a mid-tone to cover the whole silhouette. Done. And now, I'm gonna put some light strokes here at the right, and on the left area, and up here. Only one big brush and a high-tone and a mid-tone.
- Sofía:** How great! It's looking more like the model now, and in just two minutes!
- David:** Less is more! And now let's continue with the shadows.

Sofía's artistic skills at the time were not the same as other students, which reflects the wide heterogeneity of the participants in terms of their overall background and artistic experience. In fact, three participants (Marlon, Brandon, and Julián), had a breadth of experience in terms of artistic development and had by that time been working as professional designers for more than ten years. Nevertheless, the diversity of evolution did not discourage Sofía from continuing to progress as the sessions continued. Even if Sofía did not accomplish all the tasks of the workshop, she demonstrated solid commitment to finalizing all the artworks that she started. The following notes from the reflective journal value her perseverance.

From the teacher's reflective journal

Sofía had not had previous experience in digital painting, and her participation in the workshop turned into a vast series of discoveries and challenges from the first session. Even though her assignments delivery was quite inconsistent, I was able to value her great effort to complete some pieces, which are proof of the high quality that Sofía was able to achieve among her difficulties.

Sakura Card Captor. Some of the challenges students encountered with drawing basics related to the mastering of proportions and the use of digital media. The following line drawing piece (the Japanese animation character Sakura Kinomoto) reflected Sofia's struggle with proportions and using the digital painting software, and how she was able to overcome difficulties in this respect.



Figure 2. Line drawing of Sakura Kinomoto, from the animated series Cardcaptor Sakura (by Sofia, workshop student), digital drawing printed and signed.

Sofia decided to install the digital painting software Adobe Photoshop 2020 on her computer and learn to use it properly. Even though the software seemed

unusual and complex, she noticed that there were multiple similarities between a tablet application named Procreate, which she had been using in previous opportunities. This, in turn, allowed the learning of Photoshop to be more manageable than expected. The transition to Photoshop led Sofia to acquire a drawing tablet, known as Wacom Bamboo Pen (a portable device that connects to the computer, operated with a pen-like stylus). The Wacom Bamboo Pen offered Sofia higher precision of her strokes, as she operated her previous device using her fingers. Nevertheless, becoming familiar with the new drawing tablet was not a simple task for Sofia since the pen-like stylus, not intended to stroke on top of the computer screen, generated unexpected discomfort. It took Sofia almost a week to accustom herself to the new hand-to-screen motor coordination circuit.

Sakura Kinomoto's portrait, among all Sofia's pieces, became the most artistically demanding technique challenge; the development time for the piece, originally estimated as one day, transformed into a non-stop day-to-night four-day marathon. During the process, Sofia found it necessary to implement multiple corrections as she faced several adversities respecting general proportions of the model: additionally, her strokes were unsteady and caused her to continuously erase and redraw until achieving the desired result.



Figure 3. Four-day process involving evolution of artistic skills in proportions, hand-to-screen coordination, and software operation (by Sofia, workshop student).



Figure 4. Wacom Bamboo Pen graphic tablet.

As the teacher continuously assessed Sofia's creation of the piece. He was able to appreciate how the student implemented as many corrections as necessary to achieve correct proportions and confident strokes with her new Wacom Bamboo Pen. Annotations in the reflective journal reveal the joy of the teacher and the student after achieving success.

From the Teacher's reflective journal

Faced with this challenge, Sofia and I could only celebrate when seeing that, finally, the mission had been accomplished. Sofia's determination, despite the difficulties, is her greatest strength, and this image became an authentic trophy, now printed, and honorably exposed on her bedroom walls.

Robot Study. The opposite case of students, who found Stage 1 tasks relatively easy to develop, was best represented by Marlon, who has been working as a professional graphic designer for more than fifteen years. Marlon was able to create multiple black and white paintings daily and only needed minor suggestions with regards to his digital painting technique and proportions management.



Figure 5. Robot study – Black and white digital painting (by Marlon, workshop student).

In the first week, Marlon presented black and white studies (being studies, recreations of original images) of high-quality artistic technique, distinguished by great fluidity and ease of brush strokes. The teacher was able to appreciate in Marlon remarkable spontaneity in the technical solution of digital paintings and found himself impressed when Marlon revealed that he had not practiced drawing as a constant discipline for more than fifteen years. Moreover, Marlon had not used drawing tablets, neither had he used Adobe Photoshop for digital painting purposes. The following excerpts from the students' questionnaire serve as evidence of the discovery.

From the Student questionnaire

Q: How did you feel about the workshop before starting the classes? (Expectations, opinions, general comments)

A: I had great expectations, since I previously knew the teacher's work quality, and I was very interested in taking up skills I hadn't used a long ago.

Q: Before starting the workshop, what was your perception about your artistic skills?

A: Since many years ago I hadn't practiced illustration, at least about 15 years, and I never had done digital illustration, only traditional techniques. Before, I illustrated in a very basic level, I'm learning a lot. Neither had I used a stylus, so it's all new learning to me.

Stage 2

As the sessions advanced, the students entered Stage 2, embracing intermediate-level content as described in the stages of artistic skills diagram (Table 2). Some of the most relevant works exemplified progress in the geometric understanding of forms (topology), lighting dynamics and representation of proportions.

Topology and Lighting Studies. Brandon performed topology studies using cooking utensils and food as reference models. His understanding of tridimensionality of forms demonstrated overall success. However, as seen in the teacher's reflective journal, it was possible to identify technical aspects of drawing that needed improvement.

From the teacher's reflective journal

Brandon understood the dynamics of topology drawing and developed the exercises successfully. However, precision was still needed in maintaining equivalent distances between polygons when seen in perspective. During the personalized feedback session, we explored this aspect closely, which allowed Brandon to recognize how to properly correct this detail in his future drawings.



Figure 6. Topology and lighting study (by Brandon, workshop student).



Figure 7. Screenshots from the personalized feedback sessions, with indications from the teacher.

Brandon and the teacher-researcher worked on improving motor skills for straight lines and explored procedures to equally space divisions inside geometries, along with deepening understanding of how light source and surface angles can determine the amount of brightness on topologies.

Form Language and Lighting Explorations for Stitch. Stage 2 involved form language, as well, as a vital element in the digital illustration practice; form language refers to the role of shapes to visually transmit specific intentions. The workshop's form language session focused on expressing character personality through the use of geometric silhouettes and experimental

combinations of proportions. Brandon used a great variety of forms, including organic and geometric silhouettes, achieving highly different interpretations. Brandon elected Stitch, one of the main characters from the Disney's Lilo & Stitch animation movie, as the starting point for his explorations. Through such experimentation, Brandon strengthened his technical skills with regards to proportions and shape design.



Figure 8. Character design iterations, friendly and aggressive versions (by Brandon, workshop student).



Figure 9. Character design iterations, sophisticated and clumsy versions (by Brandon, workshop student).



Figure 10. Character design iterations, heavy and ethereal versions (by Brandon, workshop student).

Subsequent to the line drawing iterations, Brandon's duty was to select his three favorite versions and translate them into black and white paintings that included a light source and its interaction with the model's topology. The obtained artworks demonstrated improvement in Brandon's digital painting technique with regard to volume and light.



Figure 11. Character iteration, black and white digital painting (by Brandon, workshop student).



Figure 12. Character iteration, black and white digital painting (by Brandon, workshop student).



Figure 13. Character iteration, black and white digital painting (by Brandon, workshop student).

Visual Composition Thumbnail, Bonfire.

Visual composition, conceived as a set of strategies for directing the public's reading of an image (e.g., successfully selecting the size and location of elements or the intentional use of contrast) was explored by Julián through thumbnailing exercises. The practice of thumbnailing for illustration refers to sketching miniatures that represent the most relevant features of an image. By practicing this methodology, illustrators from all over the world have been trained to take visual composition decisions that reinforce their original storytelling intentions. Additionally, through thumbnailing, illustration artists set the focal point of an image, which will concentrate most of the viewer's attention. Julián found the process of thumbnailing to be extremely engaging and relevant to his professional practice as a marketing graphic designer. The following thumbnail sketches exemplify Julian's evolution in terms of visual-composition decision making.

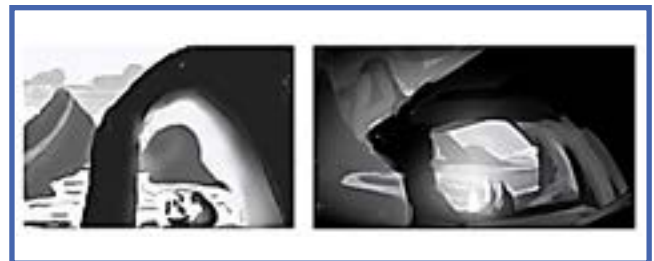


Figure 14. Thumbnail sketch (by Julián, workshop student).

The following excerpts from the teacher's reflective journal describe the subject matter that motivated Julián to create the piece and how the image evolved in terms of visual composition.

From the teacher's reflective journal

The visual composition of individuals in front of a bonfire, beneath a cave in a mountainous landscape, was a very striking image, that transported us to the age of cavemen and connected us with the concept of wild nature, and the challenges that human beings had to face to survive in such difficult conditions. We explored lighting hierarchies, so that the bonfire was the focal point of the image, and the sky stopped being protagonist. In turn, we worked on the stylization of forms, including rocks and mountains in order to sum up attractiveness to the illustration's overall design.

Additionally, Julián developed a variety of composition studies, based on black and white paintings by the illustrator Marcos Mateu-Mestre in his book *Framed Ink: Drawing and Composition for Visual Storytellers*. Julián's exercises revealed to himself that it is possible, with a limited number of brushstrokes, to create a recognizable scene and its corresponding lighting dynamics in a limited time. The previous discovery consolidated as a valuable lesson to Julián, who had been used to invest excessive amounts of time into his pieces and, as a consequence from the lesson, started to transition himself to a new methodology in his drawing practice.

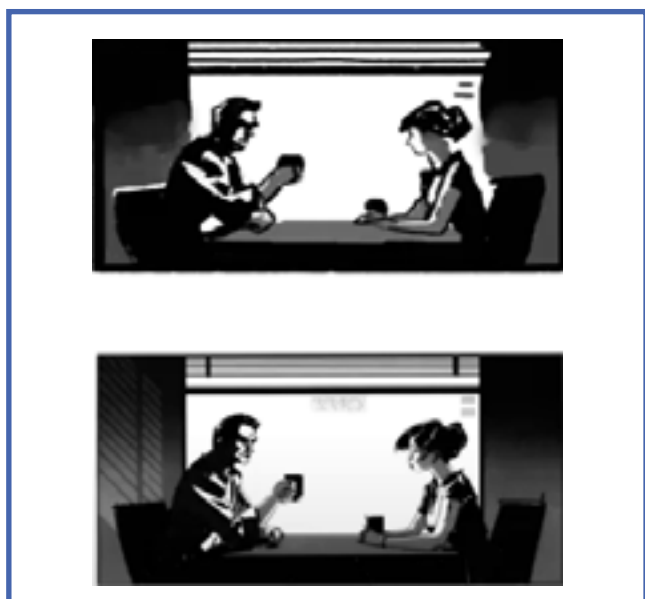


Figure 15. Black and white study (by Julián, workshop student).

Stage 3

Students encountered new lessons as they embraced Stage 3, which approached color from a basic understanding to more complex applications. The following exercises demonstrated improvement of students' artistic skills with regard to color.

Color Palette Formulation, Movie Color Studies. One of the assignments for Stage 3 consisted of performing color studies from movie still frames, attractive for their color palettes. This exercise was

experienced by Brandon as a challenging and fruitful experience that led him to become more proficient in the use of different color temperatures, which enriched his color palettes and promoted dynamism in his illustrations. The personalized feedback sessions contributed to Brandon's refinement of color recognition and representation as the teacher, through varied comments and overpaintings in Photoshop, helped him be aware of the differences between his studies and the original references; some of the aspects discussed were temperature, value, and saturation of color.

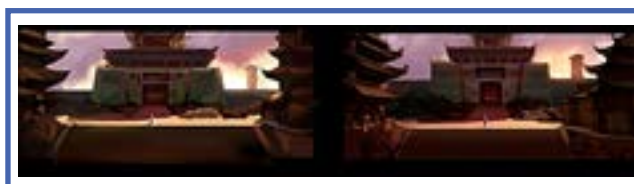


Figure 16. Color study based on the movie Kung Fu Panda 2 (by Brandon, workshop student). Before feedback.

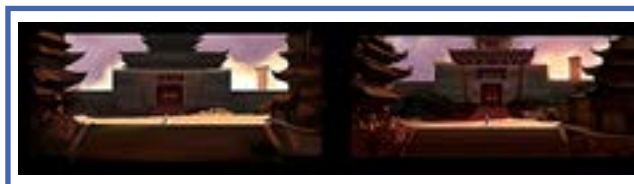


Figure 17. Color study based on the movie Kung Fu Panda 2 (by Brandon, workshop student). After feedback.

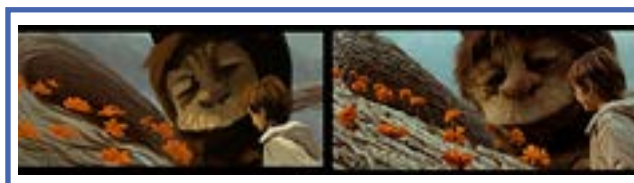


Figure 18. Color study based on the movie Where the wild things are (by Brandon, workshop student). Before feedback.

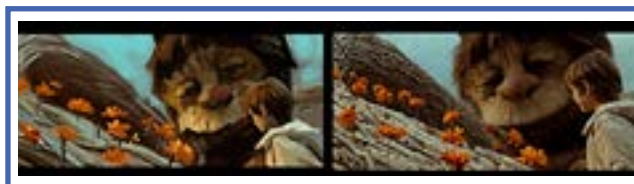


Figure 19. Color study based on the movie Where the wild things are (by Brandon, workshop student). After feedback.

Excerpts from the students' questionnaire found that Brandon manifested enhancement of his digital coloring technique.

From the Student questionnaire

Q: Have you noticed progress in your growth as an artist thanks to the workshop? If so, in which aspects have you noticed progress?

A: Yes, I have noticed improvement, mainly in the way I make the initial set-up of an image and the way that values play a vital role for creating high-quality images, also, in the way in which colors can be used and the rules to apply them. I am always open to experiment with the new knowledge I have been acquiring.

Material Studies. Brandon's improvement in coloring skills was clearly evidenced, as well, in an exercise depicting the distinctive physical properties of varied materials, whose basic shape would adapt to a spherical form.



Figure 20. Material studies (by Brandon, workshop student).

The teacher's reflective journal registered positive reactions towards Brandon evolutionary process and described specificities of the exercise that performed successfully:

From the teacher's reflective journal

Studying materials was a very exciting homework for Brandon; he presented marvelous works that evidenced hard work and great variety of textures, material finishes, colors, and relief and volume qualities produced by different light conditions and by the local colors of objects.

Color for Storytelling, Medieval Fantasy. An example of enhancement of coloring skills, related to the creation of images for storytelling, was found in Mariana's work. The following illustration resulted

from a class assignment, which asked students to ideate a short story that would later be represented through deliberate color choices.



Figure 21. Color for storytelling, medieval fantasy (by Mariana, workshop student).

Mariana conceived the story of a warrior prince and his loyal supporter, a magic dragon. Both characters' purpose was to defeat the army that had once invaded their homeland, and the ruler behind the troops – an evil witch.

Entering the art of storytelling required considerable effort for Mariana, even more since depicting characters became a vital part of the task. Mariana and the teacher recognized her need for a deeper development of her human figure and creature drawing skills. However, regardless of the overwhelming problems to be solved, Mariana absolutely enjoyed the creation of the storytelling digital painting for that week. She expressed her fascination for narrating stories where characters interact with each other, especially if the narrations involve magical and mythological creatures, such as gryphs, dragons and chimeras, which she deeply appreciated. During the creation of the image, she expressed her will to specialize her skills in this field of illustration, which she treasured more than background design, visual composition or any of the other workshop themes. The creation of this illustration was remarkable proof of Mariana's longing to continue developing her artistic skills improvement as a lifelong task.

Stage 4

Stage 4 entailed the performance of complete scenes that integrated as many elements from the workshop's curriculum as possible and the implementation of photomanipulation and/or 3D rendering techniques in conjunction with digital painting. Mariana's work became a remarkable demonstration of her continuous evolution in terms of artistic ability until the end of the workshop.

Final Touches, Matte Painting. As it was the first time Mariana had created a digital matte painting, her results were satisfying. She conveyed a convincing scene in terms of visual composition and overall illumination structure. At certain parts of the image, she felt slightly insecure as to how contrasty the lights and shadows should be, and the extent to which she should use photo-textures on top of her painted strokes. As a matter of fact, matte painting happened to be a difficult technique for the workshop students, and even if Mariana did not always find a clear path on how to technically solve the image, she was able to achieve overall success among her struggles.

Mariana, being by the time of the workshop a very young person (14 years old) longing to become a professional artist in the future, demonstrated demonstrable evolution in her artistic technique in a short period of time.

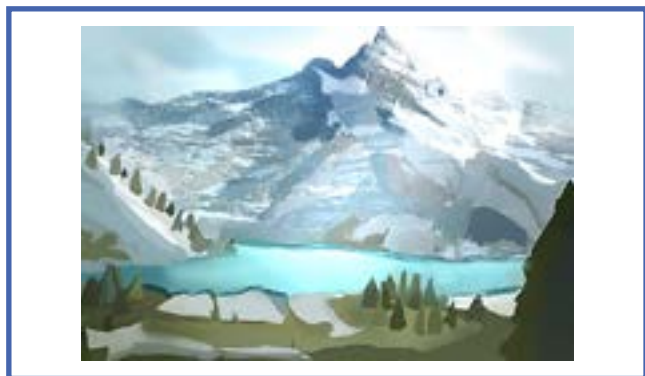


Figure 22. Matte painting, alps (by Mariana, workshop student).

Creativity Development

The study also aimed to identify the workshop's possible effects on students' creativity development. In general terms, it was possible to identify varied demonstrations of creativity and evaluated them from a qualitative perspective. Instead of categorizing creativity development effects in higher or lower levels of hierarchy, the research examined as equally valuable students' experiences of creative manifestations. The following highlighted examples illustrate students' creative evolution, proceeding in the same chronological order as the workshop curriculum (Stages 1, 2, 3 and 4).

Stage 1

Robots, Black and White Studies. During week one of the workshop, Marlon performed varied black and white paintings focusing on robots, a subject matter that the student found motivating, and which served as a basis for some of his future class assignments. Thanks to his black and white paintings, Marlon learned how to represent robots in more proficient ways, developing a deep understanding of their specificities. The process allowed Marlon to consolidate a "visual library" (a term commonly used in the illustration field) from which to formulate new robot-related illustrations. The following excerpt from the teacher's reflective journal best describes the impact of the student's exercises on his creativity.

From the teacher's reflective journal

Along my professional career I have agreed, along with many other artists, in that creativity can be compared with a muscle that has to be strengthened through the repetition of exercises. Marlon has focused in studying and analyzing robots from the visual aspect, appreciating the physical qualities of their materials, their mechanical functioning, and the engineering beneath these fascinating machines with personality. Thanks to his multiple paintings of robots, Marlon has accumulated extensive knowledge in his visual library, which allows him to imagine and create in increasingly fruitful ways.



Figure 23. Robots, black and white studies (by Marlon, workshop student).

As Marlon's creative evolution continued with the enhancement of his visual library, new evidence of his progress regarding the subject matter were recognized.

From Abstract Thumbnail to Composition Sketch. As a remarkable example of creativity, Brandon formulated a scene inspired in Eastern traditions, in which two mysterious characters exchange glances from the distance; their silhouettes remain in shadow whereas the rest of the scenery, a clear, majestic sky, appear strongly illuminated as in a radiant day. The relationship between characters was not set in a clear way for the spectators, allowing room for speculation, suggesting each might relate as master and pupil, father and son, travelling strangers that had just met for the first time, or even, hostile opponents about to fight a duel. The open-ended nature of reading the image strongly attracted Brandon as it invited the public to perform an active role at interpreting the story behind.

Initially, the creation of the piece was an exercise, in which every student would paint a group of abstract forms in miniature, commonly known as thumbnails, without a narrative intention in particular, exploring different visual rhythms, values, sizes, and directions of the composition. Afterwards, the students grouped up into working pairs and shared their thumbnails with each other, which served as stimuli to evoke multiple narratives for more concrete images. As part of the session, the teacher presented the term *pareidolia*, the phenomenon of associating abstract images to specific images submerged in the psyche (a well-known example is that of a person who staring at clouds and picturing persons, animals or any other figure). The following image, extracted from the Google Classroom

visual library, documents thumbnail iterations created by Brandon for the exercise.



Figure 24. Abstract thumbnail iterations (by Brandon, workshop student).

By socializing their thumbnail sets, Brandon and Julián selected one of the miniatures as the image with the highest narrative potential. Based on the abstract composition, both students elaborated the story of a pair of characters from old Japan, travelling across one same road leading to a Japanese traditional gate, *torii*, conceived as a portal from the mundane to the spiritual realm. The following excerpt from the teacher's reflective journal describes how Brandon's creative process was promoted by interacting with his classmate.

From the teacher's reflective journal

It was thanks to the interchange between Julián and Brandon, that blossomed ideas about movies based on oriental imagery, like Kung Fu Panda. Both of them turned excited with the possibility of telling stories about adventures of martial arts masters across the so poetic landscapes from Japanese antiquity. Traditional architecture and enigmatic vestures became fertile ground for exploration. The fact of counting on the vision of someone else, triggered in Brandon a sudden creative unfolding.



Figure 25. Composition sketch based on abstract thumbnail (by Brandon, workshop student).

Topology and Music. During Week 2, all of the students had the opportunity to freely choose reference material from which to study topological construction (geometrical grids enveloping surfaces of an object). Mariana and Julián presented outstanding works, characterized by the reference materials they selected. Both students preferred musical instruments and devices from their homes to become their subject matter, as a gesture of appreciation to music as a vital component of their lives. The participants rearranged the items to compose still lifes (traditional art term to describe paintings of inanimate objects). The teacher's reflective journal described the educator's perceptions obtained from the experience.

From the teacher's reflective journal

As topology and illumination exercise, Mariana and Julián concurred in having selected different musical elements from their homes to compose a still life that would tell stories. Mariana, for example, took a sound speaker from her apartment living room and grouped it together with a thick book from the study and with some origami figures from her bedroom. Mariana manifested that by gathering these elements in a new context, she aimed for scale and size relations between objects, giving the impression that the sound speaker was a great building and the origami cranes the inhabitants of that place where music reigned. Likewise, Julián used some musical artifacts, such as his drumsticks, tambourine, and guitar and rearranged their location; he added, as well, some decorative wooden birds, so that they became musicians in a fictional music band. Both artworks were manifestations of how the students took advantage of their creativity to develop new interpretations to objects that normally receive a different reading.



Figure 26. Topology and illumination study (by Mariana, workshop student).



Figure 27. Topology and illumination study (by Julián, workshop student).

A Robot's Form Languages. A remarkable expression of creativity took place when Marlon performed his assignment for Week Four – form language. Marlon felt doubtful about how to approach the task, so the teacher exemplified the procedures of transmitting new personality to an iconic character. In this case, the teacher reformulated the shapes of the *Tie Fighter*, a combat spaceship from the Star Wars universe that serves the imperial army. The teacher created a new design for the ship with gentle and tender features by implementing soft and round shapes. After the exemplification, Marlon found himself motivated and decided to take on his upcoming challenge.



Figure 28. Teacher's demonstration of form language reformulation (by Marlon, workshop student). Left, original design by Space Goose. Right, teacher's redesign.

Subsequently, Marlon selected *Bender*, a robotic character from the animated series *Futurama*, as his starting point for redesign. Marlon presented

a fascinating compilation of design proposals with unique and expressive variations. In terms of creativity development, Marlon manifested considerable growth, which was best supported by the teacher's reflective journal and the Google Classroom visual library.

From the teacher's reflective journal

I found these designs very enjoyable since Marlon took the character to variations where the materiality from the original version notoriously transformed. The ethereal version of Bender helped me to imagine a cluster of gas striving to keep its silhouette within a battle against the constant dissolution of its body. At the same time, his facial gesture helps to consider him as an irritated and aggressive character, who could potentially terrify others around. In respect of liquid Bender, his minimalist and smooth silhouette and his naive gaze communicated to me the feeling of a friendly personality, willing to help and serve others.

This couple of versions functioned very satisfyingly bringing to us a pair of characters who irradiated a notorious aura of taste for the world of luxuries and refinement. Specially, the version on the left went to a more extreme limit and presented the addition of new elements to the design, such as the daring moustache. Also, the selected pose granted to refined Bender a clearly readable body language that emphasized its personality. Additionally, the changes in the body proportions became a very creative way to reinvent the character.

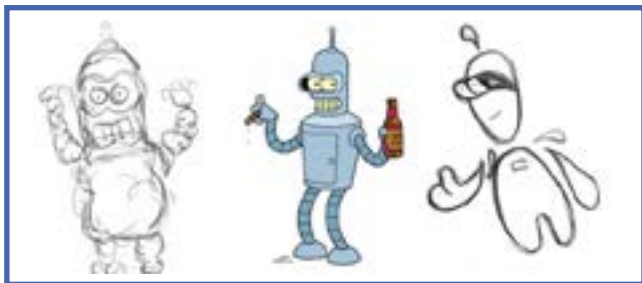


Figure 29. Form language iterations, original character: Bender from Futurama (by Marlon, workshop student). Left, ethereal version. Right, liquid version.

Heavy Bender, despite being more robust and solid than the original character, could have been somewhat more exaggerated. I suggested Marlon to try in the future another possible exploration in which the brushstroke aspect was more rectilinear, to produce different results. It is important in this workflow to allow room for abundant explorations, since they conduct to unexpected discoveries for the creator and the public; after all, that is one of the marvels of creativity.

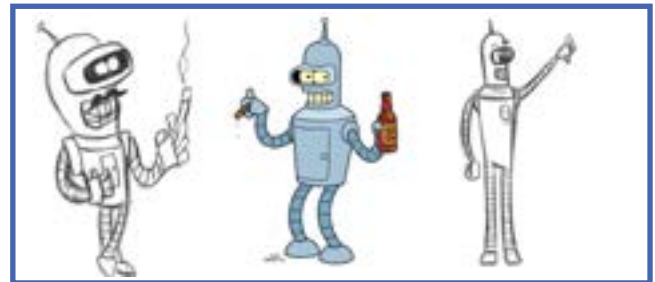


Figure 31. Form language iterations, original character: Bender from Futurama (by Marlon, workshop student). Left and Right, heavy refined versions.

The friendly and aggressive versions of Bender expressed a great diversity in personality. I deeply enjoyed seeing the results and noticing how Marlon skillfully applied the concepts explored in class in order to approach this challenge.



Figure 32. Form language iterations, original character: Bender from Futurama (by Marlon, workshop student). Left and Right, aggressive versions.

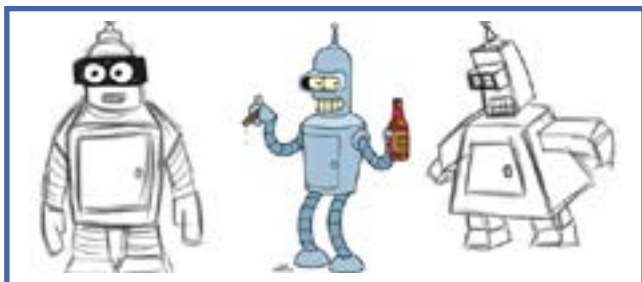


Figure 30. Form language iterations, original character: Bender from Futurama (by Marlon, workshop student). Left and Right, heavy versions.

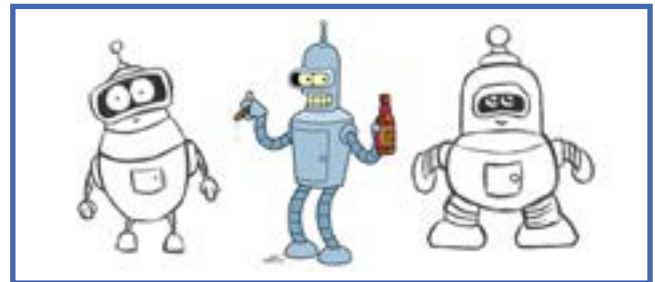


Figure 33. Form language iterations, original character: Bender from Futurama (by Marlon, workshop student). Left and Right, friendly versions.

Finally, Marlon selected one version from all the iterations to apply the illumination and final painting process. The teacher's reflective journal evaluates the artwork in terms of creative quality.

From the teacher's reflective journal

It was, as well, highly satisfying to find the final version of one of the design iterations, in this case, friendly Bender, as in this image Marlon applied his black and white painting practices directly onto his own invention. It could be appreciated how the knowledge that he had been forging from the beginning of the workshop, through the study of references to consolidate his own visual library, was used to his favor. The representation of a smooth material accurately supported the intention to transmit kindness in the curved form language of friendly Bender. I noticed rapport between the technical faculties of the student and his powerful creativity.



Figure 34. Finalized version, friendly Bender (by Marlon, workshop student).

Human Development

The last of the initial research variables is human development. The study intended to recognize the possible effects of the workshop in terms of students' personal growth and development. A variety of expressions were found that pointed to progress in the human dimension from a holistic perspective, including emotional, intellectual, social interaction, self-confidence, self-esteem, self-care, and health aspects. These findings were analyzed from a qualitative approach, demonstrating an overall positive impact of the workshop on students, who affirmed that the workshop was a contributing factor to their wellbeing

in times of the global sanitary crisis. Indeed, notable demonstrations of students' personal growth and development evolution can be found. Excerpts from the teacher's reflective journal, as well as from the student questionnaire and the Google Classroom visual library documented these findings.

The Milo Mug. A noticeable sample of improvement in terms of self-confidence was found in Sofia's painting of a Milo mug from her home. Even though the majority of the students generally delivered assignments at a more diligent pace, Sofia, who had not practiced digital painting before the workshop, refused to abandon the finishing of her pieces. She experienced a frustrating incident when creating her previous pieces (as described in the artistic skills section), which caused her to suspend her practices for a week until she regained enough impulse to embark on her next challenge. In this particular artwork, Sofia demonstrated thorough commitment and a noticeably more fluid progress, which not only evidenced improvement of artistic skills, but also, and more importantly, implied positive emotional transformations leading her to gain agility and enjoyment of her daily routine. Such findings were registered in the following evidence from the reflective journal.



Figure 35. Milo mug (by Sofia, workshop student).

From the teacher's reflective journal

After one week without working on the assignments, due to the multiple loads in her agenda, and a taste of frustrating bitterness that resulted from the excessive time invested in her paintings, Sofia resumed her digital painting endeavors by executing the image of a Milo mug located in her bedroom. She developed this exercise in a moment of greater audacity. Her brushstrokes, while not very precise, flowed more easily and the drawing execution time was much shorter than in her first artwork. In forty minutes, she had already solved

her image linework, compared to her drawing of Sakura Kinomoto, which took her four weeks. In respect of color, she started to increase the size of her digital brushes to encompass a larger painting area in lesser time. She set up the local colors of objects and also painted the Milo logotype on top of the model. Regarding illumination, it initially didn't present lights and shadows, conducting to loss of tridimensionality in the object. In the feedback session, I taught Sofía to create a color layer above her drawing and to later darken the information beneath it. In this layer we painted a few large brushstrokes on both sides and the interior of the mug with a mid-tone grey, which resulted in darker green, yellow, and grey hues that generated the image shadow. In a matter of minutes, the flat looking mug had converted into a product with its own depth in space. Sofía, with a vibrant and cheerful voice, manifested having enjoyed this exercise in particular, and felt that she gained more confidence in herself to execute her artworks. The unwieldiness from last weeks dissipated and contributed with positive feelings that not only influenced in her painting, but in her coexistence in family. Now she had a new topic to share on the table, a reason to feel proud and new motives to continue improving. The fact of being in a learning process with positive feedback, helped her to keep her mind busy and lessen importance to the experience of mandatory confinement caused by the quarantine.

As the student's questionnaire also confirmed, Sofía expressed perceiving a positive impact of the workshop in her feelings and attitude.

From the Student questionnaire

Q: Do you consider that learning digital illustration may bring benefits to other areas of your life, e.g., working, social, sporting, emotional, intellectual, self-confidence, self-esteem, health, etc.? Elaborate your answer.

A: Yes, because it brings you creativity to solve problems and helps you see issues from other points of view and perspectives in different areas of life, and keeping you active, happy and dynamic.

In Black. A noticeable example of positive evolution in terms of human development was also seen in the case of Marlon, who created the following artwork based on Mariana's suggestions after seeing his initial abstract sketch. Although the dynamics of the exercise were the same as "from abstract thumbnail to composition sketch" (found in the creativity development section), which evidenced creative progress, in the case of Marlon and Mariana, other valuable effects in terms of human development were observed.



Figure 36. Horse in black (by Marlon, workshop student).

Thanks to the interactions caused by the assignment, Mariana and Marlon, who had not previously spoken, gained the opportunity to get to know each other and developed a closer bond of fellowship, as the reflective journal affirms.

From the teacher's reflective journal

By developing the painting of the black horse, Marlon interacted with Mariana, whom with he had never shared together. They met in the group and were able to have fun, sharing with each other varied narrative ideas, and, even if their interaction did not extend throughout long periods, it was an opportunity to gradually strengthen connection bonds within the team, which flourished over time.

Team Integration. The study revealed a positive perception of the students towards social integration in the overall workshop experience. Evidence from the student's questionnaire reveals information on the subject.

From the Student questionnaire

Q: Do you consider team integration has been developed in the workshop? Elaborate your answer

A: Yes, integration comes up when we all participate in the other's projects

A: Yes, integration has been well; the opinions and suggestions from the group have been very interesting.

A: Yes, we have developed pair activities and conversations between all of us. Thanks to the exercises that David has proposed, and thanks to the fact that he is always looking for student's participation, we have been able to share together different moments of integration; the classes have always been enjoyable and entertaining.

A: Yes, because all of the workshop members have collaborated together with ideas and have supported each other to get them through; besides, we've had a great time.

Digital Painting and Self-care. The execution of topology drawings offered to Julián additional lessons from only the technical perspective; for instance, as the student was progressing in the creation of the following image. He also became aware of a physical pain in his left hand. Part of the feedback session dealt with the issue and focused on suggesting a self-care method. The teacher's reflective journal and transcripts from the recorder feedback session describe Julián's issue and the teacher's response.

From the teacher's reflective journal

Julián noticed how, because of his posture, his dominant hand and arm (on the left side) were hurting when drawing. It was a considerable impact for him and for me, even more by considering the fact that since many years he has been working in design. It is worth mentioning that until then he had been using only a mouse, but when transitioning to a graphic tablet he immediately noticed such pain, to which I suggested him posture exercises to ease muscular tensions. This was a demonstration of how the practice of digital painting can also teach students to listen to their own bodies and take care of themselves. After all, this is a life-long profession, and it is important, for digital art teachers, to not only educate on the technical execution of images, or on how to conceive ideas, but also to teach the appropriate personal cares for a fulfilled artistic career.



Figure 37. Topology study (by Julián, workshop student).

From the Feedback session

- Julián:** *I hope we can meet in person soon; my hand is starting to hurt so much. I'm not sure if it's because of being a novice, but my hand hurts quite a lot. I don't know if maybe I'm pressing too hard. Sometimes I apply too much force. It's just that my strokes have always been strong; I feel like I'm trying to make it fast and then I sometimes I stress my body. And then I try to make my strokes more softly, but my lines disappear.*
- David:** *But as you practice you will relax your arm more and more. The idea is that the stroke movement raises from the arm and from your shoulder. Don't let your wrist laying on only one point. Maybe you'll get better with this new posture.*
- Julián:** *I hope so. Just by making a few drawings my hand already hurts.*
- David:** *Sure. That's not the idea*
- Julián:** *I'm going to practice what you're telling me.*
- David:** *For sure! And now I'm going to show you a series of exercises, recommended by masters of Shoo masters, which means the traditional Japanese calligraphy, who also consider that your breathing and spine position are key to your health and your stroke quality.*
- Julián:** *Wow! Sounds interesting, tell me more, please!*

Effects of the Workshop on Other Aspects

Through the results on the student questionnaire, the study recognized varied effects of the workshop on other areas of life other than artistic skills, creativity development and human development. The following excerpt from the questionnaire evidences the student's different perceptions.

From the Student questionnaire

Q: *Do you consider that learning digital illustration might bring benefits in other areas of your life? (E.g. working, social, sporting, emotional, intellectual life, self-confidence, self-esteem, health, etc.) Elaborate your answer.*

A: *Absolutely. That was mi initial intention, and I am glad to know that the workshop has met my expectations, even exceeded them, beyond to what initially seemed to be a simple course. The workshop has all the tools need to integrate the concepts of digital illustration with any field of our lives. We feel relieved when creating stories and telling them in visual ways with a specific intention.*

A: *Yes, in my working life, the workshop has allowed me to obtain different results at the moment of designing and setting up color palettes, figures, and composition.*

A: Yes, when I enter college in the future, I want to study something related to digital illustration and art in general. I'm planning to center my life in the arts, since it makes me happy and I always feel excited about drawing.

A: Given the fact that I work in the illustration field, I'm sure this will bring me benefits in different aspects, such as the financial, personal, job acquisition, etc.

A: Yes, because it provides you with creativity to solve problems, and it allows you to see things from another point of view and perspective in different areas of life, besides, it keeps you active, happy and dynamic.

As evidenced by the student's questionnaire, the overall participant's perception towards the workshop in terms of additional benefits for other areas of their life confirmed to be positive. Some of the benefits that were commonly mentioned included possible financial benefits and potential job acquisition in the digital illustration field. Additionally, emotional benefits were recognized, helping some of the participants to be motivated and develop in more dynamic ways throughout daily routine.

CONCLUSIONS

Digital illustration for concept art has globally consolidated itself as a field of study of great interest, offering opportunities to forge a career in the entertainment industry. In the case of Colombia, most of the educational opportunities have remained unaffordable for a considerable portion of the interested population. However, offerings of divergent informal digital art education have progressively emerged, demonstrating to be a highly appreciable alternative for aspiring artists. Some of the advantages of such initiatives have included radically higher accessibility in terms of financial effort and socioeconomical backgrounds, along with high educational quality imparted by professional artists and student-centered curriculum design involving frequent personalized assessment. Such is the case of the digital-painting-for-concept-art workshop examined in the current study, during the global sanitary crisis context. The research aimed to explore the possible effects of the workshop on a group of five students from Bogota in terms of their artistic skills, creativity, and human development.

The results of the study demonstrated overall positive evolution in the examined aspects for all students. In the artistic skills aspect, the research recognized evolution of drawing skills, proportions, motor coordination, software operation, proficiency at understanding and representing lighting dynamics, tridimensional understanding of volume, visual-composition decision making, basic-to-advanced color management, depicting materials' physical properties and implementing of photomanipulation and 3D rendering techniques in conjunction with digital painting. Regarding creativity development, varied demonstrations of creativity growth were recognized and evaluated, including the enhancement of visual memory and its active engagement with idea formulation, as well as the strengthening of connections between visual thinking and storytelling. Additionally, the study recognized several experimentations that successfully applied form design and proportions. Furthermore, with respect to human development, the research found progress in the human dimension from a holistic perspective, including emotional,

intellectual, social interaction, self-confidence, self-esteem, self-care, and health aspects, registering an overall positive students' perception towards the workshop as a contributing factor to their wellbeing in times of the current global sanitary crisis. Finally, the study encountered additional benefits of the workshop in other areas of life not originally taken into consideration, including motivation, joy, work life, and sports.

Comparing the results obtained from the study to those in the reviewed literature, several affinities were appreciated in terms of artistic skills, creativity, and human development. Regarding artistic skills, as the study revealed, students experienced growth in visual-composition decision making and color management, also recognized by Samah, et al (2016) as students' progress in composition and color manipulation; additionally, the study identified improvement in digital painting software management, specifically Adobe Photoshop, recognized as well by Samah, et al (2016) as a result of the digital art education program undertaken by a group of students from Malaysia.

Furthermore, with respect to creativity and human development, the present study identified overall enhancement of creative thinking along with strengthening of team connection and social interaction; activities such as imaginary scenes creation cultivated student's creativity in meaningful ways, which concurs with Han (2019), who diagnosed that virtual world creation produced a creativity-fostering environment along with a sense of achievement and usefulness among students.

Correspondingly, the present study found that digital platforms, used to impart the workshop class sessions, manage overall workshop logistics and register the produced artwork, promoted social interaction and a collaborative team spirit among students, as well as creativity. This concurs with Al Hashimi, et al (2018), who demonstrated benefits of repurposing social and digital media applications for digital illustration education, including fluidity in group interaction and the promotion of creativity among students due to digital platform embedded features, such as exploring, commenting, and collecting inspirational images. Likewise, Koizumi (2018) determined that

artistic projects allowed participants to interact and communicate at a deeper level, and recognized that art projects are able to promote socio-cultural activities connecting diverse people in an era where isolation is common and indicated that art projects can also revitalize communities.

Additionally, further similarities were encountered in Madrid (2012), who demonstrated satisfactory enhancement of students' social abilities and their capability of conciliating differences of opinions, as well as in Ornelas (2012), who determined fostering of a sense of belonging and connection among students, as well as teamwork enhancement and team effort.

Further, the present study observed positive transformations of students' disposition towards approaching challenging tasks throughout the workshop, which are interconnected with findings obtained from Ho and Lin (2015), whose research results identified strengthening of students' attitudes towards paper-based art creation as well as their attitudes towards art learning. More similarities regarding this finding were observed by Ma (2019), showing that an experimental teaching system of digital painting effectively supported the educational experience, instruction, students' artistic skills, design thinking, and interest in learning digital painting.

Finally, regarding additional findings, the study diagnosed students' positive perceptions towards the workshop as a contributing factor to job acquisition and economic growth resulting from the improvement of their artistic portfolio. These findings correlate with Mathew and Manohar (2017), who indicated that more than 450 people aged from 22 to 35 years conceived a career in the digital arts as a path towards self-expression and self-fulfillment, which, in turn, concurs with Samah, et al (2016), who confirmed the importance of digital media education in Malaysian secondary schools in order to foster students' careers in digital art.

The major limitation identified in the project was the time period during the workshop was taught, consisting of 10 sessions, each one of them every week, resulting in two and a half months in total. Such time period proved to be fairly condensed in order



to facilitate greater students' evolutionary results in the intended areas of the study. As a matter of fact, the teacher and students noticed that additional class sessions were needed to further develop contents like perspective drawing, form language and composition. Equally, longer time was needed to include in the program a character design and human figure module, as requested by majority of participants in multiple occasions. A second limitation was that majority of students, at certain moments of the workshop duration, suspended the work, temporarily ceasing to elaborate or deliver assignments. The researcher considered, as a possibility, that this was because students were not accustomed to formal institutional grading, causing some of the participants to gradually diminish their commitment with homework.

Possible areas for future research encompass quantitative studies to measure the transition of students towards informal digital art education. Additionally, further research on exploring possible effects of informal digital illustration education are suggested, exploring the extent to which this type of education is potentially able to train emerging creatives to reach professional-or-higher-level artistic quality. Furthermore, increased research is required to recognize approaches that articulate young talent and digital illustration job opportunities as well as methods to enhance a sense of collegiality, team construction, social interaction, and stronger community support. Lastly, the study suggests supplementary inquiry of new subjects to allow students to be at the forefront of creative technologies, as well as creative thinking training and, equally important, indicated teaching methods for valuable learning of the digital arts.

ACTION PLAN

- Professional digital illustration artists with prior training as educators, willing to teach in informal settings, should promote themselves in social media and form student groups that are aligned with the intention of mastering the subject.
- Both, educators, and students should promote relationships between artists, companies, and cooperative entities to facilitate artistic careers in the 21st century. Such endeavor could be executed through the continuous celebration of entertainment-industry related events, including online meetings.
- Given the fact that artists in the entertainment industry are mostly hired because of the skill level presented in their portfolios, rather than their official certifications (as recognized by authors from the reviewed literature and in the study problem statement), a new paradigm pertaining legal requirements should develop, facilitating employment and social security to digital artists who have reached proficiency in informal settings. In order to consolidate such project, centralized efforts should come from teachers, students, creative industry companies, governmental and non-governmental institutions.
- Course developers should continuously keep learning state-of-the-art techniques and concepts pertaining digital illustration, as it is a constantly evolving field of study closely related to technological changes and entertainment industry dynamics.
- Resulted artworks from digital illustration workshops should be curated and later shown, through virtual and non-virtual events, with the aim to produce higher exposure and social networking for the emerging artists and teachers.
- Informal digital art workshops should be offered in multiple term-duration and content-level possibilities, hence allowing learning opportunities to a wider population.

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USING THE SHELTERED INSTRUCTION OBSERVATION PROTOCOL (SIOP) TO ADDRESS SECOND LANGUAGE DEVELOPMENT AND FOSTER MATHEMATICAL COMMUNICATION AND THINKING IN FOURTH GRADE MATHEMATICS LESSONS

Brayan Stiven Leguizamón Gomez

Early mathematics education forms the basis for not only mathematical ability, but also attitudes about one's ability. Students who experience difficulty with math early on often adopt a fearful and negative attitude towards mathematics in general. Supported by recent research and theory about mathematical thinking and with the added challenge of teaching in a second language in virtual classes, Brayan Leguizamón set out to use the SIOP Model to improve mathematical thinking and communication in fourth graders. The results are promising thanks to innovative online synchronous classes using a range of didactic and communication tools.

ABSTRACT

This research study, underlined by the action research approach, sought to identify the impact of explicit instruction on the development mathematical thinking, communication, and second language in fourth-grade mathematics lessons at a private bilingual school. In total, 24 students participated. Due to the COVID-19 pandemic, the intervention was conducted through remote learning, and all the strategies and activities were developed and adapted to a virtual learning scenario. Data collection instruments included a reflective research journal, learners' artifacts, periodic reports, and questionnaires. Findings demonstrate that students' language ability and use increased when math lessons turned to interaction-led instruction. Furthermore, the activities implemented helped students not only increase their mathematical thinking and competence in the language of instruction, but also their positive engagement with the lessons and cooperation with peers. In this light, findings suggest that the lesson framework used in the school needs modification in order to effectively achieve bilingual instruction practices, and that a focus on interaction and discussion may result in multiple opportunities to improve language skills, mathematical thinking and communication.

Key words: Mathematical thinking, SIOP, Mathematical communication, Second language learning, Remote learning



RESUMEN

La investigación acción del presente estudio buscó identificar el impacto de la instrucción explícita en el desarrollo del pensamiento matemático, la comunicación y el aprendizaje de un segundo idioma en las clases de matemáticas de cuarto grado en un colegio bilingüe privado. 24 estudiantes participaron en total. Debido a la pandemia del COVID-19, la intervención se llevó a cabo bajo la modalidad de aprendizaje remoto; de igual manera, todas las estrategias y actividades fueron desarrolladas y adaptadas a un escenario de aprendizaje virtual. Los instrumentos para la recolección de datos incluyeron un diario de campo, artefactos de los estudiantes, reportes periódicos y cuestionarios. Los resultados demostraron que las habilidades y el uso del idioma de los estudiantes aumentaba cuando las clases de matemáticas adoptaron un enfoque basado en la interacción. Adicionalmente, las actividades implementadas ayudaron a los estudiantes no solo a aumentar su pensamiento matemático y su competencia en el idioma de instrucción, sino que contribuyeron con su compromiso con las lecciones y su cooperación con pares. Los resultados sugieren que el formato de la clase usado en el colegio necesita ser modificado para asegurar practicas de instrucción bilingüe; dichos resultados sugieren además que un enfoque centrado en la interacción y la discusión puede provocar múltiples oportunidades para mejorar las habilidades en el idioma, el pensamiento matemático y la comunicación.

Palabras clave: Pensamiento matemático, SIOP, comunicación matemática, aprendizaje de segunda lengua, aprendizaje remoto

INTRODUCTION

Learning mathematics in a second language has become a trend in education due to the influence of economics, globalization, and recognition of English as an international language for knowledge acquisition and communication (Crystal, 2003). Schools in many parts of the world implement the teaching and learning of content areas through a second language, especially in subject areas such as mathematics, science, and technology. Now that schools are turning to second language or multilingual immersion settings, many questions have emerged regarding effective implementation, teachers' professional development and second language development. Communication has come more into focus by identifying the role of language in the mathematics classroom, the way mathematics teachers adapt communication to their lessons, and how mathematics can be used outside the classroom.

In addition to these tendencies, current trends in mathematics education highlight the importance of communication and questioning as the basis for developing mathematical thinking. Theoretical examinations of mathematics teaching and learning can provide the basis for implementing communicative tasks and planning for communication in the learning of mathematics that not only help students understand math and adopt an active role, but also allow them to achieve and develop mathematical thinking.

The existing literature on mathematical communication and language development with English language learners (ELLs) is extensive in English-speaking countries. However, there are relatively few studies in the Colombian context. The literature identifies the benefits of implementing and planning for communication and interaction in order to address language development and thinking, especially in bilingual immersion settings. It also highlights the need for professional development and teacher awareness in order to teach mathematics effectively to ELLs. Research findings affirm that to foster communication, mathematical activities should stimulate talking and engage students in discussion. This classroom talk should be focused on sharing experiences, promoting

sense-making as well as fostering collaboration and different types of interaction.

Studies have also explored effective teaching strategies to teach ELLs. Most call for attention to sociocultural approaches, in which learners are engaged and active in their learning process. Specifically, the research highlights dialogic discourse, sociocultural perspectives and reciprocal tutoring to achieve meaningful deep communication in the mathematics classroom. In general, findings have identified promising benefits to helping students become active learners, social risk-takers, and peer tutors. The SIOP model in particular has been found to be effective in addressing both content and language and aims for better and structured instructional practices to improve ELLs' understanding and academic language skills. In regards to the benefits and opportunities the SIOP model offers to English Language Learners, this study analyzes the efficacy of the SIOP model to improve language development as well as mathematical thinking and communication with fourth graders.

Problem Statement

Learning contexts where the language of instruction is different from the home language require sufficient teacher training to effectively support and achieve the learning of content and language. The setting for this research was a private school that adopted a bilingual immersion curriculum in 2012, and since that moment has been training teachers in methodologies to achieve high standards in education. Particularly, in the mathematics classroom, the school has implemented the CLIL approach together with the Singapore method as tools to provide classrooms with effective bilingual teaching practices. However, even though there is a common understanding on the use of these methods for teaching math, teachers in general do not include essential components of these models in their math lesson planning. Specifically, this means that students often do not receive instruction on how to appropriately communicate about math and find it difficult to express their opinions due to the limited opportunities for them to communicate ideas.

In terms of learner behaviors, diagnostic inquiry in the setting revealed the tendency for students to remain passive and wait for the teacher's guidance before beginning to solve tasks. This passiveness in mathematics limits students' opportunities to discover or examine the language of math by themselves and prevents them from reaching deep levels of understanding. Passive learners also tend to see the teacher as the only source of knowledge, meaning that there are no alternatives to consider different understandings of math problems, for example. Klein (2000) argues that the less active students are the fewer opportunities they have to make conjectures, explore or argue mathematical ideas. On the contrary, in environments where mathematics is seen as a discourse activity, learners encounter opportunities to negotiate and communicate about math, in this way fostering active involvement, which later results in life-long learning (Klein, 2000).

Current trends in mathematics education highlight the importance of communication and questioning as the basis for developing mathematical thinking, especially with ELLs (Moschkovich, 2018). This means that teachers must encourage children to communicate and explain their thinking in environments where deep and sustained interaction takes place. Therefore, implementing enriching activities that promote the development of language as well as mathematical thinking and communication improves mathematics teaching practices in environments where the language of instruction is different from the home language. These current trends in mathematics also call for structured opportunities where interaction and communication take place. The lack of opportunities for students to recall previous knowledge, compare, contrast, discuss, or conjecture results in limited mathematical thinking and reasoning. Planning for structured opportunities for language development in mathematics is crucial since interaction and talk allow learners to develop higher-order thinking skills.

The math curriculum in the institution is designed based on units of content rather than skills, and the planning scheme does not allow for explicit inclusion of interaction or language development. Likewise, the scheme does not ask teachers to establish language objectives, plan for interaction, discussion or

communication. Therefore, it was the assumption of this project that explicit planning for and inclusion of components would likely promote effective language development and content acquisition.

PURPOSE OF THE STUDY

This study aimed to identify how the SIOP method might address language development in the mathematics classroom so that students improve their language competency, as well as which SIOP elements benefit students' mathematical thinking and communication in a bilingual immersion setting. Once implemented, the study was interested in analyzing the ways that students interact with their teacher and peers during a mathematics lesson and the role language plays in the processes in mathematics lessons

LITERATURE REVIEW

A growing number of studies focus on the issues and challenges of mathematics instruction in English, especially with learners whose home language is different from the language of instruction. These studies focus on teaching mathematics in multilingual classrooms, professional development in bilingualism, and the development of communication skills in mathematics (Coggins, 2014; Kareva & Echavarría, 2013; Moschkovich, 2007, 2014). The common factor found is that communication and language development play important roles and that teachers currently face many challenges to ensure access to both content knowledge and second language development (Takeuchi, 2015).

The studies reviewed here focus on the implementation of teaching strategies, including dialogic discourse, sociocultural perspectives, and reciprocal tutoring to achieve communication in the mathematics classroom, as well as language factors and linguistic difficulties affecting students' mathematical performance. Most of the studies identified were implemented with teachers and

students from elementary and middle school, especially in ELL contexts. The studies address characteristics and the influence of mathematical communication in the process of developing ELLs' mathematical competence and literacy, and strategies to address ELLs' communication skills. In general, findings suggest that mathematics lessons need to be planned in detail to provide students with opportunities for language and content development. Further, the literature highlights the importance of professional development to address English Language Learners.

Mathematical Communication and Instruction with English Language Learners

Developing mathematical communication has become a goal in the learning of mathematics. The National Council of Teachers of Mathematics (NCTM, 2000) recognizes the need to develop mathematical communication skills to express mathematical thinking and ideas correctly, analyze and assess the mathematical thinking of others, and consolidate conceptual understanding. When teaching content areas through the medium of a second language, teachers must not only focus on content instruction but also on second language development. For this reason, research argues the importance of professional development in the field of second language acquisition and communicative approaches. The studies highlighted in this section focus primarily on identifying the importance of communication in the learning of mathematics as well as how teachers' instructional perspectives affect ELLs' performance and participation. This review analyzes eight research studies conducted in the United States, South Africa, Indonesia, Malaysia, and Ireland. In general, findings suggest that communication is pivotal in mathematics lessons, and that teachers' training and perspectives are factors underlying student participation, performance and success.

Research has investigated the importance of communication in mathematics practices as well as the need to provide students with opportunities and activities that foster the development of communication skills. Rohid et al. (2019) stressed the need for

attention on mathematical communication skills in the mathematics classroom since these help learners reflect on their thinking and reasoning. In their study with eighth-grade students, they found that students lacked skills to communicate their work and equations. This was due to the lack of opportunities and enriching activities to develop communication skills.

Chew and Lim (2007) identified the importance of professional development for the appropriate implementation of mathematical communication. In their study, they analyzed how teachers implemented the language policy that asked them to teach mathematics in English. Their findings evidenced that teachers lacked the skills or conceptual understanding to implement mathematical thinking and communication in English. Thus, without the proper training, they did not provide students with opportunities to develop language or content. As a result, teachers tended to shift to the L1 to help students identify and understand mathematical concepts. These findings suggest that there may often be limited opportunities for language development in mathematics classrooms, and that this may affect ELLs' performance.

In this line of inquiry, Moschkovich (2007) identified in her review three main teaching views of mathematics instruction with ELLs, which depending on the emphasis, affect students' performance in a variety of ways. The main purpose of this review was to identify how vocabulary-based teaching, construction of multiple meanings, and participation in mathematical discourse practices affected the instruction of mathematics and language. This study analyzed different middle schoolers' conversations and described how a primary focus on vocabulary and on multiple meanings in the mathematics classroom did not promote effective development of mathematical communication skills. This was because the teacher only checked whether students identified the meaning of the mathematical language and its differences with the L1. On the other hand, Moschkovich asserted that an emphasis on implementing mathematical discourse practices not only provided students with the development of mathematical but also linguistic skills because the students had opportunities to negotiate meaning, discuss, examine others' ideas and so on.

In terms of discourse patterns, Truxaw (2020) and Petkova (2009) identified how teachers' emphasis on univocal tendencies in mathematics practices provided learners with only limited opportunities to use language purposefully. Truxaw's (2020) study identified the verbal moves, exchanges, sequences, and episodes of discourse associated in several classrooms, but only focused their results and findings in one first-grade mathematic lessons, and the appropriate model of teaching (deductive or inductive) that promoted students and the teacher to use dialogic discourses. The findings evidenced that there were predominant univocal tendencies, characterized by monologic talk, or leading talk where the teacher leads most of the interaction, and inert assessment where teacher's feedback is mainly based on simple phrases such as "good job" or "that is incorrect." These patterns of discourse did not allow students to be active in the learning. On the contrary, in moments where the teacher tried to use dialogic tendencies (e.g. exploratory talk, accountable talk, and generative assessment), together with supporting moves (think time, visuals, use of L1 and code-switching), students were able to exchange ideas, think, and build mathematical meaning. Additionally, Truxaw observed mathematics lessons in order to identify whether these featured deductive or inductive models of teaching. Findings identified that the first-grade teacher implemented a partially inductive model of teaching. Although the teacher focused on individual representations, she did not move the class towards generating mathematical ideas. These findings suggest that using more exploratory verbal moves with different types of interactions (partner talk, teacher-student, student-class, accountable talk where students based their interaction on arguments, and generative assessment with open questions such as "What do you think?" "Why do you think that?" "Do you agree or disagree and why?"), accompanied by inductive cycles of teaching support foster dialogic discourse and help learners move from particular mathematical situations to more general mathematical understanding.

Similarly, Petkova's (2009) study identified the role of teachers in mathematics classrooms with ELLs. Findings showed that teachers tended to change their patterns of discourse in the presence of ELLs, and used several strategies to ensure students' understanding.

However, these discourse changes neither challenged nor fostered learners to use the target language effectively to share experiences or build personal knowledge. In other words, the questions teachers asked did not provide opportunities for learners to justify or explain conclusions. Most of the discourse teachers used was based on yes/no questions and one-word answers. Therefore, ELLs were not granted opportunities to use their communicative skills. The study strongly suggests the need for student-centered discussion with more open-ended questions requiring explanations and justifications of answers. This type of communication would foster the development of higher-level thinking and problem solving.

Studies identifying the benefits of communication in the mathematics classroom have also recognized the teacher's role in ensuring meaningful mathematics practices. Dominguez (2017) analyzed how students became social risk takers when the language of instruction or the language used by the teacher facilitated understanding. This study addressed the way teachers supported mathematical discussions and empowered ELLs to be active participants. The findings of this research identified that situating activities within the school context benefited students' understanding of math. Therefore, students were able to take risks at trying to come up with a solution using mathematical situations they were familiar with, taken everyday activities in the cafeteria, playground, soccer field, cartoons, and so on. This implies that embedding familiar situations in mathematics problems may promote not only discussion but also supports understanding of unfamiliar situations or advanced mathematics. In other words, the use of familiar contexts encouraged students to feel safe to take risks and make meaning. According to the findings of this study, in order to promote mathematical discussions, it is important to look at how the activities promote and engage students' previous experience and form a bridge to their contexts.

Strategies to Address English Language Learners' Communication Skills in Mathematics Practices

Several studies identify the importance of communication in the mathematics classroom and analyze pedagogical strategies to achieve mathematical communication among learners, especially ELLs. Within these studies, researchers identify the importance of equitable practices, reciprocal tutoring activities mediated through technological devices, facilitating students' comprehension through simpler and clear discourses, the implementation of the SIOP model, and others. These strategies appear to be beneficial for development of both academic and language skills. These studies reviewed were conducted in South Africa, Colombia and The United States.

The implementation of sociocultural perspectives in education generally invites teachers to conceive learning as social and cultural practices and recognize the importance of participation, construction of knowledge, and implementation of learning communities. Thus, students are thought to be those who construct their own meaning and understanding (Moschkovich, 2007, 2013). Some researchers in this section argue for the implementation of equity and equitable practices to achieve not only language development but also performance in the learning of mathematics.

Banes et al. (2018) analyzed the benefits of classroom discussion as an equitable practice. In this study, the researchers identified the impact of discussion on mathematical performance of third and fourth grade students. Even though the findings showed a slight improvement in those classrooms where discussion-based activities were implemented, the strategy did not have a huge impact on the mathematical tests. However, Banes et al found that providing communication opportunities to all learners regardless of their language proficiency was beneficial since the learners who were not proficient or had limited communication skills felt safe participating.

Similarly, Borgioli (2008) stressed the need for equitable practices where all students are given opportunities to communicate by using any means regardless of their language proficiency. In this

descriptive study, Borgioli analyzed the tasks, tools, and classroom communication and participation norms needed to support the learning and understanding of ELLs. Within these, language needs to be seen as a resource to engage learners rather than treated as a learning problem. This implies that classrooms pursuing equity must be safe and nonthreatening places where all kinds of thinking and reasoning are valued.

In terms of students' ability to access the language of mathematics lessons, assessment materials including complex language or language at a higher level than the learners might affect understanding and academic performance. Sibanda (2017) analyzed the factors involved in the poor results in a mathematical test (ANA, Annual National Assessment) for fourth grade in South Africa. The findings showed that the exercises on the mathematics section of the test included unfamiliar language and complex grammatical structures. These factors worked as barriers to analyzing students' real mathematical competence and performance. Moreover, students in South Africa start their bilingual immersion program in fourth grade, meaning that after one year of exposure to the language, students were not able to understand the level of English on the test. Findings suggested assessing students' mathematical performance based on their level of proficiency.

A similar study identified the factors affecting students' comprehension of word problems in second grade in a school in the US. In this study, Ambrose and Molina (2014) asked their population to read and retell different word problems in Spanish and English. The findings identified that syntax, vocabulary and cultural relevance were factors that affected students' comprehension of mathematical situations. Students only had problems retelling when they were not able to understand the situation (division problems) and were unfamiliar with certain language and concepts specific to mathematics. Additionally, retelling was a tool that led teachers to identify learners' language proficiency, and mathematical problems helped learners' understanding if they were aligned to personal experiences. This study suggests that implementing story problems and mathematical tasks that are familiar to students' contexts can empower them to plan and make sense of their answers.

Another strategy found beneficial to encourage the learning of language as well as content is found in Yang et al. (2016). Their study aimed at identifying the benefits of reciprocal tutoring in the development of mathematical communication. They developed Reciprocal Peer Tutoring Mathematical Communication (RPTMC) activities in order to implement them in everyday mathematical activities, namely creating (modeling the situation with sketch board), reciprocal peer tutoring (students analyzed each other's work and received feedback from classmates), revising (students implemented changes according to their classmates' feedback) and staging (whole class discussion and analysis with the use of a "sharing zone"). The findings showed an increase in students' ability to express their mathematical concepts, understand others' equations and thoughts when they played both roles as tutor and tutee. They were also able to perform activities including negotiating meaning, providing explanations, asking questions, and defending their processes to their classmates and in whole-group discussions. This study is also considered relevant to the use of peer tutors and tutees in mathematics since it allows learners to express their mathematical concepts and understand others' ideas and thoughts.

Within strategies that allow students to develop mathematical communication and provide them with opportunities to develop the second language effectively, the SIOP model has continued to evolve since its development and has shown benefits for ELLs. Kareva and Echevarria (2013) presented a systematization of mathematical practices using the SIOP instructional framework, which allows for structured and organized content delivery to meet the needs of L2 students. SIOP includes eight main components: lesson preparation, building background, comprehensible input, strategies, interaction, practice and application, lesson delivery and review and assessment. Findings in the study identified the potential of SIOP in lessons for ELLs since it fosters and provides opportunities for language development and content acquisition. Prior studies from Vidot (2011), and Willaford (2011) validated the benefits and efficacy of this model of instruction and highlighted the importance of raising teachers' awareness for providing language development opportunities and strategies to ELLs. Both studies analyzed teachers' perspectives

towards the implementation of SIOP. After classroom observations, and teacher interviews, they evidenced teachers' positive attitudes and dispositions toward SIOP, who considered it as a value-added necessity in classrooms since it addresses language problems and needs to ELLs.

Components similar to the SIOP method were found in Chval et al.'s (2015) case study. Their study aimed at providing a teacher with instructional strategies to address English Language Learners. Even though they did not use the SIOP model, they suggested following four main components that are similar to SIOP, namely supporting the development of mathematics (lesson preparation), supporting the development of language, enhancing mathematical tasks in curriculum materials (comprehensible input, strategies), and establishing, facilitating and maintaining productive classroom interactions (interaction, practice and application). The findings evidenced that the teacher changed and improved their approach toward ELLs and invested time to analyze the language from the perspective of ELLs and support understanding, increase their participation, engagement, involvement and interaction with classmates. With this support, ELLs improved their participation in whole-class discussions. It can be generalized from this study that teachers need considerable investment of time and professional preparation to develop skills and acquire knowledge to address ELLs.

METHODOLOGY

Research Design

This study was framed in the action research paradigm. Action research works as a systematic approach to improving teaching practices and is used to identify the effectiveness of teachers' interventions in the classroom as well as how these may shape future actions. In action research, teachers develop a reflection-in-action mindset that helps them to be self-correcting and conscious of day-to-day classroom needs (Pelton, 2010). In action research, teachers adopt

a monitoring role in which they not only self-evaluate, evolve and improve their own teaching techniques and strategies, but also keep an eye on student learning in a constant cycle of action, data, and reflection. Cohen et al. (2018) also identify this *reflexivity* approach and consider it central in every stage of action research.

In this way, this study served as a guide to identify the impact of the SIOP model in mathematics practices to improve mathematical thinking and communication. To address every session, the researcher planned mathematics lessons by using the SIOP model, constantly recorded and evaluated its effectiveness, and adjusted the implementation along the way.

Context

The context in this research study was a bilingual private school located in Bogotá, Colombia. This institution has its educational foundation based on a socio-critical and communities of practice pedagogy and has adopted a bilingual immersion program since 2012. Generally, bilingual teachers are asked to implement the CLIL approach, and some them have been trained in the British Council's course program CLIL Essentials (including the teacher-researcher). Likewise, in the mathematics practices, teachers not only implement CLIL but also the Singapore math method. Singapore math seeks to improve mathematical practices with the use of the CPR (Concrete, Pictorial and Abstract) model. This model seeks to enhance students' mathematical understanding starting with the use of concrete material, then moving to the use of graphical representations, bar modeling and tables, to finally generalize ideas with abstract mathematics.

In spite of these curricular models, the teacher-researcher in this study identified numerous issues in the English language mathematics classroom. First, the current institutional planning scheme did not ask teachers to plan for interaction or development of productive skills. Instead, it only asked teachers to include general ideas for the term, described a few activities and made sure that the activities were aligned to the assessment criteria. Another issue identified in informal diagnostic inquiry prior to the intervention was that students struggled with problem solving due to

the lack of opportunities to understand math concepts, understand mathematical language and register, negotiate meaning, and make connections among units. Issues related with problem solving were related to the lack of opportunities for language development and acquisition. Sometimes students did not understand the idea of problems due to unfamiliar language or vocabulary. Thus, it was not possible to identify if the poor performance had its roots on mathematical understanding or language itself.

Approval for this project was sought and obtained from the institution via e-mail. Principals and coordinators were interested in the proposal and were seriously considering the implementation of the SIOP Model in the future. Due to the recent worldwide COVID-19 pandemic, the institution adopted remote and virtual learning with the use of the platform Microsoft Teams. Parents' informed consent was obtained through responses in Google Forms. Additionally, the intervention and data collection were virtual processes.

Participants

The participants in this study included twenty-four male and female fourth graders (aged nine to ten years old). Most of these students had been exposed to English as the language of instruction for about five years, some of them less depending on the grade in which they entered the school. In general, students demonstrated positive attitudes and dispositions towards the learning of mathematics. However, the teacher researcher identified that their language proficiency in mathematics had not been analyzed or reinforced. This was identified through activities asking them to create mathematical problem situations corresponding to particular mathematical expressions, for example addition of fractions. In these types of activities, students were unable to pose accurate situations that represented the actual mathematical problem. Additionally, students struggled expressing their ideas in the L2 and made common errors in spelling, syntax and coherence. They frequently asked the teacher to let them use the L1 to participate or ask for clarifications.

The teacher-researcher also noticed that most of the time when dealing with difficult tasks, students would wait for him to guide them on how to start without even thinking about what they might do to solve the task. Even though these students had received mathematics instruction in English for about five years, some were unable to verbalize their thinking coherently. They failed to speak, explain their thinking, explain mathematical processes to their classmates in the target language, or convey meaning. Sometimes the learning of mathematics failed due to the lack of linguistic competence. Since English is not their home language, students did not use it outside the classroom, and therefore, the vocabulary they learned was not used nor transferred to a different context. Few students were engaged in discussion autonomously while others waited to be called on. In sum, they were not accustomed to using the target language or were afraid to take risks with the language or make mistakes.

In relation to classroom communication, it was interesting to note that the worldwide situation of the pandemic, and the implementation of remote teaching and learning influenced the classroom in a variety of ways. Some students considered as extroverts in in-person teaching changed and their participation decreased when using the camera and microphone. The teacher-researcher implemented several strategies to improve such behavior including asking the school psychologist for advice, parent-teacher conferences, and teacher-student meetings. On the contrary, other students benefited from the situation and were more active participants and committed to the learning of math.

Prior to the intervention, the teacher shared the research study with students, the purpose and the types of activities they would have along the way. Thus, students were aware of the pedagogical intervention in order to get their opinions and perspectives at the end of the intervention. The teacher-researcher was also a participant in this project. Cohen et al. (2018) find this role common within action research and identify it as *participant-as-practitioner-and researcher*. This role asks the research to adopt objectivity, neutrality and transparency in regards to the results of the research. In other words, conclusions need to evidence clarity and justifiability.

Data Collection Instruments

This research aimed to identify the impact of the SIOP method on students' language development, mathematical thinking and communication. As such, the instruments that were used to register the intervention included a reflective research journal, students' artifacts and questionnaires.

Reflective Research Journal

This instrument allowed the teacher-researcher to reflect upon the implementation of SIOP components as well as interactions, discussions and insights. The implementation of the field journal was important since it helped the teacher-researcher to analyze future actions and possible changes to make better interventions in the teaching and learning. Within this field journal, the researcher analyzed three components, including mathematical thinking, mathematical communication and language development as well as particular aspects identified in the lessons. This instrument served to systematically identify students' interventions, routines in terms of formulating mathematical ideas (mathematical thinking), use of mathematical language (mathematical communication) and language use (syntax, spelling, coherence).

Student Artifacts

These artifacts included students' written assignments, evidence of work and students' products and reflections. They helped the researcher analyze students' language development and mathematical thinking, and they were designed for the research purposes.

Student Questionnaires

Cohen et al. (2018) identify questionnaires as widely used instruments that collect participants' insights and opinions. Questions vary according to the purpose of the research as well as the type of wording in regards to the population. A preliminary questionnaire was included in order to register students' opinions about

the type of activities they enjoyed, their behavior, attitude and participation in the mathematics classroom. The second questionnaire allowed the teacher-researcher to analyze students' perceptions toward the intervention, the activities and the project in general. This questionnaire was conducted at the end of the intervention. Both questionnaires were given in Spanish, the students' first language, in order to have clarity and thorough reflections. This latter asked students things they enjoyed, things that needed to be reconsidered, the opportunities they had in the lessons, changes they found with the intervention, the types of opportunities they found to develop the L2, and so on.

Pedagogical Intervention

This research project was conducted under action research, taking into account Pelton (2010), who identifies action research as a "systematic approach to improve teaching practices" (p. 3). This approach can be used to answer the effectiveness of teachers' interventions in the classroom, and how these will shape future actions. Following Pelton (2010), five stages are developed within the action research process to carry out any pedagogical research project. These stages range from 1) the identification of an issue that teachers consider important to improve and investigate, 2) the collection of data that organizes the information through steps, 3) action planning design after setting how to address the issue, 4) plan activation or the moment when researchers act in the classroom and 5) the outcome assessment process in which the experience and the reflection upon the actions is analyzed.

Preliminary Intervention (Issue Identification)

The academic year in the institution is divided into four terms, each term divided into seven cycles. Each cycle has six days and within these, students receive seven 40-minute mathematics lessons. For this study, the teacher-researcher began a preliminary intervention in which he became familiar with the SIOP planning, evaluated his planning and made corresponding adjustments. With this preliminary intervention, it was

possible to obtain a clear idea of students' language proficiency level, interaction and participation in mathematics classes. In these interventions, the teacher-researcher asked students to write mathematical situations to have a clear idea of their vocabulary, mathematical language and use of expressions. Lessons included more interaction activities in which students were asked to explain processes, evaluate their classmates' work and thought and analyze examples. The reflective research journal became the tool to record insights of students' interactions, written assignments, quotes, phrases and thinking as well as which SIOP components implemented in the lesson, future interventions and changes in the planning.

After observing lessons and students' performance, it was possible to evidence and determine that students were not able to communicate mathematical ideas, and that lessons were mainly focused on procedures and cycles of practice and drills. Even though the teacher used only the L2 to teach and supported students with vocabulary, students had limited opportunities to communicate ideas, express their thinking and reasoning, or participate actively in class.

In order to diagnose the preliminary situation in the classroom, the teacher-researcher implemented activities asking students to create mathematical situations (pose problems) according to a given exercise, and analyzed their performance in a field journal. These results allowed the teacher-researcher to identify that students did not have opportunities to develop or use language, that their written assignments lacked coherence, that most of them were unable to clearly describe the exercise. Spelling mistakes were predominant.

Intervention (Action Planning, Plan Activation and Outcome Assessment)

The activities implemented during the preliminary stage were planned following the SIOP model. The Sheltered Instruction Observation Protocol (SIOP) model is an effective way to increase the opportunities of students' involvement in the class and facilitate their learning of mathematics as well as their mathematical

communication skills. Consequently, the SIOP method provides opportunities for students to develop mathematical thinking and communication as well as language development: "Language acquisition is enhanced through meaningful use and interaction" (Echevarria et al., 2008, p. 16). This method was developed with the need to assist non-English speakers in the learning of content areas. This was developed initially to assess and measure teachers' implementation of sheltered instructional lessons. However, it evolved and turned into a practical framework to enhance content and language delivery. It also includes eight components for instruction, which are listed and explained in Table 1.

Table 1. SIOP Components

Component	Description
Lesson Preparation	The teacher examines content and language objectives as well as content concepts, supplementary material and meaningfulness of activities.
Building Background	The teacher connects students' prior knowledge and past learning
Comprehensible Input	The teacher uses multimodal techniques to make content comprehensible to students. It includes modification of speech patterns according to learners' language proficiency.
Strategies	Learning strategies, scaffolding techniques and higher-order questioning.
Interaction	Selection of activities promoting interaction and discussion. Wait time and opportunities to clarify concepts in L1.
Practice/ Application	Activities that integrate all language skills.
Lesson Delivery	Monitoring the implementation and evaluating the content and language objectives.
Review and Assessment	Selecting techniques for reviewing content learning and key vocabulary. Providing feedback

In intervention, the teacher-researcher planned five SIOP lessons with units from the mathematics

curriculum established by the school. The units covered during the intervention were included multiplication of fractions, division of fractions, introduction to decimals and decimals. The SIOP lesson plan format was retrieved and adapted from John Seidnitz (in Echevarria et al, 2008) to include additional sections: teacher's reflection, detailed sections in key vocabulary, including content vocabulary, mathematical language, mathematical expressions and everyday language. Content objectives explicitly stated the development of mathematical thinking and communication.

Every lesson in the intervention included the interaction component in order to maximize mathematical thinking and communication. Lessons clearly stated in detail the type of activities in the interaction component, and changes were applied and varied according to weekly observations. During the intervention, the researcher kept a field journal with classroom observations (analyzed after every session), and an intervention log in Excel to organize data according to the types of activities carried out.

Teaching Tools, Activities and Strategies Implemented During the Intervention

The teacher-researcher implemented and planned for activities aimed to reinforce different types of interaction and develop mathematical thinking and communication. Some activities emerged later and were not included in all the lessons because they were product of teacher's reflections.

Tools. These tools comprise all the technological applications used to teach math lessons and to carry out the activities planned. Since most of the school year was mainly conducted through remote learning, the use of digital activities and applications were necessary for the lessons.

Collaborative Whiteboarding. Collaborative whiteboard activities aimed at asking students to use productive skills (writing and speaking) and check their classmates' contributions in order to promote interaction, discussion and analysis. Several tools were implemented.

Padlet. It allowed students to use voice recordings to explain mathematical situations (math talks) and express their thinking. With this app, students used writing and speaking skills to comment, see and listen to their classmates' work and contributions. This was also used to consolidate ideas. For example, "Mention three things you learned in the last unit" or "What are the steps used to multiply fractions? This way, the entire class had the possibility to check their classmates' work.

Jamboard. This application allowed students to connect at the same time and express opinions with sticky notes. The application was no longer used after the first cycle because students started moving, deleting and editing their classmates' work. Since they remained anonymous in the platform due to the lack of usernames and emails, they teacher could not appropriately follow or identify students with such behaviors. Even though not all students behaved in this way, they felt bad about the situation, so Jamboard was replaced with other apps. However, it is important to highlight the benefits of this platform to promote collaborative work.

Whiteboard.fi. This was the latest app used in the intervention. Thanks to this app, the researcher was able to check students' remote work and identify their strategies, understanding and thinking. This application also made it possible to address misunderstandings because it displayed a complete panel of students' synchronous work in each activity. In other words, students' work could be easily checked in real time. It felt like having students sit around the classroom instead of working remotely. Figure 1 illustrates a general overview of students' synchronous work.

Figure 1. Whiteboard.fi structure



Note. Teacher's panel.

Microsoft Teams. This software was acquired by the institution and was used to teach lessons in general. This platform was also implemented to conduct different activities such as the private chats.

Strategies. The strategies used during the intervention helped the teacher-researcher promote mathematical thinking and communication, as well as English. Most of these strategies were implemented through the tools mentioned previously. They included math *daily routines*, *verbalizing thinking*, *math talks*, and *private and whole group chats*.

Math Daily Routines. This idea flourished once the researcher started checking on students needed activities, asking them to reinforce skills and content previously learned. So, he began a warm-up activity, using a form to ask students to analyze dates with different mathematical skills such as factors, multiples, fractions, area model, Roman numerals, odd and even numbers, prime and composite (Figure 2). This way, students had opportunities to clarify concepts, reinforce mathematical skills, number sense and so on.

Figure 2. Math daily routine format

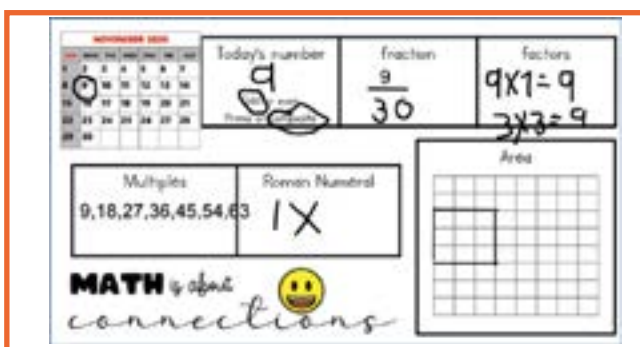


Figure 2 illustrates the structure and one student's example. The image represents how math daily routines looked like and worked in lessons. In this exercise, students analyzed the date through different mathematical concepts, multiples, factors, area model, representation in Roman numeral and concepts of prime, odd, composite and prime numbers. This student correctly provided each item. This exercise was later improved thanks to students' participation.

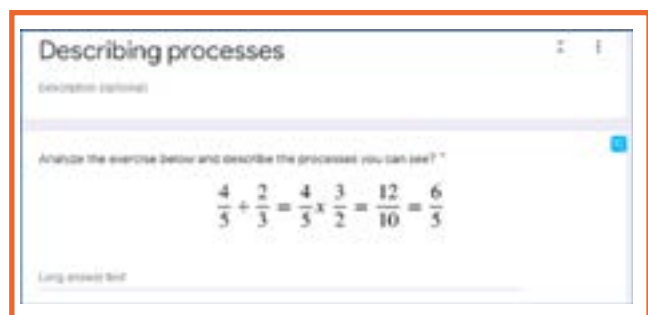
Everyone in the class had the opportunity to participate with *Whiteboard.fi*. Thus, the teacher-researcher could check students' progress, strategies and understanding in a synchronous way and in real time. Additionally, this activity allowed students to analyze their classmates' work and also receive the teacher's feedback to explain additional aspects of mathematical reasoning, such as describing a date with the use of fractions. Whole class discussion allowed students to evaluate their classmates' work. The teacher selected several exercises and invited students to analyze them in whole class discussion.

Math Talks. Math talks aimed at reinforcing mathematical thinking, number sense, argumentation, and discourse. Through different activities, students could express their thinking in a variety of ways, using drawings, recording opinions (Padlet), analyzing exercises, mistakes and so on. These types of activities worked in a cycle: the teacher presented the problem, students had some time figuring out the problem, students shared their work and thinking in little presentations, the class discussed, and the cycle started again. The math talks featured topics that students were already acquainted with, and were not used to introduce new content. This way, students were able to talk about things they felt confident about and familiar with. During the intervention, there were five math talks, at the beginning of each new cycle. To strengthen math thinking and communication, the teacher promoted dialogic discourse patterns in order to help and scaffold students' thinking, e.g., "Do you agree with [S' name]? Why?" "How did you figure it out?" "What did you think first when you read the problem?" and "Who did it in a different way?"

Verbalizing Thinking. In general terms, this strategy asked students to verbalize their thinking

about specific exercises. In most lessons, the teacher-researcher displayed an exercise without explaining, and asked students to write and describe what they thought was happening and how the numbers behaved. With these, the teacher could identify students' connections to previous skills, mathematical reasoning and thinking. These was used as a tool for students to analyze and try to understand mathematics on their own first. It also worked as a strategy to change unproductive behaviors observed in the preliminary stage. For example, the researcher identified that students were dependent on the teacher's explanation and would not take the first step to start analyzing math. Rather, they just waited for the teacher to explain to them what to do or what to think. They also waited for the teacher to determine if an answer was correct or not without gauging their own certainty. Verbalizing thinking was the vehicle to promote this thinking and communication needed to internalize and communicate understanding. Figure 4 illustrates one exercise and students' descriptions. Most of these activities were used to introduce new concepts that required steps to find the solution. However, they were not used to introduce the concept of decimals.

Figure 3. Verbalizing thinking exercise



Students' responses from verbalizing thinking exercise.

- S1. I don't now what we have to do.
- S2. We divide the first 2 fractions then you multipli and they simplify.
- S3. I think that the teacher first divide 4/3 later 5/3 and this result multiply by 4x2
5x3 and i think that

In the exercise in Figure 3, students were tasked with analyzing division of fractions and describing the procedure they identified. It was used to introduce the concept of division of fractions and elicit students' responses. Additionally, three responses were attached

in order to describe students' previous knowledge, thinking, understanding together with their ability to describe mathematical situations.

Private and Whole Group Chats. These activities were implemented in some lessons, and students were asked to have a five-minute conversation with a classmate discussing aspects from the last lesson, things they learned and things they considered they need more practice. The teacher was in charge of arranging groups. Students had also the opportunity to have a regular conversation with their classmates and raise what they did not understand from the last lesson as well as what they learned. Private and whole group chats were also used to clarify concepts, support students and provide a resource of knowledge other than the teacher.

Data Analysis and Interpretation

Data collected were analyzed following Cohen et al (2018) guidance on coding and content analysis. The added value of this approach is that it allows for authenticity, realism, personality, and emotions. The data analysis was performed on the pre- and post-questionnaires, artifacts, and reflective research journal. The data collection instruments provided information that supported categories based on the constructs of mathematical thinking and communication, second language learning and students' feelings towards mathematics practices. Periodic reports served as interim analytical documents to sum up selected findings at particular moments in the project.

Pre and Post Questionnaires

These surveys were conducted through Google Forms and included open and multiple-choice questions. Answers were organized by groups of themes. As mentioned in Cohen et al. (2018), this way, information is organized in order to respond to a particular or given issue and allowed for the creation of new themes and issues. Each response was coded and classified according to components related to instruction, materials, connections to math, perceptions and positive outcomes from the intervention. Both questionnaires were conducted in students' L1.

Student Artifacts

Raw data were collected, stored and classified according to artifacts and types of activities in internet using Google sheets in order to save students' products from all the activities planned. Every activity included a general analysis of students' performance and served as a tool to assess and modify content or activities for further interventions. Additionally, they helped the researcher to include comments and short reflections in the reflective research journal. Some artifacts were selected in order to support content analysis and present student performance presented in the section analysis and discussion. Furthermore, they provided information on the fostering of mathematical thinking and communication and second language learning.

Reflective Research Journal and Periodic Reports

The purpose of implementing a journal was to record and reflect upon class performance, student attitudes, assessment and reflection about the lessons which allowed further modifications in lesson preparation. It was also used to evaluate improvement and support the variables identified considering the development of mathematical thinking, second language learning and communication. The periodic reports were created with the aim of dividing, analyzing, and classifying data into units of meaning. Both the reflective journal and periodic reports were subsequently coded in the final data analysis, and triangulated with all other data inputs.

RESULTS AND DISCUSSION

The present study aimed to identify the efficacy of explicit lesson planning for second language learning, mathematical thinking, and communication in math lessons. Due to the COVID-19 pandemic, the intervention was conducted through remote learning, and all the strategies and activities were developed for and adapted to a virtual learning scenario. In terms of effect of this intervention in students, data collection and analysis reveal that students' language ability and

use increased when math lessons turned to interaction-led instruction. This dialogic instructional model benefitted students as evidenced in the increase in their engagement and contribution. Further, students not only increased their positive engagement, cooperation, and collaboration, but also their mathematical thinking and their competency in the language of instruction. This increased competency led to further evolution of discourse patterns in class since students began to feel free to talk and verbalize their thinking. Findings suggest that the school's lesson framework needs modification to make bilingual instructional practices to more effective. Further, lessons should include activities beneficial to students' mathematical thinking, reasoning and communication. The results and findings are categorized into second language learning in mathematics lessons, mathematical thinking and communication and students' feelings towards mathematics practices.

Second Language Learning in Mathematical Lessons

Research in language learning in subject content areas has been an interest for many researchers in recent years (Echevarría, et al., 2010; Moschkovich, 2013). Most identify the importance of interaction and communication to achieve not only understanding of mathematical concepts, but also the benefits in second language acquisition and learning. This research study helped the teacher-researcher identify the current situation in his math lessons and served as a tool to improve and enhance mathematical practices to his English Language Learners (ELL).

One of the goals of the research study was to improve student participation, and reinforce second language learning through explicit planning with the use of the Sheltered Instruction Observation Protocol (SIOP). Several strategies and activities were implemented to reinforce second language learning, enhance student talk, interaction, participation, and others. These activities were considered new and interesting for most of the students. With a preliminary intervention, the teacher researcher could identify learners' language proficiency level, level of participation, types of

interventions during math lessons and the amount of time dedicated to second language development.

Preliminary diagnostic inquiry in the setting revealed predominant discourse patterns that did not promote learners' use of higher-level thinking. These patterns followed typical and predictable structures similar to IRE (Initiation-Response-Evaluation) and IRF (Initiation-Response-Feedback) patterns (Gazden, 1988 as cited in Petkova, 2009). Students were rarely given the opportunity to discuss their answers with other classmates. These types of repeated structures are generally seen in teacher-led instruction. Here, only the teacher moves to higher-level thinking, and generalizes, synthesizes, analyzes ideas and conjectures in the lessons. If students do not engage in this talk and thinking they do not develop academic language effectively because teacher and student talking time are not balanced; rather, the teacher is the predominant speaker. This is the pattern that had been observed and was predominant at the school, including in the teacher-researcher's own classes.

During the intervention, the goal was to give students more opportunities to interact, think and communicate about what they were learning. In the activities, the teacher-researcher asked students to write, speak, interact with their classmates, and think. These activities served as opportunities to practice, express their thinking, and reinforce English in the math class. Students' language use and improvement was classified into both written and spoken products. During the intervention, students evidenced a significant improvement, demonstrating positive attitudes towards the use of digital applications, high level and active participation in each lesson and high motivation to learning mathematics.

Writing Exercises to Illustrate Language Use and Improvement

At the beginning of the intervention, in the preliminary stage, it was identified that students lacked opportunities to develop their second language. Further, they were unable to pose clear mathematical situations. Many of the artifacts illustrated this low performance

in written exercises due to few opportunities to develop language in class. For this reason, one of the ways to promote language learning in math was to implement writing exercises asking students to verbalize their thinking and understanding by describing mathematical situations, carrying out student-student interaction through private chats, and supporting students' participation with dialogic discourse patterns.

Although there was no explicit instruction in writing skills per se, the written exercises in math were helpful tools as they allowed the teacher-researcher to analyze students' understanding, thinking and use of mathematical register and mathematical concepts. In this sense, the teacher used these artifacts to re-teach, clarify ideas and assess previous knowledge. Some written exercises introduced new concepts, giving the students the opportunity to analyze and guess processes by their own, and other exercises assessed mathematical language reviewed in previous lessons.

In regards to the low performance in describing and posing mathematical problems, in one exercise students were tasked with posing a mathematical problem within a context to the following addition of two fractions:

$$2/3 + 5/8$$

This problem was presented without a context. Students were expected to provide this context and the problem. Some student responses included the following:

S1: *I have 2 packages of gummies in one and 3 gummies and one is red in the other package and 8 gummies and 5 red y despues las puse en un tarro abia 7 rojos y 11 blancas*

S2: *You and Carlos ate pizza, the pizza have 8 slices Carlos don't ate nothing but you ordened other pizza have 3 slices your friend Carlos ate 2 slices of 3 slices they asked for the, the bill was 2 8-part and 3-part pizzas they added what is the score?*

S3: *in two boxes with apples one have 3 apples and take 2 and the other box have eight apples and I take 5 who apples take of the total boxes*

S4: *Brayan has two terths of a hot dog in your suitcase and he has fife eighths of a hamburger he eat three sevenths how much has left.*

The examples illustrate how students struggled with language since they were not able to clearly state a situation related to the addition of these fractions.



Further, students did not possess a clear idea of fractions because they separated the numerator from the denominator as separate things (S1, S2). Students 3 and 4 used clear representations of fractions, but the situations they provided did not address an addition problem. Additionally, the class mentioned that they had not received any instruction in problem creation, nor had they had similar exercises in previous school years. Even though most of the students were able to set a context, create characters and use some key words related to addition, the situations were unclear and lacked coherence. These responses clearly illustrate that the class was not used to solving this type of exercise.

The intervention provided students with chunks of vocabulary and structures for describing math concepts, and this allowed them to improve their writing, using appropriate math vocabulary and common expressions. Writing tasks introducing new concepts aimed to identify students' prior knowledge and connection to new concepts. The figure below illustrates students' description and analysis of the processes used to multiply the following fractions:

$$3/5 \times 4/8$$

The exercise was displayed with its corresponding solution. Students' task was to analyze the exercise, recall previous information and try to figure out the correct process to solve it. This exercise was developed using Google Jamboard, which allowed learners to work together and see their classmates' thinking. At the end of the activity, the class analyzed each response and the teacher provided feedback.

Figure 4. Description of mathematical processes embedded in multiplication of fractions



Figure 4 illustrates students' responses to the exercise on multiplication of fractions. It is evident that most explanations start with an introduction: "I think the teacher bryan..." "the teacher first..." and connected their ideas with common linking words "Next the teacher..." "and later..." "and then...". In terms of mathematical language, students connected the concepts of *numerators*, *denominators*, *simplification*. Additionally, the figure illustrates the final product after the whole class discussion. The teacher underlined or circled items to draw student's attention to them, correct spelling, and identify accurate responses. Most of the corrections were mentioned by the students who supported their classmates' opinions with positive feedback.

These types of exercises provided the class with significant opportunities to communicate their ideas and thinking, and allowed them to use the target language regularly and transfer knowledge acquired in the English, allowing the connection of skills. Digital activities and applications were included in the virtual classes twice a week. Over time, it was interesting to notice how students gained expertise, not only in improving their participation and putting their productive skills into practice, but also in how they effectively used each application and managed to quickly acquire the skills needed to use it without difficulty.

A second exercise for students to verbalize their thinking asked them to figure out how fractions were divided with the prompt: *Analyze the exercise below and describe the processes you can see.*

$$\frac{4}{5} \div \frac{2}{3} = \frac{4}{5} \times \frac{3}{2} = \frac{12}{10} = \frac{6}{5}$$

Students' answers were assessed and coded according to the type of responses. Since the activity was used to introduce the concept, vocabulary regarding division of fractions was not provided. Thus, students had to use the vocabulary previously learned to describe the situation. This activity helped them connect mathematical concepts of multiplication and simplification with division.

Figure 5. Students’ responses and their classification according to an assessment rubric

Accurate	Inaccurate	Incomplete	Unclear
The student clearly identifies the situation and explanation is correct	Student’s description is different from the correct process	The student uses correct mathematical procedures but misses key aspects	Student’s description is not clear and lacks coherence
Student Responses			
S1. first is to divided 4×2 and next divided 5×3 and next multiply the results, next you haf and you have your answer			
S2. the first step is divide the first two fractions, the second step is multiply the other two fracctions and then you will see your results of the problem.			
S3. the teacher divide the number and later multiply the ansewr and divide			
S4. first the teacher multiply 4×3 and 5×2 and the he divided the 12 and 10 in 2.			
S5. TO DIVIDE IVIDE FRACTIONS I MUST CANGE THE NUMERATOR AND DENOMINATOR OF THE SECOND FACTIONAL AND DO NORMAL MULTIPLICATION AND SINPLIFY			
S5. First we have a processes of a multiplication in a cross mode and next we divide.			
S6. is correct that’s how we divide fraction			
S7. I changes the numerator for the denominator in the second fraction and i multiply them i simplify			

This exercise illustrates how students employed a wide range of mathematical language. Some identified previous processes such as dividing or simplifying the answer and multiplying. Even though spelling was a common issue, the message was clear, and it is interesting to note that most students organized their ideas with linking devices (S1, S2, S3, S4, S5). These types of exercises allowed the teacher to identify understanding of concepts, and the ways learners communicate processes and verbalize their thinking and understanding. Further, it also provided evidence of students’ ability to face exercises without explicit instruction by giving them the opportunity to try to figure out mathematics by themselves. In this sense, learners were able to assume an active role in the acquisition of skills and information.

Additional activities used to promote language included the use of private chats with the aim of both practicing writing and activating prior knowledge. In several lessons, students were distributed in pairs and asked to have a conversation with their classmates about things they learned in class, things they did not understand, and situations in their daily life. General

findings highlight that students initially struggled with simple discourse routines and limited themselves only to fulfilling the teacher’s directions. The following excerpt presents two different conversations of students talking about things they learned in class. Conversation 1 represents one conversation at the beginning of the intervention and Conversation 2 illustrates the last private-chats activity.

Conversation 1

- S1. Hello [S’ name]
- S2. Hello [S’ name]
- S1. What do you do in this weak
- S2. You mean what I learned last class
- S1. Ok, we learn in what possishion put the numbers qual we learn that wen we add and multiply no matter the orden we substrack and divid yes dived.
- S2. I learned to divide fractions because I was not understanding so well.
- S1. And like all the classes dived fractions



S2. *Yep*

S1. *Oooo I can help but other day*

S2. *O, thanks*

S1. *The time is up*

Conversation 2

S1. *Hello how are you today*

S2. *I am fine thank you and you*

S1. *Fine thanks for asking. What you learned last class?*

S2. *The hundreds*

S1. *I learned to use the hundreds in the place value chart*

S2. *Ohhhh thats interesting cool :D*

S1. *At first, I was not understanding and then I am understanding so well!*

S2. *Ok and I also learned to use whiteboard!*

S1. *Me too I learned to use correctly the place value chart*

S2. *Ok now we have to go to class Bye*

S1. *By Daniela, have a great day!!!*

S2. *Have a great day you too!*

Conversation 1 illustrates a common conversation structure among students at the beginning of the intervention. In general, students limited their conversations to simply fulfilling what they were asked to do. It can be observed that learners' conversation skills were limited as proof of the lack of interaction opportunities between students in math lessons generally, and the lack of discussion about math. On the other hand, Conversation 2 reflects the final private chat activity, and clearly illustrates how students started using short conversation starters and farewells as well. Even though students did not continue talking about non-math topics, they were able to follow typical question-answer patterns.

Likewise, the questionnaires revealed the class's passion and enjoyment with these activities because they were happy talking to their classmates and knowing about their understanding, as well as contributing to and supporting their classmates. There was no formal teaching on how to interact through chats, so the teacher only delivered basic instructions on how to start and

wrap up a conversation. These conversations allowed the teacher to check students' understanding, monitor their thinking and consolidation of mathematical ideas. As found by Urquhart (2009), writing gives teachers a window to get to know learners' thoughts and the way they organize. They also serve as a road map to deepen learning and understanding.

Due to the lack of time, trying to follow the class preparation already planned in the lesson framework for the term, it was not possible to place emphasis on writing structures per se in order to guide and support students. Most of the feedback provided was informal and quick, and limited to the most common mistakes.

Speaking Activities to Illustrate Language Use and Improvement

During the intervention, the teacher-researcher looked for a change in his discourse patterns and started using exploratory, accountable talk and generative assessment in order to increase student participation, engagement and talking time. These patterns enriched class discussion and maximized student talk. In this way, instead of confirming that a student's answer was correct, the teacher-researcher initiated interaction with students through question frames such as: *Well, do you think it is correct? Why? Did you follow all the steps? [S' name], do you think [S' name] answer is correct? Why? Why not?* Additional generative assessment frames were found in Echevarria et al. (2010) and applied in every math session.

- Can you tell us more about that?
- What made you think of that?
- Did anyone else have that idea?
- Please explain how you figured that out

These speaking activities aimed to address mathematical thinking, language use, communication and interaction through collaborative whiteboarding (Padlet), math talks, voice recording, and verbalizing thinking. With the implementation of these activities, students' participation and involvement in the lessons

increased strongly because the class found that participation was a great opportunity to illustrate and share their thinking. Student participation evolved, and some learners started elaborating their responses more. In some cases, students recorded their responses more than once and presented the best opinion, indicating stronger interest. In other cases, the time students used for presentations and for voice recordings increased when they started using aspects learned in the English class.

In order to appreciate students' opinions during a math talk, they were tasked with analyzing four numbers and deciding the number they would eliminate:

20, 21, 25, 40

The class recorded their responses and posted them in Padlet. Then, the class analyzed these responses in whole-group discussion in which most of the feedback was provided by the students:

- S1. Teacher I will eliminate the number 21 because because is, because it is no a multiple of 5
- S2. Hello teacher, thanks I will eliminate the number forty because all the two numbers are a family of the 20, 21, 25 and 20 bye bye have a good day.
- S3. Hello teacher, I will eliminate the 40 because all the numbers are with two except 40.
- S4. Teacher I will eliminate the number 40 because the other Numbers are like family of Numbers 20,21 and the 25

These recordings illustrate different answers. Some students defend 40, but others 21 as the number to be eliminated. The final reflection in the math talk allowed the class to identify that there was more than one correct answer, and that the key point was to justify and support their opinion. The conversation was guided with dialogic discourse patterns that asked students different questions, such as *What do you think about your classmate's response. Do you agree, disagree, why?* Activities like these allowed the teacher to analyze students' language level by increasing learner talking time. Most students started their interaction with the frame *I will eliminate* meaning they were using the vocabulary introduced during the cycle. Some students tried to structure their participation by using greetings and farewells. Conversation and interaction in lessons were freely developed and open to participation because

language competency was not judged, and the main focus was on ideas and arguments rather than correct verb tenses or vocabulary. Therefore, students felt free to participate and express their thinking.

Other activities also allowed for student talking time and provided feedback to their classmates. One activity asked students to record themselves reading three different decimals:

3.07 1.24 4.6

The second part of the activity consisted of whole class discussion in which some students' responses were analyzed and assessed by the class:

- S1. Hi, I am going to tell you the word form of the decimals. Three and seven hundred one and twenty four hundredths four and six tenths.
- S2. Hello teacher and friends today I am doing three decimals. Ok start, the first three and seven hundredths, the second is one and twenty four hundredths and the third is four and six tenths. Bye bye thanks for listen
- S3. First is three point zero hundredths second is one point twenty four hundredths and third is four point six tenths.
- S4. The first is three and seven hundredths, the second one is one and twenty four hundredths the three is four and six tenths.

The excerpts above illustrate four different responses that helped the whole class analyze classmates' understanding of decimals. The teacher led the conversation by asking students to provide feedback upon their classmates' recordings by using question frames such as *What do you think about your classmates' response? Do you agree? Why? Why not?* Additionally, it is interesting to see that in the four exercises students introduced their responses with a greeting "Hello..." "Hi, I am going..." or and introduction to the activity "First..." "The first..." Two out of the four exercises were incorrect because students used the word *point* instead of changing it for the word *and*. This was discussed by most of the students who identified the mistake and explained the correct word form to their classmates.

It was also interesting to note that most students frequently asked for their exercises and products to be shared in class, no matter what feedback they received or how accurate their answers were. They were always happy when their products were used. Exercises like



these were significant for learners since they were able to contribute and participate in class by highlighting and providing feedback to their classmates. This is evidenced not only by the teacher-researcher's reflections, but also in the students' answers and reflections in the post-questionnaire.

After analyzing students' writing and speaking tasks as well as some class observations, it is possible to see clear improvement in students' products. Learners went from having short interactions featuring short sentences to starting to use English without being worried about making mistakes. Student participation and active involvement in class improved with the use of math talks in which the class was eager to participate and explain their work to their classmates. Even though developing speaking and writing skills were not a focus of this study, they constitute an important aspect to continue working on.

Mathematical Thinking and Communication

Several studies have identified the importance of focusing on the development of mathematical thinking (MT) as well as implementing and planning for activities that allow students both to improve their MT and help them finding ways to express their thinking and understanding. Yang et al. (2016) describe mathematical thinking as a fundamental objective of mathematics that includes cognitive and social activities. With social activities, learners are able to demonstrate their understanding, express concepts, rehearse knowledge, integrate it and generate new ideas. Thus, social activity helps learners transfer knowledge successfully, understand, comprehend others' mathematical ideas and thinking, and feel part of a community of practice.

Preliminary informal diagnostic inquiry carried out with the class found that students generally received lessons focused merely on skill building, drilling and practice, and conceptual understanding. In other words, math classes and the exercises they featured did not ask students to conjecture, make connections among skills, or solve problems. Students were not asked to transfer knowledge to further units or communicate

their thinking. In this way, it was possible to conclude that students struggled when trying to show or express their understanding in part because they were not accustomed to doing so. Therefore, one of the purposes of this study was to develop mathematical thinking in students and support them to express this through different strategies in order to foster both mathematical thinking and communication. To do so, each lesson plan included activities and strategies explicitly to reinforce mathematical thinking and have students express and communicate their understanding.

The activities used to foster MT and communication included two main activities: *math talks* and *daily math routines*. Math talks consisted of exercises that allowed students to represent their thinking and freely communicate their understanding no matter its accuracy or precision. Daily math routines included daily exercises analyzing dates by using different mathematical concepts. In math talks, the teacher would present situations and have students analyze them, come up with a solution, and present their work to the class. These sessions allowed the teacher to identify students' strategies, understanding, language level, and allowed learners to reinforce math concepts, develop mathematical habits and put into practice concepts already learned. Thus, these exercises served as tools to re-teach mathematical concepts, and to teach expressions and vocabulary related to mathematical language.

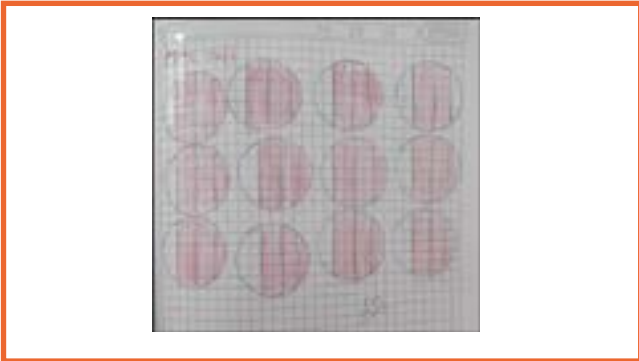
To illustrate how students performed during the math talks, the next figures illustrate how students identified and understood mathematical concepts. The teacher presented the following exercise:

Daniela has 12 cookies, $\frac{3}{4}$ of the cookies are coconut cookies.

Students were asked to represent the situation in a drawing in order to know the number of coconut cookies. In the analysis, each drawing was analyzed and the researcher included a description as well as their appropriateness. Finally, each student response was classified into correct and incorrect exercises.

Figure 6. Students' representations using coconut cookies for multiplication of fractions

Student 1



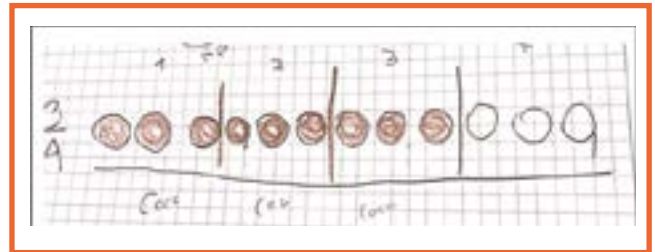
Student 2



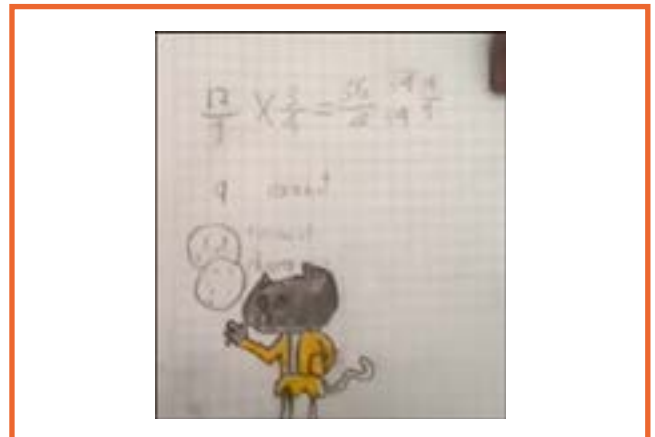
Student 3



Student 4



Student 5



In general terms, out of fifteen participants in the activity, nine students were able to represent the situation correctly, meaning they could identify the fraction of a quantity. Other students like Student 1 only divided each cookie into four parts and colored three representing the fraction $\frac{3}{4}$ of each cookie rather than the whole set. This meant that the student needed extra practice and reinforcement identifying the fraction of a set. In the case of Student 3, even though the student could not identify the number of coconut cookies, they used a story to represent the situation. The other students' exercises above show three out of the five who represented the situation correctly. Students 2, 4 and 5 were able to identify that there were nine coconut cookies. For this, they used a variety of strategies including using the multiplication algorithm, dividing the cookies into four equal groups, and counting the number of cookies in three groups.

During the short presentations, each student shared their work and received feedback from their classmates.

The teacher used dialogic discourse to support student evaluation. These types of exercises where students were tasked to analyze problems and others' thinking were found to be beneficial in developing thinking and identifying the reasoning behind a mathematical concept. In this sense, students were asked to identify and reach the meaning of quantities rather than just computing them. Learners really enjoyed this part of the class and frequently asked for this exercise in the following session. Their reason was that they felt free to express their thinking and try things without being judged. They were also able to explain their work to the class and see others' work. Students would remind the teacher to plan for more math talks in the future.

The impact of math talks and math daily routines is reflected in students' responses in the questionnaires. Students reported their interest in math daily routines since they helped them analyze dates with mathematical concepts and connect math with daily life.

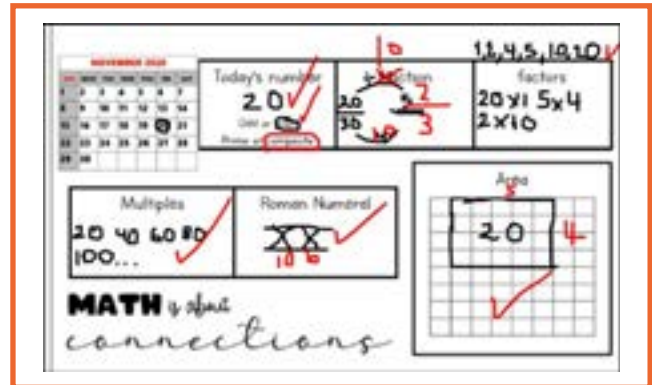
S1. 1. *los math talks: me gustan por que así reforzamos los temas vistos en clase* 2. *whiteboard: por que asi reforsabamos tambien las fracciones los numeros romanos y el area*

S2. *Porque en las "math talks" podíamos hablar libremente sobre lo que aprendimos.*

Students' suggestions reflect their interests and high motivation towards the activities implemented. Most of their responses called for continuous implementation of these activities in future sessions.

The use of math daily routines allowed learners to practice and reinforce essential mathematical concepts including finding factors and multiples of a number, categorizing numbers into prime, composite, odd and even, determining an example of area model, and expressing dates as fractions. *Whiteboard.fi* was the application used to work on these skills. It allowed the teacher to check student work in a synchronous way. At the end of the activity, the teacher selected one exercise and asked the class for feedback. Most students seemed interested in participating and showing their work to the class. Figure 7 illustrates one exercise taken by a student and graded by the teacher according to the class.

Figure 7. Math daily routine using Whiteboard.fi



As seen in Figure 7, the student performed the activity well. He was able to identify all factor pairs of 20 together with its multiples, Roman numeral representation and area model. The class mentioned that the fraction $20/30$ could be reduced to its simplest form and expressed as $2/3$ if one divided by 10. Thus, the date November 20th could also be represented and expressed as two thirds of November. Exercises like these created a habit for learners and allowed them to easily remember essential and important mathematical concepts required in further exercises and school years.

Creating habits in the math lessons allowed students to connect ideas, make sense, improve and strengthen skills. These are also identified as *mathematical habits of mind* (Lavesseur and Cuoco, 2003), habits that let learners think the way mathematicians do, and are useful for reasoning about the world and mathematics itself. Within these habits of mind, we can find activities including guessing, challenging solutions, looking for patterns, conserving memory, specializing, using alternative representations, and others.

Students' Feelings about Mathematics Practices

The data collection for the study included two questionnaires aimed at identifying students' perceptions and opinions about the work previously done in math, and the work done during the intervention. The responses also helped the researcher to address the research questions related to the elements planned in the SIOP lesson plan that helped learners

improve their mathematical thinking, communication and second language learning.

The preliminary questionnaire was conducted with the aim of identifying students' previous opinions and perceptions about the math class, things they liked about math and their opinions about learning math in English. After the intervention, a follow-up questionnaire was conducted in order to analyze the impact of the project on students' performance and learning, the benefits of the activities implemented, students' opinions about the lessons and suggestions for the next sessions. After analyzing both questionnaires, the reflective research journal, and the periodic reports, it was possible to identify that the activities in the pedagogical intervention served as tools to improve students' confidence in mathematics, willingness to do mathematics, and knowing and identify their understanding as well as their classmates'. This section provides an overall description of the findings and results from those questionnaires as well as aspects highlighted in the reflective research journal, periodic reports and questionnaires.

Confidence and Engagement

Even though mathematics has been recognized as an essential matter for success in this globalized world, it has gained a negative reputation among students, who often consider it boring and difficult to master. Sometimes failing in math results in the learner giving up and retaining a negative perspective toward the subject. Some adults even express having bad memories in school with math that contributed to them hating the subject and avoiding careers that included mathematics. These thoughts are sometimes transferred to children who mentioned their parents' experiences with math, which in some cases had served as predispositions towards the subject. In this context, it is the teacher's pedagogy and intervention that can contribute to this paradigm shift. In this sense, it is important to introduce mathematics in a way that makes students feel safe, supported, and where their needs are met. Providing students with non-threatening classroom environment surrounded by positive reinforcement was found to benefit students in a variety of ways, such as improving their confidence,

willingness in the learning of math, and realizing how important mathematics are for the world.

In general terms, students reported high motivation for the class and identified improvement and positive changes in the delivery of lessons. They even identified that lessons and activities helped them improve, and allowed them to connect their understanding with previous math skills including fractions, multiplication, division. Some learners identified the importance of attention and participation, and how these factors determine successful performance in math. The final questionnaire showed that 79% of the class highlighted a change in the lessons; however, those students retained a positive attitude towards the class. Students identified how the new activities helped them understand new and previous material better, and that the applications were useful in the understanding of math concepts. One student identified an improvement in the target language and the use of it in different activities.

In regards to learners' perceptions and opinions, in both questionnaires, students reported motivation and high interest towards the math lessons. Students pointed out that the activities helped them improve their understanding in math and the use of English. They retained high motivation and interest towards math and the activities implemented during the intervention (math daily routines, the new applications, the activities, math talks) as well as the teaching and the way instruction was delivered. They even expressed their love for math and how teacher's instruction contributed to that sense and feeling. Students commented that classes were more interactive and allowed them to better learn about math, clarify concepts and that activities helped them understand topics they struggled with in the past. This was also perceived during the lessons in which students all the time seemed highly motivated and interested in each lesson. Even though they made mistakes, they saw them as opportunities to grow and improve. Meaning the learning environment was also positive and safe for them to learn.

It was interesting to note that some students included in their answers some reflections and somehow the questionnaire served as a tool to self-evaluate their learning. The following excerpts describe students'



comments for the question related to changes perceived during the intervention.

S1. que finalmente aprendimos a usar decimales, a mi me habian dicho que eso se aprendia en quinto grado, y eso me alegro mucho, ya que no tenia que esperar TAAAAAANto tiempo para saber al menos algo sobre decimales, y lo supe, supe esos datos, que despues serán muy pequeños pero en este momento son bastante grandes.

S2. Yo note que cambiamos en que en el tercer periodo no trabajamos mucho con plataformas virtuales pero en este periodo ya trabajamos mucho con forms, antes era con pleno y tambien en este periodo grabamos audios en los que decimos que aprendimos de los temas y mas cosas en diferentes plataformas que nos ayudan mucho a aprender mucho en math y tambien a mejorar nuestro ingles hablando, participando y escribiendo las respuestas en el idioma ingles.

S3. mi multiplicacion, así yo logre mejorar mi multiplicacion, ya que antes si aprendi pero se me habia olvidado pero ya que lo recorde los ejercicios se me hicieron un poco mas faciles, eso fue lo que yo pude mejorar en math en este grado

It can be noted that students recognized a change in the lessons and that these contributed with their understanding and clarification of math concepts. They also mentioned that lessons included applications that helped them both learn math in a more interactive way and have fun doing math rather than merely note taking and developing skills in an isolated way.

It is also interesting to evidence that students recognized high motivation towards the math lessons since they felt errors and mistakes were part of their learning, and that they helped them to be better mathematicians. Comments such as “*Porque en las “math talks” podíamos hablar libremente sobre lo que aprendimos*” “*Whiteboard porque el profe puede ver que estamos haciendo, y si nos quedo mal el profe me lo dice y corrijo y aprendo de mis errores*” helped the teacher identify the new activities and exercises helped students improve their engagement and motivation towards the subject. Students felt free to talk about math without being judged and understand errors as a part of the learning process.

Implementing activities that fostered different types of interaction was also beneficial for students to remain active and with high expectations. Within the activities applied during the intervention, two in particular were highlighted over the others: the private chats and math whiteboard. In terms of private chats, students expressed

their interest in interacting with their classmates and how they can help their classmates learn better about math concepts.

S1. porque me gusta hablar con la gente tambien me gusta hablar

S2. Porque me ayudaron a recordar las clases, que fue lo que aprendimos en ellas, ayudar a mis amigos si no entendieron algo...

S3. PRIVATE CHAT PORQUE ME GUSTA CONOCER QUE NO EN ENTIENDEN Y QUE SI ENTIENDEN PARA AYUDARLOS

S4. private chats: me gusta por que podiamos hablar con los compañeros de clase y así uno le pregunta al compañero si sabia algo en lo el estava confundido para ver si podia ayudarlo a reforsar en lo que no habia entendido.

S5. Los “chats privados” le podíamos preguntar a nuestro compañero algo que no entendíamos del tema y el nos resolvía la duda y las “tres cosas que aprendimos la anterior clase” nos ayudaba a recordar las cosas que vimos y nos ayudaba a recordar el tema bien.

Students’ responses highlight the benefit of interaction in the lessons and how motivated they were to contribute in their classmates’ understanding. Additionally, these types of activities promoted active involvement and engagement. Students also highlighted their interest about math daily routines since they helped them analyze dates with mathematical concepts and connect math with daily life, and the math talks because they helped them improve their mathematical thinking, recall for previous knowledge as well as recording their voices and opinions. Students’ suggestions call for the continuum implementation of those activities for future sessions.

In conclusion, it can be evidenced that students’ confidence and motivation towards math improved since activities allowed them to freely communicate, interact, learn from their mistakes, support their classmates, and that materials and activities need to be engaging and adapted to their context. They even recognize and highlight the importance of interaction in lessons even though they received classes in a remote way.

CONCLUSIONS

The purpose of this study was to improve bilingual practices in fourth-grade mathematics lessons through explicit instruction and planning. The model used for these bilingual practices was the Sheltered Instruction Observation Protocol (SIOP). Furthermore, this framework was used to support and provide students with opportunities in the development of their mathematical thinking, mathematical communication and second language learning. In this regard, this research inquired which components of the SIOP model benefited and addressed thinking, communication, and second language learning in the mathematics classroom.

Findings suggest that explicit planning for second language learning benefited the instruction in a variety of ways. The different strategies and activities implemented allowed the teacher a) to identify students' language proficiency, b) to identify the way students consolidated ideas and new knowledge, c) to assess and diagnose their previous knowledge and, in this way, d) adapt the learning material to strengthen and support not only the learning of the four skills (reading, writing, speaking and listening) but also mathematical concepts and conceptual understanding. Learners found this type of instruction beneficial since they were able to consolidate and verbalize their thinking through written and spoken exercises. Such activities invited students to interact with their classmates through private chats, provide classmates with feedback, discuss mathematical concepts and exercises, to record their voices explaining their understanding, and others. Regarding mathematical thinking and communication, the activities allowed students to transfer knowledge, consolidate mathematical concepts and ideas and justify their thinking through dialogic discourse patterns. Additionally, students were able to strengthen their mathematical skills and have an active and regular use of the target language.

Further findings reveal the positive way in which participants perceived the learning of mathematics and math class. Even though they noted that mathematics lessons were full of challenges, learners favored them since they felt the learning environment allowed

them to make mistakes, socialize their mistakes, and learn from them. The activities also promoted student-student interaction, which had an immediate positive effect in language proficiency and confidence. Engagement was high, which allowed for meaningful learning experiences. Additionally, the applications and the virtual activities used during remote learning were motivating for students, who felt happy in the math talks, math daily routines (calendar analysis), and interactive quizzes.

A comparison between the present study and those described in the literature review agree on the need for interaction and communication in mathematics lessons to achieve high levels of thinking. Findings correlate to Moschkovich's (2007) perspectives on the importance of implementing a sociocultural perspective, fostering interaction and higher order thinking skills. Thus, with the implementation of mathematical discourse practices, the teacher can provide students with plenty of opportunities to learn the target language, interact, build knowledge and so on. Similarly, Rohid et al.'s (2019) findings stressed the need for attention to mathematical communication during lessons since it helps learners reflect on their thinking and reasoning.

The focus on developing and implementing activities achieving mathematical communication benefited in this study both the teacher to guide students' learning and understanding and the students to verbalize their thinking and consolidate their ideas. Additionally, it offered the possibility to reflect upon others' understanding and work. This latter was also found in Truxaw's (2020) study, in which the use of dialogic discourse patterns in the lessons benefited students' thinking, reasoning and critical thinking. Such patterns served as tools for the teacher to invite learners to justify their thinking and reasoning through different techniques such as exploratory talk, accountable talk and generative assessment.

In regards to strategies to accomplish language learning, findings were similar in the studies of Banes et al. (2018) and Borgioli (2008). Classroom discussions and interaction as equitable practices allowed students to freely participate in the different activities. They felt safe in a supportive environment, so they were not afraid of sharing their mistakes with their classmates;



they also felt confident to express their thinking.

A limitation of the present study was to provide students with more time to discuss mathematical ideas presented in the math talks. Time was an issue since the teacher was worried about covering all the content planned for the period. As thinking is a complex process, it requires and takes time.

Further research could identify the impact of mathematical routines to accomplish mathematical thinking and to consolidate ideas in an extended period of time. Since this study was conducted through remote teaching and learning, it would be advisable that in future interventions with in-person teaching and learning, teachers analyze the function of space, student movement, disposition and behavior during classroom discussions, additionally, how these practices may benefit standardized test scores.

ACTION PLAN

The following points are suggested for schools and teachers:

- It is important to plan for activities that promote the development of mathematical thinking and reasoning.
- The institution should evaluate the implementation of the SIOP model for its bilingual practices, not only for mathematics lesson but other subject taught in a foreign language.
- It is possible to motivate students with the use of activities that require knowledge bridging and transfer.
- It is beneficial to implement activities based on the four basic English skills in content areas.
- Teachers should open the opportunity to write and interact in math lessons
- Mathematical practices at the institution should give priority to the development of mathematical thinking and communication through well-structure and explicit opportunities stated in the lesson plan framework.
- Elementary bilingual teachers should examine and analyze the way their instruction is favoring the development of communication, and thinking.
- Remote learning and teaching should favor different types of interaction rather than merely the delivery of content.

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THE EFFECT OF CREATIVE PROBLEM- SOLVING AND ARTISTIC CREATIVITY STRATEGIES WITH NINTH GRADE FINE ARTS STUDENTS

Francy Patricia García Torres

Studies about creativity are uncommon, but this volume includes two. In this school, high students enroll in the arts class not necessarily because they are interested in art, but that other elective course options – their first choice – might not be available. In this way, arts teachers are challenged to provide learners significant creative experiences as well as technical instruction in drawing, for example. A further significant challenge in this project was that it took place in virtual classes during the pandemic. Learners experienced drawbacks in terms of materials and adequate space. Still, findings were positive and participants expressed interest especially in acquiring technical drawing skills. They were also able to reflect critically on creativity as a concept and their own creative competence.

ABSTRACT

This research explores the effects of choice-based art education, cooperative learning, and creative problem-solving to develop creativity in seventeen ninth grade students from a Jesuit school in Bogotá, Colombia. The intervention occurred in one term of the 2020-2021 academic year during the global sanitary crisis. Because of the quarantine, classes were held remotely. Different strategies linked to the creative process were implemented in seven online sessions. This study used mixed methodologies to collect and analyze data, including a questionnaire, students' reflective log, teacher's reflective journal and two focus groups, which provided important information that was categorized and analyzed. During the research it was possible to identify how creative processes enriched with creative problem-solving strategies helped students to develop artistic proposals and foster their confidence in self-creativity. Findings indicate that connections between willingness and creativity as well as a good plan can provide a positive environment to connect artistic works with students' interests, experiences and perceptions, helping them to solve creative problems using different inspiration sources. After the intervention, students showed more confidence in their own creativity and their comprehension of how the creative process and creative perception evolve.

Key words: Creativity, Creative problem-solving, Teaching for creativity, Creative process, Creativity development



RESUMEN

Esta investigación explora los efectos de la Educación Artística Basada en la Elección, el Aprendizaje Cooperativo y la Solución Creativa de Problemas (CPS), al desarrollar la creatividad de diecisiete estudiantes de noveno grado en un colegio jesuita en Bogotá, Colombia. La intervención se realizó durante un periodo del año académico 2020 – 2021, durante la crisis sanitaria global, en el que las clases se llevaron a cabo virtualmente. Durante siete sesiones virtuales se implementaron diferentes estrategias asociadas al proceso creativo. El estudio empleó metodologías mixtas para recoger y analizar la información; esta información incluyó un cuestionario, un registro de reflexión de los estudiantes, un diario de reflexión del profesor y dos grupos focales, los cuales aportaron información importante que fue clasificada y analizada. Durante esta investigación fue posible identificar como el proceso creativo enriquecido con estrategias de solución creativa de problemas CPS ayudó a los estudiantes a desarrollar sus propuestas artísticas y a promover la confianza en su propia creatividad. Los hallazgos indican que la conexión entre la voluntad y la creatividad, así como una buena planeación proporcionan un ambiente positivo que conecta los trabajos artísticos con los intereses, experiencias y percepciones de los estudiantes, ayudándoles a resolver creativamente los problemas mediante el uso de diferentes fuentes de inspiración. Después de la intervención los estudiantes mostraron mayor confianza en su propia creatividad y su comprensión del proceso creativo, así como una evolución en su percepción de la creatividad.

Palabras clave: Creatividad, estrategias de solución creativa de problemas, enseñanza para la creatividad, proceso creativo, desarrollo de la creatividad.

INTRODUCTION

Nowadays, creativity is a common word in talk about education. Industries and entrepreneurs are interested in creativity as an important part of success, and schools today seek to develop creativity in students as a need to face daily life and world problems. Teachers of different areas promote creativity in their classes and are constantly looking for new ways to teach and guide students to do innovative works using different media and technologies.

Two constructs emerge: Teaching Creatively, also known as Effective Pedagogy, and Teaching for Creativity. Both look for creativity development and innovative ways to promote students' learning, but their scope is different. While creative teaching involves using resources in an imaginative way, teaching for creativity is a form of "teaching that is intended to develop young peoples' own creative thinking or behavior" (NACCCE, 1999, as cited by Joubert, 2001 p. 22). It is important to differentiate creative teaching from teaching for creativity since both have different paths to foster students' motivation, involve creativity in the class and develop learning experiences using art tools.

There is a common belief that creativity is only a higher-order thinking skill; hence, only mature minds can manifest creativity. However, research has demonstrated that creativity is based on pre-knowledge, life and learning experiences, no matter a person's age. Hence, even though creativity is placed at the top of Bloom's taxonomy of thinking skills, it is a skill present at any age and can be developed at school using different strategies and methodologies. Art in education helps to develop sensibility, imagination, creativity, resilience and the ability to adapt for the future (Nathan, 2018). However, creativity is a concept that goes beyond art, and it is necessary to understand its relationship to art and art education.

The general interests of studies whose main goal is the development of creativity include improving reflective practices, fostering meaningful learning environments, and exploring the effect of interaction with professional artists, problem-solving techniques and choice-based art. Research on teaching for

creativity in the arts reports interventions that take advantage of artistic education elements like drawing, collaborative work, experimentation with material, imagination and creative process to develop creativity, creative thinking, and thinking skills. Most of the studies about teaching for creativity observe students' creative process, in which students' feelings, opinions and reflections are main data of analysis to enhance teaching practices and develop creativity. There are also several studies that provide methodologies and tools to develop creativity in school, taking advantage of art elements, artists and creative processes. Teaching for creativity takes elements from creative problem-solving methodologies, cooperative learning, arts-based research and choice-based art education to develop creativity as a fundamental skill in students' lives.

Creative thinking connects knowledge with creativity, and artistic creativity includes the knowledge of art concepts and traditions in a culture. Artistic creativity may be considered as a subset of creativity that “includes knowledge of art concepts in a culture, highly visual thinking skills and intrinsic motivation” (Amabile, 1983 as cited Zimmerman, 2009). Moreover, artistic creativity implies a series of decisions and actions with purpose for the person that is creating.

Problem Statement

In the school where this study took place, different academic areas promote creativity in their classes and are constantly looking for new ways to teach and guide students to create innovative works using different media and technologies. However, teaching creatively is different from teaching for creativity, and Artistic Education (AE) is the perfect field to cultivate creativity using artistic languages and providing a different learning environment to develop students' creativity. The school's art classes are based on the *Propuesta Educativa de la Comunidad de Jesús* and take into account five essential moments in the learning process: *contextualization, experience, reflection, action* and *evaluation* (ACODESI, 2005, p. 268). The area of Artistic Education is now called Creativity Skill. In this area, teachers are focused on developing artistic skills and attitudes, and fostering divergent thinking

and problem-solving, using creative process, tools and strategies from the world of art languages such as music, dance, theater and fine/visual arts.

There is a lot to do in teaching for creativity, including new strategies as an opportunity to improve students' creative process, implementing new didactics and activities with strategies from Creative Problem-Solving (CPS). It is also important to clarify how to give high quality feedback and encourage all students to believe in their creative potential.

These conditions raise the importance of analyzing how AE can develop artistic creativity in all students, and on the way, help them to foster their abilities to solve problems, take risks, be open minded, and to connect divergent ideas or concepts in a creative way. There are some creative intentions and artist's attitudes that help to develop creativity in a different way than other fields. In this sense, it was thought interesting to analyze how AE might develop artistic creativity in ninth grade students, especially using CPS strategies, including cooperative learning and reinforcing choice-based art. The intention was to give students the opportunity to make the best choices for their art projects and fostering their abilities to solve problems, take risks, be open minded, and to connect divergent ideas or concepts in a creative way.

PURPOSE OF THE STUDY

The goal of this research was to identify how different methodologies such as creative problem solving, choice-based art education and cooperative learning applied in a pedagogical intervention can develop students' creativity and artistic creativity. To accomplish this goal, the research also included to identify the effect of teaching for creativity strategies (creative problem solving, choice-based art education and cooperative learning) on 9th grade students' attitudes and their perceptions about creativity. Additionally, part of the learning process is assessment, which in this case is required to recognize how to assess creativity while students develop skills and artistic behaviors during their creative process.

LITERATURE REVIEW

It is possible to find texts, articles and documents that talk about the importance of creativity in education. However, it is necessary to differentiate teaching for creativity from creative teaching since they have different emphases and imply different ways to develop the experience using art tools. The general interest of studies whose main goal is the development of creativity is to improve reflective practices, foster positive learning environments, explore the effect of interaction with professional artists, problem solving techniques and choice-based art. Research on teaching for creativity in the arts reports interventions that take advantage of artistic education elements like drawing, collaborative work, experimentation with material, imagination and creative process to develop creativity, creative thinking and thinking skills. Most of the studies about teaching for creativity are based on the observation of students' creative processes, where students' feelings, opinions and reflections are the main data of analysis to enhance teaching practices and develop creativity.

Some methodological strategies applied in studies are developed around the concept of *glow*, or deep and critical reflection, in which dialogue, critical and creative reflection help to build learning meaning. Other methodological examples used include critical dialogue, which looks to transform thinking in action through dialogue and discussion. This is similar to *glow moments*, which promote dialogue between people, artists and creative professionals. The *hundred languages of thinking and expression* methodology includes narrative observations, photographs, video, reflective journals and creating an environment based on participants' experiences and perspectives (Paris & Hay, 2019).

The studies reviewed were carried out in the United States, United Kingdom or Australia, as well as Spain and Colombia. Some of these schools have art education as a part of their curriculum and teachers work with their usual students, but in some cases, interventions are with small groups in extracurricular classes.

Teaching for Creativity

Teaching for creativity takes advantage of art perspectives, tools and behaviors to promote creativity and inquiry attitude in students as many studies have demonstrated. Some of these analyses highlight the influence of professional artists in creative and critical thinking. Creativity is not exclusive to artists; by contrast, it can be cultivated in every person and art helps to interpret and understand the world. Researchers suggest that by paying attention to children's creative ideas and promoting artistic processes through experience, it is possible to encourage learning in the flow.

Paris and Hay (2019) describe *flow* as an "intense concentration, absorption, pleasure and lack of awareness of time passing" (p. 3) when developing a creative process. During the creative process, children have the opportunity to try again, "try out ideas, test theories, experiment with symbol systems, explore social relations, take risks and reimagine the world" (Paris & Hay, 2019, p. 5). Flow theory is joined with intrinsic motivation, which involves creativity and cognitive ability. Participants in Henson-Dacey's (2015) study discovered that self-intrinsic motivation increased when students had the possibility to solve complex problems based on previous knowledge, which allowed them to understand creativity in a new way. There are some creativity traits that also emerge during the creative process, including openness to experience, self-efficacy and perseverance, which allow students to become immersed in the goal or activity producing a sense of pleasure particular to flow state.

In addition to these strategies to develop creativity, art at school can become a tool to foster consciousness about social realities with the advantage that includes both theory and practice, where artist-researchers use creative strategies in the research process, expanding their perception of reality through imagination (Marshal, 2014). Findings in these studies suggest that children construct their own meaning making artworks because they perceive themselves as authors and inventors. The presence of an artist creates a bridge between creative practice and pedagogy, using their own experiences through discussion and exchanging ideas and attitudes like open mindedness and flexibility (Paris & Hay, 2019). De la Torre (2006, as cited in



Velasquez, 2017) defines six elements as important strategies to teach for creativity: *theory fundamentals, purpose, adaptive sequence, adaptation to reality, agents' role, function and efficiency*. The priority is the student's need, and the teacher's role is to be the tutor; the teacher must be creative to create creative learning environments.

Furthermore, arts based on research is inspired in contemporary art, taking research methods of other disciplines, such as social sciences, psychology, art education or anthropology tools like participant observation, in which students collect data from the field and then enrich that information with historical and sociological document research. Art research is less structured than scientific research and more open; it has a structure that involves creation, reflection, images and written texts. Art practice research begins with questions, collecting ideas and information, experimentation and making (Marshal, 2014). To make the learning visible, teachers, children and artists describe their explorations and experiences in a reflective journal enriched with videos and photographs. Another way to understand children's artworks is through exhibitions and performances, allowing families and the community to connect with the artistic process (Paris & Hay, 2019).

Choice Based Art Education

Developing creativity depends on teachers' attitudes towards creativity. Teaching for creativity is a systematic effort during every lesson (Grohman & Szmids, 2013). Teachers who are interested in improving art education focus their attention on motivating students and giving them the opportunity to express themselves. One way to teach art is centered in activities where art history and techniques are the main part of the program. However, from the teaching for creativity perspective, the creative processes and self-expression become the heart of art education. With that in mind, it is important to consider the importance of choice to work in a similar way as an artist, identifying ideas and problems of interest, selecting materials and methods, practicing, refining and assessing one's own work.

Choice-based Art Education (CBAE) provides strategies that support and individualize students' learning, helping them to develop artistic behaviors while they feel heard and have the chance to make choices (Varian, 2016). CBAE explores the use of "studio centers, visual art menus, exhibition, and authentic art-making [that] can help support all student learners" (Varian, 2016, p. 1). This model has four fundamental elements: students as artists, pedagogy, classroom content and assessment. Students can select their level of challenge, and teachers help to adjust instruction with students' work habits and interests (Douglas & Jaquith, 2009, as cited in Varian, 2016). Varian confirms that choice in the classroom builds students' artistic vocabulary and knowledge of new techniques while they improve self-confidence, creativity and critical thinking. At the same time, students understand what it means to be an artist and create artworks.

Additionally, when teachers are interested in improving art education and learning environments, collaborative learning helps to foster students' confidence and creativity. Corocran (2009) explains that when a teacher sets aside his/her full control and students are engaged in the creative process, it influences pedagogical reasoning and changes teacher and student behavior. The teacher's responsibility is to structure students' work and promote collaborative learning, which helps the class be active in their learning process. Cooperative learning requires changes in teaching styles and assumptions about students. In this group of studies, grouping was fundamental, and one conclusion was that friendship-based groups were more successful because creative ideas emerged openly. Cooperative learning offers a positive environment and motivates students to solve problems creatively.

Creative Problem Solving in Art

Other studies explore how to encourage students to solve problems and persevere in art making. Kulinski (2018) focused her research on how Creative Problem-solving (CPS) scaffolded students' arts learning and included strategies like multiple prompts, collaborative material exploration, and a creative problem that promotes divergent thinking. For their part, the Creative

Art Group Experience (CAGE) (2012) explored the use and effectiveness of creative problems solving (CPS) tools in visual art.

Dame-Seidler (2012) investigated how CPS has evolved from the Thinking Skills Model (TSM) to increase creative potential using specific processes, divergent and convergent guidelines and tools. The CPS tools used in the study included a) brainstorming with Post-its with a head question (Stick em' Up brainstorming), b) mind mapping / sketching out idea, c) forced connections with an image / visual connection worksheet, d) Sketch & SCAMPER (Substitute, Combine, Adapt, Modify, put to other uses, eliminate, rearrange), e) individual PPCo (Plusses, Potentials (it might) Concerns (how to)) critique on artwork, and f) questionnaires as an important tool to collect data during all process. Findings indicated that CPS helped students to reinforce their autonomy, creative thinking and organize their thoughts. For Dame-Seidler (2012), it is important to teach CPS guidelines and then introduce those tools slowly during the school year. Even though the main goal in this study was to teach techniques, process and style, the researcher learned to identify her students' preferences and the best tool for each.

CPS tools can be used according to students' needs as long as teachers have prepared the material, and in this way helped students during their art-making process. (Dame-Seidler, 2012). One way to provide a structure that supports learning is to understand creative problem-solving stages, including *fact finding* for more information about the problem, *problem finding* when the problem has to be clarified, by focusing on sub-problems, *idea finding* or looking for all possible ideas for the problem and a list is created of all 'possible best' solutions through group brainstorming. *Solution finding criteria* are developed to evaluate each generated idea to find the most valuable and *acceptance finding*, which "involves selling the idea to others and identify it as the 'best possible' alternative" (Parnes, 1967, as cited in Corcoran & Sim, 2009, p. 5). A particular characteristic in this study was the explicit involvement of students.

The class learned how to use CPS according to their needs and knew how to solve their "artist block" using Parnes' steps. This co-research in action transformed a process-product approach to a reflective practitioner approach.

In another CPS study, Kulinski (2018) identified that creative problem-solving strategies were useful to guide students in creating artwork connected with experience and personal meaning. CPS contributed to awaken students' creativity through tools like brainstorming which encouraged students to express themselves.

Artistic Creativity

Artistic creativity involves knowledge of art concepts and traditions in a culture, as well as a mindset connected with creative process and state of flow. A flow state occurs when a person is creating, and involves intrinsic motivation, openness, and means for students to be focused on ideas and connected with their mindset. In Henson-Dacey's study (2015), participants felt 'go with the flow' when producing art about "personal experiences, having strong messages, are out of the box, connecting to spirituality, and tapping into imagination" (Henson-Dacey, 2015, p.155)

De la Torre (2003, as cited in Swift, 2015) explains that while scientific creativity focuses on divergent thought and ability to solve problems, artistic creativity involves emotion, inspiration and productive imagination. The creative process not only requires inspiration, intuition, spontaneity and self-expression; it is also about other skills like teamwork, analysis, brainstorming. Its characteristics include thinking or acting with imagination, developing imaginative acts with a purpose, generating something original, and valuing the creation.

Although creative process stages have been identified, such as *interest*, *preparation*, *incubation*, *illumination*, *exploitation* and *verifying results* (Velasquez, 2017) as a way to understand creativity, it is important to recognize the role of identity in students' creation. In a study with seventh graders in the UK, it was found that when students made links between personal identity, their own thoughts and artwork "Art creates identity.



Art connected the viewer to the creative experience resulting in new ideas about identity” (Henson-Dacey, 2015, p. 152). Henson-Dacey’s study (2015) showed the connection between students’ perception of creativity and self-efficacy, represented in intrinsic motivation. The external motivation was the teacher who inspired and motivated students to continue and help to build students’ self-efficacy. Some students felt more freedom to explore new techniques, ideas and express self-efficacy connecting everyday life events with their creations gives deeper meaning to their artworks. At this point teachers assisted when needed because students showed self-regulation, self-efficacy and their creative process adapted to different domains. Emotions were also an important part of the creative process. “For some participants’ emotions helped them focus their energy on their artwork, while other participants developed emotional connections with their artworks” (Henson-Dacey, 2015 p. 168). Students showed happiness, joy and pleasure while doing their work even if the inspiration of those artworks is melancholy.

Swift (2015) discovered that the creative process in a multidisciplinary project that needs a balance between individual and collaborative work, involves inspiration, intuition, spontaneity and self-expression but also team work, analysis, brainstorming and agreements in a flexible and stimulating environment.

Lagesse (2013) focused her research in *creativity acumen*, which refers to the effort involved in creating something that has not existed before. The creative endeavor promoted in students’ creative process included making choices and decisions, engaging with materials, understanding their own ability, making changes and evaluating creative outcomes in order to prepare and help them to persevere and minimize frustration. As Lagesse analyzes, creativity acumen and creative performance in art creation emerge from three necessary components: from combinations of innate skills, also named art-relevant skills by Amabile (1996, as cited Lagesse, 2013), learned abilities, and task attitudes.

Assessing Creativity

Several studies inquire how to assess creativity. However, there is no consensus about what creativity is, and there is the assumption that it is not appropriate to compare individuals’ creativity or the role of the contextual component (Lucas et al., 2013). Any assessment activity needs a method and has two fundamental purposes: to provide certification of achievement and facilitate learning (Boud & Falchikov, 2006, as cited in Lucas et al., 2013). Assessment can be formative, helping students and teachers improve or summative, avoiding comparison.

One way to trace creativity development is to identify the eight levels of creativity: 1) *replicate* – change the context of something created, 2) *redefine/reconsider* – interpret the problem to propose new alternatives; 3) *progressive increase* – add new ideas to an existing one; 4) *increase steps* – create new relations between compatible ideas or steps to refine a product; 5) *redirecting ideas* – turn the course challenging the status quo; 6) *redirecting the past* – take past ideas to reinterpreted and solve actual problems; 7) *reset* – giving new ideas and take the challenge to do something different; and 8) *synthesis* – connect ideas that seems different. Each level shows the maturity of the subject’s creativity as a way to identify a student’s process (De la Torre, 2003, as cited in Velásquez, 2017).

Evaluation is necessary as part of a process to determine if the path selected is appropriate to accomplish the goal. In Lagesse’s (2013) study, six eleventh grade students showed more consciousness about the importance of going back and reflecting on their own work and trying new strategies if necessary; in this way, they understood which art skills are needed. Lucas’ research team, on the other hand, found that it is possible to involve both teachers and students in assessment process where teachers became more creativity aware and confident with their teaching while students that used the tool became more aware of when they were imaginative (Lucas et al., 2013)

The best way to develop creativity in schools is “redesign the art education curriculum focus in reflection-in-action as an assessment practice” (Henson-Dacey, 2015, p. 202), where students can

discuss their experiences with creativity and take ownership of their own learning. Creating visual arts requires meta-cognition (awareness of their thoughts) as students continually assess and evaluate their ideas. Art skills are required as well, such as using their own experience and analogies and the willingness to improve and learn from the mistakes, also task motivation and perseverance to complete the task (Lagesse, 2013). For his part, Amabile (1983, 1996 as cited in Baer, 2013) suggests focusing feedback in the work itself more than students' abilities. This is less harmful and lessens the impact of the evaluation.

When students are interested in one domain, the need for knowledge arises and they can learn how to be more capable, persistent, creative and evaluative. The creative process requires a self-determined motivation along with intrinsic and extrinsic motivation. These can keep students involved in tasks during difficult times. In extrinsic motivation, evaluation or feedback has an important role when is constructive, recognizes accomplishment and is informative. Both intrinsic and extrinsic motivation influence the creative process as only a motivated person persists in problem-solving efforts (Rostan, 2010).

METHODOLOGY

Research Design

Action research was the best option to carry out the study, taking into account that it proposed working in art classes and with art students to improve their learning process. The teacher used different strategies to develop learning activities that helped to foster students' creativity. As Cohen et. al. (2018) describe, action research is a form of self-reflective inquiry to improve understanding of one's own practice and is designed to link research and practice. Action research includes diagnosis, action and reflection in order to bring innovation, change, development and improvement. It is also an example of situated learning because it takes place in and about the workplace through the self-reflective spiral including planning, acting, observing and reflecting.

This study also followed a *mixed method approach* (Cohen et. al., 2018), as it is necessary in this study to understand problems and propose research questions using quantitative and qualitative methodologies and data in order to know about the intervention in the middle school art class. The specific purpose was to understand the effect of teaching from a teaching for creativity perspective in art classes using strategies such as choice-based art, creative problem-solving and cooperative learning, which requires qualitative data. Mixed method research allows understanding of the context, participants, their interactions and creative process from a phenomenological point of view that analyzes participants' behaviors from direct experience and the researcher's observation. Using quantitative data to measure prior knowledge and the effect of the intervention also strengthened the investigation's validity.

Further, in art education, subjectivity and individuality are the substance of the creative process, and thus the qualitative perspective is the most important even if quantitative data helps to support the research. With that in mind, this research was also *exploratory* because to answer the research questions, the qualitative data took priority over quantitative data (Cohen et al., 2018).

Context

This study was set in a private Catholic school located in Bogotá, Colombia. The curriculum includes Arts Education, which covers dance, theater, music and visual arts. Art education considers three sub-processes: aesthetic appreciation, creative experience and communication through symbols, based on three competences raised by the National Ministry of Education (MEN, 2010). Students have been in contact with art since pre-school, when they experience and learn through music, visual art and corporal expression to know and understand their world.

At the moment of this study, the school was in a period of transition, in which all members of the community were investigating, analyzing and defining new ways to promote humanistic education for students who live in a changing world. In middle and high school, the Artistic Education area was renamed



Creation Skill and continued to cover dance, theater, music and visual arts, but while hourly intensity was reduced, the integration of languages was improved. Learning plans include learning objectives and learning rubrics aligned under two learning lines (strands): appreciation and communication instead the previous standards.

It is important to note that in ninth grade, students have the opportunity to choose between dance, theater, visual art and music to continue with the chosen language during the next three years and delve into it. The goal of these *profundizaciones* is to continue with the artistic learning process in a specific art language (dance, fine art, music and theater) and help students to grow in their artistic abilities, which for some have become an important part of their life.

As a Cambridge International School with an international standards curriculum, the Cambridge strategies, procedures and elements like the Reflective Journal are gradually included in daily art classes, whose goal is to accompany students to obtain a degree with international standards through artistic projects. Fine Arts was still being taught in Spanish during the academic year 2020 – 2021, but was expected to be taught in English and Spanish in the following academic year.

In education, research cooperative work between institution, parents and researcher is an important part of the study. It was important to have the institutional approval to make the pedagogical intervention, even more when research and its results will be to improve the pedagogical practice and students' learning and creativity. For that reason, the research proposal was presented to the school's Academic Director, who approved the research and intervention.

Participants

The ninth-grade group was made up of 95 students, and 34 chose visual arts as their *Profundización*. There were two visual art teachers, so each group was about 17 students between 14 and 15 years old. Consent forms were gathered from participating students' parents. This informed consent was necessary in order to use information collected from observation and analysis

during art classes. In this study, parent consent allowed for the use of classroom information in which their sons and daughters developed their artistic exercises and projects. The research used students' creative artworks, text and opinions to trace information about how their creativity was fostered.

In this project, the researcher worked with her own group in order to analyze all processes closely and take enough data first hand. In this case, the teacher became a teacher-as-researcher in order to understand and interpret her context and improve her work (Stenhouse, 1975, as cited in Cohen et al, 2018). Practical action research promotes teacher professionalism. As Kemmins (1997) describes, the reflective practitioner interprets the action research as a way to improve professional practice and change education from a self-critical perspective (as cited in Cohen et al, 2018).

Data Collection Instruments

With the mixed method approach, the study included qualitative and quantitative data collection instruments, where qualitative data took priority over quantitative data, without leaving aside the latter. In art education, it has been important to register the creative process in workbooks, as well the reflections – written or oral - about one's own and others' creativity, exercises and artworks. That evidence became a fundamental source of data that showed how students' creative process evolved, in which students register their own discoveries and conclusions.

Questionnaire

It was important to learn about students' pre-knowledge, perceptions and attitudes about this topic. At the beginning of the course, the questionnaire was designed in MS Forms with open and multiple-choice (closed) questions that looked for knowledge about what students understood about creativity as well as their perceptions about their own creativity. Only a few multiple options questions were designed to identify specific attitudes or perceptions in concrete circumstances.

Students' Reflective Log

In the Cambridge proposal, the Reflective Log is the tool to make students' creative process visual, and involves research, experimentation, reflection and creation. It is a way to maintain a thoughtful process in which a student is conscious of his/her own learning and difficulties. The reflective log is the ideal instrument in creative processes because it includes images, sketches, students' research, appreciation texts and reflection about their own artworks. This information helps analyze how students understand their own creativity and process during the academic year. This information is important to understand how Creative Problem-solving (CPS) strategies applied in class affect students' learning and creativity.

During the academic year of the research (2020 – 2021) and considering conditions of remote education during pandemic, the usual workbook was replaced by a virtual book created in MS One Note in which students uploaded all the class exercises. Reflections, researches, individual or group class exercises, sketches and final artworks were filed in the reflective logs created using this application. The reflective log enhances the ability to follow, understand and provide evidence for each student's creative process, and at the same time, is one way to give students feedback especially nowadays where it is difficult to provide guidance face to face because of remote education.

Students' Artwork and Exhibition

During the creative process, students explore ideas, emotions, experiences and techniques to create an artwork that communicates part of his/her perception of reality. The final artworks and their exhibition give the group the opportunity to share opinions and verify the impact of their art proposal on others. Usually, a complete creative process takes one term (10 or 12 sessions) or less if students are able to work independently at home and not only during class. When artworks are finished, it is important to exhibit them in order to promote self-confidence, develop critical thinking and appreciation skills. Reflection and appreciation about students' final works and the differences between them

helps to analyze how creativity develops in each student and how they can show evolution in their proposal.

In order to socialize final artworks, two different formats were used. The first used the artistic proposal finished as a screen background where students' groups shared each other's works and talked about them to identify achievements and receive spectators' opinions. For this appreciation exercise, a guide oriented the meeting and provided evidence of their group work. Further, artistic proposals were exhibited virtually using the application Emaze where it was possible to design an exhibition like in a virtual gallery. Students were invited to visit this virtual exhibition and write their appreciation about artworks made by their classmates and reflect about their own creative process as well as their pairs' process.

Focus Group

The focus group is a qualitative method used to obtain knowledge related to perceptions, opinions, beliefs and attitudes interviewing a group of people about a specific topic. This methodology was used to understand what students think about creativity and their self-creative perception. The focus was on students' own ideas and valuing individual opinions and feelings while the class had the chance to express themselves in a relaxed environment (Then, et al., 2014).

This research first took into account students' ideas and their process to plan questions to orient the focus group. In order to respect students' time and disposition, it was necessary to invite and suggest two different schedules. One day the meeting was with four students for twenty minutes, and the other one was with three students for thirty minutes after class.

Teacher's Reflective Journal

Action participant research is based on observation and constant teacher reflection, and keeping a reflective journal becomes a fundamental tool to capture the phenomenological elements of participants' interactions and at the same time keep in mind the teacher/researcher point of view. Action research involves using a personal journal to record progress and reflections which imply



making changes that affect others and “It is a flexible, situationally responsive methodology that offers rigor, authenticity and voice” (Cohen, et al., 2007, p. 312). In this case, the teacher used the MS One Note application to collect reflections, documents and analysis during intervention. This document contains notes from different sources and texts written considering data collection instruments used.

Pedagogical Intervention

This study proposed the use of specific strategies to improve creativity in ninth grade students. During the didactic sequence, each class included an activity taken from different sources, especially Creative Problem-solving (CPS) strategies and Choice-based art elements. The pedagogical intervention occurred in seven 60-minute sessions during the first academic term. The intervention included the session needed to develop an artistic project, including all the creative process stages and adjusted to the first term. The intervention took into account CPS steps, including *executive steps*, which describe the process of *exploring the vision, formulating challenges, exploring ideas, formulating solutions, formulating a plan, and exploring acceptance* (Trefinger, et. al. 2006, p. 9) used by Dame-Seidler (2012) in her research, but also adapted to art classes. Stages and phases proposed by Trefinger are a way to solve problems creatively. In this research these stages are linked with creative process stages and elements from the school’s pedagogical paradigm, interrelated to propose an innovative way to promote creativity in a specific context.

Sometimes learners feel lost and insecure at the beginning of artistic projects. Creative Problem-solving stages (Trefinger, 2006) can be linked with creative process stages and in this way help students to understand and guide their artistic process. These stages are necessary, such as the opportunity to explore their environment, feelings, perceptions, and possible media. Each step helps learners to discover their path and create artistic products without neglecting subjectivity and emotionality.

Creative Problem-solving can be defined as “a methodology based on a multidisciplinary approach

dealing with the role of creativity, innovation and problem solving in various situations of daily life” (Franco, 2017, p. 29). These strategies include brainstorming with key questions, sketching out ideas, forced connections with an image to reinforce ideation, divergent guidelines, visual connection worksheets and individual PPCo considering an artistic creation’s Plusses, Potentials, Concerns and Overcomes. This tool improves feedback and helps evaluate new ideas (Futurethink, 2005). Different formats can be found on the web to apply this technique.

It is important to take into account that the strategies designed for each class were adapted to artistic goals and dynamics considering the development of learning objectives and abilities as well as the Ignatian Pedagogical Paradigm (IPP), the center of the school’s educational philosophy. The IPP is a pedagogical paradigm that is flexible, to admit new strategies or pedagogical models in order to improve the teaching-learning process looking for the best for students. Its structure makes it possible to connect different elements that enrich education and students’ learning: context, reflection, experience, action and evaluation. In this philosophy, the center of educational process is the person and the teacher-student relationship is focused on in accompaniment (Reyes, 2014).

Classes were planned using the GANAG model, which includes setting the goal for the class (G), access prior knowledge (A), new information (N), apply knowledge (A) and generalize the goal (G). This schema was proposed by Pollock (Pollock & Ford, 2009) and “acts as a scaffold as connecting curriculum directing with instruction and assessment” (p. 7), which provides a way to organize and be aware of each step during the class.

The following chart integrates the Ignatian Pedagogical Paradigm with Creative Problem-Solving stages defining the learning objective of each one and including artistic elements.

Table 1. Class sessions

Class session	Stages' PPI/CPS	Learning objectives
1	Context / exploring the vision	Students will be able to recognize <i>Profundización</i> 's goals, group distribution, class narrative and make a questionnaire to identify prior knowledge. Strategy: Key questions.
2	Reflection / formulating challenges	Students will be able to reflect about their imagination and memory role in art connecting the film <i>Una noche de 12 años</i> with surrealist elements through images. Strategy: sketching out ideas
3	Action / exploring ideas	Students will be able to create a composition using images from the previous class reflecting their perceptions from the film used as narrative. Strategy: Forced connections
4	Reflection / formulating solutions	Students will be able to share opinions about each other's sketches. Strategy: PPCo
5	Experience / formulating a plan	Students will be able to identify Creative Process' stages and its importance and relation with their own process. Strategy: Choice based art
6	Action	Students will be able to manage their own time and resources to develop their artistic proposal during an asynchronous session.
7	Evaluation / exploring acceptance	Students will be able to share and write their opinions about their own and others' final artworks.

Table 1 illustrates how the intervention was planned articulating the Ignatian pedagogical paradigm with creative problem-solving stages, including some strategies to help students and scaffold the comprehension of how context, artistic movements and perceptions can be the origin of an artistic proposal.

Class 1 - Context / Exploring the Vision

After an introduction to the course, this session presented the narrative proposed for this academic year, the film *Una Noche de 12 Años*, which was chosen considering the need to develop students' critical thinking about problems in their context. This film describes real-life experiences of political prisoners in Uruguay included Pepe Mujica who became president of this country and cause reflections about difficulties in Latin-American and human troubles and strengths. The key words for ninth grade included *problems of the context, how art faces those problems and how art transforms the community*. For this reason, the first part

of the creative process was to watch the movie at home and then reflect about perceptions, ideas and feelings using leading questions. The film was chosen because it describes a reality which is important to talk about with teenagers to promote a sensitive, reflective, committed and creative vision of the world. Whatever artistic language students use, it has the power to communicate ideas, feelings and opinions and this possibility is promoted inside artistic education classrooms.

Class 2 - Reflection / Formulating Challenges

In the first part of this session, some students shared their reflection on the film, and the class was invited to highlight the words or sentences most relevant to their reflection exercise. To connect the narrative with artistic elements, the artistic movement Surrealism became the reference point for the creation. The teacher showed some fundamental ideas and images about this artistic movement, its characteristics and main iconic



artists. The challenge was to transform in images the words and sentences highlighted in the first exercise, not as brainstorming, but as an image-storming using association and symbolism.

Class 3 - Action / Exploring ideas

To begin the session, some students shared their image-storming. The main element to promote creativity and guide students' creation was the surrealist juxtaposition. The intention was to guide students in the association of the previous exercise to create a composition with a communicative intention inspired by students' perceptions of the film. Part of the class began this exercise of creation, where students developed one sketch integrating some or all the images proposed in the image storm. This sketch was uploaded in the Reflective Log where the teacher wrote feedback for each student.

Class 4 - Reflection / Formulating Solutions

During this session, the teacher showed and explained the PPCo format as a tool to carry out reflections in groups and foster appreciation abilities about students' own and others' artistic proposals. The PPCo format was adapted to guide the appreciation exercises, which allowed students to develop their critical thinking, considering achievements as well as things to improve in their own or others' creations, taking into account their communicative intention and the communicative power of images.

Class 5 - Experience / Formulating a Plan

In this session, the intention was to make students aware of their own process and connect it with creative process stages, as proposed by Wallas (1926, as cited in ingenio.com.co, 2016), which has been a reference to guide art work in high school students. For this reason, one element shared in class was the video created by one eleventh grade student in 2019 about creative process stages and its importance during artistic creation.

At this point, it was important to highlight how students manage their time and the different needs of each one, considering the different artistic proposal characteristics, resources at home and decisions that each student had made about his/her own work. With that in mind, an asynchronous session was proposed for the next class. Personal work is an important element of the learning process because it is a space where teachers are attentive to students' needs and help them arrange and develop their work while also developing their autonomy and ability to be organized and plan actions.

Class 6 - Action

In the asynchronous class, students were free to use class time to work on their projects or do them later. They were also able to choose the media and technique that was best suited to their artwork and that was available at home. Working independently did not mean for students to be alone. Rather, in this case of remote education, teachers were connected in Teams chat or video calling, mindful of students' needs and questions.

Class 7 - Evaluation / Exploring Acceptance

Students were invited to share their experiences from the asynchronous sessions. The first part of this class asked students to carry out a self-reflection in which each of them wrote about their own experience developing their artistic proposal. Then, students met in which groups and shared their experiences and opinions about each other's works. In this case, because of remote learning, students showed their work to the group using the bottom of their screen and a document to register their group's reflections and opinions.

Another tool used in the collective appreciation exercise was the exhibition designed by the teacher in Emaze application. This app allows the spectator to make a tour around a 3D gallery where the artworks can be observed in an arrangement that is similar to a real art gallery. In this gallery, students' sketches and final works can be organized in order to compare how ideas and artistic proposals evolved.

Figure 1. Screen shot of Emaze virtual exhibition with some of students' artworks



Figure 1 is a screen shot from the virtual exhibition used to socialize students' work using Emaze App, in which the class had the chance to appreciate others' creations and reflect about their results. This gave importance to their exercises and provided a space to learn one from each other. Another way to show each other's works was using the background screen where students included images of their works. This appreciation exercise was especially important when there was a communicative intention that needed to be verified through spectator perceptions. This was the last session for this particular creative process, and students received their term evaluation in the following class.

Data Analysis and Interpretation

This section describes the methods used to analyze each instrument in order to identify categories as a way to make able identify progress, findings and achievements.

Content Analysis

Students' reflective journals, the PPCo creative problem-strategy and the teacher's reflective journal allowed for the identification of perceptions and students' opinions of their process, works and exercises developed in class. These kinds of texts need to be observed carefully using content analysis to interpret,

infer and understand the information extracted from the texts. As Cohen et al. (2018) mention, the intention of qualitative content analysis is to "deliberately move from the original text to analysis of the information extracted from it, focusing on the meanings of texts and their constituent part" (p. 674). Data obtained is linked with feelings, personal perceptions and events occurred during class that reflect how creativity manifests itself, conditions where it is developed and how students feel about their own process, abilities and creativity.

Coding Information

The questionnaire and focus group were analyzed using categories related to the research questions and key words determined by students' answers. Data analysis was developed coding information with category labels according with similarities founded in students' texts (Cohen, et al., 2018). In this case, open codes were used in which students' texts were analyzed "line-by-line, phrase-by-phrase, sentence-by-sentence, paragraph-by-paragraph, unit-of-text-by-unit-of-text" (p. 671) to identify main concepts and research criteria. Each word, phrase or section was then grouped into categories searching similarities and specific terms.

Each source of data identified different aspects and important elements for the research. The keywords established in coding were the starting point to creating main groups that included important elements related with developing creativity using different strategies in fine art classes. All categories were an important part of the process and to understand them grouping helped the analysis and description of each. Figure 2 summarizes the process of categorization.

Figure 2. Categorization outline

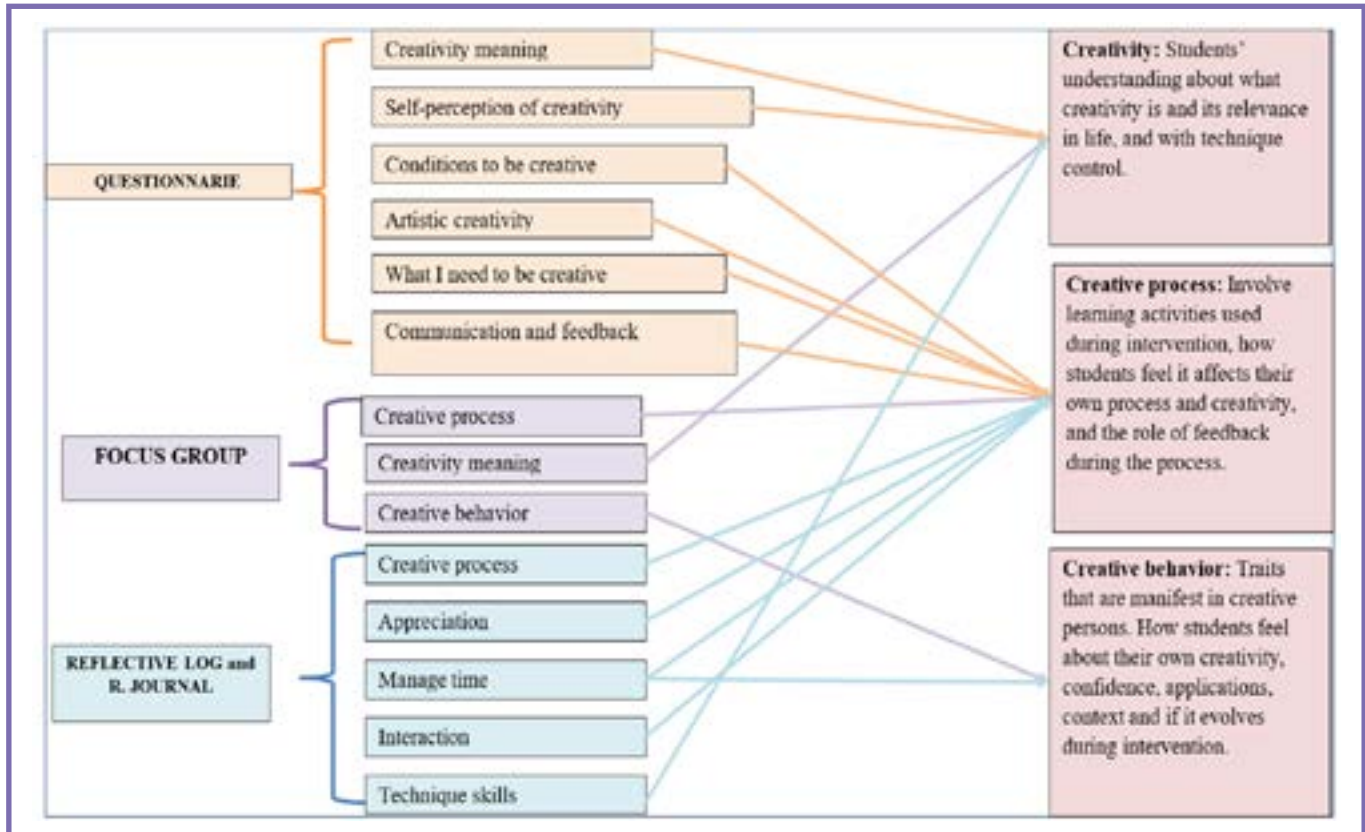


Figure 2 illustrates the coding process and how each data source provided categories which were then integrated in main categories to describe research findings.

The questionnaire contained both open- and multiple-choice answers, which were analyzed grouping students' answers considering creativity as a concept, self-perception of creativity, artistic creativity and the conditions that promote or block creativity. During this analysis, it was possible to compare and contrast answers from different students. This was designed in MS Forms and downloaded as an Excel document where similar answers were labeled by colors. Subsequently, those answers were grouped into columns and tabs according to the categories. The questionnaire consisted of 12 open questions focused on *creativity knowledge*, *creativity perceptions* and *students' opinions about fine arts*. It also included four multiple-choice questions to focus students in some possible feelings and pre-conceptions about creativity.

Coding information was the same methodology used to analyze the data obtained during focus groups. The two meetings were recorded and the dialogue was transcribed. The text allowed for the identification of categories relevant for the research and to code the data according to similarities founded. Students' reflective logs and the teacher's reflective journal included descriptions and opinions that were analyzed in detail and also contributed to the process of understanding the data. These sentences and paragraphs helped to discover how the intervention could have affected the learning-teaching process focused on creativity.

RESULTS AND DISCUSSION

The main goal of this research was to identify how creative problem-solving strategies impacted creativity in a group of ninth grade students. However, any teaching-learning process involves several variables,

and this case was no different. This study and intervention were designed not only to try to discover and understand how to improve creativity using different strategies; they also involved a reflection as to whether it was possible to identify the effect of teaching for creativity using strategies such as creative problem-solving, choice-based art education and cooperative learning. Further, it was important to understand how the proposed process influenced the attitudes and perceptions about creativity in this particular group of seventeen 9th grade students. Not less important, it aimed to discover how creativity could be assessed while students developed skills and artistic behavior.

Through the pedagogical intervention and data analysis it was possible to discover the importance of technique mastery in students' perception of their creativity and how they expanded their concept of creativity from the artistic field to creativity as part of a problem-solving attitude. Furthermore, there was a change in students' mindsets from a relative insecurity about their self-creativity to a more confident attitude when confronting creative challenges. Students valued the way that the creative processes and strategies were applied and they felt confident in the process.

Student Perceptions of Creativity

The data collection and analysis revealed students' understanding of what creativity is and its relevance in life. It was also possible to understand the importance of technique control in relation to perceptions of creativity. Students' responses to the questionnaires showed similarities with researchers' descriptions, such as creativity as a state of mind (Lucas, 2001) or an ability (Torrance, 1974), but other students believed that creativity was a gift given only to some people or even a spontaneous impulse. Twelve of the 17 students stated that a person was either born with creativity or not. Initially, participants were not very optimistic about the possibility of developing creativity using external tools because only five of them thought that creativity was a skill that could be learned and developed. This idea was supported by a few students, who believed that creativity was an ability common to everyone. This perception inspired students' intentions to be more

confident about their own creativity, and at the same time, helped them understand becoming more creative as part of a learning and mental process, not only a matter of being gifted or inspired.

The feeling of being and becoming creative was also seen as mental disposition linked with willingness and the wish to be creative. According to some students' responses to the questionnaire, if they wanted to be creative, they let their creativity flow. This belief was so strong that some students thought that creativity could be stunted or shut down if conditions were not adequate. The disposition towards being creative is linked with internal and external motivation, as Joubert (2001) explains. Motivation is related with curiosity and doing something students like, as some of them expressed in the questionnaire. This confirms the conditions for creative learning (Jeffrey & Craft, 2001). The elimination of both negative stress and the need to be challenged are conditions that promote creative learning and help the state of flow linked with creativity.

Eleven students of this group felt that they were creative because they were capable of creating new things, thinking of new ideas and using their imagination. Some of their expressions, including "My ideas are a lot and constantly I have new ones," "I look for one creative way to represent different things," or "I am capable to go beyond and use my imagination to create things"¹ show these learners' confidence in their own creativity. Another three thought they were creative when they decided to be creative (*intento, logro, quiero*). On the other hand, two expressed that they were not creative because they usually used common ideas or copied directly from the context, as one mention in the questionnaire: "Usually I don't have inspiration or I don't think easily in that kind of things," while another said, "No, [I am not creative] because I inspired in surrounding world and things I like to do something I like." This last answer is interesting because it shows how for this student, creativity was not connected with context or the things he/she liked.

¹ All excerpts translated from the original Spanish by the author.



Students also linked creativity with inspiration and recognition from others, as one of them mentioned, “[I am creative] because my family told me that and at the school others praise me for that,” revealing the need for motivation and support in order to be more confident about their creativity, or even believe they are creative. It is interesting to see how students linked their creativity to their free will and sense of purpose to do creative activities as shown in phrases such as, “I consider myself a creative person only in some moments, usually when I want to have some idea,” or “There are other times when I believe I can let flow my creativity.” This understanding highlights the importance of choice, clear intentions in pedagogical activities, and clear communication with students to give them the feeling of being in their own path, with the chance to decide.

Students’ Understanding of Creativity

During the research process, students identified some changes in their own understanding about creativity. Some of them connected creativity with everything, not only “crazy ideas” or “unreal things.” The process followed during the term showed students that creativity could emerge from real situations and in small and daily things like organizing a room. After the intervention, participants in the focus group identified creativity as the capacity to think and create new things, part of imagination, and ingenuity, as one of them mentioned, “[Creativity] as the capacity that one has to think in something new and organize, create, imagine something in a different way and I feel that [creativity] is linked with imagination and wit.”

Students expanded their understanding about creativity, which can be identified in expressions such as, “I connect creativity with everything,” “Creativity are not only crazy ideas, unicorns or that stuff, creativity is basically everything because creation means one first time,” and “I link creativity with new ideas, when you have ideas, you are a creative person.” These opinions reinforce the idea that everybody can be creative and use this capability in different circumstances.

It was interesting that students identified as part of their mindset change the film *Una Noche de 12 Años* and its characters’ attitudes. One student explained that he usually related creativity with joy, movement, and happy moments, but that the exercise using the film as inspiration and the following writings and drawings showed him that creativity was like an instrument or tool to overcome difficult situations. One of them explained, “I believe that I can see other meaning of creativity, that can become an instrument, like a resource to...let say... overcome difficult situations.” In this way, creativity was seen not only about overcoming one’s own difficult moments creating new things, but rather the ability to be creative and inspired in difficult moments and hard things. In this way, they linked creativity with every aspect of life and not only happy and joyful moments.

The Creative Process as a Path to Creativity

The pedagogical intervention included elements from the Ignatian pedagogical paradigm and creative problem-solving stages, but it was the creative process that integrated these pedagogical elements with fine arts education. The creative process involved the learning activities used during the intervention, how students felt, and how this affected their own process and creativity. Further, the intervention explored the role of feedback during teaching and learning process.

One element in this research was choice, as an important element in creativity development. Considering the results of the questionnaires, it is important to note the role of freedom during the creative process. Some members of the class felt that they could express themselves using art and at the same time improve their technical skills. It is possible to distinguish two perspectives: one that valued the interaction with classmates and feeling comfortable in class, and the other which focused on elements of academic fine arts like color theory, drawing techniques, the creative process, and how they could apply their learning. Most students linked artistic creativity to their capacity to draw and use different techniques.

As the closed questions on the questionnaire showed, it was interesting to see how half the group of students linked their creativity with their free will and sense of purpose to do creative activities. This understanding highlights the importance of choice, clear intentions in pedagogical activities, and clear communication with students. On the one hand, most students reported that they wanted to develop their skills, improving artistic techniques with the possibility to show some mastery in drawing, something that they could show to others and be proud of. On the other hand, it is interesting to note the comment of one student, "...what helps to expand my aspirations," which can be interpreted as a relation between knowing art and opening their view. These affirmations allow us to infer that learners connected creativity with mastery of techniques and knowledge that could help them to understand the world in a different way. Some students valued expressing their feelings and emotions through art and developing their artistic creativity.

With these appreciations, it is evident how choice-based art helped give students the sense of freedom they felt was important. When students had the opportunity to choose between several techniques and styles, respecting their own capability to create, they felt confident to do things and be creative. Choice-based art helped give students that sense of freedom, and they felt listened to and made choices (Varian, 2016).

Further, choice is not always to do what students want; on the contrary, it means providing options to the sense of doing that a student has chosen and not only something that the teacher demands. In fact, the narrative in this grade was selected by the teachers, but the reflections and feelings about it were from the students and became the main inspirational element to create. Students had the chance to choose what was important for them and define the message they wanted to express. They were also able to decide how to develop their artistic proposal and which technique to use even though it was important to present some options to guide students' work during their creative process.

Students' Understanding of Creative Process

Wallas proposed four stages in a creative process: *preparation, incubation, illumination* and *verification* (1926, as cited in ingenio.com, 2016). These have been the foundation for other research about creativity in different fields like science, mathematics, and entrepreneurship. Different authors have developed other creative process alternatives, including Amabile (as cited in ingenio.com 2016), who explains that creativity happens when motivation, domain skills and creative thinking skills combine.

The school in this study works on five elements of the Ignatian Pedagogical Paradigm: *context, experience, reflection, action* and *evaluation*, which provide the structure of each class no matter the pedagogical strategy applied. In artistic education it is also important to bear in mind the creative process and its fundamental elements such as preparation, incubation, illumination and verification (Wallas, as cited in ingenio.com, 2016) and in addition, elaboration. These are the backbone to which each pedagogical innovation can be linked.

In this research the innovation elements included Creative Problem-Solving strategies that propose, among others, the executive steps, which describe the process of exploring the vision, formulating challenges, exploring ideas, formulating solutions, formulating a plan, and exploring acceptance (Dame-Seidler, 2012). Connecting the creative process with executive steps helps students to focus their thinking constructively, which is part of Creative Problem-solving (Treffinger, et. al., 2006). This project sought to help learners stay focused while think constructively in many and varied options to solve a problem, and in this case, in artistic problems to be solve creatively. For that reason, CPS became a reference for innovation in teaching for creativity during this study.

Helping and teaching students to follow a process is not opposed to creativity. It helps them stay focused on artistic projects that need dedication, research and persistence. Some learners feel that they do not have ideas to be creative, so it helps them follow a creative process, promotes creative attitudes, and makes it



easy for learners to generate ideas and be confident to take unusual options. Clarity and concentration in class objectives were necessary, as the class expressed in the questionnaire, for example the need to of “keep the topic clear” and “put what we’ve seen to the test,” as a way to give meaning to what they were doing in art classes. Eight out of 17 students wrote that in order to present creative proposals they needed to have freedom to do what they wanted. Nine participants reported that it was important to have clear goals and instructions. These opinions affirm the need to guide students using an organized process and provide clarity about goals and intentions in order to create the right environment to promote creativity.

Implementation of Creative Process Stages

The intervention featured different strategies for CPS (Creative Process Stages) adapted to the conditions of remote learning and the artistic aims and creative activities. The strategies aimed at finding the best ways to improve creativity, confidence, artistic as well as other soft skills. For this reason, the intervention included seven sessions with the executive steps (Dame-Seidler, 2012) outlined above.

Session 1 – Context / Exploring the Vision. The strategy used in this session were *key questions*. The beginning of a creative process is not always easy, especially when it is not clear what a person wishes to do. Sometimes the most difficult thing is to decide how to start, and for many students is particularly difficult. As one of the participants mentioned, “keeping the topic clear” is important in order to have a route to follow. Usually, if students have the freedom to decide how to start, they feel confused and a little lost. For that reason, it is important to find the balance between what teachers know students need to know - considering their age - and what students want to know.

Teachers in the ninth-grade team had accompanied students for years and noticed their particularities and knew the profile of the group. From this point and keeping in mind the background elements in the lesson plan, the teachers chose *Una Noche de 12 Años*. Any

element can be the origin of an artwork or inspiration for a creative process, but it is important to explore the possibilities and link that creative process with students’ emotions, feelings and ideas.

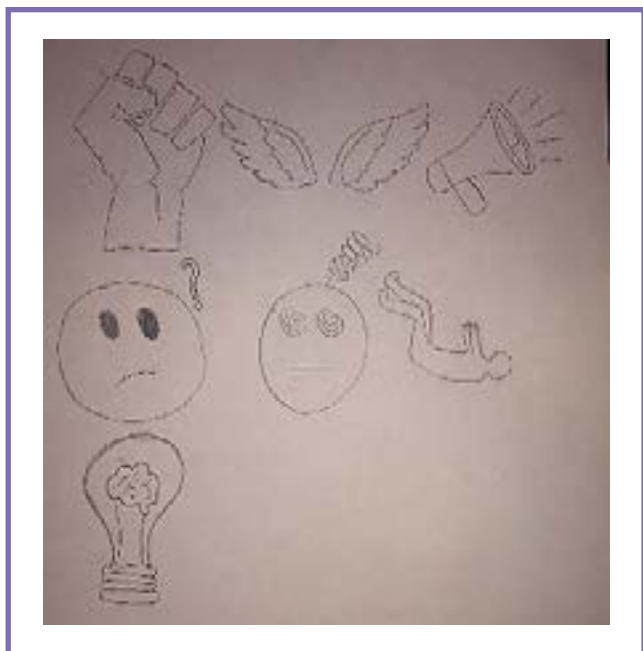
To guide students’ reflection, the core elements are key questions. Questions to promote deep and unusual perspectives about the object of inspiration. In the case of this class, after students had viewed the film, the teacher-researcher proposed some questions, which became the raw material for creation. The creative process might originate in many fields, but how to explore those fields depends most of the time of reflection where “teacher guides the students in assimilating new information and further experience so that their knowledge will grow” (Jesuit Institute, 2014, p. 3), and that reflection can become the start point of creation. Questions used during intervention touched sensitive human experiences, analyzed characters’ emotions and tried to connect the film’s narrative with students’ personal life.

Key questions helped students to discover and act out feelings and perceptions that otherwise it would stay hidden. With this strategy, these inner elements can be the seed for a creative work. As one student mentioned during the focus group, “With the film exercise and following works, and the film analysis using writings and drawings, I believe I can see another image of creativity.” They also recognized how the process helped them generate new ideas and explore new possibilities. As other student noted. “If we had not done the questions or all the process, we would not have come to the conclusion we came about the film.”

Session 2 - Reflection / formulating challenges. This session focused on *sketching out ideas*. The challenge is to transform abstract ideas, feelings and perceptions into something manageable, and transform that in a creative product. Reflection is at the same time the internalization of key questions and the consciousness of the main elements that are part of the creative process. By highlighting things that are important and relevant for students, their individuality is respected and at the same time it is possible to promote a process.

In the intervention, teachers used the strategy to scaffold the process of transforming a perception of a film into a starting place for students' own creation. The transition from questions to answers to images began by highlighting words, sentences or phrases, which then became the inspiration for sketching out ideas. The exercise to link words with images was a brainstorming, but with images. This *image-storming* helped students to start a creation on their own. One student explained, "You have given us the chance to work on our own artworks, without always following a specific model." There was no model because students worked based on their own ideas, interests and background. Here, it is possible to observe some image-storming examples where students drew separate elements that they linked with key words in their answers to the key questions.

Figure 3. Image-storming and reflection, Student A



According to the film, the confinement produced insanity, hallucinations (both auditory and visual), memories, anguish, fear and many others. The circumstances that the main characters experienced provoked many emotions in me, but mainly, I felt anguish, impotence, fury, fear, admiration for resilience that they had when facing everything that was happening to them, a sense of the inhumanity.

Figure 3 illustrates how Student A connected some images with characters' and his/her own emotions caused by the film watched. The student made an association to each word having in mind his/her own knowledge and experiences.

Figure 4. Image-storming and reflection Student B



The confinement blocks and generates limitation in feelings, affecting the perception of the surroundings and the development of people's ideas and emotions...Imagination and memory were the support to hold on and forget desperation and the pain of being confined. They used memory to remember the most important moments of life and imagination to fly away from reality to a place that gave them joy.

Figure 4 illustrates another example of how students made their image – word association. Student B's drawing tried to show how memory and imagination can become a refuge inside the characters' head during difficult circumstances. Each image represents "important moments of life" which the film's characters used to maintain their mental health.

During this stage of creative process, the most important thing was the way that teenagers link experience with their own perceptions, more than their

drawing mastery. Each student has his/her own artistic skills that can be improved with time and practice, but what is most important is what students do with their capability to express and communicate their own using images

Another example of the first stage of the process is the next one made by Student C, who during sketching ideas draw several images from his/her perceptions about the film. It is interesting how this image not only shows the student's perception about the film, but also his/her prior knowledge or – at least –the interest to be precise in order to link images and film. The presence of the Uruguayan flag demonstrates the knowledge and interest to look for the appropriate image according with what student wanted to depict. The way each object is represented also shows student's ability to draw and his/her attention of the film's details.

Figure 5. Student C's image-storming



The role of imagination in this situation of confinement is the power to create and have creativity... They were able to create a language which helped them not to lose their mind and maintain contact among the prisoners. Another role is the fact of imagining family events since this would allow them to remember where they came from. Subsequently, it enabled one of the prisoners to write love letters to the girlfriend of the commander, which allowed him to feel free when writing. Additionally, another role that it plays is the power to feel free and experience the world as at the end of the film when the prisoners imagined a soccer match, played and sang.

Sometimes arts teachers hear the expression, “I don’t know what to do” when students feel lost and confused when facing creative-artistic challenges. However, during this creative process, what students thought was important became important for their artistic creation and gave them the confidence to continue.

Session 3 - Action / Exploring ideas. The strategy in this session was *forced connections*. Creating new things is usually the result of reshaping existing ones. As David Eagleman mentions in the short film *The Creative Brain*, “Creativity doesn’t mean inventing something out of nothing, instead it’s about refashioning what already exists” (Beamish & Trackman, 2019. 16:30 min). The clue is to remove the inputs that are already in students’ brains. Emotions, memories, feelings, ideas, experiences arose because of the film and the key questions.

One important element for developing creativity is to think outside the box, force connections, try to mix and merge things that are usually different. This was one of the most important contributions of the Surrealist artistic movement, which according to Breton in the Surrealist Manifesto, “responds to a purpose to destroy conventional meanings and create new meanings or counter meanings using radical juxtaposition (the collage principle)”² (Sontag, as cited in Ruíz, 2011, p. 159).

This class exercise linked students’ inputs, perceptions of the film, and Surrealist juxtaposition to force the creation of new images, without leaving aside students’ individuality. Students shared ideas in a chat, which was later summed up in class to guide the creative exercise. From this point, students had time in the session to do one sketch proposing a composition with three or more images from the image storming, and applying Surrealist juxtaposition.

During this part of the process Student A elaborated the following sketch, which combined the person falling and the wings proposed in the previous exercise.

Figure 6. Student A first and second sketch

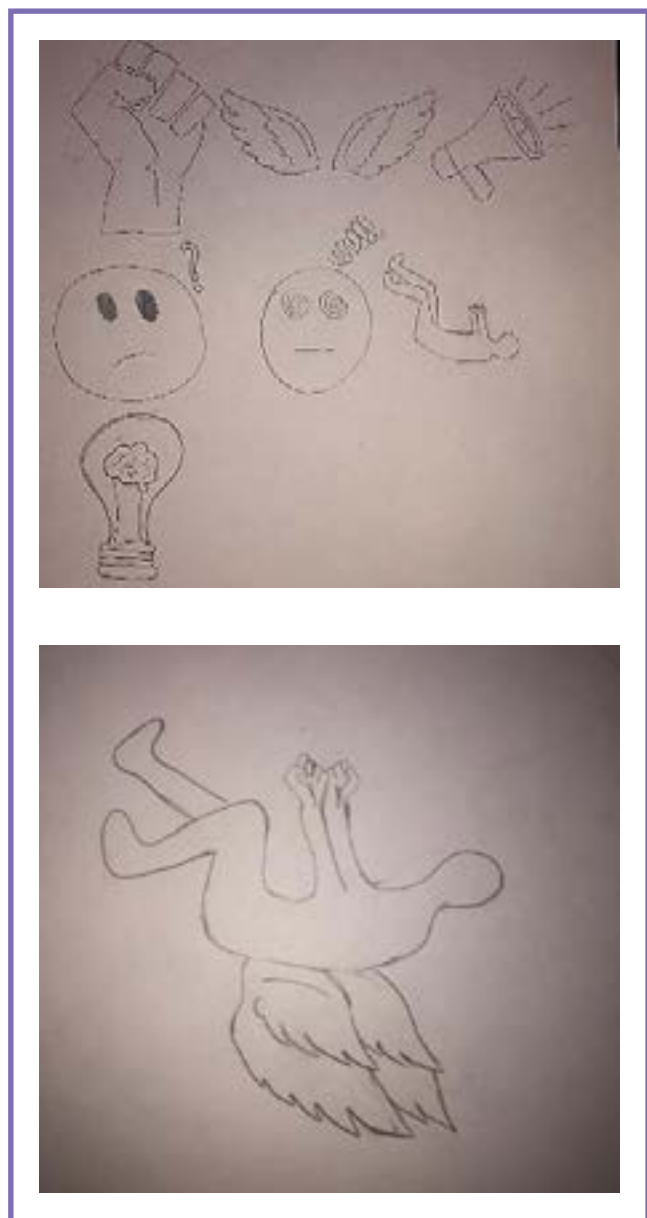


Figure 6 illustrates how the new image includes some of the elements proposed in the previous exercise. Even the *image-storming* included six images, but the student decided to use just two of them because what they wanted to represent was “those declining moments that we can have and, that we always going to have ‘wings’ to get ahead, but, when we feel bad or we are discouraged, we can’t open them freely.” In this way it can be seen how students continued making their own decisions and clarifying their intentions during the process. The creative process was an organic evolution and allowed

students and teachers to adapt each step according with circumstances, difficulties and possibilities while improve their ideas and technique.

Session 4 - Reflection / Formulating Solutions.

The strategy used in this session was PPCo the Creative problem-solving strategy which explores the Plusses, Potentials, Concerns and Overcomes of an artistic proposal or design in order to improve communicative intentions. At the same time, the PPCo strategy was applied in a group work task, which allowed students to interact and share opinions about each other’s works, helping them to develop communicative, social skills and artistic appreciation abilities.

During this session, students shared their ideas in groups in order to improve their artistic proposal. As some of them reported, “We could reflect about our drawings recognizing positive and negative aspects.” This strategy also helped the class appreciate their proposals as a group, and provided key questions to analyze the drawing exercises, not only in shape and technique but also in content. Considering that in this fine art class, the main goal was to understand art as a communicative human tool, artistic intention was part of the creative process. For that reason, one of the questions was about the communicative intention.

The main goal of this exercise was to promote students’ interaction in small groups. Grouping was free, and students were able to choose who they wanted to work with in order to provide them with confidence and a positive environment in which to share ideas, opinions and individual proposals. Students found that “this technique helped us to create more concrete arguments about the aesthetic appreciation of the proposals because we could emphasize each aspect and at the same time give constructive criticism based on the requirements that had been previously established and the intentions that the sketch intended to transmit.”

To analyze each other’s sketches, the questions guided students to identify communicative intentions, qualities and elements to improve. Students identified the communicative power of images and the possibility to interpret them. They felt that the exercise allowed them to reflect on their drawings and improve their work. Students identified that proposals needed to be

more elaborated, taking care of details and elaboration. Wrapping up this activity, students were asked about the effectiveness of this strategy, and one group responded, “Yes, because it helped us to give a course to our artistic appreciation and motivate us to further improve our work.”

Session 5 – Experience / Formulating a Plan. This session focused on *choice-based art*. When students are the center of their learning, it is important to include their opinions and decisions in the process. The teacher guides the process and designs the best path to follow and the strategies to help students learn. However, as part of the learning process, students’ actions, interactions and options must be included. “Choice-based art and teaching for artistic behavior were interchangeable phrases to describe art program where children make most of the decisions regarding their work” (Douglas & Jaquith, 2018, p.1). During the lockdown it was not possible to create an environment where different materials and techniques were available for these young artists. Under these circumstances, learners then needed to choose the techniques and materials they preferred and wanted to use at home. For that reason, choice-based art became important as “a methodology to provide a large number of students with choices in media and technique” (Douglas & Jaquith, 2018, p. 1).

In the same way, it is important to make students aware about their creative process, and how each one, at their own pace, can improve and refine ideas and transform them into artistic proposals. This consciousness is present in one student’s appreciation when they explain that “to use creative process stages... doesn’t cancel creativity that one could have, because, creativity is something that can’t be eliminated only trying to think in something. But even [creative process] allow it [creativity] to flow more.”

During this session, the groups decided how much time they would need to carry out the creative exercise. For students, it is important to learn how to manage their time, plan the creative process, and become autonomous. For this reason, most of the artistic projects included personal work, where students were by themselves exploring their options, taking decisions, and defining what they want to do. Most of the time, oral instruction was not enough, and it was necessary

to use an image, like a slide, to remind the students of the time and actions to take.

Session 6 - Action / Developing the Artistic Proposal. During previous sessions students explored ideas, possible compositions, and the clarity of their communicative intentions. These elements were the raw material for the final artistic proposal. Students had the entire session to work by themselves; nevertheless, they needed guidance, support and the certainty that the teacher was there to help them. For this reason, this asynchronous class was guided, and students were able to call teachers or teachers could call them to follow the process.

An interesting part of this stage was related to one result in the questionnaire analysis, which was how students connected technical ability with creativity as the first need and expectation when studying arts. In addition, in the reflections after having finished the first creative project, students identified the technical element as their main challenge. At the school, art education is not focused only on technical elements although it is undeniable that these skills are important in order to be able to adequately and accurately express the message or intention through the artistic proposal. Students felt that a lack of technical mastery would block their creative process. As one student expressed, “My biggest challenge was work development because many times I wasn’t able to accomplish the expected results, and had to begin again, till I could obtain the desired color and texture.”

Students described their difficulties with realistic drawing, especially applying shadows and generating light with color or other media. Some students also identified the need to learn how to draw human figures and faces. One student mentioned, “My biggest difficulty was to choose the technique...I had to choose one [technique] in which I don’t have much skill.” This also shows the relevance of media (technique, materials) and support to develop an artistic purpose. Another technical element mentioned by one student was perspective as the way to create the atmosphere and drawing space in order to evoke “the gloomy part of the drawing.” This learner’s difficulty to represent depth meant a difficulty to accurately represent the proposal according to the communicative intention.

Through these challenges handling techniques, students recognized their own effort to create images according to their purposes. Most of them felt proud of the drawings, their detail and symbolism. They felt they were able to express their ideas and preferences in the final artistic proposal, and some of them felt reality as a source of inspiration. It is important to highlight how some members of the class were aware that their technical decisions affected the process and artistic result. One example was the chance to choose colors or black and white options to make their creations, in order to communicate a special emotion. One student mentioned, “I didn’t choose the color for the artwork in order to indicate sadness and a kind of impotence, nor did I want to draw any element that could refer to happiness. I used objects common on prisons and places of confinement to symbolize the emptiness in physical and mental freedom.” Additionally, there was a conscious choice of technique in order to obtain a specific result. Another student commented, “This work was made with colored chalk because this kind of material gave me the bright colors I needed.”

It is interesting how learners mentioned their difficulties and at the same time were proud to overcome them. These affirmations show their persistence and effort in developing their artistic exercises, whether to apply shadows or light, or draw a human figure in a balanced space. Despite the difficulties using some techniques, students showed how any narrative could serve as an inspiration to reflect and create. They developed the awareness of a communicative intention and were proud to accomplish the artistic creation. They were pleased with “the creativity I had because I did not lack ideas at the moment to perform the process.” Another wrote, “I feel proud how I managed to do the character seated and, also, how my imagination flowed just watching the film.” These comments show the relevance of making connections between the inspirational reference / narrative and students’ personal experiences. At the same time the class recognized the importance of taking risks and making decisions in order to obtain an artistic project that accurately expressed their ideas and feelings.

During this process, some students used their first ideas to create the final image without a transition, which is the case of Student B, who made the leap from sketching images to proposals without a second

sketch, as Student A had done. Each student’s process was different, and it is important find the balance between what teacher expected and scaffolded in the activities proposed with students’ own path and their own discoveries. Creation can be improved in order to guide students to do the best, but respecting their own creative process.

Figure 7. Student B’s first and final work

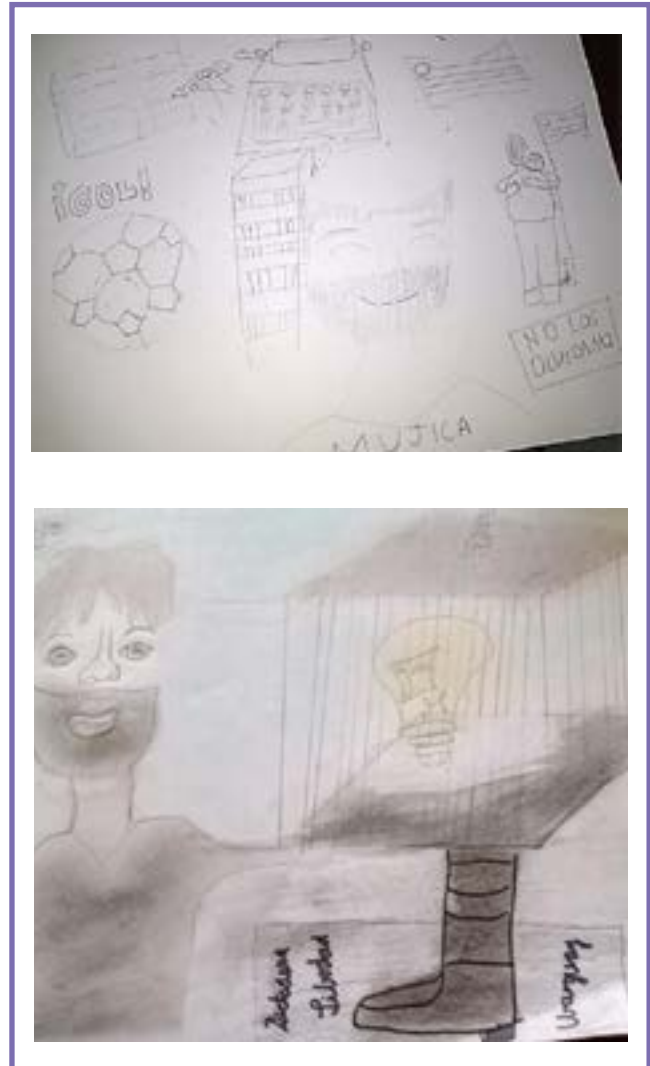


In this final proposal, we can see how Student B kept the initial idea of a human head that contains memories, desires and different feelings. It is evident how he/she worked carefully on details and explored technical possibilities. The student's motivation to create this image was "to make a drawing that summarized the film in its main aspects such as silence, freedom, etc." Silence is represented with the tape on figure's mouth. Some of the elements from the first exercise, like the pencil and paper, are included in the neck's figure, but in a more delicate and creative way. Additionally, it is possible to find connections with other important symbols from the film, such as the plant that Pepe Mujica kept during his lockdown and the birds as a symbol of freedom. Technical decisions were also relevant during the creative process as this student mentioned, "I wanted to do it with pencil to give it a mystery touch because if I used colors it would seem "happy" and I didn't want to show that message." At the end, the reflection exercise that began with the film became an artistic proposal full of insights and personal explorations.

A similar experience occurred with Student C, who made a sketch from the first drawing exercise and then developed a second creation, composing a new image with some of the elements from the image-storming. The creative process proposed exploring the vision using key questions around the film, formulating challenges, transforming words into images, and exploring ideas through Surrealist juxtaposition, which involved forced connections help students to create new images. However, this does not involve only making transitions between ideas, feelings and images; rather, this process is also about find meaning for creation.

The final work presented by Student C shows a new composition including the student's first images in an unusual and surrealistic way. This teenager kept the Mujica image, the man with a beard, paper, pencil drawings, and key words as freedom and Uruguay. Forced connections link the writing as an important element for film's characters to keep their light inside a jail sustained by the dictatorial military boot that oppresses freedom and a country.

Figure 8. Student C's first and final work



This image was also the result of sharing ideas with others, as Student's C group mentioned in the PPCo exercise, where they described how they "felt that each drawing is full of messages with different points of view about film teachings" as Student C explained, "What I wanted to explain is that ideas will keep alive even oppression and lockdown, as happen in the film." Contrasting what the creator wishes to transmit and what the spectator understands helped students identify the communicative power of images, and taught them how to watch carefully and appreciate them in order to discover hidden messages.

Session 7 - Evaluation / Exploring Acceptance.
Evaluation is not always about grading an activity. It also

means to stop and look at the process, whether the steps were executed correctly, or are helping along the path to accomplish the planned purpose. During the creative process and some artistic projects, it is necessary to identify if creative intention is well defined in the artistic proposal. Self-reflection and peer appreciation of the artistic products help students to understand how the images created affect the spectator. It is a view of formal and communicative elements in the image, including technical and meta-cognitive reflections. To help students in this exercise three key questions were proposed:

- What was my communicative intention (message) and expressive intention (forms, colors, composition and technique exploration) in the artistic proposal?
- What was my biggest difficulty developing the artistic proposal?
- What do I feel proud of? (about the work itself or the personal process)

This was the first part of evaluation process, in which students described their wish to transmit a message and express their opinions and feelings produced by the film, such as sadness, melancholy, grieve, angry, sense of injustice, human imagination, human experiences, mental capacities, memories, and attitudes to face difficulties. Most learners understood how to use symbolism and color to create a certain atmosphere and communicate deep and abstract messages.

Evaluation, in this case, is not about give an artistic proposal grade; it is about evaluate how creative process goes, how a student is involved with their own process and exercises, and what students have learned. Most of the time, the conclusion of a creative process means making individuals aware of their own accomplishments, difficulties and developed skills. Evaluation does not always come from the teacher, but from the learners, who discover the process results in their reflections. It is important to consider expressions like, “Express what I wanted,” “My intention,” “I wanted to explain,” “I did my best to reflect,” and “Transmit a message” as evidence of the role of willingness in artistic creation. In the questionnaire analysis, the importance of students’ desire to do something emerged, as well as the way that motivation

and engagement facilitated their perception about being a creative person.

In general, evaluating the process and how it affected learners, their perceptions of art, and their own creativity became more important than a number or letter to grade. Helping students to be confident in their own capabilities requires that they discover that by themselves. Not always what others said is enough to be aware of one’s own evolution, and this kind of reflection exercise helped students to be conscious of their own process, as can be identified in expressions like, “I could use my preferences and related them with the film,” or “I achieved what I set out to do and it was better than I expected.” At the end, the class discovered how a creative process that involved new things, concepts and experiences helped them in life.

The second part at the end of the process was *exploring acceptance*, which in this case means how the artistic proposal connects with the spectator. After reflection about their own process, students shared their findings in groups to analyze final results. In this appreciation exercise, the class was invited to think about positive elements and things to improve in group artistic proposals. Some of their positive conclusions included the following: “As a group, we could discover the diversity of how the history [of the film] was perceived, some positive and others negative. These perceptions diversity allowed us to understand closely classmates’ emotions.” Some appreciation about other classmates work were about intention, process and what the work caused in others. “We watched that he/she manage a good artwork environment and was possible to clarify the artwork intention...he/she could take two different ideas, put them together and to do the final artwork more complete...we recognize a creative proposal and which reflections cause.”

During group reflection about each other’s work, students found how each perception resulted in a different creation and was motivated by each different person’s emotions. This exercise also provided a positive environment to develop friendly ties among learners while they got to know each other better. Students also identified what environment meant in the work and its role in appreciation. They connected reflections with communicative intentions in the creative proposals and



how, during the creative process where different ideas could merge in one, the message became clearer for the spectator. Students also identified some elements to improve, like “Must improve the way to apply shadow,” “Must improve the way to draw human figures” and “the way to apply colors.” Again, students focused on technique as an important element to improve. A well-done drawing with detailed lines and good use of colors, light and shadows results in a better artistic work.

The creative process is a fundamental part of the artistic education area at the school, and was enriched with learning activities designed taking into account the research about Creative Problem-solving Strategies. It is important to identify that the students who participated in the focus group reported that the process “that we are using, is linked everything with everything,” and if they had not used this process, they would not have accomplished the same conclusions. One student commented that she “feels that was a step-by-step process of imagine, think and create in order to accomplish a final project” while another one think that the image storm allows them to create an artwork. Learners’ reflections about their processes and their classmates’ works showed an increased consciousness about the meaning of artistic projects and how this can affect creators and spectators.

Creative Behavior

Some traits associated with creative persons are curiosity, open-mindedness, (Zimmerman, 2009), problem-finding, problem-solving, divergent and convergent thinking, self-expression, and adaptability in new situations (Dudek & Cote, 1994, as cited in Zimmerman, 2009). Creative persons are happy to experiment, take risks, make mistakes and make unique connections often unseen by others (Lucas, 2001). During artistic education, it is important to keep these traits in mind in order to identify and promote them in students. Teaching and learning actions can influence students’ behaviors and guide them on a path where their skills and behavior are linked with creativity. During the creative process in class, it is important to consider the traits that are manifested in creative persons, not only for people who are considered artists

but also for all who are related with the environment in a creative way.

In this research, an important question to understand was how students felt about their own creativity, confidence, applications, context and if this evolved during the intervention. To begin with, most students showed in their questionnaire answers that they considered creativity as a gift, or external inspiration, coherent with the common belief that an artist is always creative and inspired, ignoring that an artist also has frustrations and moments without inspiration. However, during the intervention some of these students changed their thinking, and expressed that creativity was actually an ability, not the gift of a few.

When facing difficulty solving or understanding a creative problem, half the class reported feeling calm and focused, and tried to find new ways to face the artistic exercise creatively. However, the other half tended to feel upset or worried, which made it difficult to continue. Even so, most of them reported a sense of pleasure, happiness and pride with their works in art classes. At the end of intervention, learners recognized some progress, as one group wrote, “It is recognized as a better proposal development; both forms, elements and strokes are diverse and risky.” Taking risks is one important element of being creative, trying new ways to do things and connecting ideas in an unusual way to develop creative innovative ideas.

Sometimes the doubt of one’s own creativity was the greatest obstacle to solving a creative problem, but positive feedback from teachers or peers helped learners continue in their creative process. In accordance with Jeffrey and Craft (2001), the right conditions for creative learning include elimination of negative stress, helping students build their capacity to live with uncertainty, and at the same time keeping the need to be challenged. The main element to maintain the balance between challenge and positive environment is feedback.

In addition, teacher feedback helped make students feel taken into account, valued and truly accompanied. Timely teacher feedback helped students to overcome their doubts about their skills and process. It was not

focused on technique or media used; rather, feedback was centered on a student's personal need to increase his/her confidence, learn to be patient with their own process and identify the ways to improve. In one student words, "It is to help with resources, do it step by step, and the reflective log and personalized comments." As another student mentioned, "I believe that everything is based on new techniques teaching new ways to draw, paint, express...because I feel that that also helps... let say...to find better ways that help us to express." Teachers' accompaniment must be integral and include knowledge, comprehension and support.

Creativity manifests itself in an open-minded person who can listen and observe both the environment and others opinions, adapt to new situations and is patience with his/her own process. In this way, peer feedback took on a special importance because it increased appreciation skills and at the same time helped students to be more confident with their achievements and admit mistakes in a positive environment, particularly if they formed their own groups. Relevance of peer work in this project was evident in students' appreciations like, "We liked very much that each [classmate of the group] took into account some recommendations that we mention in last meetings and apply them in a satisfactory way." In this way, both teacher and peer feedback helped students to increase their confidence in their own process and build a positive condition for creative learning.

Creative Confidence

At the end of intervention, students who participated in the focus groups reported that a creative person can make anything and use everything to create. As one of them expressed, "If you are in the forest, you can use rocks, leaves, branches to do an artwork without using pencil, paper, clay...nothing...you don't need any of these things." A creative person can use everything around to make an artwork.

Students also recognized that step by step it is possible to do things better and obtain the expected result. They felt that expectations had been fulfilled slowly and that they had been taking risks. At the end of

the process one student reported, "I believe that we all are creative and we use creativity all the time." This was the same student who in the questionnaire expressed that creativity only appears when it is needed. For this student, the artistic education class was the opportunity to make real creative ideas while other days "I didn't have creativity, had new ideas. But I didn't represent them."

Art teachers have the responsibility to help students to increase their skills through art. Teaching creativity means creating adequate conditions for creative learning and developing artistic behaviors that not only help professional artists but any person who wants to face daily problems in a creative way.

CONCLUSIONS

Creativity is an important skill and human ability that helps to solve daily situations and problems, and is fundamental in artistic expression. However, in educational environments creativity can be seen from different perspectives. On the one hand, creative teaching looks for new ways to motivate students in learning designing creative activities. On the other hand, teaching for creativity is focused on strategies and methodologies to promote and develop creativity using elements from art. From this point, arts education involves students' development through choice-based art, creative problem-solving and artistic experiences that help to develop creativity to face the surrounding world in a creative way. During this study, it was possible to identify how creative processes and creative problem-solving strategies helped students develop their artistic works, and strengthen their confidence and capability to use creativity to express their ideas and feelings.

Creative processes applied in artistic education build conditions to help students "try out ideas, test theories, experiment with symbol systems, explore social relations, take risks and reimagine the world" (Paris & Hay 2019, p. 5), and students' answers showed how the intervention using creative process steps linked with creative problem-solving stages helped them develop their artistic proposals. Teaching for creativity



can also foster consciousness about social realities as occurred during this study, in which the starting point to create was a film that caused deep reflections in students and expanded their perceptions of reality through imagination (Marshall, 2014).

Another element to motivate and develop students' creativity was choice. It is important to give students the opportunity to express themselves, identifying ideas and methods in which they develop artistic behaviors to create autonomously. As in Varian (2016), the ninth-grade students who participated in this research expressed how the chance to link their interests, perceptions and technical possibilities with creative processes improved their self-confidence, creativity and critical thinking.

Finally, creative problem-solving strategies and stages used during intervention are aligned with Kulinski's (2018) affirmations, which identify creative problem-solving as a guide to help the creation of artworks connected with learners' experience and personal meanings. This connection between personal meanings with solving artistic problems develops artistic creativity that involves inspiration, intuition, spontaneity and self-expression (De la Torre, 2003, as cited in Swift, 2015), including artistic skills and specific art knowledge. As students expressed, technical mastery is important to have all the possible options to express their ideas and explore different artistic styles help them to expand their creative options.

The main limitation of the study was time. Even though the term selected for the intervention consisted of ten sessions, the first three classes were used in specific grade activities: for this reason, it was only possible to apply the intervention in seven classes. Students' commitment was very important to develop the process. However, 60-minute sessions in the remote model were insufficient to carry out in-depth feedback and better guidance to students in order to obtain better results. Another limitation was lack of materials because during the quarantine students did not have enough materials at home to choose from. In other conditions, the school would provide different materials to decide which technique use to make their artwork.

An interesting field for future research could be the assessment of creative process and artistic products. In art education, assessment has been a constant topic of debate since artistic creation involve emotions, feelings, personal ideas and several subjective elements that make it difficult to grade students works. Assessing creativity is linked with formative assessment because it is a matter of metacognition and self-awareness more than results or artistic canon. However, this is a field that deserves more research and reflection as during teaching students need timely feedback and guidance to help students to be more aware of when they were imaginative (Lucas et al., 2013), and the best results they can obtain at the end of the process. As Henson-Dacey mentions, the best way to develop creativity in schools is "redesign the art education curriculum focus in reflection-in-action as an assessment practice." (Henson-Dacey, 2015, p. 202)

ACTION PLAN

- The creative process needs time. It is important to negotiate with school coordinators longer sessions for art education. It is adequate to have 60 minutes or more because students need time to develop and make their artistic proposals with quality. It is important to give students enough time to enjoy the activities and avoid rushing learners.
- It is important to show others the difference between teaching creatively and teaching for creativity. Sometimes institutions and teachers of other areas confuse the meaning of art in education with imaginative and creative ways to teach different concepts.
- Share and promote the use of Creative Problem Solving and other strategies applied in this research to develop creativity and students' confidence.
- Giving timely and meaningful feedback is fundamental during the process to solve artistic problems. Students need the tools to evolve in their works, and it is the teacher's responsibility to manage class time to respond to that need.
- Teachers must promote peer feedback and students' self-awareness of their creative and learning process.
- The learning process also involves participating in new experiences planned and proposed by the teacher in order to help students moving out their comfort zone and the common places where they feel secure or master easily.
- Artistic education involves more than technique mastery, as some art teachers might think. Nevertheless, students recognize the capability to use different materials and techniques to make their ideas real as an important element in creativity.
- It is necessary that parents know their children's capabilities, so it is important to show the resulted artworks. It is comprehensible that because the quality of the results, some students do not want to show their artistic proposals; however, internal exhibitions could be used as a strategy to socialize creative process its meaning and goals.

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THE EFFECT OF SECOND LANGUAGE ORAL EXPERIENCES ON THE DEVELOPMENT OF EARLY LITERACY SKILLS

Laura García Jaramillo

The importance of early literacy processes is undisputed. In our setting, many English immersion schools expect preschool students to read and write in a second language while or even before literacy is developed in the first language. In this study, Laura Garcia sought to maximize oral language experiences as a way to support second language literacy processes. Her intervention provided important support for early literacy in the online environment during the pandemic. In addition to the stated variables, she found that the role of the home and parents' influence weighed strongly on students' performance during virtual classes and on their literacy development overall.

ABSTRACT

The purpose of this research was to determine the influence of second language oral experiences on the development of early literacy skills in kindergarten students at a private immersion school in Bogotá. Further, this study also sought to identify the strategies that best support second language oral skills development in kindergarten students. The study took place during the COVID-19 pandemic, and all activities occurred in a virtual learning scenario. The participants of this study were kindergarten students, nine students in total, five boys and four girls, all of them five years of age. Data was collected from class observations and students' artifacts, and the information was kept in a reflective research journal with the teacher-researcher's reflections. Results demonstrate that multiple opportunities to use the language promoted students' listening and speaking abilities, as well as vocabulary acquisition. Another important finding to emerge was the important role of the home in students' language and literacy development. Finally, it was found that most of students improved and developed literacy skills during the pedagogical intervention, showing that the improvement of oral skills directly influences the development of literacy skills.

Key words: Oral Skills, Early literacy development, Classroom strategies, Online classes, Early childhood education, Immersion education



RESUMEN

El propósito del estudio fue determinar de qué manera las experiencias orales influyen el desarrollo de las habilidades de lecto-escritura en estudiantes de kínder en un colegio de inmersión, privado en Bogotá-Colombia. El estudio buscó, además, identificar las estrategias que mejor apoyan el desarrollo de habilidades orales en la segunda lengua a los estudiantes de kínder. El estudio se desarrolló durante la pandemia por COVID-19, por lo que la intervención se llevó a cabo de manera virtual. Los participantes fueron 9 estudiantes de cinco años del nivel kínder, cinco niños y cuatro niñas. Los datos fueron recolectados a través de observaciones de clase y evidencias de las actividades desarrolladas; esta información se registró en el diario de campo junto con las reflexiones de la investigadora. Los resultados indicaron que las múltiples oportunidades para usar la segunda lengua promovieron la habilidad de escucha y la habilidad oral en los estudiantes, al igual que su adquisición de vocabulario. Adicionalmente, se evidenció la importancia del papel que cumple el hogar en el desarrollo de la lecto-escritura. Finalmente, se encontró que la mayoría de los estudiantes mejoraron y desarrollaron sus habilidades de lecto-escritura durante la intervención pedagógica, demostrando que el mejoramiento de las habilidades orales influye directamente el desarrollo de las habilidades de lecto-escritura.

Palabras clave: Habilidades orales, Habilidades de lecto-escritura, Estrategias de enseñanza, Clases Virtuales, Educación en primera infancia, Educación de inmersión.

INTRODUCTION

Bilingual education has grown significantly, both in popularity among parents and in research interest in recent years. Second language acquisition remains one of the main goals for private schools in Bogotá, and immersion education is the most frequent approach to accomplish this goal, beginning at the moment when students start school at age four. Unfortunately, preschool teachers tend to be self-contained, meaning that they teach most of the subjects in English without the proper training on how to use immersion methodology or without the proper knowledge of the stages of second language acquisition.

When promoting language acquisition, teachers must manage school expectations, as well as student motivation and interest. However, most school directors and English teachers are uninformed as to the process of second language acquisition, and generally hold expectations that are higher than what learners actually achieve. By the end of the preschool years, students are usually expected to speak, write, and read proficiently in the second language and are also expected to learn concepts in the second language.

Research shows that immersion contexts are beneficial for learning a second language. Nevertheless, they also point to the issue that immersion programs often do not have the recognition or investment needed to achieve their goals. Literature reviews and different studies recognize that immersion settings provide children with L2 resources to start producing oral language, highlighting the importance of oral skills development as a basis, including aspects such as vocabulary, speech perception, word familiarity and phonological awareness, which are crucial in the development of early literacy. Researchers are also interested on identifying different strategies and ways to support second language literacy development. Research points to phonological awareness, type of instruction, environment, developmental stages and learning experiences as the most important elements to develop in the classroom because they promote early literacy skills.

Problem Statement

After four years of working at private schools, the teacher-researcher of the present study has observed that these schools often lack a clear correlation between their methodology and the stages and characteristics of second language acquisition. At the school in this study, there is a vague relationship between second language literacy developmental stages and academic expectations. This is a problem because the school tends to pressure teachers to make their students bilingual as soon as possible, which in turn makes teachers force their students to copy or use dictation as a strategy to show results. This situation leads to a lack of motivation in students because they do not feel capable or successful. In consequence, preschool children find it difficult to feel comfortable or confident when starting to learn a second language; in addition, it is observable that kindergarten students lack oral skills, and this affects the development of literacy. Based on the literature reviewed for the study, there appears to be a direct link between oral proficiency and literacy skills. For this reason, the study posited that strengthening students' vocabulary and oral language proficiency may aid learners in literacy development.

PURPOSE OF THE STUDY

The main purpose of this research was to determine the influence of second language oral experiences on the development of early literacy skills in kindergarten students at a private immersion school in Bogotá. Further, this study also sought to identify the strategies that best support second language oral skills development in kindergarten students.

LITERATURE REVIEW

Researchers are more and more interested in studying the second language acquisition of young learners. This literature review focuses on studies from around the world that share critical factors that need to be addressed in the classroom to promote second

language acquisition in immersion education contexts. Most of the research found centered on early literacy skills development, oral skills development, lexical development, and the way schools approach immersion education. The findings of these studies point out that immersion contexts are beneficial for learning a second language. This type of setting provides children with L2 resources to start producing oral language, and in consequence early literacy skills can start to develop. In most of the studies, oral language is considered the most important factor for early second language acquisition, highlighting that phonological awareness and vocabulary skills might be the best predictors for reading and writing skills.

Immersion Education

Several literature reviews share research from immersion settings in different places, including the US, Canada, Ireland, Colombia, and Finland. In general, these reviews affirm that the objective of early years immersion programs is usually either language maintenance and/or enrichment of second language learning. The articles reviewed recognize the benefits of immersion settings for second language acquisition. However, they also point to the issue that immersion programs often do not have the recognition or investment needed to achieve their goals, and as a result, teachers tend to improvise or focus their teaching on less relevant matters affecting students' second language learning.

Cummins (2000) summarized over 30 years of research on immersion programs in Canada. His main finding was that immersion education needs to incorporate an educational philosophy that goes further than the discipline of Applied Linguistics to reach its maximum potential. He argues that immersion programs should give students opportunities to communicate powerfully in the target language and to be able to integrate language with their cognitive development. Another important finding was that immersion programs have the most potential for truly preparing citizens who can make significant contributions to our global societies. Nevertheless, immersion education has to face different issues that

may affect its results, including teacher training, the quality of the classes, and the quality of materials.

Hickey and de Mejia (2014) did an extensive literature review evaluating different immersion models, looking specifically at the North American and European contexts of Belgium, Canada, Finland, USA and Wales to explore some of the challenges early years immersion programs are currently facing. They found that the most significant challenge for early years immersion centers is to train and retain effective and experienced educators with qualifications in early years education. Another identified challenge was that teachers do not have the access to effective ongoing training in immersion methodology, tending to improvise or focus their teaching on less relevant matters, such as an exclusive focus on content of academic subject areas, or relying exclusively on dictation and translation. Hickey and de Mejia (2014) concluded that this type of education does not have the recognition or investment needed to achieve its goals appropriately and that preschools that have this type of education have difficulty accessing appropriate materials for early years education. Despite these issues, early years immersion is an educational sector that offers significant educational benefit to children.

Interested in the benefits of immersion education, Björklund et al. (2014) videotaped the interaction between children and their educators during the first two years in immersion settings to research early second-language learning and teaching. They found that immersion kindergartens offered ideal conditions for L2 learning even though educators failed to optimize learning opportunities if they were not aware of their role as language models. The authors argue that teachers need to provide opportunities for language input, to verbalize ongoing activities and scaffold L2 use for individual learning. The bilingual dialogues analyzed in this study showed that children used their common L1 as a resource in order to understand items in the L2 and continue dialogues. Another important finding was that receptive skills in particular seemed to develop very early. The data showed that children's use of L2 productive skills were observable even from the first days in immersion. For immersion children to acquire a functional L2 lexicon and syntax, the authors

argue that it is necessary to train educators to prepare carefully planned activities and language routines for the introduction and use of language. Björklund et al. (2014) finally found that because educators systematically speak only the L2, their every verbal production provides children with L2 resources.

L2 Oral Skills Development

Immersion education research points to oral skills development as one of the most important factors to achieving second language acquisition. The articles reviewed for this section explore the role of oral skills in different contexts such as USA, Ecuador, and Canada. Most of the studies highlight the importance of oral skills development as a basis, including aspects such as vocabulary and phonological awareness, which will help develop reading and writing skills. A general finding of the studies reviewed is that teachers should focus on oral skills and give students opportunities for communication settings so they can develop language, which is crucial in the development of early literacy.

Gibson et al. (2014) used a bilingual English-Spanish oral screener and interviewed caregivers to measure receptive-expressive language of 78 Spanish-English bilingual children in pre-kindergarten in the US. They wanted to explore the influence of language experience in the relationship between students' receptive and expressive skills. The results of this study showed a meaningful gap between students' receptive and expressive semantic knowledge in English, but not Spanish. The size of the gap was related to the amount of English input that children received. Another finding was that language experience played a dominant role in influencing the appearance and breadth of the receptive-expressive gap and was the strongest predictor of performance in both English and Spanish. Finally, the authors suggest that the receptive-expressive gap might be attributable to the quality of phonological representations that these children received, especially in English.

Understanding the importance of oral skills when acquiring a L2, Toro et al. (2019) identified the use of the Communicative Language Teaching approach,

specifically the strategies and resources teachers used to improve students' oral skills. They interviewed six English teachers and conducted observations of several English classes. They found that the only task-based activity used by teachers during classes was dramatizations while hands-on activities were not commonly used. In addition, teachers were not using strategies like modeling, repetition or grouping to improve speaking skills as frequently as they should have. As a result, students were not achieving the desired results. Toro et al. (2019) suggest that students need more opportunities to use L2 to orally interact, which will benefit the goal of acquiring the language.

Garbati and Mady (2015) aimed to identify effective strategies for L2 oral skills development through a literature review in the areas of oral proficiency, academic language development, and L2 teaching and learning strategies. They found that explicit teaching, plus opportunities for meaningful and authentic communication, help promote L2 production, and that scaffolding can provide the learner with the tools they need for learning both the L2 and specific subject-related content. Another helpful strategy is to provide multiple authentic encounters that give learners opportunities to speak about academic topics throughout the school day, encouraging oral skills. Planned and spontaneous presentations increase learners' L2 development because they need to interact with teachers and peers in both structured practice situations as well as in spontaneous conversations. Garbati and Mandy (2015) found that task planning can have a positive effect on oral fluency and can lead to the production of more complex language. For early learners, the best strategy is to use fluency activities where students can rehearse activities gaining familiarity with the language through repetitive tasks. Furthermore, through appropriate questioning techniques, teachers can promote low-level L2 learners to interact naturally in the classroom. Garbati and Mandy (2015) also found that students demonstrated an improved use of the L2 and a wide range of language learning strategies as well as a decreased use of their home language when engaged in role-play activities. Finally, they concluded that the quality and type of assessment and feedback plays an important role in oral language development. It is also useful to highlight that the instructional approach has an impact on the quality

and effectiveness of the learning context for L2 learners (Garbati & Mandy, 2015.)

Research shows that oral skills are not only important to promote L2 acquisition but also to predict literacy skills. Geva (2006) examined studies concerning to the relationship between English oral language proficiency (vocabulary, grammar, and listening comprehension) and various English reading skills among English-language learners. This literature review showed that phonological processing skills and working memory in English are predictors of accurate English word reading skills, also that vocabulary skills in English may be related to spelling skills in English. Another finding is that English oral language proficiency is consistently implicated when larger chunks of text are involved, whether in reading comprehension or writing.

L2 Lexical Development

Oral skills help second language learners become more involved with the language and feel more confident when using it. The research reviewed for this section explored the role of vocabulary in reading, listening, and writing skills development in European contexts. Most of the studies suggest that phonological awareness, speech perception and familiarity are crucial factors for lexical development in early learners.

Knowing the importance of the role of oral skills to achieve a second language, Aukrust and Rydland (2011) videotaped group time conversations of several immersion schools. They studied the impact of preschool talk quality on young immigrant children's second language and literacy skills outcomes in first grade classrooms. The main findings were that preschool vocabulary richness and discourse complexity predicted receptive vocabulary and word definition skills. Nonetheless, vocabulary richness did not predict listening comprehension; rather, the level of narrative performance was thought to be a better predictor of listening comprehension longitudinally. Finally, they found that preschool classrooms did not evidence continuity in the way they taught emergent phonics, which affected their ability to predict code-related skills in first grade.

Most of the research reviewed points to phonological awareness and processing as one of the most important elements for second language acquisition. Nicolay and Poncelet (2013) carried out a longitudinal study with 61 French-speaking 5-year-olds who had just been enrolled in English immersion classes in Belgium. They aimed to determine the effect of phonological processing abilities, such as phonological short-term memory (STM), phonological awareness, and speech perception on the acquisition of L2 vocabulary. Further, they sought to discover if this was linked to attentional and executive skills, including auditory attention, flexibility, and inhibitory response. Their main findings were that phonological STM and speech perception were predominantly involved in vocabulary development during the first years of language acquisition. In addition, Nicolay and Poncelet (2013) found that perceptual sensitivity to the phonetics of speech guided word learning. However, phonological awareness did not seem to be as relevant for L2 vocabulary development as the familiarity of the words. Children who achieved familiarity were able to rely on their phonological awareness ability to learn new words. They also suggested that the early phases of L2 learning involved greater attentional control; in addition, the auditory selective attention and flexibility were correlated with the performance of L2 productive and receptive vocabulary. Finally, they found that the inhibitory control did not appear to play an important role in L2 vocabulary development.

L2 Early Literacy Development

Most of the research reviewed for this section focused on identifying different strategies and ways to support early literacy. Immersion education, oral skills and lexical development are some of the factors researched that support emerging literacy. The studies reviewed identify phonological awareness, type of instruction, environment, developmental stages and learning experiences as the most important elements to work on in the classroom to promote early literacy skills.

Yaden and Tardibuono (2004) aimed to understand if children in the US develop literacy skills in the same

way as children in Latin America. They carried out a study with 47 children from a childcare center in the US. They collected prewriting samples of preschool children to analyze and compare with the findings of Ferreiro and Teberosky's study (as cited in Yaden & Tardibuono, 2004). The authors found that even though a child was not able to produce conventional letter characters, his or her understanding of how the written language system works may be developing at a normal pace. The authors affirm that these findings can be generalized and that children tend to take years to fully understand the written language; therefore, it is necessary to promote learning environments that encourage active discovery, and engage students in innumerable situations of trial and error and multiple opportunities to observe others applying their written system in many different contexts. Yaden and Tardibuono (2004) also point out that second language learners overlapped conceptualizations, which had their own pace of development, and incorporated a wide range of inputs on the way to a conventional view of the written language system.

In general, the findings from research indicate that a proper environment and opportunities to develop language learning will help promote early literacy skills in young learners. Gersten and Geva (2003) made a literature review to understand how young English learners develop language and literacy skills. They found that phonological awareness plays an important role in reading skills development. Studies showed that instruction in phonological awareness enhanced growth in reading and spelling and predicted its development. An important strategy to promote phonological awareness linked to writing is to use frequent writing activities that reinforce emergent phonological and word analysis skills. Gersten and Geva (2003) suggest that teachers should integrate vocabulary development with other lessons, letting students define words and use those words in sentences.

Purewal (2008) also highlights the importance of phonics and literacy development of second language young learners. This literature review explored the relationship between synthetic phonics and emergent literacy. Purewal found that the first language reading experience and second language proficiency contributed



to the success of reading effectively in the second language. The research reviewed in this article also showed that second language learners need a sufficient oral vocabulary base for reading successfully. Purewal (2008) suggests that phonological awareness in L1 positively affects reading acquisition in L2, and that the knowledge of L1 sounds help second language learners to make connections and understand the sounds of the learning language. He also found that learners who were exposed to a synthetic phonics program improved their word reading abilities significantly but did not improve their reading comprehension abilities.

Most of the success of teaching literacy skills depends on the strategies teachers use. Dennis and Votteler (2013) carried out a literature review to provide strategies for preschool teachers that can be used to support children's emergent writing skills, and ultimately enhance their overall literacy development. The findings of this research review suggest that drawings actually generate ideas for writing and help the child remember the ideas when he or she attempts to use writing for self-expression. Dennis et al. (2013) recommend that teachers should treat drawing as a way of communication since children write and read images before writing and reading in a conventional way. Writers' workshops and dictation are two strategies that promote early literacy in children because each strategy supports the individual capabilities and encourages them to move forward in the writing process.

The language of instruction is another strategy worth considering when teaching emergent literacy skills. Nitecki and Chung (2013) observed 14 preschool classrooms in the US to explore the relationship between developmentally appropriate literacy instruction and addressing conventional literacy skills. The result of this study showed that developmentally appropriate books, accessible materials, print-rich environments, various literacy-based lessons, and group and individual activities were relevant to the students. Results also indicated that preschool teachers tended to use direct instruction to address the standards, and that this method was often developmentally inappropriate. The authors argue that teachers should focus on environment and setting. In addition, they found that teachers tended to undervalue free choice

time, and that speech and language opportunities were not maximized in the classrooms. Nitecki and Chung (2013) recommend that preschool teachers allow children varied opportunities to practice their speech and listening skills and use everyday conversation to introduce new vocabulary. The study concluded that foundational skills, play, and the principles of emergent literacy seemed overshadowed by the emphasis on teaching the practical ways of reading and writing.

Similarly, Lindholm-Leary (2014) studied the relevance of language instruction in the development of literacy skills. This study applied three instruments to measure language proficiency and preliteracy skills in a sample of 254 children from kindergarten through second grade (ages 4–7) Hispanic students to determine whether their outcomes of literacy skills varied according to instructional language and primary language proficiency. The results of this study concluded that there was no significant disadvantage to being instructed bilingually, showing that primary language instruction / bilingual approaches can provide an important foundation for the development of language and literacy skills in the majority language, while also developing the minority language.

The use of proper strategies as predictors of literacy skills is also important to consider when teaching second language learners. Lipka and Siegel (2007) carried out a longitudinal study with a sample of 831 children who were tested in kindergarten and in Grade 3 in Canada, using a battery of tests in kindergarten and another set of tests in third grade. Lipka and Siegel (2007) wanted to examine whether the predictors of reading skills in Grade 3 would differ between English as a second language (ESL) students and native English-speaking (L1) students. They found that both ESL and L1 children showed correlations between phonological awareness and literacy in kindergarten, suggesting that the same factors contributed to reading development in these two groups. For L1, the combination of the five kindergarten measures (phonological awareness, syntactic awareness, lexical access, letter identification, and memory for sentences) were found to be significant in explaining individual differences in third-grade word-reading ability. Nonetheless, for ESL students, only two measures (letter identification and memory

for sentences) explained differences in third-grade word-reading ability, indicating that these two measures were more sensitive to individual differences. Another finding was that being an ESL student was not a significant factor for being at reading risk. Further, letter identification and phonological awareness predicted reading difficulties in Grade 3. Also, kindergarten skills of working memory were found to be important in predicting word reading skills in Grade 3.

METHODOLOGY

Research Design

This study was designed based on the *complexity paradigm* of educational research as it understands reality in a holistic way. This perspective goes beyond a cause-effect model. Complexity paradigm also sees phenomena as a complex issue, pointing out that relationships, interactions, and systems are dynamic and interconnected in multiple variables (Cohen et al., 2018). In the case of the present study, literacy development in second language learners is a phenomenon that is observable in almost every child; however, the process is different in each individual. Literacy components have their own developmental sequence; each supports the development of the others as part of a holistic appreciation. Consequently, the complexity paradigm and the comprehension of literacy development in second language learners are aligned in the manner they perceive reality. Considering this paradigm, this study aimed to determine the influence of second language oral experiences in the development of early literacy skills in kindergarten students at a private school in Bogotá. Further, the project sought to identify the strategies that best support second language oral skills development.

The study also used an *action research* type of research, which is defined by Cohen et al. (2018) as a self-reflective methodology that helps researchers to understand and produce knowledge about educational practices and their complexity that aim for changes at a local level. There are different types of action research: action research as a critical praxis, action research and

complexity theory, and participatory action research. Action research and complexity theory suit this research since it allows for the research to produce outcomes and processes that are dynamic, open, adaptive, non-linear, and co-adaptive (Cohen et al., 2018, as cited by Daza, 2020).

Action research tries to improve the educational practice from a perspective in which the teacher-researcher identifies a problem in his or her context that involves procedures, people, or tasks and looks for a solution using self-reflection as a meaningful tool (Cohen et al., 2018). In this particular research, the teacher-researcher analyzed the students' work to monitor early literacy skills development with the influence of second language oral experiences in the classes. The learning experiences determined the strategies that best support second language oral skills development and in consequence literacy skills development.

Context

The study took place in a private immersion school in Bogotá, Colombia. The school is located in the north of Bogotá, and most of the families come from high-income backgrounds. It was founded in 2002 by a Colombian entrepreneur. The school is accredited as part of the International Baccalaureate community, is trilingual with French as a third language, and has an immersion education methodology to acquire English as a second language. It is an urban school with close to 300 students. The mission of the school is to form knowledgeable, reflective, and open-minded citizens who question the world with ethics, determination, and commitment, and to promote respect for diversity and human dignity through a constructivist pedagogic approach. The population of the school is mostly Colombian.

The school is divided into three programs: The Primary Years Program from nursery to fourth grade, the Middle Years Program, from fifth grade to ninth grade, and the Diploma Program in tenth and eleventh grade. Learners in the Primary Years Program (PYP) inquire into concepts through a transdisciplinary



approach in which learners can investigate how a concept transforms and/or permeates all subject areas. The language of instruction for most of the subjects is English.

The school has an immersion program since pre-kinder year. In preschool, the homeroom teacher teaches most of the classes, and his or her communication with the students must be in English. Although the school curriculum points to some content in English, most of the language learning happens indirectly through the homeroom teacher speaking English most of the time. During the study, students had two sessions of 45 minutes every six days to explore language content, including phonics, high frequency words (HFW) and vocabulary. The other classes focused on disciplinary or transdisciplinary content.

The goal of the school is to have students in transition grade proficient in English; however, there is no consensus on how to promote and teach literacy skills. Most of the teachers do not know the developmental stages of literacy and unconsciously ignore important elements to develop these skills. Teachers at the school tend to center the classes on teaching content and use literacy skills as a way to evidence students' knowledge. In the informal diagnostic inquiry at the beginning of the study, the need for students to truly explore pre-writing elements and language elements through oral activities and opportunities to practice reading and writing was clearly evident.

The study took place during an atypical historical moment. It happened during September-December 2020 during the COVID-19 pandemic. All of the classes were led virtually since March 2020. All of the research was conducted virtually. Although virtuality transformed the ways in which data is collected, it was not possible to know to what extent the process was transformed by the virtual scenarios. Permission from the school was sought and obtained to carry out the project.

Participants

The participants of this study were nine kindergarten students, five boys and four girls, all of them five years

of age. This group had been together since pre-kinder, except for one boy who started school the year of the study. They had been learning English as a second language for one year but had been missing some learning experiences involving literacy skills. Both the name of the students and the name of the school were kept anonymous following the school's policies on *habeas data* and Child Protection.

For this study, there was no explicit consent from the parents as the school considered that there was no need to obtain this consent since parents already signed a consent to record and save students' work at the beginning of the year. The school felt that their approval was enough to collect data. The children's identities were not revealed at any moment.

The teacher-researcher was also considered a participant because she assumed an active and self-reflective role in her practice as teacher of these students. The teacher-researcher looked for data which might lead to the identification of strategies that best support second language oral skills development, which consequently promoted early literacy skills in kindergarten students.

Pedagogical Intervention

This project intended to describe and analyze students' work to identify patterns that show the influence of oral experiences in the development of early literacy skills. Additionally, the data analysis identified some strategies that best support emergent literacy. With this information, it was hoped that teachers may be able to promote literacy skills in young learners by using effective strategies and identifying student's stage of literacy in order to help them move forward in the process.

The teacher-researcher developed different activities planned for classes that had English as a language of instruction, such as math, English, science, and social studies. She selected learning experiences with the following criteria: oral language as the center of the lesson, a final product that involves writing, and an oral presentation by the students. Finally, the teacher-researcher wrote observations of the classes that

described and analyzed the final product of the learning experiences. The data description and analysis were written in the reflective journal.

The learning experiences were planned in cycles of six days. Students had at least three literacy activities during the cycle. By the end of the semester, a substantial number of samples had been gathered to analyze if the oral experiences helped students move forward in their literacy development. Parents of the students sent the final product via email. The teacher-researcher collected the products describing and analyzing the data in three different moments in the reflective journal.

Data Collection Instruments

Reflective Journal

This instrument was chosen to describe and analyze students' work in classes that had English as a language of instruction. In this way, it was possible to carry out a self-reflective process in which the situations experienced during class showed strategies and marked the process of the students in literacy and oral skills. The analysis of students' work was described and analyzed in three different moments with the lesson plans as a basis.

Student Artifacts

Throughout the study the teacher-researcher collected students' artifacts for three months. In three different moments she described and analyzed students' writing samples, which made it possible to determine whether the oral strategies used in the learning experience helped promote learners' early literacy skills. The data description and analysis were written in the reflective journal.

Field Journal

The teacher researcher chose the learning experiences that met all the criteria for the study: oral language as the center of the lesson, a final product that involved writing, and an oral presentation from the students explaining their work. After executing the

lesson plan, the teacher-researcher wrote a reflection of what she observed during the lesson. The observation notes were written in the reflective journal.

Data Analysis and Interpretation

The data collected during this research project was analysed guided by the principles of *grounded theory*. Grounded theory is a systematic way to produce theory from data. The data is coded by reading each stage of the project, categories of analysis are coded by reading each of the stages, and categories of analysis emerge from the same text. These categories are then compared with theory and transform while the research takes place (Glaser, as cited in Cohen et al., 2018).

In the data analysis for this project, all the stages of the pedagogical intervention were analysed using grounded theory. This was done by identifying recurrent variables that affected the progress of literacy skills in students, and these variables were registered in the reflective journal and compared to the outcome of the classes. The teacher-researcher wrote three reports where she analysed recurrent variables, class observations, students' progress, and the outcome of the classes. Each of the stages of the pedagogical intervention produced similar categories, which were then triangulated to create unified categories from recurring themes. In order to answer the research questions, different techniques were used, including field journal, reflective journal and students' artifacts.

Field Journal

After executing the lesson plan, the teacher-researcher wrote a reflection of what she observed during the lesson and how she perceived the outcome of the class. An Excel spreadsheet was used to collect and log the intervention. This instrument showed the lesson plan for the learning experiences selected, the evidence students should send at the end of the class, vocabulary seen in the lesson, the ways students were using the language and, a reflection of the outcome of the class. The observation notes were also written in the reflective journal and compared to students' artifacts.



Student Artifacts

After the classes were finished, parents sent the teacher-researcher the evidence of what the students did in class. Throughout the study the teacher-researcher collected students' artifacts and wrote observations about the evidence. In the reflective journal she described and analyzed students writing samples, which allowed her to determine whether the oral strategies used in the learning experience helped promote early literacy skills in the students. The analysis of these artifacts was informed by Ferreiro and Teberosky's stages of literacy in young children (1982, as cited by Gillanders, et al, 2017). Three categories were determined based on this, and these categories were used throughout the study to gauge students' current level, progress, and also regression back to previous stages.

Reflective Journal

The reflective journal entries were analyzed following what Cohen et al. (2007) state as *content analysis* for qualitative data. In the reflective journal the teacher-researcher described and analyzed students' work in classes that had English as a language of instruction. In this way, it was possible to carry out a self-reflective process in which the situations experienced during classes showed strategies and marked the process and progress of the students in literacy and oral skills.

After reading the reflective journal annotations about the development of second language literacy skills in kindergarten students, the researcher defined codes and categories through considering the recurrent themes in these entries. This allowed the researcher to organize and examine the information. The analysis of students' work was described and analyzed in three different moments with the lesson plans as a basis.

Periodic Reports

The teacher-researcher wrote three periodic reports that summarized the analysis made from reflections, students' artifacts, and students' observations written

in the reflective journal. In the periodic reports she narrated the process of the students, the influence of the variables in the literacy promotion of students, mentioned variables that affected the research that might not have been contemplated from the beginning of the pedagogical intervention.

RESULTS AND DISCUSSION

The purpose of this project was to determine the influence of second language oral experiences on the development of early literacy skills in kindergarten students at a private immersion school in Bogotá. The pedagogical intervention intended to describe and analyze students' work to identify patterns that illustrate the influence of oral experiences in the development of early literacy skills. As a result of analysis of the data, it was possible to determine findings that respond to the research questions. The findings of this study indicate that classroom strategies are fundamental in promoting early literacy skills, routines, and differentiation. In addition, presenting different activities that support oral language helped students develop their literacy skills. The strategies used in this project always involved oral experiences. The results showed that having multiple opportunities to use the language promoted listening and speaking abilities, as well as vocabulary acquisition. As a consequence, students felt more confident with the language and started to produce more oral language.

Another important finding to emerge was the important role of the home in students' language and literacy development. Factors emerged such as parent intrusion in students' work, the organization of the student's workspace, as well as home reading and study routines and the promotion of early literacy. These can be understood as important variables that encouraged or discouraged the development of literacy skills. Finally, it was found that most of students improved and developed literacy skills during the pedagogical intervention, showing that the improvement of oral skills directly influences the development of literacy skills.

Student Language Development and Early Literacy Skills

This project observed and analyzed students' literacy development throughout the period of the pedagogical intervention. The data collected during class observations helped determine how the variables affected students' literacy skills as well as which actions proved more effective. As a result of the intervention, it was possible to evidence improvement in students' early literacy skills. This progress was visible in the quality of students' written samples over time. Although it was possible to observe a general overall improvement in some of the students, others were not able to move forward in their process due to other factors, such as the influence of the home in early literacy and study processes.

Preliminary Diagnostic Inquiry

Initially, the teacher-researcher carried out informal diagnostic inquiry in the reflective journal in order to arrive at a baseline description of students' literacy skills. The pedagogical intervention started with observations of students during virtual classes to determine their stage of literacy development, using as a basis theory and research by Ferreiro and Teberosky (1982, as cited by Gillanders et al, 2017). The teacher-researcher also observed students' performance related to their development of literacy skills, and analyzed some of the students' work using grounded theory. This stage lasted for two weeks and allowed the teacher-researcher to establish a baseline. In general, this initial diagnostic inquiry revealed that kindergarten students lacked oral skills in the second language. Further, it was possible to evidence three different stages of literacy development coherent with Ferreiro and Teberosky's work (1982, as cited by Gillanders et al, 2017).

One of the activities used to analyze students' stages of literacy skills was a worksheet with pictures of different holidays. Students were asked to cut the holidays they celebrate with their families and paste them in the table. Then, they were asked to write one or two sentences saying which of those holidays was their favorite. After finishing the worksheet, students were

divided into groups where they had the chance to share with their classmates. Another activity used for the diagnostic inquiry was a presentation about themselves. Students were asked to write one thing they like and make a drawing about it. Afterwards, they introduced themselves and showed their drawing.

In the first of the three writing stages identified, students used different symbols to represent words; however, the extension of their writing (length) did not match their oral language ability. Students in this group were able to express more orally than in writing, and the length of the written text did not match the length of the oral sentence. Only one student was categorized in this group.

Figure 1. Example of Writing Stage 1 ("I like Halloween.")



The student's work in Figure 1 is characteristic of Stage 1. The student in Figure 1 was able to respond to the prompt and demonstrated some competence in terms of expressing ideas in writing following the instructions. Figure 1 also shows that the student mixed letters with random symbols, indicating that they did not yet master the connection between graphemes and phonemes. It was also observable that the sentence "I like Halloween" was shorter when performed orally than in writing. The student also explained why that holiday was his or her favorite, but did not write that idea. Due to the use of random letters mixed with symbols, and not being able to match the length of the writing with their oral language, this learner was categorized into Stage 1, according to Ferreiro and Teberosky's framework (1982, as cited by Gillanders et al, 2017).

Stage 2 students were those who understood the relationship between graphemes and oral language, and attempted to match the length of what they were saying to the length of the text using only random letters. Four students were categorized in Stage 2: the Syllabic Stage.

Figure 2. Syllabic Stage (2). Example 1 (I like Christmas).

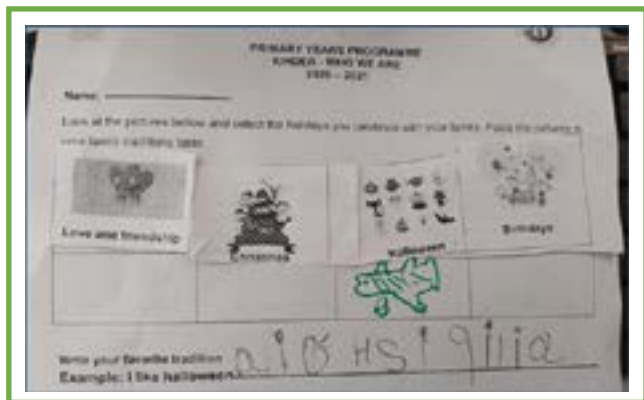


Figure 3. Syllabic Stage. Example 2 (I like my birthday).



Figures 2 and 3 show students' work illustrative of the Stage 2: The Syllabic Stage (Ferreiro & Teberosky, 1982, as cited by Gillanders et al, 2017). In Figures 2 and 3, when attempting to write one sentence expressing their favorite holiday, learners used only random letters, which means that they had a better understanding of the connection between phonemes and graphemes even though they did not correctly match the sound of the letter with the correct symbol. In these writing samples, it is visible that when students wrote the sentences "I like Christmas" and "I like my birthday," they attempted to match the length of the oral sentence to the length of the written sentence.

The last group of students (Stage 3) used their phonetic knowledge to write their ideas, making sure

that the letters matched the sounds they heard. Ferreiro and Teberosky (1982, as cited by Gillanders et al, 2017) name this stage as the Transition between the Syllabic Stage to the Alphabetic Stage. Three students were categorized in this group.

Figure 4. Transition between the syllabic stage to the alphabetic stage (Stage 3). Example 1 (I like Christmas; I like birthdays; I like Halloween).

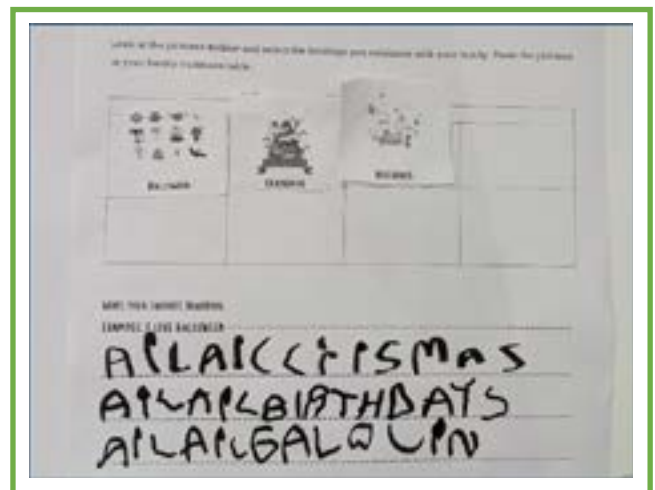


Figure 5. Transition between the syllabic stage to the alphabetic stage (Stage 3). Example 2 (I like Christmas).

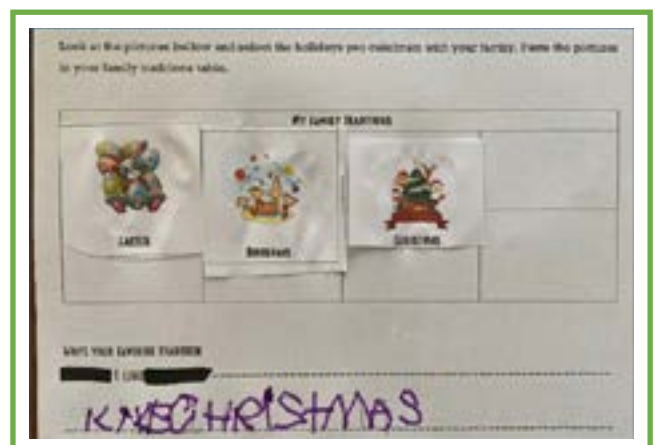


Figure 6. Transition between the syllabic stage to the alphabetic stage (Stage 3). Example 3 (I like rainbows).



Figures 4, 5 and 6 show writing samples typical of a child in the transition between the syllabic stage to the alphabetic stage. These students were successful in the activity and were able to write their likes using their phonetic awareness. Ferreiro and Teberosky (1982, as cited by Gillanders et al, 2017) explain that children in this stage are moving forward in their literacy process. In the writing samples of Figures 4, 5 and 6, it is visible that students understood the connection between phonemes and graphemes and started improving their alphabetic knowledge. It is also observable that their work still contained errors, which occurred because even though they understood better the connection between graphemes and phonemes, they still needed to practice and have more writing experiences to improve their phonetic awareness.

Improvement during Pedagogical Intervention

After ten weeks of oral exercises in which students shared their thoughts, explained their work, and carried out conversations with their classmates, it was observable that they were feeling more confident about the language. It was also possible to notice improvements in listening comprehension. Due to the oral experiences and exercises, some of the students were motivated to speak English, which in turned

promoted the use of oral language in the classes. At the beginning of the pedagogic intervention, it was observable that students were more self-conscious and had difficulty expressing themselves in English. The teacher-researcher needed to ask them directly to try to speak English. After a while, these learners were motivated to speak English, and used both English and Spanish to express their ideas. The teacher-researcher also noticed that the advanced students encouraged and helped the others, helping them feel more secure and willing to try speaking English.

The intervention promoted vocabulary at the same time as oral language through specific exercises, for example, dictation activities, find the pair games, hang man, guess the word, drawing, and using the chat in Zoom. It was observable that students found it easier to talk and write independently when they knew the vocabulary. The teacher-researcher could also perceive that the group was more homogeneous: either students wrote phonologically or with the correct orthography. Meanwhile, when students were exposed to activities where the vocabulary was new, the separate literacy stage of each student was more strongly revealed, showing the group as more heterogeneous, and in many cases tending to write in Spanish.

As a consequence of the oral activities and vocabulary acquisition strategies, the teacher-researcher started to notice that most of the students began incorporating the new vocabulary into their spoken language, used pseudowords or words in Spanish using an English accent. In a science class, Student 1 said, “*Many animals no have ears,*” and Student 3 said, “*Cats tienen ears en la head.*” With these types of oral interventions, it is possible to conclude that students knew how to use the vocabulary learned in previous classes, and that they tried to integrate their mother tongue with their second language.

The Effect of Semester Break on Literacy Processes

After the October break, the teacher-researcher noticed through observations and parent meetings that students from homes in which literacy was promoted

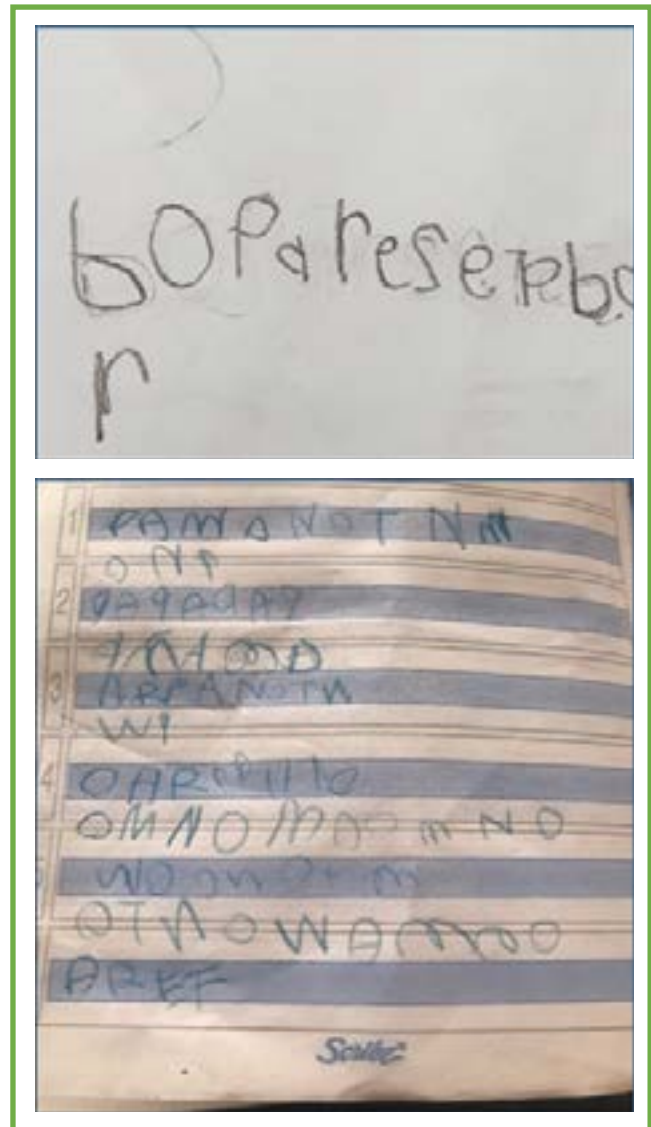
maintained the current developmental stage and continued improving their literacy skills. On the other hand, students who did not work on their literacy skills during the break regressed back to a previous stage. Because of this, it was necessary to restart oral and literacy activities and dedicate an extra half hour per week to practicing oral and literacy skills. On Fridays, one student was chosen to read a book. Depending on the student's stage of development, he or she would read the book or make up the story following the pictures. After a couple of weeks, most of students began developing their literacy skills at a faster pace. Students in Stages 1 and 2 moved forward to Stage 3, and students in Stage 3 enriched their writing and improved the quality of their sentences.

The figures below compare writing samples of students from homes that promoted literacy, showing the improvement of their literacy process. On the other hand, the figures also compare writing samples of students from homes that did not promote literacy skills, showing a setback in their process.

Figure 7. Before and after October break with literacy skills promotion.



Figure 8. Before and after October break without literacy skills promotion.



In Figure 7, it is visible that the student practiced literacy skills during the October break. In the first writing sample the student attempted to write “I decorate the Christmas tree with lights and gifts” with random letters. After the October break, the learner wrote peer feedback using his or her phonetic awareness. Even though there were mistakes, the intention is clear: “Good costume”, “Low voice”, “Don’t repeat” and “Nice Santa,” indicating that the student enjoyed literacy promotion at home and hence moved forward in the process of acquiring literacy skills.

Contrastingly, Figure 8 shows a student who did not practice literacy skills during the October break. In

the first writing sample, it is observable that the child wrote with random letters, showing understanding that graphemes are the symbols that help express ideas in a written way. After the October break, it is visible that the student went backwards in the process of acquiring literacy skills, writing ideas with random symbols instead of using letters only.

Literacy Development in the Hybrid Model

In November 2020, the school began a hybrid model in which preschool students were able to attend school on Tuesdays. As not all the students would be attending, the principal decided that the classes needed to reinforce different kinds of skills, such as social and motor skills, so classes on Tuesdays were different from the normal schedule. Students who attended school in person did the activities with the teachers, and the students who stayed home did the activities remotely. This change meant that there were four hours less per cycle to work on literacy skills.

In fact, most of the students stayed at home during the hybrid period. This meant that those in homes with strong promotion of literacy were able to practice reading or created new stories. However, students from homes where literacy was not promoted were essentially involved in other kinds of activities and did not practice literacy skills at all. The teacher-researcher noticed that the change was helpful for the children because they had one day to be away from the computer, which resulted in a better attitude towards the classes the rest of the week.

Final Results

By the end of the pedagogical intervention, most of the students were able to write phonetically. Students throughout the intervention were engaged and in their free time created stories and books, and wrote letters to their parents. At the same time, the Spanish teacher was also working on promoting literacy skills, which helped students' process in the second language.

The teacher-researcher started the pedagogical intervention with three different groups that represented three different stages in literacy acquisition. At the end of the pedagogical intervention, most learners were able to transition between the syllabic stage to the alphabetic stage, improving their literacy skills. The following samples illustrate the way students wrote at the end of the pedagogical intervention.

Figure 9. Final writing sample. Example 1. (The bird id pink).

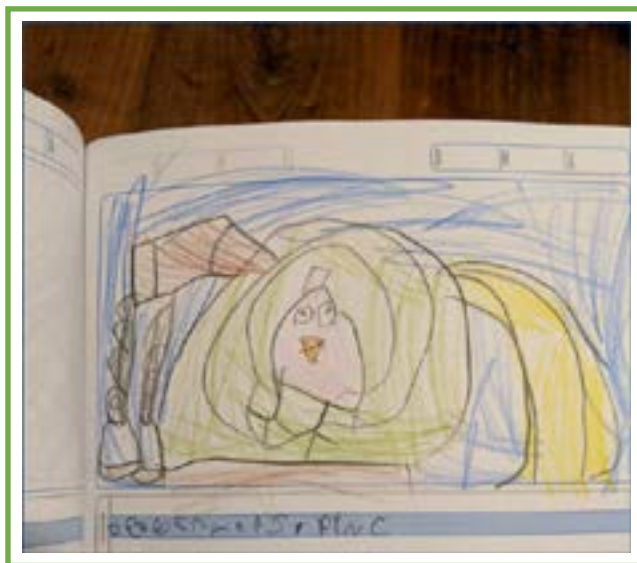


Figure 10. Final writing sample. Example 2. (The rabbit is fast; The bird is angry).

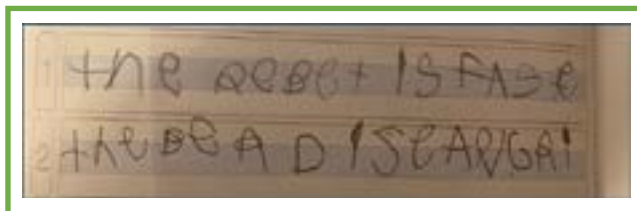


Figure 11. Final writing sample. Example 3. (I am hungry; Me too; Ice-cream? Yes, Surprise!).



Figure 12. Final writing sample. Example 3. (shark; eagle).



Figures 9-12 show the improvement of literacy skills in students at the end of the pedagogical intervention. Most were able to write their ideas using their phonetic awareness, which also improved their reading abilities. Figures 9 and 10 show an example of how students were able to write complete sentences that were grammatically correct even though the teacher did not emphasize this accuracy. Oral experiences and reading exercises also helped the morphology and syntax development in students. Figures 11 and 12 show two examples of different writing experiences in which students were encouraged to write their ideas using different writing formats. In the figures, it is visible that even though the input changed, the children were able to write using their phonetic awareness.

Seven out of nine students finish the intervention writing phonetically. It is speculated that the students who were not able to show progress were negatively influenced by factors in the home, which will be explained further in this discussion. In general, students were encouraged to develop literacy skills through classroom strategies where they were able to practice writing, reading and oral skills. At the same time, they played and practiced with vocabulary and worked with phonics, which improved their writing and reading skills. As a result of the intervention, it was possible to evidence improvement in students' early literacy skills.

Classroom Strategies to Promote Literacy

In general, children improved in the targeted skills because of the activities proposed for the classes, which not only introduced these activities, but offered the opportunity to practice reading, writing and oral skills in a repeated fashion through the daily and weekly routines. In order to determine the influence of second language oral experiences on the development of early literacy skills in kindergarten students, the teacher-researcher selected different classroom strategies based on the literature review in the project. The strategies selected helped promote literacy skills in kindergarten students by targeting different aspects of language. Chenu and Jisa (2009) explain that second language learners face the same challenge as first language learners, to map form and function to produce utterances based on their language experiences. The most important criteria to select classroom strategies were that students found it meaningful and that several aspects of language were practiced.

Phonics

The most important strategy to promote literacy skills was the use of phonics in different ways. First and second language learners' lexical representations are structured by phonology, and research has shown that beginners in second language derive word forms phonologically from first language words (Meisel, 2011). For example, students instead of writing "My"

wrote “Mai,” transferring letter sounds in Spanish to the words learned in English. At the beginning of the pedagogical intervention, the class wrote most of their texts in Spanish, indicating that they lacked oral skills and vocabulary.

Figure 13. Writing sample with Spanish words.



The activity illustrated in Figure 13 was very interesting and engaging for students. They were asked to create a magic potion using daily items in their home. They needed to change the names of these items to create a horrific magic potion. The student in Figure 13 was successful in the activity because he or she was able to change the names of daily items to create a magic potion, creating a recipe to make his or her family laugh. The student wrote, “*Escarcha, polvo de telaraña, chichi de zombie and bicarbonato.*” In the writing sample of Figure 13, it is visible that all of the words were written in Spanish. It is also observable that the student used phonetic awareness of Spanish to write

the magic potion. The fact that all of the words were in Spanish indicated that this learner lacked oral skills and vocabulary in English.

During the pedagogical intervention, the teacher-researcher planned different classes involving phonetic development and vocabulary acquisition. Some of the activities included:

- Gap filling
- Hangman
- Looking for letters in the houses
- Write in the chat for others to discover the word
- Teacher shows a picture and students write the word in English
- Building words
- Rhymes
- Teacher acts out and students guess what it is
- Dictation

Berko (2010) and Menn and Stoel-Gammon (2017) assure that it is helpful to design strategies in which learners engage themselves in the process of self-correction guided by an indirect feedback from the adult. In this project, the teacher-researcher made sure to continue working with students using the activities they enjoyed the most. When students attempted to read or write using their phonetic awareness, they were given indirect feedback and asked to check again, or to work with peers or in groups. All of the students enjoyed phonetic activities; however, some of them practiced independently at home while others practiced only during class time. The impact of this home-based practice will be discussed in the section on these findings below.

Reading

At the beginning of the pedagogical intervention, most of the students read stories following pictures. By improving students’ phonetic awareness, it was possible to encourage them to try to identify words in the stories with the knowledge they had gained of the grapheme-phoneme correspondence. The teacher-researcher encouraged students to read using the research-based strategy *reading searching for meaning*, in which

learners try to comprehend the whole text in order to understand its components. When the children did not know a word, they were encouraged to decode based on the context.

- Students were exposed to several reading experiences:
- Identify vocabulary words
- Read independently and answer reading comprehension questions
- The app Raz-Plus to listen to a short story, then read it and answer reading comprehension questions
- Imagine different endings to the story
- Read with a classmate
- Read one-on-one with the teacher
- Create stories, recipes, legends, or comics and then read it to a friend

In order to aid children who struggled with reading, it was possible to give them more time to work alone with the teacher or a more advanced student. The reading experiences encouraged learners to read independently in their free time. In fact, most of them identified readings and topics of interest to share with the class or read a passage from a book in the morning meetings. Everyone in the class was able to participate even though their abilities ranged in terms of stages of literacy. Some students read the passage following the pictures of the book, others prepared the reading the day before, so they knew what to say while others explained the main idea of the book and shared the pictures. The topics of highest interest were dinosaurs, myths and legends, bedtime stories and animals. Being able to share something they liked with the class promoted a reading culture, which became very important for the improvement of literacy skills.

Vocabulary

The teacher-researcher noticed very early in the pedagogical intervention that the lack of vocabulary was interfering with the reading process of students. It was necessary to plan activities that engaged students to learn new words. With this in mind, the teacher sent an email to parents with 10 vocabulary words every two weeks. Students were asked to post the vocabulary

words on their “English wall” and use them during classes. The children chose a wall or window in their home where they pasted three titles: 1) Vocabulary words, 2) Letter of the week 3) High frequency words. The vocabulary words were used and practiced for two weeks with activities such as crosswords, word search, guess the word, guess the picture and hangman. These activities motivated students to learn new words. In the Letter of the Week section, students wrote the letter that they were going to practice during the week. With the letter, the children made drawings, practiced the sound of the letter, did some rhymes and wrote some words. The teacher-researcher also worked with high frequency words every week, which helped students to recognize them easily in texts and improved reading fluency in most of the cases.

Writing

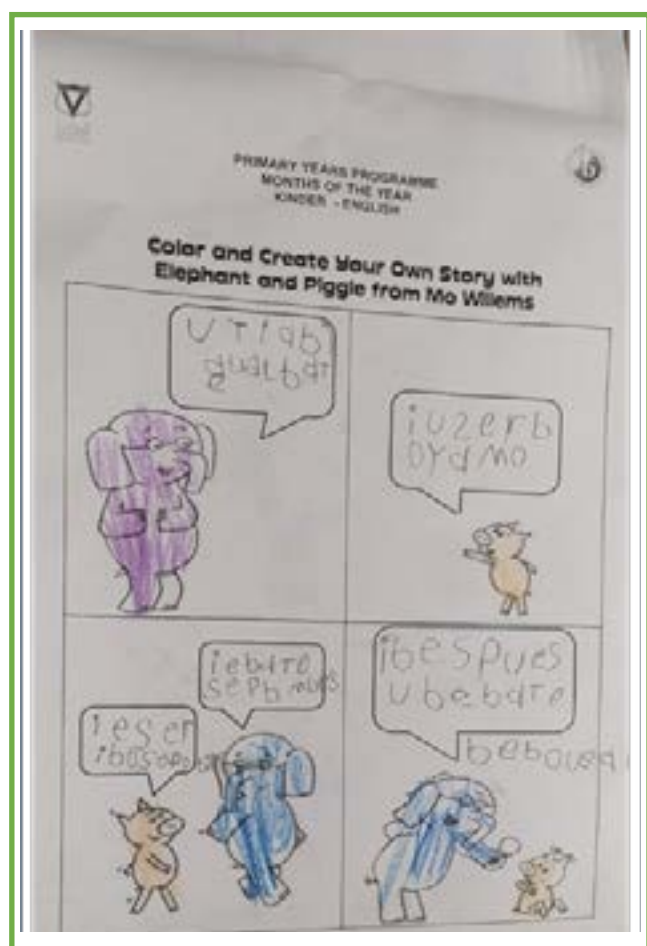
Simultaneous to the language areas above, writing was also at the core of the intervention. To promote writing skills, the teacher-researcher used the Unified Hypothesis, which posits that children learn about general language and specific aspects of writing in no particular order, depending on their experiences with print (Puranik & Lonigan 2011). Accordingly, in every class, with the exception of math, students were asked to write, and were exposed to different types of written experiences such as:

- Graphic organizers
- Story maps
- Comics
- Legends
- Descriptive texts
- Letters and postcard writing
- Peer feedback
- Venn diagrams
- Thinking routines
- Scribble the word
- Organize the sentence

During the pedagogical intervention and in all of the activities proposed, the teacher-researcher promoted writing spontaneously by asking students to write what

they were thinking, which helped them to relate written language with spoken language. Berko (2010) and Puranik (2011) explain that when children read what they write, they also discover the connection between reading and writing.

Figure 14. Writing sample spontaneous writing



The activity in Figure 14 was very challenging for some students. The teacher-researcher gave the class four pictures and asked them to write what they thought the characters were saying. Even though this learner wrote with random letters, they were able to read the conversation to others: “Hello Pedro. Hello Mario. I want ice cream. I want chocolate ice cream. Happy birthday. Eat chocolate ice cream.” Figure 14 is an example of the many activities in which students were able to write their ideas spontaneously. These exercises showed the class that they could write and express themselves in different kinds of texts.

All of the students enjoyed the written experiences. Some took more time to write their ideas, but with time they took risks and enjoyed discovering that they could communicate through writing. Once learners made the connection between oral language, written language and reading, they started to create their own text content depending on their interests.

Oral Skills

Oral experiences were the most important variable when choosing activities for the pedagogical intervention, due to the fact that the improvement of oral skills directly affects the development of literacy skills. Geva (2006) suggests that oral skills are not only important to promote L2 acquisition, but also to predict literacy skills. The teacher-researcher noticed at the beginning of the project that students lacked oral skills and consequently struggled with writing.

Since the first day of the pedagogical intervention, oral language was promoted by the teacher speaking English in all classes and promoting the use of English when students wanted to participate. Activities with vocabulary and phonics allowed students to feel more confident when expressing themselves in English. Advanced students helped others with translations or vocabulary, which encouraged the them to try speaking English. Most learners practiced English in their free time watching movies, talking to their parents in English, and/or listening to stories.

The teacher-researcher promoted oral skills in all of her classes using the following strategies:

- Riddles
- Jokes
- Guess who game
- Oral presentations
- Retelling stories
- Creating stories
- Modeling to students
- Sharing something they like in the morning meetings

Geva (2006) and Gibson et al. (2014) explain that phonological processing skills and working memory in English are predictors of accurate English word reading skills, also that vocabulary skills in English may be related to spelling skills in English. Even though the teacher-researcher focused on giving students meaningful oral experiences, she planned activities in which the class experienced and practiced more than one literacy skill. It was observable during the pedagogical intervention that the better a student's oral ability, the better their literacy.

Another important finding was that providing multiple authentic encounters that gave students opportunities to speak about academic topics throughout the school day encouraged L2 oral skills. The oral presentations where learners had the chance to practice several times before the final presentations increased L2 development because they were required to interact with the teacher and peers in both structured practice situations as well as in spontaneous conversations, as suggested by Garbati and Mandy (2015).

Influence of Home Factors on Literacy Development

This study took place during the pandemic of 2020, when all classes were delivered online. As a direct result, throughout the study, variables appeared that had not been initially considered in the research design or factored in as important variables in the research questions. The influence of the home in literacy development was one of the main unexpected findings of this study. While conducting the intervention, the teacher-researcher quickly noticed that home influence in literacy development was a main factor.

The ways that parents set up their children's learning space affected their learning both positively and negatively, for example by distracting them or helping them be more independent. In general, students who had an independent space away from external noise, who had access to materials without having to ask their parents, had comfortable chairs and tables, folders or boxes where they could find worksheets or previous

work were students who showed more independence and autonomy in the classes. As a result, these students' artifacts tended to have better quality.

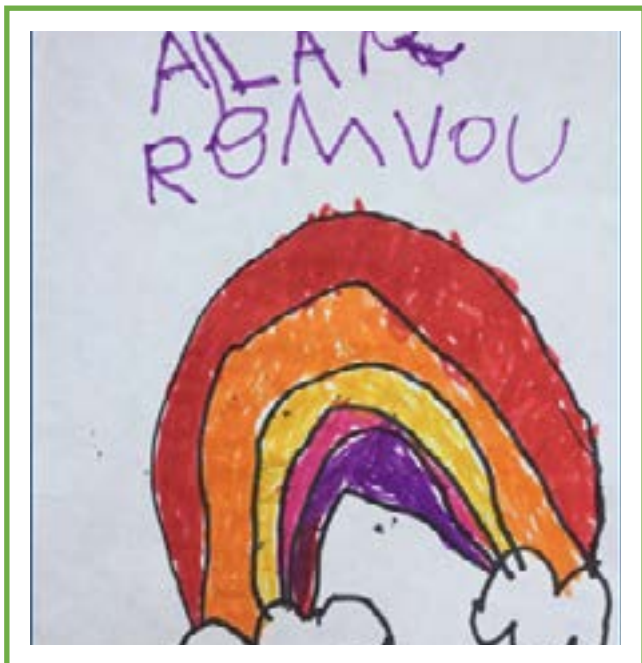
Home workspace was not the only factor affecting students' language and literacy development. Parent involvement was soon identified as a major influence on students' progress and their work. At the beginning of the intervention, it was possible to determine that most of the caregivers were very involved because they had the notion that children at this age were not able to work independently. In most cases, learners were accompanied during class by a caregiver who did not speak English. This led to translations and interfered with oral, writing and reading skills promotion in L2. Further, the constant companionship distracted students because they tended to pay more attention to the adult at home than the instructions given by the teacher-researcher, and in some cases, the caregiver changed the instructions due to their lack of understanding of what the teacher was explaining and requesting.

Caregivers also seemed very preoccupied with grades and feedback. Most of them assumed that the goal of the classes was to submit perfect work with no mistakes. Very early in the pedagogical intervention, the teacher-researcher observed that caregivers were intervening in students' products, telling children what to write, how to write it, and in some cases doing the drawings themselves, helping children color, or writing for them.

Figure 15. Writing sample mediated by the caregiver



Figure 16. Independent work writing sample



In the activity in Figures 15 and 16, the class was asked to draw things they like and write one sentence sharing their favorite thing, using the prompt “I like.” At the end of the activity, they were divided into groups where they introduced themselves and shared their likes orally. In Figure 15, it is observable that the student wrote with perfect spelling and separated the words, indicating that the caregiver dictated the sentence. In Figure 16, in contrast, the student wrote the sentence, “I like rainbows” using his or her own phonological awareness, indicating that he or she worked independently.

After noticing that most of the students were accompanied during classes, and that the involvement of the adult was interfering with learners’ progress, the teacher-researcher held a meeting with parents explaining the process and the importance of allowing students to work alone. Most of the caregivers followed the suggestions, which led to a more precise confirmation of children’s stages of literacy development. In some cases, this meant that learners evidenced earlier literacy stages than previously thought in the diagnostic inquiry. Nevertheless, other caregivers continued helping the children. In these cases, it was very difficult to identify the literacy stage of the learner or any progress in this regard.

In addition to parent interference, other parent behaviors like organization of the student’s workspace, home routines, literacy promotion and, engagement with the learning process mediated student’s products and performance. Two students out of nine did not show any progress during the pedagogical intervention due to the fact that their caregivers were always helping them, and they lacked literacy promotion in their houses.

Figure 17. Writing sample mediated by the caregiver at the beginning of the pedagogical intervention.



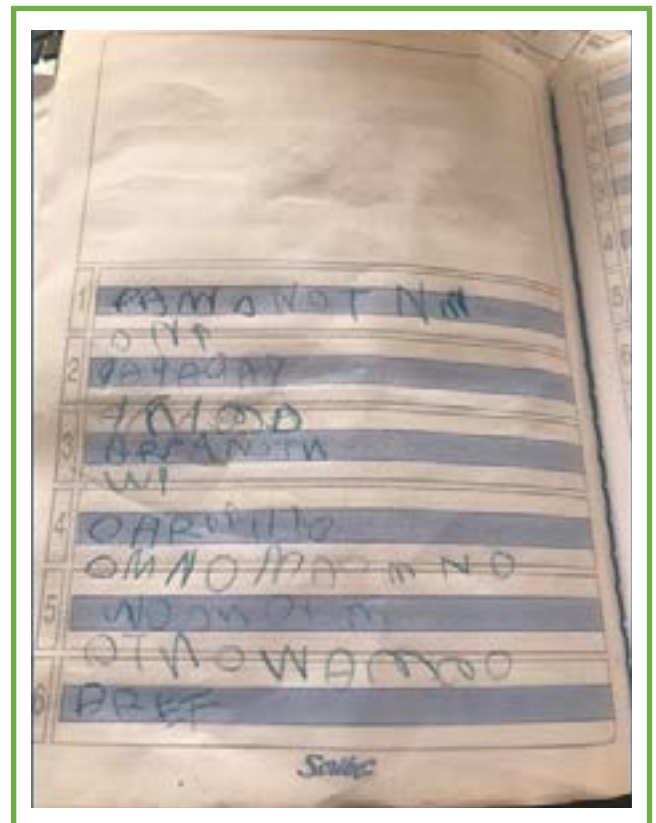
Figure 19. Writing sample at the beginning of the pedagogical intervention.



Figure 18. Writing sample mediated by the caregiver at the end of the pedagogical intervention.



Figure 20. Writing sample at the end of the pedagogical intervention.



In Figures 17 and 18 it is observable that the intervention of the caregiver was constant during the pedagogic intervention. In the writing sample of Figure 17, the student wrote a simple sentence with perfect spelling, and in the writing sample of Figure 18, complex sentences with correct grammar and spelling, indicating that the caregiver dictated what to write.

In Figure 19 and 20 it is observable that the student did not make any progress during the pedagogic intervention, but continued to write with random letters. In the case of this student, the caregiver-mediated oral and reading activities prevented the child from improving oral skills, which directly affected literacy development.

In both cases, most of the activities were mediated by the caregivers. In oral and reading activities, students looked for the adult and repeated what they said. When the teacher-researcher asked the student to write or read alone, this caused frustration, and the caregiver went back to helping. In both homes, literacy promotion was very low, affecting phonetic awareness and vocabulary acquisition. These students did not follow the pedagogical intervention and in consequence were not able to progress in their oral and literacy skills development in L2.

In sum, the role of the home is crucial for developing or not early literacy skills, especially in a virtual model. Parents who allowed their children to be autonomous, explored freely with language, and promoted literacy in their homes developed literacy skills in a short period of time. However, parents who protected their children and would not let them experience or explore language prevented them from developing literacy skills.

CONCLUSIONS

The aim of this project was to determine the influence of second language oral experiences on the development of early literacy skills in kindergarten students at a private immersion school in Bogotá. The pedagogical intervention expected to describe and analyze students' work to identify patterns that illustrated the influence of oral experiences in the development of early literacy skills. As a result of analysis of the data, it was possible to determine findings that respond to the research questions. The findings of this study point out that the improvement of learners' oral skills positively impacted the development of their literacy skills. Another finding was that classroom strategies were fundamental to promoting early literacy skills, as well as clear and engaging routines. In addition, presenting different activities that support oral skills and giving students several opportunities to use oral and written language promoted listening and speaking abilities, as well as improved their phonological awareness and vocabulary acquisition. As a consequence, children felt more confident with the language and started to produce more oral language. Another important finding was the critical role of the home in students' language and literacy development. Factors emerged such as parent intrusion in students' work, the organization of the student's workspace, as well as home reading and study routines and the promotion of early literacy. These can be understood as important variables that encouraged or discouraged the development of literacy skills in this group of learners. Finally, the teacher-researcher found that most of students improved and developed literacy skills during the pedagogical intervention, showing that the improvement of oral skills directly influences the development of literacy skills.

The results of the study demonstrated overall positive evolution in the examined aspects for most students. Oral skills were the most important variable in the study due to their direct influence on literacy skills development. Students throughout the pedagogical intervention improved their oral language considerably, which in turn promoted literacy skills. Most of students at the end of the pedagogical intervention wrote phonetically and used the vocabulary learned in the classes to write their ideas. This finding correlates to Gibson et al. (2014), where they found that English



language experience was the strongest predictor of literacy performance.

The teacher-researcher also focused her attention on improving students' phonetic awareness using different kinds of activities that encouraged students to learn letter names and letter sounds. The teacher-researcher observed that phonetic awareness helped improve reading and writing skills as well as vocabulary acquisition. Gersten and Geva (2003), Geva (2006) Aukrust and Rydland (2011), and Nicolay and Poncelet (2013) agree with the importance of phonetic development, finding in their studies that it helped semantic development and word learning. They also suggest that instruction in phonological awareness enhanced growth in reading and spelling and predicted its development.

During the pedagogic intervention, the teacher-researcher promoted learning environments that encouraged active discovery, engaged the class in innumerable situations of trial and error, and gave them multiple opportunities to observe others applying their written system in many different contexts. This environment allowed learners to understand the writing system and permitted them at the end of the pedagogical intervention to express themselves in a written way. This finding compares to Yaden and Tardibuono, (2004), who found that multiple opportunities and written experiences were necessary for children to understand the writing system and start developing literacy skills.

Another important finding was that the use of proper classroom strategies such as modeling, repetition and grouping engaged students and motivated them to practice oral and literacy skills in their free time, and that this constant practice developed oral and literacy skills in kindergarten students. Lipka and Siegel (2007), Dennis et al. (2013), Nitecki and Chung (2013), Lindholm-Leary (2014), Garbati and Mady (2015), and Toro et al. (2019) suggest that explicit teaching plus opportunities for meaningful and authentic communication help promote L2 production. They also affirm that modeling, repetition and/or grouping improve speaking skills, and that students need more opportunities to use L2 to orally interact, which will benefit the goal of acquiring the language.

The major limitations identified in the project were the online classes and home interference. All of the pedagogic intervention was made through online classes, and this modality limited the quality and quantity of time that the teacher-researcher was able to work with each student. It also affected the feedback she could give learners. It was very difficult to show specific things students could improve, especially with graphic space management and directionality. Home interference was another limitation, including the proper (or not) organization of students' workspace and materials at home, interference by caregivers, and the presence or absence of literacy promotion in the home. The teacher-researcher needed to constantly remind parents to follow routines, to help students be more organized and to let them work independently. In short, the constant intrusion in the pedagogic intervention delayed the overall language development.

Possible areas for future research, derived from the current project, encompass quantitative studies to measure the length of time that students remain in one literacy stage before moving forward. This could be an interesting topic due to the fact that the teacher-researcher observed changes in students during the pedagogical intervention, but was not able to identify how long students remained in certain stage or what specific challenges they conquered to move forward. Additionally, further research on the effect's parents' influence in the learning process of students, particularly in the development of literacy and self-management skills is needed. It was very clear that parents affect the way students relate to learning. Furthermore, increased research on how vacation periods affect academic performance in students could be interesting. The teacher-researcher observed that the October break influenced students positively or negatively, depending on the activities they did during that period. The teacher-researcher suggests supplementary inquiry in this area to determine whether or not and how the vacation period affected student's academic performance.

ACTION PLAN

School

- Schools should train teachers in early literacy skills development.
- Schools should adjust the curriculum to respond to early literacy skills development needs.
- Schools should give more importance to developing phonological awareness in kindergarten students, who should have at least three hours a week of use of language.
- Schools should explain their philosophy and the way of teaching to parents to prevent negative interference in the learning process of students.

Teachers

- Teachers should use different strategies to promote early literacy skills in students.
- Teachers should create learning environments where students have different opportunities to relate with language.
- Teachers need to promote spontaneous writing in students so they can explore written language in their free time.
- Oral skills should be the center of every activity propose in kindergarten.

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PROMOTING CRITICAL GLOBAL CITIZENSHIP EDUCATION WITH THE CAMBRIDGE GLOBAL PERSPECTIVES CURRICULUM: A CASE STUDY

Andrea Espinosa Wang

Global citizenship is fashionable today in many school curricula. However, recent critique of this approach has pointed to the need of a more critical understanding of world issues and our actions and attitudes towards them. Andrea Espinosa Wang explored in this project critical global citizenship, which attempts to go beyond passive steps such as donating to important causes to considering one's own stance and actions. She found that it was possible to engage students more deeply with global issues despite the continued challenges of teaching in an online setting in which high school students especially were found to assume passive behaviors in synchronous virtual settings.

ABSTRACT

This project aimed to promote critical Global Citizenship Education (GCE) in the high school classroom. The project took place in Bogotá Colombia with a group of 13 ninth-grade students during the global COVID health crisis in September and November of 2020. The purpose was to encourage the promotion of human rights as well as students' involvement in global issues from the Global Perspectives subject of the Cambridge International Education curriculum. The study was focused on helping students challenge the current world order, and think and analyze their place on a personal, local and global level in terms of their participation and influence to promote change. The project used a critical pedagogy framework, which focused on developing four facets: the political, the collective, the self- subjective, and the praxis or engagement in world issues to assess the effect of the of class content and discussions on students' perceptions. The study used a qualitative research design and action research to record and analyze the data obtained, including pre- and post-unit questionnaires, teacher reflective journal and observations, class discussions, and workshops. The study found that the virtual setting made it difficult to integrally apply critical CGE in the classroom because of students' limited interaction in the online platforms. Notwithstanding, findings indicate that that students shifted their perspective somewhat in terms of their role in global conflicts and citizenship issues by discussing social movements and the role and influence of youth in changing and challenging the status-quo.

Key words: Global citizenship education, Critical GCE, Citizenship, Human rights, Social issues, Youth participation, Social engagement, Critical pedagogy, Critical literacy, Global perspectives



RESUMEN

Este proyecto tenía como objetivo promover la Educación para la Ciudadanía Global crítica en el aula de la escuela secundaria. El proyecto se llevó a cabo en Bogotá Colombia con un grupo de 13 estudiantes de noveno grado durante la crisis de salud global de COVID entre septiembre y noviembre de 2020. El propósito fue incentivar la promoción de los derechos humanos y la participación de los estudiantes en temas globales desde Perspectivas Globales, materia del plan de estudios de Cambridge International Education. El estudio se centró en ayudar a los estudiantes a desafiar el orden mundial actual, y pensar y analizar su lugar a nivel personal, local y global en términos de su participación e influencia para promover el cambio. El proyecto utilizó un marco de pedagogía crítica, que se centró en desarrollar cuatro facetas: la política, la colectiva, la auto-subjetiva y la praxis o compromiso con los problemas mundiales para evaluar la afectación de los contenidos y las discusiones de clase en las percepciones de los estudiantes. El estudio utilizó un diseño de investigación cualitativa y una investigación de acción para registrar y analizar los datos obtenidos, incluidos cuestionarios previos y posteriores a la unidad, un diario de reflexión del maestro y observaciones, debates en clase y talleres. El estudio encontró que el entorno virtual dificultaba la aplicación integral de CGE crítico en el aula debido a la interacción limitada de las plataformas. No obstante, los hallazgos indican que los estudiantes cambiaron de alguna manera su perspectiva sobre su papel en los conflictos globales y los problemas de ciudadanía al discutir los movimientos sociales y el papel y la influencia de la juventud en cambiar y desafiar el statu quo.

Palabras clave: Educación para la ciudadanía global, Educación para la ciudadanía global crítica, Ciudadanía, Derechos humanos, involucramiento social, Participación juvenil, Compromiso social, Pedagogía crítica, Alfabetización crítica, Perspectivas globales.

INTRODUCTION

Global Citizenship Education (GCE) has become a main concept when discussing 21st century curricula and the learning outcomes for students today. The idea, put forth by the United Nations (UN) in its effort to ensure access to education for every child, responds to a changing world where interactions are now globalized and the needs of learners have shifted. The intention of this education is to promote a critical, empathic and mindful individual who understands that their role is much more influential than ever as local thoughts and actions can easily ripple to the global stage and create change.

Closely related to the Sustainable Development Goals (SDG) of the UN, a set of seventeen goals planned to be achieved by 2030, GCE aims for an education that allows the student to connect their wants and needs to a global network of many others like them, creating a sense of a globalized community that needs to be nurtured to succeed in the foreseeable future. Problems like climate change, poverty, inequality, and the lack of access to basic needs like water and food have prompted a change in the way education focuses on problem-solving and perceiving the rest of the world. It requires a reassessment of how these issues are taught, arguing the need for the student not only to know about them but to also act. Most importantly, GCE is concerned with countering the deep disengagement we see in our students today regarding problems that are in plain sight but do not affect them directly.

Although powerful in its intentions, Global Citizenship Education has revealed some limitations as the concept of citizenship has very wide interpretations and is not easily defined. There are many approaches to understanding not only what it means to be ideal citizens, but also the scope of their actions, duties and responsibilities, and the lines between local, national and global relationships generated by the speedy process of globalization. Thus, GCE has been categorized in different lines of interest, interpretation and application of citizenship in education.

Within these categories, *critical GCE* (cGCE) is crucial to understand a new wave of postcolonial



studies and the influence of critical pedagogy and critical thinking imbued in the classroom. At a time when global participation in national and international issues has become important to understanding how the world works and communicates, critical GCE is in the forefront in trying to counter structures of world order that are seen as hindering change in inequality, poverty and discrimination around the globe. For this type of GCE, the classroom is the perfect space to start challenging the status quo, and helping students develop a critical stance as citizens of the world to try to voice their concerns and take action.

The literature on this topic is varied and speaks to the importance of cGCE as a part of every national curriculum. For the most part, the studies on critical GCE focus on the evaluation of curricula in order to analyze and reflect on the ways in which the curricula itself can either promote or limit GCE, especially critical GCE. Other research emphasizes the use of ethnographic studies in the classroom, using diverse resources, topics and spaces for discussion to shed light on the ways that students react to these programs, and whether and how they may actually promote critical GCE. There is also research on the importance of open spaces for dialogue between students, teachers, administrators and policy makers as the center for making critical CGE a reality in schools and nations. In this sense, the research points to the role of teacher training as a critical part in the process of developing programs that can impact students. Finally, more radical studies show the connection between critical GCE and Social Movement Oriented Citizenship (SMOC), which can both potentialize and actually engage students who may not usually participate further than the classroom or school setting.

Problem Statement

GCE has many different levels and approaches, which in turn make it open to interpretation and application in the classroom. In this case specifically, the research took a close look at the Global Perspectives program, part of the Cambridge curriculum subject created to promote the ideas of 21st century skills and local and global engagement in middle and high school.

The aim of these programs is to promote a sense of curiosity for the unknown, and most importantly, a space for reflection and empathy for the pressing issues of the world. However, it has been possible to identify that instruction tends to be one-dimensional when introducing topics of this nature, and students prove disconnected from their own reality. In turn, if these topics are not taught effectively, it can even be dangerous as this fails not only to create a space for change and improvement, but may also help perpetuate the idea that young people are above these problems and not truly affected by them.

There are many academic discussions on the matter, but what it is often put forward is a promotion of a *soft GCE*, which Andreotti (2014) describes as missing the big picture. This soft approach maintains a view that reinforces the idea of the “other” as someone who needs the help of the established institutions. The students’ role in soft GCE is to acknowledge disparity, but act only based on what is more advantageous individually. In contrast, the new trends in literature and research on the topic focus on how these programs should encourage a *critical approach* that questions the order of the institutions, and the role of the individual and of education itself to nurture a vision of the other as the result of complex historical, cultural and political circumstances that have shaped the world as we know it.

For this reason, the present study looked further into the facets of an ideal cGCE classroom based on a critical pedagogy approach: *ideology and politics, collective focus, self-awareness, and engagement/action/reflection* (Johnson & Morris, 2010). Based on these four domains, the issue was not the presentation or teaching of the topics, but how they could be used to strengthen their connection to an otherness which until now has been barely recognized by learners when they think about their future. Further, it was necessary to assess the effectiveness of this pedagogy over time. In sum, the interest of this application in the classroom was to promote an education that advocated for the individuals in the study to see themselves as part of the problem, not as a separate entity that can only participate by campaigning or donating, disconnecting themselves entirely from one of the main purposes of education today.

PURPOSE OF THE STUDY

The aim of this study was to inquire as to the ways that the Global Perspectives program proposed by the Cambridge curriculum can be used to promote cCGE for ninth grade students in the classroom. In this specific intervention, the purpose was to adapt one of the six challenges that the program proposes for each stage, and try to assess to what extent it can encourage students' critical stance on global issues. It assessed the students' progress in four facets of critical pedagogy: *ideology and politics, collective focus, self-awareness, and engagement/action/reflection.*

Taking into account the current pandemic and health crisis, this was an opportunity to engage students differently than if the class were set in a classroom context. It was then the purpose to adapt the program to fit the particularities of this setting and involve the students to share their personal experiences, engage and be active participants in the issues that are pressing them on a local and global level.

LITERATURE REVIEW

Research on critical Global Citizenship Education (cGCE) is varied and represents a field of study in which there is still much to be done, especially in regards to students' perceptions of the class, the program, and citizenship attitudes and attributes. The studies reviewed here are mainly focused on the analysis of different curricula around the world, and assess their effectiveness in creating active civic engagement and a recognition of otherness to build fluid constructions of the concept of citizenship adapted to the particular context. The literature reviewed uses some standardized criteria to evaluate the impact of cGCE, and most of the studies use frameworks from the fields of critical pedagogy, critical literacy and critical thinking. These studies, albeit few in regards to students' opinions of the programs and how they can be improved, are valuable in discussing the scope and limitations of cGCE in the classroom and its effects on perceptions of citizenship, advocacy and civic participation.

Evaluation of Curricula and cGCE

Most of the studies reviewed in the field of critical Global Citizenship Education share authors' concerns about the lack of consensus on its definition in theory and in practice. This in turn has minimized the opportunities this type of education can bring to the students, especially in the context of globalization in which issues of poverty, discrimination and inequality are commonly discussed in the media. With this in mind, these studies are focused on establishing the effectiveness of different curricula on citizenship education in promoting the theoretical ideas of cGCE, including active participation, recognition of the other to recognize oneself, and a critical stance on the hegemonic relationships that have been established as the world order.

A number of the studies spotlight national curricula on citizenship education, programs that have become essential in schools around the world. There has been an increasing interest in leaving behind the passive or "soft" promotion of cGCE, which teaches preconceived notions of democracy, citizenship and civic participation, and instead take a more critical approach. For critical citizenship to be achieved, Andreotti (2014) argues that there has to be a global consciousness, which in turn allows the citizen to partake in their ethical responsibility to promote change. In this regard, the research focuses on a range of interests, from evaluating if the citizenship curricula promote critical thinking and civic engagement to comparing how different countries' curricula are affected by national conceptions of the "ideal" citizen and their historical, political and social context.

The first group of studies focuses on understanding the relationship between the established curriculum and the flexibility and adaptability to these standards in regards to cGCE. In this respect, Harshman (2016) reported on the curricular context of the US, and how coupling the National Council of Social Studies (NCSS) College, Career, and Civic Life (C3) framework and the standards for Global Competence Education created a better framework to engage students in a critical GCE. The NCSS C3 framework focuses on inquiry-based learning, and as such, is mainly directed to developing skills, learning concepts, promotion of investigation,

and call for action. On the other hand, the Global Competence Education program follows competency-based education, which allows students to master skills at their own rhythm by highlighting variety and differentiation in the demonstration and evaluation of knowledge. The coupling of both of these programs was done by demonstrating, based on an example unit on Food Security, that the national curriculum in Social Studies was not disconnected from the goals of critical global citizenship, and that in fact there are many standards and goals that allow the learning process to be guided by the critical assessment of students' perceptions on global issues.

Harshman created inquiry-based learning units to promote understanding of transnational systems and perspectives, anticolonial and decolonial actions, and knowledge construction. He also highlighted how citizenship education is at the core of social studies, capable of encouraging the reflection of one's actions within interdependent global networks in a space for students to consider the complexities involved in being truly prepared for college, career and civic life. Thus, the study concluded that cGCE was not far from curriculum standards, but that there was still much to be done to adapt these into meaningful critical citizenship experiences.

In the same line of inquiry regarding curricula, another study by Feldman et al. (2007) analyzed the impact of a curriculum called "Student Voices Program," designed by American policy makers to promote students' political interest and participation through resources like the Internet to encourage active involvement in school and local government. Participants were students of 26 public and charter schools during the fall 2002 semester (1,314 students) and the spring 2003 semester (865 students). Their experiment was designed based on a "control" classroom, which used the state's recommended civics curriculum while the "treatment" classrooms applied the Student Voices program. During the investigation, researchers applied several surveys to assess students' perceptions and participation in three broad areas: frequency with which they discussed and followed political affairs, their thoughts on efficacy of government policy, the amount of knowledge they had on candidates, government officials and public affairs.

The results of the study demonstrated that the Student Voices program had a positive impact on indicators of civic and political engagement, compared to the traditional citizenship program. Even though this program was only to last 10 weeks during the school government elections, the authors applied it both in the original time frame and as a year-long project. Their findings showed that in order to truly create an impact on students' participation and engagement, it was important to discuss issues constantly, rather than segmented in different times of the semester. Their findings also showed that no one activity proposed in the program demonstrated more efficacy than others. Rather, the key was to promote various spaces to talk and discuss current political and community issues, as this motivated students to learn and understand politics from other perspectives. In addition, the constant use of the Internet as a source of information and communication was highly recommended, as was shown to boost curiosity, strengthen critical literacy skills and give learners the freedom to choose what to write, read and learn.

While these studies were based on assessing the curriculum and its effectiveness in promoting active global citizenship, others investigate how national curriculum standards impact the promotion of cGCE, and how curricular analysis can also shed light on national interests and context-laden issues that may influence the very nature of citizenship education. To this extent, these studies help us understand how defining historical and spatial variables can have a great impact on the development and promotion of critical approaches of global citizenship on a national and global level.

One such study by Johnson and Morris (2012) examined the curricula of both England and France to assess how each country approaches citizenship education, and its implications for critical citizenship education goals in both contexts. Based on the authors' own analytical framework for cGCE, the study's inquiry was defined by four distinguishing elements of this type of education: a concern for ideology rather than knowledge (political), a focus on the social instead of the individual (social), a subjective rather than objective view on the issues, and a drive towards reflection and action beyond knowledge and skills.

Taking into consideration these four dimensions, the authors proceeded to analyze each of these, depending on the national standards and the political nuances of each government. The results were varied and showed how each country had a different conception of the “ideal” citizen. The findings of the analytical study concluded that both citizenship programs contained elements of critical citizenship, but that many “spaces” were not covered completely. England’s strengths were in relation to the social element of critical pedagogy, while France’s were in relation to the political element. This ultimately showed how important it is to take into account the context in which these curricula are created and applied, and understand the difference this can make in the focus and the scope of this education in students, teachers, and the community as a whole.

Looking further from the country’s context and interests, the authors also concluded that both curricula showed discordance between its objectives and the content (topics and themes), as well as bland curricular content incongruent with more critical aims and objectives in the classroom. Taking this into account, the authors recommended more engaging and open spaces for students and teachers to discuss the implications of such education, and to use the flexibilities and spaces in each curriculum in ways that are consistent with a critical citizenship approach.

In the same inquiry line as Johnson and Morris’s study, Swanson and Pashby (2016) investigated how cGCE is conceptualized in both the Curriculum for Excellence (CfE) from Scotland and the Alberta Program of Studies for Social Studies from Canada. The researchers studied both curricula in depth, and established similarities and differences between both in their particular context. They found that neither of the curricula promoted a critical or transformative educational experience, nor pursued to disrupt the status quo as critical global citizenship education is intended. The authors highlighted how pluralism and multiculturalism were clearer in the Alberta curriculum than in its Scottish counterpart, demonstrating key differences depending on the context, educational system and government. Finally, the authors also criticized the focus of the Scottish curriculum regarding nationalist and nationhood attitudes, which were often

celebratory and constrained students from engaging on a global level.

In comparison to the previous studies, research by DiCicco (2016) illustrates a questioning of the process behind creating curricula rather than analyzing its implementation. The author also goes further into the planning and implementation stages of the Global Studies Initiative (GSI), a curriculum focused on citizenship education in the context of US public schools. This study contributes to the literature in understanding underlying interests, hidden curricula issues and how important it is to think of the curriculum as a whole, and not just the final stages of its application. DiCicco followed an ethnographic study, which included semi-structured interviews, participant and non-participant observation and document collection. The data collection of the study was done between September 2009 and April 2014 with 15 teachers (including six social studies teachers, two world language teachers, two music teachers, one art teacher, one science teacher, one family and consumer science teacher, one English teacher, and one ESL teacher) and eight administrators. The participant pool was diverse, demonstrating the author’s intention of including all of the school community in the assessment.

The results of the study found that the Global Studies Initiative program was more concerned with addressing parents’ concerns with training their children for a global competitive market than promoting responsibility or critical engagement with global issues. Still, the program opened up spaces of discussion the traditional curriculum did not and expanded opportunities for participation with other schools and organizations. The author highlighted that the biggest challenges these kinds of programs face are the accountability of the program’s success within schools and the broader national standards. The paper concluded by reflecting on the importance of enacting change at the policy level and working closely together to support schools and promote a GCE for social justice.

cGCE in the Classroom

As it is a rather new approach, critical Global Citizenship has yet to define how to evaluate “success” or “applicability” in curricula and in turn in the classroom. As a result, research is focused on trying to assess how programs can be adapted, while others need to be reevaluated completely to make cGCE in schools a reality. Other research focused on the application of GCE units in different academic subjects (social studies, language and art), which are especially designed to promote cGCE. In general, these studies sought to understand how to apply and improve lessons in meaningful ways, while clearly and explicitly trying to achieve the goals of critical GCE. As with the previous group of research, these studies show the importance of a safe environment for discussion, open channels of communication and active participation from all of the members of the school community to truly make an impact on citizenship education and civic engagement.

Harshman (2017) sought to understand the role of media literacy and specifically film to teach critical citizenship in the classroom. The author examined how eleven educators around the globe used film in different school subjects, as it has become a democratized source in the most recent years, with video platforms and on demand content. Harshman used the 6C's of critical literacy to evaluate the impact of film on these issues, directly correlated to the goals of cGCE, which include colonialism, capitalism, conflict, citizenship and conscientious consumerism. The author asked 120 teachers from around the world to participate in twelve online discussion forums. Teachers discussed different approaches to global issues in their classes through media, and had the chance to reflect on their participation. Teachers who explicitly used films in their class were contacted and interviewed via Skype.

With a closer look at each of the 6C's, the author examined the reports, interviews and discussion forums of the participants to gather examples and data to assess how critical citizenship education can be taught through the framework of critical literacy and films. The study found the approach very useful if the selection of these resources is made critically, taking into account the visible difference between media created in the “Global North” compared to other less powerful

nations. As the main finding, Harshman concluded that film media in the classroom needs to be accompanied by the analysis of the media itself, decentering content from the dominant Hollywood media, which we are used to consuming. Authorship and point of view emerged as key concepts in the classroom, as well as a more enriching and participative discussion between teachers around the world to improve how critical literacy can actually be a proper channel to incentivize students to develop a global consciousness.

As illustrated, critical citizenship education can be adapted to many school subjects, and can be cross curricular. With this in mind, Myers et al. (2015) provide an example of cGCE in action in a history classroom. The researchers' inquiry was to specifically assess the role of class discussions in history courses, and how these spaces are fundamental to create civic identity. As civic identity is defined as a socially constructed process to create meaning, the investigation saw an opportunity in taking a closer look at social interactions in the classroom and how discussion can be a catalyst to promote cGCE. This study focused on the fluidity and flexibility of the concept of “citizenship,” and how it is contingent to the context and heavily influenced by the opinion of others. Participants were 75 students enrolled in a world history course in the US. The authors constructed an interpretative study using audio recordings of discussions, student and teacher interviews and field observations.

The results of the study claimed that first, it is very important to understand that the construction of civic identity is a process, not a fixed or finished task. With this in mind, the findings showed that even though literature can attempt to define it, there was no specific categorization of global identity in the students. Rather, the study found that this was negotiated constantly in students' interactions with family, teacher and peers. They found that these pressures exerted a great influence on how students were able to integrate different identities and navigate between them, and so the recommendation for teachers is to support the diversity of ways of being citizens in the world.

Considering the negotiation of meaning, Jennings (2010) examined how a unit on a specific historical event offered possibilities of finding spaces that explore

the themes and the meaning of rights, respect and responsibility in the students' daily life. The research specifically examined classroom practices about the Holocaust in literature and how this may foster critical citizenship, tolerance and empathy. This study sheds a light on multidisciplinary practices as well as the effect of a historical, social and religious event through literature. With an interactional ethnographic approach, Jennings utilized participant-observation, video and field notes to evaluate the impact of these units in learners' perceptions of the other, and its consequences in the past, present and future. The findings showed that with the construction of a long-term and in-depth approach to tolerance, intolerance and social responsibility, students built meaning together. The study also highlighted the importance of looking for each student's own voice and providing several opportunities not only to discuss, but to act upon issues of social justice and inclusion. It also calls for more authentic action from the students and a constant review of curricula to develop critical consciousness.

cGCE and Social Movements

The classroom is where everything ultimately takes place, and so this is why these studies are paramount in understanding the impact and challenges in making cGCE a reality. Notwithstanding, the purpose of critical citizenship is not to limit the construction of meaning and the discussion of global issues to the school space, but rather to transcend education and foster civic engagement in students. With that in mind, research forms the basis for day to day practice and to promoting dialogue between policy makers, educators, and students to encourage action, peace and global awareness. Going further, some studies emphasize the importance of social action and speaking against the power struggles that still exist in society, which in turn perpetuate situations of inequality, discrimination and poverty. In comparison to the research shared so far, these studies examine the real impact of cGCE in terms of the participation of the school community outside of the classroom, and how it actively searches to bring change.

In this vein, Catalano (2013) established a clear connection between social movements and the goals of

global citizenship education through the example of the "Occupy Wall Street" movement of 2011 in main cities around the US. Catalano interviewed 45 participants of the social movement, and their perceptions on society, change and social action. The study examined how social movements are in itself great teaching tools for GCE as they inquire into the attitudes of participants and how social movements promoted the major themes by Oxfam (2006): knowledge and understanding, skills and values, and beliefs. The study determined the "Occupy" movement as a good example of how the three dimensions of GC were practiced, applied and promoted in social movement experiences, through the construction of social belonging, identity and solidarity – in this case, when a group is out on the streets together fighting for a common goal. For Catalano, the involvement in social movements embody GCE's goals inasmuch that they encourage active participation for change, and highlight the importance of SMOC (Social Movement Oriented Citizenship) to enrich the students' experiences.

Along the lines of SMOC, Edwards (2012) emphasizes Colombia's involvement in the promotion of GCE goals as essential to understanding not only the government's interpretation of citizenship, but the promotion or hinderance of social movements in Colombia. Edwards' participants were taken from a previous study by the International Association for the Evaluation of Educational Achievement (IEA) on civic studies in 28 countries. The final sample in Colombia was of 2,254 students. The central finding was that pedagogy and curriculum were positively and significantly related to the development of a SMOC behavior. The encouragement of class discussion, a safe and open environment and a curriculum focused on social movements was particularly important in Colombia, where conflict and political violence are part of its history.

In another Latin American country, Lazar (2010) studied the role of citizenship education in the practice of political socialization, agency, participation and exclusion in El Alto, Bolivia. It examined citizenship as a social practice, and as such, how this education in a lower income community can give opportunities for new types of participations, and other sectors of society to be visible under the scope of the government.



It explored the power of citizenship education in the future of countries where inequalities are evident and rampant. The participants of the study were children ranging from the ages of 14-18 in El Alto, Bolivia, a city that began as a slum district of La Paz and is made up of mostly migrants from the countryside looking for better job and education opportunities. With participant-observation and film interviews, Lazar's inquiry was focused on how citizenship education in the schools affected the embodiment of practices of collective belonging and political agency. The study findings showed that even though there were hierarchical, authoritative and unbalanced relations of power between student, the teacher, school and government, it was still possible to be able to promote critical global citizenship. It concluded that this experience cannot be precluded to the classroom and curriculum level, but needs to be analyzed in a wider context, where socio-emotional and personal experiences outside of the classroom play a fundamental role.

On the subject of civic engagement and social movements, Broom's (2017) analysis on the influences and reasons behind youth action is particularly enlightening. The purpose of this study was to present a conceptual model of internal and external factors that may influence youth actions depending on their context. The author cited a void in research on youth civic engagement, and her aim was to create a more comprehensible model to understand what moves a student to participate and act. The participants were about 150 youth in Canada, England, China, India, Italy, Japan and Mexico. Multiple scholars participated in the application of the research surveys, understanding differences in social and cultural factors specific to each context. The study showed an increasing apathy for civic engagement, which responded to an adult community that also showed great distrust in political institutions. Because of this, the authors highlight GCE as essential, especially in its power to challenge students' knowledge of news and social media as tools for engagement. The role of these networks that engage with particular issues and popular culture has opened spaces for participation that transcend national of physical boundaries, connecting based on interest rather than physical locations. The study further recommended that youth have the spaces to demonstrate awareness

and insecurity of the times they are living in, which calls for a stronger GCE program that focuses on building skills (critical thinking, analysis, and inquiry skills) to encourage critical engagement to challenge the world order. Finally, the authors argue that is important to foster care, compassion and empathy in youth and not fall into a fundamentalist way of thinking, but rather one that appreciates and values civil and human rights in a collective reality.

cGCE and Teacher Training

Studies on social movements and youth engagement with local and global issues is fundamental, and this is the cornerstone of cGCE and its difference with the "softer" kinds of GCE. Although there is still little research on the topic, this literature is important in demonstrating the clear effects of GCE, not only on the classroom and school level, but on a much broader scale, as well as its power to promote change. A curricular focus and student outcomes are useful to study the impact of cGCE. However, the teacher's role is certainly pivotal, and a number of studies focus on aspects of teacher training. Research has looked into the extent to which teacher factors impact students' perceptions of global issues and their role as citizens of the world. In this regard, these studies highlight the lack of training and discussion among teachers, which is thought to impede effective citizenship education.

Bamber et al. (2018) researched the influence of initial teacher education in relation to the promotion of Fundamental British Values (FBV), a statutory component in English schools. They evaluated the relation between teacher training in CGE and the tensions that arose by simultaneously adhering to national standards that promote learning values embedded in a nationalistic discourse. The study was done from document analysis of publicly available data, including school websites and inspection reports, semi-structured interviews with teachers, participant observation and reflective logs. The findings explored four overlapping teacher orientations (critical being, criticality, compliance and comfort), providing a framework to differentiate CGE in practice and to give guidance to teachers who have to juggle official policy discourse and critical autonomy. The authors concluded

by affirming the importance of teacher training for CGE and the need for discussion about the teachers' contexts, and the state's demands.

In the same line of open discussion to enrich the teacher's role in citizenship education, Jerome (2006) studied the perceptions of teacher trainees in England who took part on a one-year training course put forward by the government's Teacher Development Agency. In the study, Jerome attempted to find through their written work and reflections how experiential learning and active citizenship themes might help improve the classroom experience. The author found that reflection on teacher training is vital to developing an impactful GCE as it builds on previous experiences that can help in the future. It also highlighted how promoting reflection among trainees promoted a sense of ownership of the topics and attitudes in the students (both teacher and pupils) as well as encouragement to see citizenship education as a whole school issue. For Jerome, schools are seen as changing institutions, as are the teachers. With this in mind, it is then fundamental to maintain a critical observation between colleagues to help avoiding pitfalls in the planning and execution of the lesson plans, as well as having small scale objectives first to then be able to transfer to a bigger stage.

In these studies, it is clear that the role of the teacher in promoting cGCE has been undermined, and there is much to be discussed and researched. As the facilitator of key global issues, the teacher is at the main stage of this education. It is then very important to continue to question the possibilities and restrictions the teacher has as person, as a citizen as a professional. Analyzing personal bias, school expectations and limitations, and the citizenship role of the educator can bring endless possibilities to enrich the literature and have a better understanding of how to reach younger minds in the complexity that is citizenship.

METHODOLOGY

Research Design

The research adopted a *qualitative design* based on an instrumental case study that examined a particular

case to gain further insight into the impact of cGCE in educational practices. A case study allows for the analysis and interpretation of the uniqueness of the participants and also provides for an in-depth study of the setting. A case study may also give space to examine the complexities of the shared social truths of the group, and can yield different perspectives on the same issue. Most importantly, a case study approach allows to 'step to action', as it begins and ends in the world of action and provides the space for insights to be directly interpreted and put to use (Cohen, et al., 2018).

Additionally, this research was also an *action research study* as it involved a pedagogical intervention that sought to improve practice in attitudes and values and set out to evaluate procedures in a specific setting. In action research the purpose is to focus on the areas that the participants are directly concerned about, and it promotes the evaluation and reflection of all of the parts of the study. Action research is also dialogical in nature and encourages the use of discourse as an effective insight to participants' actions. In this regard, action research fit the present study in order to evaluate, re-evaluate and self-evaluate the instructional practices, the content of the program and the students' perceptions and actions towards this kind of pedagogy (Cohen, et al., 2018).

Context

The context of the intervention is a very small private school in Bogotá, with 500 students from grades Pre-K to 11. It is a Jewish school, owned by the Jewish community, but also accepts non-Jewish children, and in this way expands the pedagogical scope to all beliefs and creeds. Still, religious traditions are very important at the school, and they celebrate prayer every morning, respect Shabbat hours and follow all Jewish festivities and holidays. This makes the school a unique space in Bogotá, a city where the Jewish community is a minority and their perspectives can differ greatly from other schools in the city. Approval to conduct the research was sought and obtained from the school to be able to apply the action research in the virtual classes of September, October and November of 2020.

Global Citizenship Education in the School

The Global Perspectives subject of the Cambridge International Assessment curriculum is a two-level program whose purpose is to promote global awareness of local and global issues, and give the students the tools to be critical thinkers, develop skills and propose solutions to many of the issues the world faces today. In essence, this program provides a GCE subject in the curriculum, which promotes learners' self-awareness as active citizens as well as the development of academic and English language skills (Cambridge Assessment International Education, 2018).

The program is divided into two main levels, the Primary curriculum framework and the Lower Secondary curriculum framework. Each has its own set of success criteria, one leading to prepare the students for the latter program. These programs in turn are divided by stages, and each of the stages has six challenges based on a set range of topics, and the challenges focus on two or three of the skills promoted by the curriculum mentioned above on a personal, local and global level. The challenges also give a set of activities that the teacher may or may not follow, but what it must be taught are the skills it is based on to reach the challenge's success criteria.

An important feature of the Global Perspectives program is that is flexible and allows the teacher to have control over how the objectives are met, and at what pace. Taking this into consideration, the proposed topic of conflict and peace specifically around resources and scarcity was modified. In previous experiences, the teacher found little engagement and motivation from the students, especially when conflict over resources are especially evident in Asia and Africa.

Instead, conflict was introduced as a complex concept that changes depending on the perspective. The class analyzed conflict in comparison to peace, and the teacher put forward the importance of social movements, social protest and social struggles in history and today. First, learners analyzed conflicts on a personal level, and were provided strategies to resolving them, understanding the importance of communication and empathy. Afterwards, students were presented with the basics of Conflict Theory, and introduced to

sociological concepts and the application of a macro-theory to understand society and its order. Learners were then challenged to complete independent research on recent social movements around the world that have been particularly propelled by social media. In this regard, local and national experiences were essential to connecting the theory to practice, and acknowledging the importance of social protest and ensuring safe spaces to do so. The aim was to finally encourage students to create their own social movement, by first identifying a problem that needed to be solved and that directly affected them, creating and designing a campaign on a fake social media template to then be revisited at the end of the year to assess its pertinence as time passed.

Participants

The participants of the study were 13 students in total, eight girls and five boys between the ages of 14-16 years of age. The participants had been students of the teacher-researcher for two years, already completing previous stages of the Global Perspectives Curriculum. Students all had English as their second or third language (the school also has Hebrew courses since preschool). Informed consent from parents was obtained via email, explicitly explaining the aims and purpose of the study.

The teacher-researcher was an essential part of the discussion and participation, taking into account that she and the class had been together for over two years and had developed a rapport that enabled a safe space to share information. The teacher-researcher role was one that intended to promote debate and incite answers to hard questions, as well as planning the content. In this regard, it is then important to highlight the teacher-researcher's intentions of promoting a more critical stance of issues, and belief that critical pedagogy is essential in this process. The teacher-researcher had observed in her experiences students' lack of engagement in both local and global issues, so the stance towards the investigation was subjective and the researcher was a clear participant of the study.

Baseline Description of Students' Critical Pedagogy Skills

During the previous two years, students had learned how to identify reliable sources, plan group work and research independently on a given topic with specific guidelines. The group had an acceptable level of understanding of the topics, but still lacked tools to go further with their answers or take critical stances on the issues presented in the class. In general, the class was able to follow instructions, but had difficulty with questions without clear-cut answers, which is where teacher's guidance was constantly required.

In regards to the facets of critical pedagogy (ideology and politics, collective focus, self-awareness, and engagement/action/reflection) (Johnson & Morris, 2010), learners had demonstrated some critical stances, especially when they were encouraged to carry out projects that required their opinion supported by arguments on a social issue. In the first facet, *ideology and politics*, in which the idea was to have students develop their own visions of causes of injustices around the world as well as methods to advocate against this, the group had shown little motivation or interest on the matter. In general, the discussion on politics and ideologies was somewhat restricted by the school's political stance, but it was also true that none of the activities in previous stages had focused much on this. Still, some students showed more interest in asking why the order of the world is as it is, and usually were able to go further with their analysis.

On the other hand, the facet of *collective focus*, which asks the student to understand his or her civic role and the relations that emerge from being a social being, is strong in the Jewish community. The students evidenced family contexts in which the community and mutual aid was an important part of their personal and family spheres. In this matter, students had proven to be very eager to help others, and also usually evidenced a socially-oriented view of the issues seen in class. Notwithstanding, it is also imperative to highlight that their collective focus seemed in itself reduced, and their belonging to other groups very limited. For example, when asked about their role as Colombians, the students did not exhibit a strong sense of identity, and sometimes showed apathy towards the topic.

Regarding the facet of *self-awareness*, based on the recognition of subjectivity and objectivity, this had been addressed through the topic of finding reliable sources of information and understanding differences between facts and opinion. Further, the activities required not only content and objective information, but rather encouraged personal and subjective views of the issues. The students were aware that the Global Perspectives subject asks for much of their voice in the writing and discussions in and outside the class.

Finally, the last facet based on *engagement/action/reflection* was more evident in the reflection than the engagement/action side. The Global Perspectives course continually asked for students' self-assessment and reflection questions with most of the activities. This helped students become accustomed to thinking and writing about feelings, perceptions and opinions during the course of the school year in the subject. The only limitation with the self-assessments made was that these tasks were usually not graded, so it made the reflection somewhat superficial in content.

As mentioned before, the action/engagement part of this facet had not yet been explored extensively in the subject, especially because of time constraints of the program. Nevertheless, students actively participated with different organizations and other spaces for social engagement, but these only affected the Jewish community. For example, they actively participated in organizations like the *Keren Kayemet LeYisrael* (KKL) and WorldORT, which aim to engage students to find solutions to world problems like environmental and inequality issues and how youth can make an impact. However, engagement was restricted in scope and needed to be widened in order to accurately assess how classroom topics might motivate student action in different spaces.

Data Collection Instruments

The data collected included both the activities that were graded (summative assessment), but also the opinions, class discussions and other evidence that appeared spontaneously during the course of the class (formative assessment). In this way, the summative assessment included the following evidences:

Quizzes

These were quick in nature to assess understanding or promote reflection at the beginning or the end of the class. These usually were done at the beginning of a session (to activate prior knowledge) or at the end of the class as an exit ticket. The purpose was to have their perceptions before and after a session, to promote reflection and compare their views on the matter before and after class discussion.

Worksheets (Individual)

Individual worksheets were made up of clear instructions that the students answered on their own. These were aimed at understanding the individual perceptions of the students, as well as to assess their reading, writing and critical thinking skills throughout the course. This was more focused on knowledge and skills, and how they were able to understand the information given on social movements and its history.

Workshops (Group)

The workshops were longer projects, aimed at promoting discussion, collaboration and reflection from the students. These workshops were divided into several steps to arrive at a product that accommodates to the student's interests and allows for authentic assessment. The idea of the workshops was to develop the engagement/praxis facet, but for it they needed to also apply the other three (political/ideology, social/collective and subjectivity/self) to arrive at their own conclusions on the matter.

These activities focused on engaging learners to answer them developing critical thinking skills and going further than what is asked. The motivation to have deeper analysis in each of the stages was be that it was a current and pertinent topic that had affected all of us in varying degrees. Students' work was be analyzed in two moments, based on the application of the questionnaire. The activities were planned and assessed based on the framework proposed by Johnson and Morris (2010) before, during and after each of the surveys. The instruments included the following:

Reflective Research Journal

The purpose of the research journal was to assess the class discussions, attitudes and other evidence that the students produced during the course of the unit in regards to their perceptions on social movements and their utility, as well as their willingness to engage. This instrument was mainly focused on the detailed writing of teacher-researcher reflections, experiences and other evaluations observed throughout the study. It included detailed observations of the physical setting, the human setting, the interactional setting and the program setting (Morrison, 1993, as cited in Cohen, et al., 2018). This was aimed to be as descriptive as possible with the interaction in and outside of the class within the study's scope and purpose.

Observation

Observation was the basis for the reflective journal and the research assessment. This observation was naturalistic to try and be the least disruptive and allow class flow. The teacher-researcher assumed a role of observer-as-participant, as the students were informed of the research study, but the teacher was not part of the group of students, participated peripherally in class activities and tried to be as unobtrusive as possible (Cohen et al., 2018). The main observations were carried out during class discussions, individual and group activities, as well as during reflections and thoughts spontaneously shared in class. The purpose was to evaluate learners' changing perceptions before and after the unit, and to observe the changes and permanences. These observations were constantly cross-referenced with the three facets of critical pedagogy and how the unit promoted each.

Pre- and Post-Intervention Questionnaires

These questionnaires were done electronically in Google Forms. The pre-questionnaire sought to attain their perceptions on action, engagement and social movements, as well as their previous knowledge on the topics. The questions were directed towards understanding the students' opinion of the current global social movement panorama, and its impact on

social media engagement, their personal experiences on the matter, as well as their overall stance on their influence to act and create change in their community.

The post-questionnaire aimed to evaluate the course as a whole, and students' changing perceptions on social movement and engagement compared to the beginning. It included reflection questions to evaluate students' personal, group, class and overall experience and perception towards social action, their role in this and the possibilities for the near and distant future, as well as their overall experience in online classes of the unit.

Curriculum Based Measurements

These include the assessment criteria found in the curriculum framework of Cambridge Global Perspectives, which includes a detailed description of success criteria in each of the challenges. The purpose of this measurement was to have a standardized scale to evaluate students' progress based on Cambridge guidelines, and to compare it with the observations and reflections from the class to see the scope and limitations of such assessment.

Pedagogical Intervention

The challenge was applied during the months of September, October and the beginning of November of 2020. The general plan was to apply the strategies that Cambridge suggests to develop the two main skills of the challenge (reflection and analysis). The intervention was also guided by content on social media, social movements and the current global outrage over police brutality, as well as race and feminist protests in order to engage the students and promote cGCE in the classroom in the four facets of critical pedagogy.

To assess the effectiveness of the intervention, the results were cross-referenced with the framework proposed by Johnson and Morris (2010). The intervention followed the pedagogical model of the school, Teaching for Understanding. In this regard, understanding is a broad concept, it "is contextualized as a function of social interaction with others, the undertaken, the tools employed and the immediate context which reflects the culture in which ideas are

developed and used" (Blumenfeld, et al., 1997, p. 869). This means that understanding is not a one-dimensional objective, but rather a tool to transform and create new meaning.

The unit focused on the generative topics "How does conflict affect me and others?" and "How can I be a promoter of peace?"

The understanding goals of the unit were:

- Students will understand the basic concepts of conflict resolution strategies and compare them in different world scenarios.
- Students will understand the causes and effects of conflicts and compare them in different world scenarios.
- Students will understand the impact of their daily actions to promote conflict and/or peace, how it affects them, and how they are active participants in creating a healthy and safe environment for all.
- Students will understand how to select, organize and effectively record relevant information from a wide range of sources and findings from research.
- Learners can work together effectively and allocate roles and tasks that need to be completed to achieve a shared outcome.
- Students will understand how to effectively communicate their ideas with the correct use of English (grammar and spelling) and correct citation.

The lessons were targeted to make the students reflect on their influence in social movements in order to incentivize active participation, discussion, reflection and a critical stance on the current social global crisis. As it followed the Teaching for Understanding model, the first lessons/ activities were directed to explore the issues in a general manner. Then, as the course progressed, the activities required guided investigation, in which the key terms, concepts and issues were presented and practiced by the class with small workshops to assess understanding. Finally, the last part of the course included the application stage, in which the class was asked to create research questions, plan their research project and execute it in groups, working closely with the help of the teacher. In general, the course focused on exploring the terms "conflict"

and “peace” as complex, and often times chaotic and tensioned relationship.

The exploration stage in Learning for Understanding is the introduction to the topic or lesson that activates prior knowledge, and motivates the student to engage. A sample of an activity at the **exploration** stage was the following:

Students were asked about the most common conflicts in their lives and reflect on the causes of these conflicts. Then, they shared the most common solutions that they give to these situations. Afterwards, they swapped their stories with their peers and evaluated how others solved them, giving them different perspectives on the problem and understanding the importance of a point of view. This was an activity that took no more than 10 minutes, and it worked as a warm-up for the remainder of the lesson.

In the **guided investigation** stage, with the use of media, readings and other resources like academic reports and news, the students dug deeper into the issue, and were presented with the main characteristics of conflict resolution strategies, conflict theory and social movements with a specific focus on the recent protests around the world involving issues of race, gender and inequality. A sample of an activity at the **guided investigation** stage was the following:

Students were presented with a “Win-Win” conflict resolution approach, and practice its application in different mock scenarios with examples given by the teacher (modeling). Afterwards, they discussed their answers with the class to promote class participation (activate prior knowledge). Further in groups, they researched on a social movement in US history by visiting a Library of Congress resource website, in which various movements were presented on a comprehensive guideline with short text, videos and other primary sources. With the information, they were asked to imagine how could it be solved (or not) in our current state of affairs (guided investigation). The idea of this activity was to push the boundaries of temporality, and make them share their opinions and ideas on how conflict can be prevented if we all work together, no matter the place or time.

In the last stage, **application**, the final project of this challenge, the students prepared a debate surrounding the question: “Should youth participate in social movements?” The activity was carried out in the following way:

In several steps, both sides prepared their arguments with reliable sources of information to support their arguments. The debate proved to be a space in which the students felt safe and comfortable to give their opinions about the topic, and ultimately, to weigh the importance of their own voice in these matters. The project allowed each of the groups to debate amongst themselves to critically assess their stance, and also were able to conduct their own research to find supporting facts to help their argument.

Data Analysis and Interpretation

Collected data for the questionnaires were analyzed and contrasted with the unstructured observation information gathered in the reflective journals. Grounded theory was used to look for categories emerging in the answers given, and they were analyzed together with the reflective journals, the students’ answers and participation in each of the activities, and the issues raised by the researcher in the participant-observant role in and outside the classroom.

Questionnaires

The questionnaires were made with the objective to assess students’ knowledge and attitudes towards participating and understanding social movements. In this regard, and as the main objective was to promote critical CGE in the classroom, the teacher-researcher created each question to address one of the four facets of critical pedagogy. The questionnaires were created in Google Forms and then tabulated using spreadsheets in Microsoft Excel by questions. Using grounded theory, the data was analyzed by identifying emergent categories in each of the open and closed questions, without trying to impose any preconceived notions to it. This was done simultaneously as the research was still occurring.

Open questions were analyzed separately from closed questions. Closed questions were analyzed according to the number of students that selected one specific option, giving a broad overview of their positions on the matter as a group. On the other hand, open-ended questions were individually analyzed, which in turn led to the formation of some patterns that made it possible to create units for meanings and feelings in their

answers. Both questions in the questionnaires were compared with their responses in classes and in their activities to integrate and interrelate actions with other actions, thus, ensuring that the data was contextualized and connected (Glaser, 1996, as cited in Cohen et al., 2018).

Reflective Research Journal and Observations

All of the entries in the journal were done throughout the duration of the unit, logged by date and activity. All of the activities were recorded in the journal, as well as the comments by the students and experiences of the

teacher that were thought pertinent during this time. This allowed the teacher-researcher to organize each of the activities by its original purpose and the final outcomes in terms of the facets of critical pedagogy that were actually addressed and practiced. The entries in the journal provided evidence of the assessment made by the teacher of what each activity was supposed to develop in theory and what indeed took place in the classroom. This was done to allow a clear comparison between the desired objective and the real objectives achieved, and also to assess the success of the unit in terms of its main objective: to promote critical CGE.

The following table shows the activities carried out, their initial objective regarding critical pedagogy and its correlation to the facet(s) that were actually observed:

Table 1. cGCE Activities with expected results and facets observed

Activity Name/ Expected Objective	Facets Observed During The Activity			
	Politics/ Ideology	Social/ Collective	Self/ Subjectivity	Engagement/ Praxis
“What are conflicts? How do you solve yours?”. The expected result was for them to reflect in their intrapersonal relationships. It also required sharing their experiences to relate them in a social context.		X	X	
“Conflict and Peace: Different Perspectives, Same Outcome” The objective was to sensitize the students to different contexts of conflict around the world and relate it to their personal experiences and political participation.	X	X		X
“Conflict Theory”. The objective was for the students to conceptualize conflict, and understand its role in history as both something necessary but avoidable.	X			
“Youth and Social Movements: Do I count?”. The objective of this activity was, through mixed media (video, photos and audios) to analyze their role in social movements, by comparing their experiences with those of the USA and drawing conclusions on what they can give to their community.	X	X	X	X
“Social Movements in Depth” The objective was to independently research four movements in groups to learn more about social action, political involvement and their impact in and outside of their context.	X	X		
“Social Movements Final Debate: Should Youth participate in social movements?” This final activity’s objective was to let the students share their voice and opinion in a free and safe environment, and be able to support their claims with evidence about their influence (or lack thereof) in today’s world issues.	X	X	X	X



RESULTS AND DISCUSSION

This project aimed to use the Global Perspectives curriculum to promote citizenship education that encouraged students to take a critical stance on global issues and understand their involvement and influence in these issues. The goal was to help students reflect on the present world order and the conflicts that afflict different populations, as well as the need to “decolonialize” the view that helping others is limited to sending donations or remaining unengaged because of age, social status or personal interest. A critical Global Citizenship Education was implemented, where it was made clear that knowledge is in constant construction and change, and that each person within their particular context can form a very different perspective on the same issue. In the unit, students were asked to challenge their thoughts about their personal conflicts and broaden their knowledge of social movements in order to re-think their role in these issues as active members of the global community.

The data analysis showed that implementing critical CGE presented several limitations in the virtual classroom setting in this specific case. Data suggest that this was because of low levels of engagement during the sessions because of the restrictions inherent in online classes. Motivation and interaction were vital for CGE lessons to be successful or to truly impact students’ experiences on a personal, local and global level. In the online setting, the promotion of the main aspects of critical CGE and the facets of critical pedagogy proved to be a difficult and challenging task. It was clear from the start of the project that participation was hindered by the nature of the interaction, in which cameras can be, and usually were off, and microphones muted.

Nevertheless, the unit showed a shift in students’ perceptions regarding civic protests and youth involvement. Through class discussions, class activities and other supporting tools like news articles and videos, students demonstrated growing empathy for social issues, and stated that most of their apathy was due to a lack of information as well as not being included in the decision-making process in world issues. Their Jewish context aided in the promotion of empathy, and connection of their heritage’s past to the present and

future of world conflicts. Another reflection was that in the past, learners did not have spaces in their classes for discussions of this kind, so they appreciated the unit and its content.

Although most aspects of critical pedagogy were indeed practiced, there was an evident lack of “engagement,” specifically in relation to the virtual classes. The engagement facet asks for a clearer demonstration of engagement in social matters, such as being part of a campaign, protesting or engaging on social media. Because this was done online, there were many variables that the teacher could not control. For this reason, it was decided that the engagement would be limited to the classroom and their intentions to act, rather than engaging in a more active manner.

Online Classes and Critical CGE

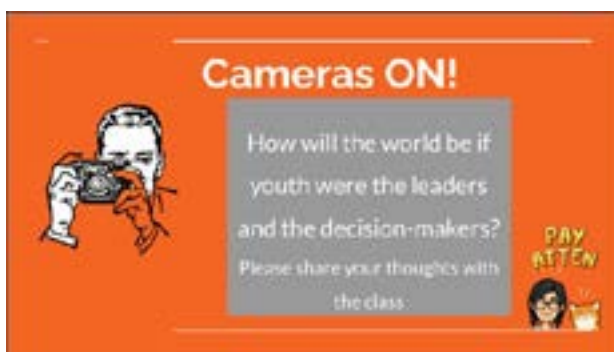
Although not identified as a main variable, one of the most influential factors in the results of this study was that the pedagogical intervention was carried out in the context of the current global pandemic, and the unit was taught entirely online. The school uses GSuite, so it uses Google Meet as the platform to connect to the class, and Google Classroom to publish activities, instructions and to share grades.

The platforms proved to be user friendly. All of the students connected on time during the sessions and were able to participate in the meet without much trouble. Still, the occasional internet connection problem proved to be difficult to manage, with no control over the complete attendance of the class during the sessions. Further, even though it was school policy that students turn on their cameras during the entire class, this proved to be very difficult to achieve. Despite efforts by the teacher-researcher to motivate the class to be more engaged in class and to turn their cameras on for more interaction, most learners turned the camera on for their own participation and then immediately turned it back off.

Strategies to encourage students to turn on their cameras included class warm-ups related to the day’s topic to help learners activate previous knowledge and reflection. These included cartoons depicting critiques

on social participation, famous quotes or “What if...” questions for them to analyze and give their opinion. After presenting the information, the teacher-researcher asked students, one by one, to participate, turning their cameras on in order to ensure complete engagement at least for the beginning of the class. Figure 3 illustrates one such activity:

Figure 3. Sample slide from warm-ups in class



The teacher-researcher mainly used three different platforms for the unit: NEARPOD.com, a platform of interactive presentations with polls and questions to assess understanding in an enjoyable way, Google Slides with content, instructions and links to videos, and finally Google Classroom, where the written worksheets were posted, and where students presented their work. Although these did not promote the use of cameras, they did ensure some level of involvement as learners had to answer them as classwork or homework.

What proved to be most successful in promoting participation were the graded tasks, in which the stakes for learners were higher. In non-graded activities, students seemed to use the platforms as a shield to not have to be present in class. In one question in the final questionnaire, they were asked what would help them participate more in class discussions, and surprisingly many said that they thought they had been involved. Still, there were some comments in which the student mentioned the limitations of the online platforms:

As we are virtually I think that if we were in school I will do participate more, since in virtual class is difficult to have the control of the speakers and it's a little messy because when two people talk at the same time its very difficult to go in and talk.¹

The limitations of the online class proved to be very challenging, especially in promoting critical CGE, due to its principal of constant interaction and discussion in order to stimulate the way people think about the world. With this limited online presence, a tension could be observed between the individual needs of the students (being comfortable at home, in their bedrooms, usually with cameras turned off), and the promotion of universality and social conscience (in regards to issues of identity, duty and participation in social issues) in order for them to truly be able to practice critical CGE (Reimers, 2017). The critical approach advocates that individuals see themselves as part of the problem, not as a separate entity that can only participate by campaigning or donating. However, as a result of this limited interaction online, the problems discussed seemed even further from their reality (Andreotti, 2014). In sum, the online barrier made it much more difficult for learners to separate their immediate preferences from the larger issues.

Adaptation of cCGE to Context

A very important element of Global Citizenship Education is its adaptability and flexibility to its context, in order to give students the incentive to think globally and act locally, and thus be more informed and involved not only in terms of what the issues are, but how to help by actively participating as a member of the community and finding strategies together to solve them. With this said, it was an advantage for students that they were part of the Jewish community in Bogotá, which has its own country club and holds many social and religious gatherings during the year. It is a very close community, and thus very protective of their institutions and traditions. Taking this into account, one of the most successful activities proved to be when the

¹ All excerpts in the original. As the data collection was part of the class activities, it was collected in English. No modifications have been made to students' formulations.

class was asked about the issues that most mattered to them, and many had opinions about the discrimination they have suffered as Jews in the past, and sometimes in the present, and how they feel identified with other movements that protest against discrimination based on gender, race or religion.

In this regard, class discussions were very illuminating, and students repeatedly discussed their families' journeys and their escape from Europe and other nations after World War II. One item on the first questionnaire asked, "What issue would inspire you to start or join a movement for change? What change do you want to see happen?" Answers showed that for the students, the issue that they felt that inspired them and touched them in a personal way was related to their Jewish identity. Some examples of their answers are the following:

No more anti-Semites in the world, and let no one be discriminated against by religion.

I would like join some movements for change. But the main change I want to happen is anti-Semitism, as a Jew this affects me, I really want freedom and respect for all religions.

In general, I would like to stop antisemitism not only in Colombia, but around the world.

In sum, the influence on personal and community matters was visible, and the answers conveyed how their own perspectives on social issues were affected by their religious affiliation. This helped the class, but it was also a disadvantage as their bias towards their community affected the way global issues were perceived. For many, the motivation to be more involved and understand global issues was a matter of how much it involved them personally. In this way, creating more global empathy towards conflicts around the world was not truly achieved. Notwithstanding, it was an effective gateway to keeping the discussion alive, and to have them acknowledge that there are many conflicts that are very delicate and meaningful, just like their historic experience during the Holocaust.

Adaptability of the Global Perspectives Curriculum

The planning and results of this project were mostly possible because of the flexibility of the Global Perspectives curriculum, which allowed content to be adapted to learners' interests and motivations. The unit proposed by Cambridge for Stage 9 was about conflict and peace. The teacher-researcher adapted the content to start with this specific topic, but gradually it deviated to social movements to specifically target critical CGE while always promoting the key skills proposed by Cambridge Education. This helped focus the class more on opinion and reflection, instead of facts and indicators to fulfill. This was also very useful as midway through the unit various changes were made to ensure critical CGE in the classroom. It gave the students the freedom to choose how they would like to receive the information and analyze it, instead of imposing a defined set of answers with no dialogue between peers. Even though some things were set, like the worksheets and some of the resources, much of the work involved independent research and collaboration among classmates. This allowed for a safe environment where students felt heard, and that their opinion mattered. It also opened the way to help learners develop international awareness while also understanding that they have rights and responsibilities as members of this global community.

Youth Participation in Global Issues

The unit's objective was to give students the information and tools they needed to transform the knowledge from the online classes and apply it in their daily lives in regards to their role in world change, and the impact of this in their future. The guiding question of the trimester was, "Should youth participate in social movements?" The activities were especially planned to make them reflect on their role in society, not as the legal definition of "citizens" (because they are not yet of age), but rather to challenge their notions that "citizenship" is limited to adults. This was to ensure the main goals of critical GCE, and to build connections between their own reality and a global one, and make them realize their privilege, but also the opportunity this entails for them to participate.

These goals were also addressed with the purpose of decolonizing students' ideas as members of the upper class in Bogotá, in which their role was often perceived as limited to donating to Jewish organizations. Further, one of the comments at the beginning of the unit, when asked briefly in a warm-up if they helped society, and in what way, learners mostly reported donating and helping people on the streets with coins and food. This helped the teacher-researcher gain insight into what students felt their role was in society in general, and how they tended to help with money, instead of thoughts and actions.

Through their participation, research, classwork and questionnaires, students in the beginning showed apprehension towards the topic because they argued that students such as themselves did not have a voice in decision-making processes in order to alleviate the issues at hand. Their answers on the questionnaire showed that most of their apathy came from the fact that they felt powerless. The class also saw themselves removed from social and political protests because of experiences they had heard about, seen in the local news, or that affected their daily routine when roads were closed or classes were cancelled during local disturbances. However, as the unit progressed, and learners gained perspective from other youth activists and movements, the class started to shift perspective and insist on the importance of youth as a point of view that needed to be acknowledged by policy makers, as they had their rights and opinions as much as the next adult.

To illustrate the feelings of the students regarding their influence and participation, in the first questionnaire several students reported a "lack of power," but most importantly, they showed that they believed that participation was somewhat important and useful to promoting change. In this way, even though they thought that youth did not possess the same power, learners initially thought that protesting in general was significant to solving public issues. The question was, "Do you think you have a role in the decision-making process for these issues? (YES/NO) Why?" The following are some of their answers:

NO because im not someone with that type of power. The only thing I can do is participate because every voice counts in a social movement.

No because im no diciding weather or not they make a change or an implementation. I can make social movements and participate in them but Im not the one that is making the permanent change, I would be promoting and fighting for the change but not making it.

Most people dont care for the opinion of a random kid on the internet, but I agree adults should participate, as there are things that should change.

We might run into barriers like the lack of political power, because this if it is a movement of teenagers, they don't have any power in society, but they still have their voice. Also, they might face some stubborn adults that won't take them seriously because they are "just kids".

This feeling at the beginning of the unit was generalized, but is important to remember that students did believe that social protest mattered. As the unit progressed and they read and researched about youth social movements, learners' perspectives radically changed. In a class reading about the school shooting in Parkland Florida and the youth protests that followed, students reflected on the importance of young voices uniting around a cause, as well as the power of the youth perspective as very different from that of adults. Students saw this as an advantage, and showed pride in being in a position in which their opinion mattered, and where social media had been fundamental in putting their voices forward. A question was asked, "Do you think these students (from the Stoneman Douglas High School) will be able to make a lasting impact on this issue? If yes, why? If no, why not?" Their answers showed that they did believe that it was their place, and even though they might encounter barriers, it was essential that students, just like them, protest peacefully for their rights. Some of the answers included the following:

We think that these students are going to be able to have a lasting impact, they have shown that their voices are important and they are the future. These students have shown that they can make a change no matter what age they are, they are making a major impact that could change the world.

Students will be able to make a change or at least impact because they are protesting for what they lived and for what they have seen. This will make an impact because the people



that protest are vulnerable and older people are concerned about their safety, security and more, this happens because young people are the future of the world, so they should and need to be safe. This impact will also be lasting because they are protesting about something that could have taken someone's life away, and also they could've been hurt badly. Right now young people have lots of dreams, future plans, but they think they are not going to be done because of the society we are living in. They are making campaigns like "never again" and this has become a big movement that now lots of people support, so when more and more people talk about this, the possibilities of being heard are even bigger. If they are heard by the government, they can make a lasting change like prohibiting the purchase of weapons without a real reason, the inspection of objects that a person carries before entering a school and much more helpful things that would give young people peace and tranquility back. These students are doing effective things like protesting, social media movements and by the pass of time they are being heard by the government even more so this can make a lasting issue. Besides, these movements are making people realize that nobody is too young to vote or too old to vote, everyone has the same rights and the same power.

Another important reason why in the beginning of the unit students thought it was not entirely the place of youth to protest was because of violence, and past experiences in Colombia and the world in which protesting had turned into altercations between protesters and police. For the class, protesting was important, but only if their safety were ensured. In the first questionnaire and in class activities, students clearly showed their position on this matter, by commenting that the most important thing about protesting was a non-violent approach. In a question that asked, "What do you know about social movements?" most students answered that in their local experience, what they had seen were protests that resulted in violence and unfortunate situations.

First of all, a social movement is a collective action in which a group of individuals has the purpose of promoting or preventing changes, basically it is to express themselves. Lately in Colombia there has been a great variety of social movements, these actions can be both negative and positive since in my community violence and bandits often occur. I do not know much about the exact reason for the movements, but I do know that most of the time the community claims disagreement with the structure of society, the economy and public spending.

I know that in Colombia there have been some social movements because of the deaths of people in demonstrations by the police, but i don't know a lot about it. I know that in the world there are thousands of social movements, like black lives matter, Anti-bullying movement, Women's liberation movement, and others.

I know that social movements are organized by many people (a community) and are a way to protest to achieve a goal. I know that here in bogota where I live there had been a lot of movements, some have been with responsibility and others have been very destructive.

In the same manner, the students were asked in a class activity, "What actions seem to be most effective for protest? Why?" Here, answers also overwhelmingly stated that a non-violence approach was one of the main reasons that made a protest effective. As one group stated:

Most of the time, protests are more effective when they are peaceful. The best thing to do in a protest is, passively take a busy street and make a massive protest so that you can get the attention of the media and the government, but doing it without violence and with respect, so that more people support you and don't put their lives in danger.

The issue of violence in protests was very important, as this was one of the first obstacles when discussing students' involvement in issues, at the beginning. As the trimester progressed, the class remained clear that protests should always be peaceful, but they also showed less apprehension in acting. This is because students found that protest could occur not only in the streets; rather, that they had the power of social media and other outlets of action. Regarding this, the class commented that they felt that social media was a great tool, and the use of hashtags could serve as a way to unite youth voices around a cause. In this regard, their attitude towards acting to solve an issue seemed to change slightly, as they realized that to engage, one did not need to go out into the streets to be part of it.

After watching a video on the Parkland protests, students were asked, "What qualities, skills, circumstances or perspectives are unique to young people and how might they help make their voices uniquely powerful?" The answers were very similar in nature, and all of them pointed out that youth had a powerful voice as they "are the future" and can use social media to their advantage. One student reported,

“We are creative, we have the ability to manage social media in a way that not everyone can so that give us power or influence in a situation.” In another video, where the students participating were interviewed about their views on the problem and how they were helping raise awareness, they were asked, “What do you think about their opinions? Do you agree or disagree with the protests? Why?” All of them agreed, and the overall sense was one that regarded the Parkland students as courageous agents of change, who may not have the power to change the laws, but that it was fundamental to fight for one’s rights. One student made the following comment in the NEARPOD.com activity:

I think that their opinions are great because thanks to the courage they have, they are asking for help and for a change. I totally agree with one girl that said that # (hashtags) can not change laws, but I think they are doing the best. They cannot automatically change the law of change other people opinion. I agree with protest course I think it helps people to be courage and also leaders. Is a way of showing who you are and who you wanna be.

Finally, regarding youth involvement, even though students still felt that they did not have enough power, they voiced that it was not a good enough reason to stop acting. They clearly demonstrated that youth perspectives were very important, and that not only did they have a different and more unbiased view of certain issues, but their vulnerability was also an advantage. In a class discussion, one student made the following comment:

Young people are the future so we have to be protected, because we are underaged our voice sounds more if we know how to use it, if underaged people are in danger, lots of people would have an opinion because the idea is to take care of them.

Students’ Development of Facets of Critical Pedagogy

Each activity in the pedagogical intervention was intended to promote one or several facets of critical pedagogy, which are politics/ideology, social /collective, self/subjectivity and praxis/engagement (Johnson and Morris, 2010). Although it is difficult to determine in a

precise manner how each of these facets was promoted for each of the students, there are some clues as to the level of application and reflection in each of the different categories. In general, most of the facets asked students about their personal and social perspectives on social movements, youth and conflict theory. This was something inherent to the Global Perspectives curriculum as it is focused on integration of personal, local and global experiences to understand, analyze and evaluate the knowledge and skills learned in the challenge. The following is the analysis of each of the activities, and how they promoted each of the facets.

Lesson 1: What are conflicts? Conflict Resolution Strategies / Lesson 2: Conflict Resolution: Mock Scenarios

This first part of the course sought to develop personal and local perspectives on conflicts and strengthen the “Self/Subjectivity” dimension, while always relating this with “Praxis/ Engagement” and the “Social/Collective” focused on learners’ immediate community relationships (peers, parents and teachers, religious community). The “Political/Ideology” dimension was left for later sessions, as it was thought best to start from the personal in order for the class to be able to engage more assertively on global issues further in the course. In each of the activities in this first module on “What are conflicts?” and “How do I solve my conflicts?” the center of attention was to highlight the relationship between students’ lives and conflicts, and how their own position mattered greatly when confronting problems. The purpose during these first three weeks was to specifically promote subjectivity and social dimensions. In the framework, the aspects were the following:

- SELF: “Knowledge of own position, cultures and context; sense of identity” and a “critical perspective; autonomous; responsible in thought, emotion and action; forwardthinking; in touch with reality” (Johnson and Morris, 2010, p. 90).
- SOCIAL: “Skills in dialogue, cooperation and interaction; skills in critical interpretation of

others' viewpoints; capacity to think holistically", "inclusive dialogical relationship with others' identities and values" and to be "socially aware; cooperative; responsible towards self and others; willing to learn with others" (Johnson and Morris, 2010, p. 90).

The results showed students' capacity to voice their own concerns and reflect on conflicts on a personal level, but also revealed a lack of "knowledge of interconnections between culture, power and transformation" (Johnson and Morris, 2010, p. 90) and a more critical stance on the issues that affect not only them, but others. The activities were planned to provide an overview of learners' thoughts on conflict and conflict solving, and also to promote a sense of empathy with others, while also encouraging action in their personal and community lives to improve their inter-personal relationships. The results of the activities showed that the class knew their context and had a strong sense of identity as students and Jews, and that they were very much in touch with their own reality, relating the self with the social dimension. However, outside of this context, learners' reflection was limited. The praxis/engagement dimension was somewhat narrow as their solutions and written reflections did not focus on doing, but rather on discussing and reflecting. This, in turn, showed that the topic of conflicts in their lives allowed the class to express their thought and opinions, but when discussing larger issues, their responses did not go further than what was asked, and were mostly focused on their individual needs.

Lesson 3: Conflict Photo Essay Analysis

This activity was focused on activating the "Political/Ideology" dimension after the personal/group discussion on the previous classes. The activity required that students researched on their own about a conflict, and analyzed images to develop "skills of critical and structural social analysis; capacity to politicise notions of culture, knowledge and power; capacity to investigate deeper causalities" (Johnson & Morris, 2010, p. 90). This was done without disregarding the other dimensions, but the focus was to motivate learners to understand different situations of conflict around the world, and

to understand their causes and consequences. The class's answers showed some critical reflection, but when learner talked about the topics, they seemed quite disconnected from the issues, and commented as outsiders wishing for a better situation in the city that was researched. As an improvement for next sessions, the teacher-researcher considered that it was important to ask more reflection questions rather than content questions in order to promote more engagement. In this way, it was hoped that students would be "actively questioning; critical interest in society and public affairs and seek out and acts against injustice and oppression" (Johnson & Morris, 2010, p. 90).

Lesson 4: Creation of Photo Essay

The conflict essay was intended as a tool to understand students' personal perspective on conflict and their social disposition as a group, discussing fears, weaknesses and personal problems in their own households. The idea was to create a sense of vulnerability to engage students to create a photo essay that was not only personal, but which also clearly showed the group's worries and reflections on the pandemic and the issues that had arisen from it. In this regard, the dimension most practiced with this activity was "Social/Collective" and "Praxis/Engagement." Students were asked not only to include all the group members' perspectives, but also to offer solutions to their situations of conflict. In this regard, the activity was successful, as learners eloquently and creatively shared their thoughts on their conflicts and reflected on how to solve them, instead of only stating facts. In this way, the activity promoted "skills of critical thinking and active participation; skills in acting collectively to challenge the status quo and the ability to imagine a better world" (Johnson and Morris, 2010, p. 90).

In the activity, students were asked to create their own pictures and show the most common conflicts in their lives during pandemic. The objective was to tap into their creativity and motivate them to share their own struggles, especially during this exceptional time. The results showed the class had experienced similar conflicts, and in the group discussion, they realized that even though they are separate in each of their homes,

they have much in common, as when talking about global issues. It was also interesting to see the support from students' families to make the photo essay, which clearly connected to the self/subjectivity and social/collective facets, as can be observed in Figure 4.

Figure 4. Sample picture from the photo essay on the pandemic

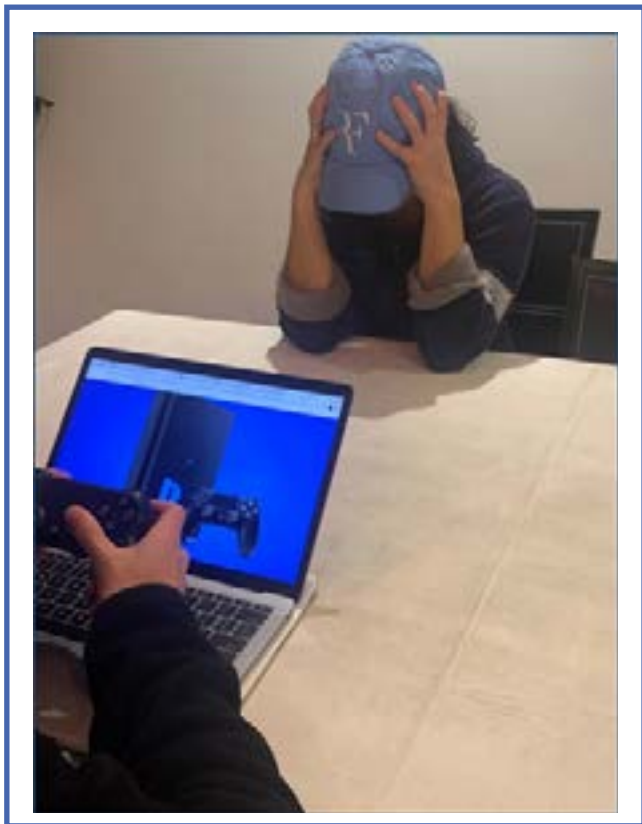


Figure 4 is an example of one of the pictures that made up the photo essay. This photo's caption read:

Conflict in our houses makes us distance from each other (in the family) and as we are locked in the house everyone locks in their room, in a cell phone or a video-game which causes more conflict. The shouting while playing video games doesn't help to sleep and the addiction to cell phones creates conflict because people feel annoyed.

Lesson 5: Google Form: Marxism 101

The critical CGE aim in this activity was designed to give the class different perspectives for understanding

“conflict” and also encourage them to think about the status quo and whether it needed to be changed. In this way, learners were encouraged to carry out an in-depth reflection using the concepts and ideas discussed in class in order to then challenge them to think why even though there is inequality, poverty and discrimination, the ruling economic system has not changed. Their answers were very revealing in that they showed how students thought about the world order and their place in it. For most, it was something that did not relate directly to them, but for others it was indeed something worth discussing and thinking about. Their answers revealed that it was best to maintain the status quo even though it may be unfair. For some, it seemed to have a connotation of a “necessary evil” which we have learned to live and endure. For others, it was not seen as worth it to revolt, as it might be dangerous or futile. There was also a group who showed in their answers how this system had allowed them to be comfortable, which was why it should not change, as from their experience, capitalism works.

Lesson 6: Youth and Social Movements: #NeverAgain

This activity was planned to promote empathy and some relation to students' own experiences as youth even though gun violence in schools had fortunately not been an issue in these young people's lives. This lack of direct experience made it difficult for them to feel connected to the topic. However, it was also evident that their comments became more personal and connected to their own experience during the participation activities. This activity was aimed at assessing the four dimensions. In politics/ideology, it was intended not only to give them “knowledge and understanding of histories, societies, systems, oppressions and injustices, power structures and macrostructural relationships” in explaining the social problem gun violence has caused. It also was aimed to build a “commitment to values against injustice and oppression” (Johnson and Morris, 2010, p. 90) and to actively question the roots of this injustice. In the social/collective domain, the specific case of #neveragain gave an opportunity to think about other's viewpoints, and to have a “Socially aware; cooperative; responsible towards self and others;

willing to learn with others” (Johnson and Morris, 2010, p. 90). In the self/subjectivity domain, the activity was planned to encourage a connection in youth as they may relate with the students, who look just like them, who protested in the US. In this regard, it was aimed at manifesting a “capacity to reflect critically on one’s ‘status’ within communities and society; independent critical thinking; speaking with one’s own voice” (Johnson & Morris, 2010, p. 90).

Finally, in the praxis/ engagement dimension, which proved to be the most difficult to promote, the activity sought to represent engagement in a very clear manner, and to encourage a “commitment and motivation to change society; civic courage; responsibility for decisions and actions” (Johnson & Morris, 2010, p. 90). Students’ answers during the session showed more interest than in other lessons, with lengthy and mostly well-written answers to give their opinion on the matter. They reported that they did see themselves as agents of change, but that they lacked motivation to actually feel themselves as participants. They noticed that their voice mattered, and that they had advantages over other populations. In spite of all of this, there was not much consideration of the event itself (gun violence), but rather on highlighting that youth’s perspective was unique and valuable.

Lesson 7: Youth and Social Movements: History of Youth Social Movements in the US

The purpose of the lesson was to assess learners’ perspectives on the four facets of the framework. In the first part of analyzing the article, the questions asked them to analyze what it takes to make a successful protest, and what recommendations they might give to the students in social movements to be effective communicating their dissent. These questions were more focused on the social/collective and the praxis/ engagement domains. On the social/collective, it was aimed to promote a “critical perspective; autonomous; responsible in thought, emotion and action; forwardthinking; in touch with reality” (Johnson and Morris, 2010, p. 90), by asking them about the barriers activists may encounter, what they might suggest

to have more impact and finally by asking their own reactions to the problem presented. On the other hand, the praxis/ engagement facet is clear in all of the activities regarding social movement, as it asks directly for their opinion on solving issues with the power of protest. It is also to develop “informed, responsible and ethical action and reflection” (Johnson & Morris, 2010, p. 90).

The answers showed to some degree that the class understood the role of protesting, and actually regarded it as something very valuable to any community, and especially for youth to be involved. The answers also pointed out the importance of a peaceful protest, which in turn can tell much about the unfortunate experiences of protests in Colombia, and how some had turned into violence in months prior to this project.

Lesson 8: Debate. Should Youth Participate in Social Movements?

This activity was the culmination of the unit, where students were asked to apply what they had learned, discussed and reflected during the past weeks. Even though participants were not able to choose which position they would support, it proved to be very interesting, as they reported in the final questionnaire. The objective was to promote all of the facets, as learners needed to build arguments, find proper support and present their thoughts to the class. There were also two rounds of rebuttals, where most of the discussion occurred. On the side that stated that youth should participate, their main arguments were experiential in nature, and mostly based on opinion and some facts. Their position was that youth was still an important part of the population, and that their perspective could shed new light on problems that until today had not been solved. They also mentioned their technological advantage, and gave examples on social media. Finally, they stated that youth must be involved, as information is power, and they must be active and curious to learn more about the issues that are affecting the local and global community.

On the other hand, the group against youth participating stated that it was dangerous, it was no place for young people, and that there was a reason why they

were still under the care of their parents or guardians. With scientific evidence, they argued that the brains of adolescents were not yet completely developed, and that they were more prone to taking unnecessary or reckless risks.

The class's responses were agitated and in many occasions redundant, but by and large students participated actively for the first time. The activity was very successful, not only to give voice to students' perspectives on the matter, but also because they were passionate about the topic. In the last questionnaire, in which the class assessed the unit and what they enjoyed the most, they overwhelmingly chose the debate. Further, when asked what they would suggest to improve the unit, they asked for more spaces to debate.

During the course of the unit, the facets were promoted in each of the activities. Although it is difficult to measure with certainty, the analysis showed that students became increasingly more interested in the issues, and not as something far or apart from them. Instead, they started owning their position as young people in their context, and were motivated to talk and reflect about the importance of their voice in these matters. At the end of the course in the final questionnaire, a question asked, "What aspects of the unit did you find more useful for your life?" Most answers pointed to the freedom of speech, their youth, and to be informed about conflicts and problems that were affecting society, and thus them, in one way or another.

The fact that teenagers actually have a voice in social movements and in society and the strength and impact it can have

I think the aspect that was more useful for my life was the freedom of opinions, because now I am not afraid of expressing my thoughts.

Maybe the most useful for my personal life would be learning about all of these new social movements I didn't know of. And how they are by Youth for Youth, mainly because it motivates me to believe that if I want a change, I can make it doesn't matter my age.

All of them but I think the capacity of being able to talk and be heard of those children it's a thing that I learn for my own life.

In sum, the framework for critical GCE proposed by Johnson and Morris (2010) was thoroughly applied during each of the classes, and it was a highly effective tool to assess how students received, processed and transformed the information given in class. At the end of the unit, the review of these results showed that even if all facets were not targeted to be practiced in all activities, learners did need to actively use them all to achieve the proposed objectives of the unit. The comments of the students about the topic and its pertinence were in general positive, which shows that in spite of the participation problems and the lack of interaction with the students online, the unit generated an impact in the way the class understand conflicts, social movements and youth participation in global issues.

CONCLUSIONS

This case study was focused on promoting critical Global Citizenship education in the classroom by applying the four facets of critical pedagogy throughout a trimester in the Global Perspectives subject. The objective was to encourage a different perspective towards conflicts that students might have seen in the news, but which bore no relationship to them when presented as events separated from their own reality. Instead, the project aimed to foster empathy in students, and empower them to understand that their voice matters, and that their involvement in world issues is of the utmost importance. The project also sought to encourage students to think beyond what is presented, and analyze how knowledge is created and transformed, depending on context and perspective.

The results demonstrated that critical GCE in the classroom is difficult to achieve, especially in the context of the pandemic with the online class format. This virtual format revealed many limitations during the study, in particular the possibility for the teacher/researcher to assess each student's process. Still, even without the interaction with the class in a shared physical space, the unit proved effective in encouraging learners to reflect on their position as youth, and to understand that world issues are not as disconnected



from their own lives as they may assume. Students were able to move from identifying their own conflicts on a personal level, to relating and comparing them to a larger scale, and also realizing how important it is for them to know and discuss these issues, and become engaged in proposing solutions that consider different viewpoints. The facets of critical pedagogy, which were used as a framework to assess their progress, proved a useful tool that engaged students to develop knowledge, skills, values and dispositions, and allowed the teacher-researcher to frame the activities to promote further analysis beyond what the content itself could provide. Finally, the study allowed the students to go further than what was presented, to create their own position regarding social movements and youth participation.

Compared to the literature reviewed for this study, the present results show many similarities, in particular the value of sharing these experiences in order to understand and apply critical Global Citizenship Education in the classroom. This critical approach challenges the “soft” versions of GCE, which only present and repeat content about the issues. Rather, it tests students’ perceptions of how knowledge and meaning are produced, and encourages them to have more authentic experiences in which they analyze and transform the information given. The findings of this study also share many similarities in the reviewed studies regarding the importance of teacher training, context and curricula to making this type of education meaningful for students’ school and life experiences.

In this regard, in this study, students were encouraged to reflect on their actions, not as isolated matters, but within interdependent global networks. They were presented with the issues by introducing their own personal ones first, thus creating a connection between their experiences and a broader reality. This in turn, encouraged students to think about the complexities that are entailed to become truly prepared for career and civic life. This coincides with the study by Harshman (2016), which affirmed that GCE in the classroom must go further than understanding global issues to actually helping learners realize their place in a global network, where, as present and future as citizens, they can play a role and have an impact.

The issues were also studied through different perspectives, in different spaces and were constantly discussed during the unit, rather than as segmented information presented randomly. The intervention also promoted spaces online within the class sessions, group sessions and individual written reports to discuss current political and community issues. In this regard, the present study bears similarities with the results found by Feldman et al. (2007), and their assessment of how to promote this kind of education through constant discussion of the issues in various ways to activate curiosity and engagement. In addition, the constant use of the Internet as a source of information and communication was also recommended by the authors, as it proved to strengthen critical literacy skills and gave learners independence in what they chose to write, read, speak and learn.

This study also demonstrated that civic identity as such is not clearly defined but rather constantly in construction and changing its meaning. Students in the project showed many changes from the first questionnaire to the last, especially in terms of their increasing sense of involvement as part of a global community after the unit. Still, learners’ definition of being a “citizen” is not well defined, and showed some ambiguity in terms of their ability to relate their reality with world conflicts. This echoes Myers et al. (2015), who aimed to assess the role of class discussions in history courses, and how these spaces are fundamental to create civic identity. Authors remarked that there is no specific categorization of global identity in students, but rather is something negotiated constantly depending on students’ interactions with family, friends and school. These relations prove to have great influence in how they are able to integrate different identities and navigate between them.

The limitations of the study were mostly in terms of the scope of the program in the future, as well as more spaces to discuss issues, not only within the Global Perspectives class, but in other subjects as well. The program developed by the teacher-researcher was planned for only a trimester, but ideally it should be transversal, not only throughout the school year but also over the course of school life. With this said, several restrictions were evident in regards to its impact in the

long run. Broom's (2017) study supports this, arguing the importance of stronger GCE programs that focus on building skills (critical thinking, analysis and inquiry) to encourage engagement to challenge the world order though a comprehensive program that does not foster a fundamentalist way of thinking, but that values and appreciates human rights in a cross-curricular manner.

A further limitation of the present study is related to the need for teacher training as well as whole school involvement in the issues. During the course of planning, executing and analyzing the study, the teacher-researcher encountered problems engaging students in a virtual setting, and the strategies used to present the content and discuss it were quite limited. In this regard, a teacher training program would have no doubt proved useful, regardless of the academic subject. Further, a critical comprehensive CGE program would need to involve everyone in the issues and the discussion of all aspects of school life in order to enrich the learning experience and students' critical analysis. This requires not only training, but also spaces for teacher discussion to effectively influence citizenship education in the community (Bamber, et al., 2018; Jerome 2006).

Further research should focus on developing a more comprehensive cross-curricular CGE program, which may be more critical in some subjects than others, but which altogether might offer a wealth of different spaces for students to build their notions and meanings of 'citizenship', reassess their stance in their community, and challenge the world order to engage in a more active manner. It is also recommended to involve the whole school community in order to ensure continuity and coherence in the GCE applied in the institution. Finally, it is essential that the program follow past and current academic discussion on the matter, as Global Citizenship Education is in constant reassessment because of its relationship to recent events, and future projections. It is also very important to practice critical literacy in various subjects so that students are constantly required to research, analyze and come to their own conclusions to build their skills for their future as active citizens who care about and become involved in the enforcement of human rights around the world.

ACTION PLAN

- Critical GCE should be promoted as a school wide initiative, in which cross-curricular adaptations are made to engage the students in global matters in different spaces and with different perspectives.
- Teacher training should be taken into account, as this type of education requires teachers to be constantly updated with the current academic discussion for the enrichment of its application. This is also to foster spaces for teacher discussion, to dialogue on the successes and limitations in and outside the classroom.
- Students should be encouraged to engage more in community issues, not only by donating money or giving clothes and other items. It should be a more comprehensive project in which students design, plan and apply their intervention to make them participate in a more holistic manner, in which there are responsible and involved in local action.
- Administrators should also be involved in the application of the program, as they are an integral part of the students' community. It would be appropriate to include them to not only foster school unity regarding the action on global issues, but also to include all of the institutions' voices to enrich the program in the short and long term.
- Teachers should apply GCE with formative and summative assessments so that grades are not the main concern, but rather the promotion of discussion and the proposal of solutions to act and engage actively in and outside the school. In the classroom, it is crucial that students are the ones that lead their pedagogic experience, rather than a rigid plan in the beginning.



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THE APPLICATION OF THEORY- AND RESEARCH-BASED MOTIVATIONAL STRATEGIES IN THE SECOND GRADE CLASSROOM: A CASE STUDY

Susana Mariño Montoya

Concern about student motivation is universal among teachers. The connection between motivation and learning is clear to all, evidenced in every classroom in each lesson. Fostering positive motivation and engagement is critical in order to provide the necessary conditions for learning to occur. However, teachers do not agree on how to best motivate learners. Susana Mariño posits a theory- and research-based approach to understanding and promoting student motivation, in particular primary level students. Her strategies are tied to routines and supports for effective lessons, which enhance student self-efficacy, resulting in positive attitudes towards present and future learning experiences.

ABSTRACT

The purpose of this study was to determine the effect of a systematic application of a series of theory- and research-based motivation strategies on a selected group of 2nd graders' attitudes towards learning, and their academic performance. The sample for the case study was selected with the purposive sampling strategy. Motivation strategies were applied in Spanish classes in two second grade groups at a private all-girls school in Bogotá Colombia. Each one of the 20 lessons intervened lesson was registered and commented in a reflective journal. Analysis of the data collected during the intervention suggests that the theory- and research-based motivation strategies had a positive effect on student attitudes related to motivation towards learning, for example engagement, participation and joy, among others. There was also a significative tendency for students to improvement in academic performance. A longer and deeper study is needed to determine if the use of these strategies may have a more permanent effect in motivation towards learning.

Key words: Motivation, Motivation towards learning, Motivation and learning, Motivation strategies, Motivation strategies in the classroom, Students' motivation, Effects of motivation strategies, Theory-based motivation strategies



RESUMEN

El propósito de este estudio era determinar el efecto de la aplicación sistemática de una serie de estrategias de motivación basadas en la teoría y la investigación en las actitudes hacia el aprendizaje y el rendimiento académico de un grupo selecto de estudiantes de segundo grado. La muestra para el estudio de caso fue seleccionada mediante la estrategia de muestreo intencional. Las estrategias de motivación fueron aplicadas durante la clase de español en dos grupos de segundo grado en un colegio privado femenino en Bogotá Colombia durante un promedio de 21 lecciones. Cada lección fue registrada y comentada en el diario de campo. El análisis de los datos recolectados durante la intervención sugiere que las estrategias de motivación basadas en la teoría aplicadas en clase tuvieron un efecto positivo en actitudes relacionadas con la motivación tales como el involucrarse en el trabajo, la participación y el gozo entre otras, durante las clases en que fueron aplicadas. Así mismo hubo una tendencia al mejoramiento en el rendimiento académico de las estudiantes. Es necesario un estudio más extenso y detallado para determinar si el uso de estas estrategias puede tener un efecto más permanente en la motivación hacia el aprendizaje.

Palabras clave: Motivación, Motivación hacia el aprendizaje, Motivación y aprendizaje, Estrategias de motivación, Estrategias de motivación en el aula, Motivación de los estudiantes, Efectos de las estrategias de motivación, Estrategias de motivación basadas en la teoría.

INTRODUCTION

According to theory and research in fields like psychology, and neurophysiology among others, motivation is not only important or desirable to be present in lesson plans and applied in the classroom. It is in fact a requisite for learning to happen. In other words, there is no real, deep, or life-long learning without motivation. Even a student with no physical or cognitive barriers for learning may fail at school due only to a lack of motivation. Nevertheless, motivation is not simply an inner condition of the person or something that teachers give students as a prize, but rather a dynamic process that involves the student, the environment, and the interactions among them, in which the brain receives, analyzes and builds the pathways for real learning processes.

Motivation towards learning has been researched a great deal around the world, in the context of general subjects and specific skills. Some studies focus on observing what teachers do in order to find out what is and what is not motivating, and others examine more specifically the effects of different strategies or describe teachers' actions that motivate students. General findings suggest that motivation has a direct and significant positive impact on academic achievement.

Further, some instructional practices have been identified as effective in both fostering motivation and improving academic achievement. Classroom management strategies that promote caring, organization and autonomy have been shown to have a notable impact. Student-centered classes focused on learners' interests and promoting group work and other types of interaction also help increase motivation. Recognition, expectancy expressions and other ways to show students they are capable may produce a strikingly positive impact on learners' behavior and achievement.

The science of the brain explains that the beginning of motivation and also of the full learning process is connected with the amygdala and the nucleus accumbens. These two structures, although small in size, are responsible for either locking or awakening the reward pathway in charge of the motivational process and are directly connected with the learning

process. After motivation is awakened in the nucleus accumbens, other structures of the brain are connected with this process, and it is the brain, at the end, which decides to be or not motivated towards certain subject, topic or activity.

Problem Statement

Most students in the first grades of primary school are easily engaged in class activities and projects. Nevertheless, motivation may decrease when they face certain tasks that require special effort, focus and concentration for a longer time, when the objective does not seem clear, or when they need to make decisions in the process. Other students find it difficult to engage in many academic tasks at school although they seem to have skills for most subjects and their teachers may not consider the need for a formal intervention for learning difficulties. These students may fail to submit homework, frequently arrive late to class, take a long time to finish their work, and as a result, their performance is usually lower in quality than expected. Teachers do what they can for these learners, but at the end, it remains clear that there is something the student needs to do to improve. They need more effort and commitment, but it is unclear whether or not this is entirely the student's responsibility.

According to the theory reviewed for the present study, there are many possible variables that can affect motivation towards learning. Factors that the individual attributes to succeeding or failing could be a reason for continuing to try or for abandoning a goal. How far and how difficult the goal seems to the person, and how valuable it is for him or her, will also produce an impetus towards the goal, or an avoidance. Self-esteem and previous experiences in the learning environment may determine an individual's goals, whether *performance goals*, very extrinsically motivated since they are conditioned for a grade, or *mastery goals*, where learning more every day is the motive, and the person makes effortful decisions to achieve the maximum learning possible, even competing against herself. It is this level of intrinsic motivation that is desirable at school. Not only this committed attitude towards learning, but also enjoying tasks in such a way

that learners forget about time or other distractors and become one with what they are doing, described by the theorists as *flow*.

Some of these psychological theories can explain motivation from the neurophysiological point of view. Research shows that a person can learn to be unmotivated if the amygdala reacts with a freezing effect as a survival reaction towards risky or fearful situations. In the brain there is also a valuation system in which the orbitofrontal cortex assesses the quality of reward or punishment after certain action, and according to whether it is greater or less than expected, dopamine is released by the *striatum*, the structure of the brain that commands action in the next similar experience. Finally, research in this field describes a process of regulation of motivation that takes place in some structures of the *prefrontal cortex* where executive functions like *inhibitory control*, *planning*, and *working memory* direct *goal-oriented behaviors* by inhibiting other more salient rewards in order to achieve valuable outcomes. These structures are fully developed at about 15 years old. This explains why it is difficult for youngest students to keep focused and motivated towards some goals, when they are hard, not clear enough and when they require cognitive effort. This also explains why we may not ask a second or a third grader to have a greater commitment towards work if rewards are too far and difficult to see, and goals are not divided into smaller more reachable goals.

In the case of the present study, the second graders in question exhibited attitudes and behaviors that suggest lower levels of motivation. For example, some of them showed low participation, apathy manifested in low quality work or unfinished work despite having extra time to do it, distraction, and anxiety manifested in constant interruptions during teacher explanations. Most of the time these are individual attitudes, although in some moments the teacher perceives them as more generalized in the group, depending on the lesson and the tasks. Based on the theory and research detailed above, it seems possible that these students may benefit of the systematic application of theory-based motivation strategies.

PURPOSE OF THE STUDY

The aim of this study was to determine the effect of systematically applying a group of theory- and research-based motivation strategies on second grade students' attitudes towards learning and on their learning performance.

LITERATURE REVIEW

Teachers' motivation strategies in the classroom in elementary school levels have been studied widely from different perspectives, in various cultural and socioeconomical contexts around the world. Some studies involve large populations of teachers and students and use standardized scales while others look deeply into one or two small groups through qualitative research. Some works control the strategies used and determine the effect of these strategies; others describe practices by categorizing teaching styles and determining the effect of these practices on students' motivation and/or academic achievement. Finally, some works focus on students' perceptions about their teachers' practices. Teachers' motivation and perception of self-efficacy is also considered in some papers. This review has been carried out in two directions: exploring motivation strategies within general subjects or related to specific skills, essentially reading and writing. In general, initiatives for improving motivation by teachers have had positive effects on students' motivation and academic results while punishment or very restrictive practices have been found to be detrimental.

Teachers' Classroom Management and Motivation Strategies in General Subjects

Most studies reviewed in this section are based on teachers' practices and observation of classes, strategies, and teaching styles, registering their effects on students' motivation by observing behavior in class, interviewing learners and comparing this with academic results, using more or less standardized scales. In general, observations are based on self-efficacy, goal orientation, and expectancy-value theories, among others.

Two studies analyzed how teachers' attitudes, types of goals and leadership influenced students' intrinsic motivation. The general conclusions were that democratic leadership (Adedigba & Sulaiman, 2020) and the development of mastery goals in the classroom (Linnenbrink, 2005) promoted behaviors of wellbeing, help-seeking and cognitive engagement, and that when students felt confident, safe and cared for, the academic performance significantly improved.

Other studies collected and analyzed teachers' practices and expressions during classes. Although the three studies were developed in schools with low socioeconomical levels, one focused on teachers with an important professional background known to be successful with students (Green, 2019) while the other two took place in environments where teachers' professional development was difficult, one in a fishing island where students had a historic demotivation towards continuing school (Sondang & Bonik 2018), and the other at a public school in Guatemala (Corado Lara & Marroquín Chacón, 2017). The research found that a frequent use of expectancy expressions that show trust in students and confirmation of their work and sometimes value expressions, especially when the task is new or more challenging than usual, were reported as motivating for students (Green, 2002). On the other hand, a teacher-centered approach that limited students' interaction and disregarded individual learning styles and the frequent use of punishment as the predominant way to modify students' behavior were practices found as detrimental to students' motivation (Corado & Marroquín, 2017; Sondang & Bonik, 2018).

Other studies explored the short-term effects of applying a series of motivating strategies. One research was carried out at a rural school in Mexico in a multilevel class with two teachers and 40 students from first to third grade, where the researcher implemented a series of motivating activities and observed general results of this implementation (Sánchez López, 2015). The other study took place in a fifth-grade classroom with students with different learning styles, and two students with individualized education programs due to communication impairment. The researcher applied a sequence of motivating strategies and analyzed the effects of each strategy on students' motivation and learning (Tybus, 2010). The general conclusions from the two studies were that students' behavior and



attitudes towards learning improved when activities focused on their needs and emotions, when group and collaborative work were implemented, and when the teacher showed enthusiasm towards the subject and the teaching experience, combined with clear rules and routines. Although extrinsic motivating strategies were also positive, the effect was not as strong as the strategies mentioned above.

Daniels et al. (2001) explored students' perceptions about what motivated them towards learning with students from kindergarten to second grade in different schools in a major Midwestern city in the United States (Daniels et al., 2001). According to interviews with the children, a good teacher is supportive and fair and provides appropriately challenging activities. Further, learner-centered classrooms where students can work collaboratively and solve problems are proven to be more motivating than teacher-centered classrooms.

A series of studies share common findings about classroom management practices and teacher interaction that motivates students to learn with an indirect positive effect on academic achievement (Adedigba & Sulaiman, 2020; Corado & Marroquín, 2017; Daniels et al., 2001; Green, 2019; Linnenbrink, 2005; Sánchez López, 2015; Sondang & Bonik, 2018; Tybus, 2010). In general, teacher attitudes like care, confidence in students' abilities, and enthusiasm have a strong influence on students' motivation, followed by learner-centered practices and appropriately challenging activities. On the other hand, restrictive teaching approaches, punishment and teacher-led practices have demonstrated to be detrimental on students' motivation and performance.

Teachers' Strategies Regarding Motivation Towards Specific Skills

Some works found in this section focused on reading and writing as significant skills throughout the full learning process, and that at the same time due their complexity, are connected with frequently low levels of motivation. The research demonstrates that even in school activities requiring high amounts of effort, persistency and concentration, the application of motivation strategies produce significant results.

Teachers' Strategies Regarding Motivation Towards Reading

Beyond the process of learning, the connection between letters and sounds in order to become an independent reader and the process of reading for learning new concepts and contents involves higher order thinking skills. Because of this and due to the conscious effort needed in this process, motivation towards reading needs special attention. Some studies reviewed have proposed effective strategies to improve motivation to read, and indirectly improve reading comprehension.

Guthrie et al. (2006) used hands-on activities as stimulating tasks with 98 students in Grade 3 of an elementary school in the US. After participating in a professional development workshop and in the context of the science class, teachers were instructed to promote situational interest around a particular hands-on activity. They provided explicit instruction on reading comprehension strategies and gave motivational support during the reading process, allowing students choices about materials to read and promoting collaborative work. These conditions show how context, value, choice, and confidence generated through students' learning processes produced higher intrinsic motivation to read. This was due to students' feeling of control and a sense of competence towards the task.

Law (2001) conducted a quasi-experimental research with 279 fifth-grade students in Hong Kong. The cultural aspect of this investigation is noteworthy since it is reported that most Chinese students tend to memorize more than understand what they read, which affects reading comprehension when texts are longer and more complex. Three different teaching strategies were researched, all beginning with direct instruction. Two experimental groups were involved in a jigsaw or drama reading comprehension activity, the two collaborative work strategies being intentionally scaffolded by the teacher in order to provide enough structure. A third control group developed the same task using a traditional teacher-led whole group work. The two experimental groups showed greater levels of intrinsic motivation and mastery-goal orientation

towards the task than the control group. Among the two experimental groups, the jigsaw group showed better reading comprehension than the drama group although the two of them performed significantly better than the control group, demonstrating the positive effect of collaborative work in both, motivation to read and reading comprehension.

In a final study, 38 teachers and 664 fifth-grade middleclass students from 27 elementary schools throughout Belgium participated in another quasi-experimental project, where teachers participated in a professional development process grounded in self-determination theory and were encouraged to provide autonomy and structure in the reading activities performed in the classroom. Motivational strategies such as focusing on students' needs and interests, providing structure in the form of clear goals and guidance when needed, combined with choice and enough challenge were taken into account. At the end, only recreational, not academic autonomous motivation to read was reported to increase, probably because the focus was on this type of reading practices. An open question remains regarding academic reading practices using the same strategies (De Naeghel et al., 2016).

As well as with general subjects, motivation towards reading is benefitted by strategies like collaborative work, scaffolding, choice, structure, and teacher support and guidance. Promoting autonomy and providing space for fulfilling the need of relatedness is proven to be as positive for reading motivation as it is for any other learning subject.

Motivation and Writing

As with reading, writing is a process that requires a great deal of self-determination, discipline and higher-order executive functions. In primary students, where language is not completely developed, motivation to write becomes an issue of the greatest attention. Two studies reviewed explored this topic, one assuming motivation towards writing and strategic writing behavior as interdependent, and another, similar to the studies described previously, observed the effects of motivation strategies applied to writing.

Graham et al., (2017) proposed a writing task consistent with planning and writing a personal narrative story with 227 fourth-grade students in six elementary schools in an urban school district in the US. Researchers interviewed students and teachers to determine levels of motivation towards writing and the writing strategies used. The researchers were able to confirm that both motivation to write and strategic writing behavior positively affected writing performance, and that motivation to write predicted greater strategic writing behavior. Writing practices, such as instructing students on strategic writing, and motivation practices, including students' choice about topics, collaborative writing and frequent publication of students' works, increased students' sense of self efficacy and confidence and were shown to be more effective than traditional practices such as teaching grammar, spelling and handwriting (Graham et al., 2017).

Grünke et al. (2018) researched participation in daily writing exercises using writing starters. Participants were fourth graders attending an inclusive elementary school, all with a learning disability or in risk of developing one. In different phases teachers asked students to write based on a different starter each time, or included motivating expectancy expressions, and feedback referred to effort when performance was better, and to external factors when performance was poorer. At the end, writing performance was better where the motivating strategies were applied than where they were not. It is important to notice that the measure for writing quality was based only on the number of daily words written. Although this is an important beginning regarding students who struggle because of low self-efficacy perception due to their learning issues, further research is needed that includes teaching and applying writing strategies.

In the two studies reviewed, the use of motivating strategies makes an important difference in attitude towards writing and in writing performance, and self-efficacy shows to be an important factor to determine motivation to write. Value reflected on reasons for writing like the importance of being published is also an important element that enhances motivation to write.

The Effect of Teachers' Motivation on Students' Motivation

Motivating students is a conscious effortful action. Executive functions are involved in this process. Usually, research has focused on what teachers must do, assuming that they as adults must have total control of their actions and decisions. The three works reviewed in this section show how teachers' motivation not only determines the use of motivating practices but also the attitudes and perceptions of students towards the teacher and the class. The three studies were conducted in different contexts, with different emphases, yet with similar conclusions on the effects on students' motivation.

Thoonen et al. (2010) interviewed teachers and students of 36 schools in different regions of the Netherlands about teachers' sense of self-efficacy and students' perceptions regarding classes. Teachers' motivation based on the perception of self-efficacy was connected with a greater tendency of mastery-goal oriented practices, which at the same time reflected on students' mastery-goal orientation tendencies. On the other hand, a lack of expertise in some practices like process-oriented instruction, which opposes the traditional methodologies, and a consequent feeling of less self-efficacy towards applying this kind of instruction was found to be detrimental on students' motivation although this kind of practice itself was usually found as motivating for students. The conclusion of this study was that teachers' sense of self-efficacy affected their practices and students' motivation to learn, not only as a consequence of the practices themselves, but also due to students' perception of the teachers' greater or less sense of self-efficacy.

In another study carried out in Germany with 110 teachers and their students using standardized scales, researchers interviewed teachers and students about aspects such as teachers' educational interest, mastery goals and classroom management. The aim was to find out whether classroom management could be considered as a mediator of teachers' motivation and whether this classroom management would predict students' motivation. The study confirmed that motivated teachers had structured classroom management with visible features like greater behavior

control in the classroom, clear rules and proper time management, and mastery goal-oriented practices. Further, students reported greater subject interest and a greater tendency to develop mastery goals in these learning environments (Schiefele, 2015; Schiefele & Schaffner, 2017).

A study in the US focused on a group of teachers led by the principal of their school who were involved in design-based action research to investigate learner agency. As the research unfolded, teachers began to become more involved in their teaching practices and began to be more proactive regarding how to promote students' motivation through their delivery. As teachers' agency increased, it was reflected in students' agency as well (Childress, 2019).

This research suggests strongly that a "happy" classroom is not necessarily a motivated classroom. A "happy" classroom does not necessarily reflect teachers' interest or motivation to teach. In order for motivation towards learning to happen, the teacher needs to consciously and effortfully structure the class with clear rules, routines and goals. Within the apparent chaos of an active learner-centered class, order and teacher confidence as well as vision are determinant for students' motivation and thus, for learning to really happen.

METHODOLOGY

Research Design

This study followed the effects of an intervention on a selected purposive sample during the process. This description coincides with the features of a *case study*. In addition, the character of the strategies applied was intangible and incommensurable, dependent on the situation, implying a permanent revision of the different aspects affecting the results. Further, the intention of the researcher was to improve her practice through reflection and change throughout the application. As such, the present study is also framed in the definition of an *action research* (Cohen et al., 2018).

Context

The present study was conducted at a private, bilingual, all-girls school in Bogotá. From 2010, it has belonged to the Council of International Schools (CIS) and has adapted the Cambridge Assessment International Education curriculum (CAIE). The school believes in motivation as an important aspect of learning and fosters any initiative from teachers in this direction. Despite the fact there is no specific guidance on how to promote or maintain motivation, the frameworks that support teaching practices at the school including Project-Based Learning, Problem-Based Learning, and Teaching for Understanding all suggest practices which impact motivation in the light of different theories for motivation and learning.

During the application, the school was in a virtual modality and only few lessons were in a hybrid modality, in which most students were at school while four or five of each group remained virtual due to the COVID19 pandemic. Approval from the school to conduct the study was sought and obtained (Appendices A and B).

Participants

The participants of this study were second grade girls, aged seven-nine years of age. Although most motivating strategies were applied for the entire group as part of the lesson plan, others were directed to the *non-probability purposive sample*, which Cohen, et al. (2018) describe as consisting of individuals who are handpicked by the researcher on the basis of her judgement for “possession of the particular characteristics being sought” (Cohen et al., 2018, p. 218). This sample consisted of eight students, four in group A (one second grade class group) and four in group B (another second grade class group), for whom the strategies were specially designed. According to the data collected, individuals of the sample were chosen because they previously evidenced attitudes associated with lower levels of motivation in Spanish class. In order to maintain their identity confidential, students of the sample were each assigned a letter corresponding to the group they belong to, since there are two groups in second grade: second A (2A) and second B (2B),

and a number that was assigned randomly from one to the number of students in each group: 20 students in 2A and 17 in 2B. Informed consent from participants’ parents were sought and obtained.

Researcher Positionality

Since the researcher was applying the motivational strategies and observing the way they were applied and their effects on the selected sample, and at the same time she was reflecting on her own practice, it is determinant for the sake of reliability to present her point of view. I have been a teacher for 28 years, most of the time at all girls’ schools and most of the time in primary levels from first to third grade as a “self-contained” teacher, teaching in both Spanish and English. At the moment of the present research, I was teaching only Spanish, in second and third grade. I chose second graders because I was less emotionally involved with them since this was our first year working together.

I usually judge my work harder than others when they observe it. This does not mean that I do not do my best in class, but I usually consider that something has to be improved. In other words, it is difficult for me to accept when I do things right, and probably because of this, it is so difficult for me when someone else observes my classes, because I feel I lose my spontaneity by trying to perform better than I consider I usually do. This phenomenon known as the *Hawthorne effect* is considered a *bias risk* in the research field. I consider that the exercise of being myself the observer of my own classes was the chance for judging myself in a more balanced way, which I considered an advantage for this research because the actions in class were real and spontaneous since neither teacher nor students felt the pressure of an external observer. These actions are thought to reduce the mentioned Hawthorne effect (Cohen et al., 2018).

Data Collection Instruments

With the aim of collecting information to answer the research questions, different collecting data instruments were used in this investigation.



Reflective Research Journal

A couple of weeks before the application of motivational strategies, the researcher began registering her impressions about her classes in second grade, focusing on the strategies used, where they came from, attitudes towards students' behavior, students' attitudes, her own motivation, and other topics she considered relevant for the topic. She also collected names of possible candidates for the case study. Once the application began, each class was recorded in the journal with comments, impressions and reflections of what the researcher could perceive during the delivery of the class. This reflective journal was the center, where

all data was collected, and coding and conclusions for this research come from here.

Direct Observation

The sample for this study was selected after a series of sessions of direct observations using a checklist. Based on the first registers in the reflective journal, and depending on parents' informed consent, the candidates for the case study were observed using a researcher-developed checklist of behavior correspondent to the case features. The rates given by the teacher were not based on a measured frequency, but on her subjective observation of the students.

Table 1. Researcher-developed behavior checklist

Behavior	Always	Mostly	Sometimes	Never
Is on time for class				
Hands in homework on time				
Spontaneously participates in class				
Answers to questions when called on				
Asks for help				
Participates in group work				
Shows calm when facing challenge				
Shows anger, anguish or laziness when facing challenge				
Her work is neat				
Her work is complete				
Spontaneously corrects work after feedback				
Needs extra supervision to finish class work				
Follows class rules				
Easily turns back to work after transitions				
Gets involved in the different activities suggested despite her preferences				

Participant Observation

The researcher applied the motivation strategies planned and observed how the application took place, described the activity, as well as teacher's and students' attitudes and expressions during each session. Based on this feature, the actual research featured *complete participant observation*, in which the researcher was naturally socially connected with the observed (Cohen, et al., 2018). Observations were written in the reflective journal. A template was designed for registering reflections during application of motivation strategies.

Pedagogical Intervention

According Kim, (2013) the motivation process from the neurophysiological point of view includes three different aspects: *generation*, *maintenance* and *regulation*. As previously explained, the process begins when the amygdala selects action instead of freezing. Therefore, stress is the first issue to avoid in order to generate motivation. Willis, (2006) developed a series of research-based strategies aimed on reducing stress, anxiety and boredom. Although these strategies aim to focus only on reducing the freezing action of the

amygdala, which according to the author is not only connected with motivation but also with the full learning process including long-term memory storage, some of them coincide with general strategies suggested by Kim, (2013) for other stages of the motivational process. These strategies can be classified into three categories: *brain breaks*, *value* and *predictability*.

Brain breaks are three minutes activities that allow the brain to cool down, especially during a demanding task. *Value* refers to the importance of connecting tasks with real life and or with students' interests. Value is also given when they are able to connect actual contents with previous knowledge. Finally, *predictability* is related to students' sense of control during a task. This predictability can be achieved using *routines*, *rules*, *rubrics*, or any other tool that gives structure to the environment and the task.

After a thorough revision of the theory, Burden (2002) classified strategies into six groups in terms of motivation objectives.

- Capture student interest in the subject matter by awakening curiosity and promoting groupwork.
- Highlight the relevance of the subject matter. This is connected with the value factor mentioned in Willis (2006).
- Help students maintain expectations for success. As expectancy-value, and self-efficacy among other theories suggest, helping students set short term goals and valuing success over fail.
- Design the lesson to maintain interest. A long list of strategies passing by the surprise effect, different group configurations, challenge and student-led activities and providing a safe environment are suggested in this item.
- Express interest in the content and project enthusiasm. This is basically related to teacher's motivation and is mentioned in the literature review.
- Provide feedback and rewards for performance. In consonance with Kim, (2013) reward, not necessarily tangible, is in the base of the motivation process and therefore it is an essential strategy.

Burden (2002) also refers to three moments of the lesson. In each moment, two factors "serve as categories for specific strategies. Strategies should address attitudes and needs when beginning a lesson, stimulation and affect during a lesson, and competence and reinforcement when ending a lesson" (Burden, 2002, p. 164). Thus, strategies for the present study combined both sources mentioned: the three categories from Willis, (2006) and the three moments mentioned in Burden (2002).

The *value factor* was included in the beginning of the lesson since it is connected with attitudes and needs, the *brain breaks*, which were only applied when the lessons were especially long or demanding of students' attention, were part of the middle of the lesson strategies, and *predictability* aspect, that the researcher has renamed *structure*, was present in the three moments since it is required throughout the lesson in the form of guidance, rules, teacher support and feedback.

For ten weeks, the strategies were planned and delivered for the entire class during all Spanish classes in a whole group organization. Although especial attention was focused on the effects of systematically applying the strategies on the selected sample, most of the reflective journal was dedicated to the group's responses as a whole. With the exception of three lessons, at least one strategy was included in each of the different moments of each lesson according to their category, and the teacher-researcher registered the strategies used in the research journal, and her observations during the lesson. These observations included teacher's attitudes and feelings during application, students' attitudes actions and comments, and reflections from the teacher after application about what went right or wrong and why according to theory.

Strategies for the Beginning of the Lesson

- Connect with students' interests, real life, and prior knowledge. All classes began with an activity that the teacher called *calentar el cerebro*¹, which usually consisted of language activities reviewing previous topics or introduced new topics in a

¹ Brain warm up



quick, fun way. For example, short stories or poems read out-loud by the teacher, “Say in a word how I’m feeling today,” “Say in a negative sentence what my weekend was like,” Say a word that rhymes with my name.” This first activity was connected with predictability and value at the same time.

- Provide structure and predictability by setting clear rules, objectives, and goals, and reminding them during the lesson. General class rules and agreements were reviewed after vacation, or mid-semester breaks of one week. On the other hand, they were reminded every time the group needed them, for example in the case of a misbehavior. Other rules for specific work were provided when necessary, for example in the case of group work or instructions for working on a collaborative text.
- Present an agenda which is also connected with structure and is partly responsible of inducing curiosity. At the beginning of the application the agenda was just mentioned by the teacher. This evolved to a written agenda, which provided much more structure and order to the class.

Strategies During the Lesson

- Promote respectfulness in the classroom and control non-verbal expressions. Individual and whole-group expectancy expressions of confidence, challenge and confirmation (Green, 2001). It seems obvious that a teacher promotes respectfulness in the classroom although sometimes it is difficult for her to control her non-verbal language. Even though this strategy was planned, its execution in class was more of a process that improved along the application as the reflection continued. Strategies like this do not appear in the lesson plan because they depend more on the situation.
- Promote active student involvement. Students’ participation was fostered in most lessons by exploring new concepts, in the form of group discussions with the teacher as a moderator, or in collaborative group work whether for exploration or application of concepts. In addition, note taking most of the time was done based on the students’

definition of concepts after a process of exploration, clarification and application.

- Provide scaffolding and guidance. Whenever needed, models on how to do activities were provided using slides or pictures. The teacher also modeled some exercises by doing examples of them in front of the class, or showed work of students who succeed for the ones who struggled or needed more guidance. The case of scaffolding was less frequent and more depending on individual needs.
- Brain breaks. This strategy was used less frequently, only when the length of the lesson and depending on how demanding of concentration the activity was.

Strategies for the End of the Lesson

- Promote different ways of formative assessment. This strategy was applied usually in the form of exit tickets by answering orally or writing in the chat words or sentences depending on the topic. In other few opportunities they were invited to self-evaluate their work by checking their answers or tick an imaginary checklist of what they were expected to do. Although this strategy was not indicated in the theory consulted, most activities in the calendar el cerebro session were also useful for formative assessment of previous lessons.
- Value effort and connect performance with effort.
- Highlight success and recognize each student.

The last two strategies were used according to the situation of the class. Sometimes the teacher wrote reminders in her personal lesson plan or on sticky notes for making it more conscious. Although they are especially recommended for the end of the lesson, the teacher decided to use them at any moment of the class when the chance was given.

With respect to how the strategies were planned and registered, there were two kinds of lesson plans: a weekly more general institutional lesson plan where some strategies were mentioned, and a daily more specific personal hand-written lesson plan which was organized keeping in mind the three moments of the

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class where motivation strategies had to be applied, but without following any special template. With the exception of being written in Spanish because it was for Spanish class and of some clarifying comments, these bear no significant difference to the lesson description in the reflective journal. In this reflective journal the researcher also clarified the kind of strategies planned, to what extent the planned strategies were delivered, what was missing from the initial plan, whether the lesson needed longer time, and the date when the plan was actually carried out.

Data Analysis and Interpretation

All the data for this investigation essentially comes from the direct participant observation registered in the reflective journal. Before the beginning of the project, the teacher-researcher selected a sample by using the

checklist in Table 1 via informal observation of students' class behavior. Students in the sample evidenced behaviors suggesting lower levels of motivation in different ways and apparently for different reasons. The teacher attempted to describe each case.

Following direct participant observation registered in the reflective journal, the teacher-researcher applied content analysis as an analytical tool. First, a color-coding process took place beginning with the motivation strategies used in the different moments of the class. Table 2 shows each motivation strategy organized in the respective moment of the class, the color and a short description of each strategy when needed. It also displays the lessons where each strategy was applied, the total of strategies per moment of the lesson, and whether strategies were applied in the three moments of the lesson. It also presents other motivation strategies used different from those planned for the intervention.

Table 2. Coding and frequency of application of strategies

Moments of lesson	Color	Strategy	Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	Total	
Beginning	Yellow	Structure and predictability	Instructions, rules, material configuration, goal clarification breakers, short games, or any intention to connect with students' emotions in relation to language.	x	x		x			x	x		x	x																12	
	Pink	Connect with students' interests, real life and prior knowledge.	For example, read a poem or a story.				x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		18	
	Purple	Agenda					x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		13	
Total/lesson				1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	13
Middle	Red	Create a safe environment.	Allowing students to ask, value all ideas. Do actions to reduce stress when needed. Promote respectfulness and control non-verbal expressions.				x	x					x	x	x			x												8	
	Red	Individual and Whole group expressions of confidence, challenge and confirmation																												1	
	Green	Promote active student involvement	Collaborative work, group discussions, students' examples, students getting to the concepts		x	x	x	x	x				x	x																	15
	Light Green	Scaffolding and guidance	Show models and examples, step by step guidance, answer questions.	x	x					x			x	x	x	x	x														15
	Dark Green	Brain breaks			x																										2
Total/lesson				2	3	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Ending	Blue	Formative assessment.	Including Self assessment	x	x	x	x	x					x	x																9	
	Cyan	Feedback: value effort and connect performance with effort.		x	x	x	x	x					x	x																15	
Total/lesson				x	x	x	x	x					x	x																24	
total/moments of lesson				2	3	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Other strategies	Dark Blue	Choice																												3	
	Dark Blue	Induce curiosity					x																							1	
	Orange	Caring							x	x																				5	
	Light Blue	Price																												2	
		Something different from reading, writing.																												2	



The construction of this table serves to validate the presence of motivation strategies in the three moments of each lesson. Lessons shaded in light green correspond to those where the motivation strategies were applied in the three moments described above. A total of 18 out of the 23 lessons carried out and observed included motivation strategies in the three moments. There was one lesson where no motivation strategies were planned or applied, and in the other four lessons at least one motivation strategy was applied. This table illustrates that the application was systematic. Although some lessons showed irregularity, there was a general trend, which possibly helped students perceive a pattern in

the way classes were delivered. This was intentional and expected to produce a positive impact in attitudes connected with motivation towards learning.

Continuing with the coding process, actions and attitudes from students were categorized into positive or negative attitudes. Positive attitudes were those that the researcher connected with motivation towards learning and were classified in categories like engagement, understanding, happiness and joy, high participation, confidence and efficiency. Table 3 shows the positive attitudes categorized and the expressions found in the reflective journal that fit in each category.

Table 3. Positive attitudes and behaviors observed

Category	Attitudes – Behaviors Observed
Engaged	Worked great/well/ Focused on the work/ Engaged/ Wanted to work/ Motivated/ Worked as expected/ Worked properly
Understanding	Their answers were fantastic/ Showed understanding
Happiness and joy	They liked the activity/ The activity was interesting/ Having fun/enjoyment/ Enthusiastic/ Excited/ Happy
Participative	Participated/ Proactive/ Connected/ Active/ Actively participating/ Wanted to speak/ Initiated interaction/ Cams on
Confident	Wanted to show their work/ Confident/ Wanted to be noticed/Independent
Efficient	Finished on time/handed in work on time (before dead line)

On the other hand, negative attitudes were those which, according to the researcher, suggested lower levels of motivation towards learning; these were classified in categories like apathy, low understanding,

low participation, interruptions, slowness, distraction, low performance or being tardy. Table 4 presents the negative attitudes categorized and the expressions found in the reflective journal that fit in each category.

Table 4. Negative attitudes behaviors observed

Category	Attitudes – Behaviors Observed
Apathy	Not working/ Tried to copy paste/ No intention/ Not working consciously / No effort
Low understanding	Low understanding/ Did not understand
Low participation	Low participation/ No participation
Interruptions	Repeated interruptions/ Unnecessary questions expressed without respecting turns / Lots of questions
Slowness	Slow work/ Not handing in on time/ Weren't able to finish/ Difficulties getting organized
Distraction	Distraction/ Omit parts of instructions / Difficult to focus on task / "Connection difficulties" that were not be verified
Low performance	Low performance/ Evaluation/ The work was not so good
Tardy	Arrived late

The reason why understanding and not understanding were also categorized as positive and negative attitudes respectively was because there was a probability that behind these were other attitudes, for example engagement or apathy. This idea suggests the probability that some other of these categories may be overlapping, for example, apathy and low participation since in some cases, this low participation was thought to be a consequence of apathy. Nevertheless, since the objective was to define positive or negative attitudes in general, no greater attention was put in this aspect.

Coded strategies and attitudes were divided into positive and negative groups, including sample attitudes, positive highlighted in blue and negative highlighted in red. The teacher-researcher also added comments and reflections in a table chronologically, divided by group -- Group A (2A) and Group B (2B).

RESULTS AND DISCUSSION

This research sought to determine the effect of the systematic application of a series of theory- and research-based motivation strategies on attitudes towards

learning as well as academic achievement in a selected group of second grade students. Most of the strategies applied were directed to the full class, but others, due to their nature, were applied on a one-to-one basis, depending on students' needs in different situations presented in class. Data collected during an average of 21 lessons showed an important manifestation of attitudes considered positive towards learning, such as joy, high participation and engagement. In the process of application there was also a progressive improvement in academic achievement in most students of the sample. In general, findings indicate that whole group strategies were significant in this improvement, but that individual strategies also made a notable impact, especially in the results of the sample group.

In spite of these promising gains in terms of student motivation, other attitudes towards learning that may be considered negative also continued although less frequently than positive attitudes. Further, it was not possible to observe an increase in the frequency of positive attitudes versus a decrease in negative attitudes while the motivation strategies were applied. In the process of journaling, the researcher observed that despite her intention of being systematic, planning for motivation involved many factors, for example, the



need for more or less structure depending on the kind of task, differences in the way instructions needed to be given from face-to-face lessons to virtual lessons, and contextual issues as the teacher's health or the incredible amount of excitement when students returned to face to face classes, which necessitated adaptations to the original plans.

Connection and Motivation

The sample selected for this case study was a purposive sample consisting of students who, according to the teacher's unstructured direct observations,

repeatedly showed attitudes related to low levels of motivation towards learning. Table 5 presents each member of the sample and a brief description of each in terms of the behaviors observed and registered in the reflective journal and in the researcher-developed checklist during the first weeks of the project. Although these descriptions are subjective from the researcher's perspective, they indicate the criteria used to determine if a student belonged in the group targeted for intervention. Common behaviors that arose included turning the camera off, low levels of attention, constant interruptions, handing in work late or not at all, and low participation.

Table 5. Sample Group – Student Descriptions

ID	Description
A6	If I did not have the first hour of class with them, I could say she was always late for class. As I enter the meet, they have been with her group director, they have already entered the class a half an hour ago. When my class with them is after recess she is always late. She looks smart she knows a lot, but she does not like working so much. Probably she needs more responsibility, more challenge, she needs to value more what she does.
A7	She seems frequently lazy. When she is asked about the instructions or the recent explanations, she usually says that her connection was bad. It is difficult for her to have her cam open. When she gets to work, she shows good understanding. Probably she is not feeling enough challenge in work. Now that I know her in face-to-face, I see her insecure. I notice that many times she does not understand and she really needs more explanation and example. She seems grateful when I call her and explain her individually.
A8	I connect her less motivation with insecurity. I am not clear enough if this is because she doesn't pay attention, or because she does not understand, and her excuse is usually that there was not good internet, that my voice was intermittent, nevertheless her parents or teachers have not sent any notification of a bad connection. She feels much better when she can share the screen and I can help her solving the problems she finds, but in classes in which from one to another we keep working in the same activity she asks again the same questions and has the same problems. Sometimes she asks the same question I have answered to other three partners in different ways, as if she needed my attention on her at least for a while. She constantly interrupts instructions with her questions. Her general attitude towards all classes is like if all was boring, too much work, her nonverbal language shows laziness or boringness.
A11	Although she is in class with her camera on, it is difficult to notice her. Her voice is low, and she barely participates in class. Frequently she seems not having paying attention and asks questions that have been answered before.
B2	She shows difficulties in many areas of language. She looks distracted all the time. Her speaking is poor, sentences are usually not complete. She receives some help at home. When I call her to participate, she usually turns her camera off and abandons the meeting for a while. Probably her motivation is affected by her low achievement in the subject.
B5	She is nice, she is good in technology, but her first impulse is not to ask for help. If the connection does not work properly, she does not show any care. She constantly has her camera off and usually has the excuse of connection problems or sound interruption. She does not show interest when working in groups, and I notice that her classmates don't take her opinions into account, but also that she tends to be disruptive in group work getting upset or leaving the meeting when she feels her opinion is not being accepted. She wants to lead, but she does not know how and she shows her frustration by becoming into an obstacle. She is frequently tardy and submits works late.
B13	This student has historically shown low motivation for most classes, not only Spanish. When you look at her, she barely shows any emotion good or bad towards class activities. Her drawings seem careless even for homework. Her questions when done are more like ¿What are we doing? than questions about the topic to clarify. Her cam is usually off. She reacts positively to positive feedback and recognition.
B16	Although her work is neat, her expression is low. Her ideas and drawings are just enough, she does not go beyond and sometimes her answers are not enough to get a passing grade. Her questions are more of the kind of not having paid attention at all and not to clarify. Her cam is off most of the time.

Some students of this group showed more salient attitudes. For example, A8 was especially anxious about instructions and was constantly interrupting the teacher while giving directions, and at the same time she showed laziness according to what is mentioned in Table 5. A7 had usually her camera off, and at the end of the instructions she said she did not know what to do, attributing this to her poor internet connection. B13 had similar difficulties: her camera was usually off and her questions indicated that she was not paying attention at all. In the reflective journal, the teacher-researcher wrote about these students:

I noticed some feelings of rejection towards these students (...) I notice that I have to make a big effort sometimes in order not to judge or have a sarcastic or other kind of hurtful reaction when after five or six times of having explained the same, a student says “I don’t understand.” I feel pressed by time, I feel frustrated, I feel angry sometimes. And I also ask myself if those many explanations are needed.

Although A11 was included in the previous comment, the teacher-researcher was not as conscious of her at the beginning of the study as she was about the other three. Probably this student was more sensitive towards the teacher’s non-verbal language and became more invisible for a while. A6 and B5 were usually tardy and late submitting work. B16 had her camera off and sometimes when the teacher asked her a question, she said her connection was bad. B2 had notable difficulties understanding and following directions. Probably because they were quieter or because their behavior was less disruptive, the teacher-researcher wrote, “In the case of the other students, I was more benevolent. Probably their behavior is less disruptive, I don’t notice them as easily as the others.”

The fact that the teacher-researcher observed and noticed some students’ evident show of behavior or attitudes she coded as negative towards motivation led her to pay more attention to them from the beginning of the research. Her observation and noticing of other students in the sample grew over time. The first comments about the sample were for A7, A8, and B13, and these were more specific and descriptive while comments about the other individuals began later, as well as the individual strategies directed to their own needs. In some cases, for example A11 and B16, the moment when the teacher began to be more aware of them is evident. On the other hand, B2, who really needed attention and guidance, was the least and last

to be noticed, to the point that almost no entries about her were registered in the reflective journal and the comments about her were more general. No special motivation strategies were applied with her at any time apart from those included in the plan for all students.

At some point, in the case of A7, A8 and B13, the first feelings of rejection from the teacher were an alert for her, and she decided to change her approach from the beginning. Something similar happened later about A11. In the entry of Jan. 18, the teacher-researcher commented, “A-11’s performance was significantly lower than the previous activities I see that my connection with her is lower.” The next day she wrote, “I could notice A11. She is shy, she speaks low, but she wanted to speak, she raised her hand and I was really noticing her.” After that, some other comments appeared in the journal about her. Something similar occurred with B16 and B2 although in opposite directions. While in B16 the teacher observed that she wanted to participate and that she showed positive attitudes, in B2 the comments were written later, during the process of analyzing data, when the teacher realized that she did not pay attention to this case at all as a special one really needing the motivation strategies even though she was in the sample. It is interesting to notice that despite the comment that was written in the journal about her during the sample selection process in which her need for more attention was evident (see Table 5), the teacher-researcher remained only slightly conscious of her. About A6 and B5, although no special intervention beyond the planned strategies was reported, there were special comments in the journal about them and the researcher was conscious about their process. Different levels and moments of connection with each student were evident here, and the sooner and greater the connection, the most one-on-one strategies were applied during the process when needed.

In this context, *connection* corresponds to a special feeling or knowledge about the other person that involves understanding and being aware of her needs and reasons for misbehavior, and acting consciously to attend to these needs. This can be characterized as a bond with each student as an individual and not simply as part of a group. Students can perceive this, and in this way, they feel they are special for the teacher. Although at some point of the year, most teachers reach a certain

level of connection with most students, there are some who need this more than others. The teacher-researcher hypothesized that this misbehavior or avoiding being noticed by some students in the sample caused these students to be precisely the last receiving the special attention and care that they needed. For example, in the case of A8, the first comment about her appeared in the journal in the third section the researcher had with her group:

I am happy because today A8 participated in the class so well, she turned on her cam and she made an excellent explanation of her answer on her own. She was great and I congratulated her for that. She was really happy about it.

Immediately after a positive attitude coming from the student, the teacher brought out a reward in the form of recognition. After some other comments in the journal about her positive attitudes and how she has improved, there is another similar entry:

A8 was the first student coming back and saying she was finished, so I double checked with her and gave her feedback. She hadn't finished but I congratulated her about her great attitude. She was thankful about the feedback and she went back to work with no complaints at all.

Also, when negative attitudes came from her, the teacher found the way to engage her as can be seen in the following comment: "A8 was one of the students who was asking a lot of questions. She was named the secretary giving turns and the energy in the classroom changed."

In contrast, the following is the only entry in the journal that is specific for B2:

Although I realized at this moment (05-07-21) that I didn't notice B2 in terms of how she was participating. I remember that she was struggling with accent and syllables. We have been observing her lately because she is evidencing some difficulties in learning, in understanding, and in her general performance. I have not been noticing her although she was in my sample.

As can be noticed, the entry was registered about a past activity when the researcher was reviewing the journal. The rest of the comments about her in the journal referred to behaviors that applied to all the students in the sample. For example, "The whole group was active, even my students in the sample," and, "They

were so enthusiastic from the beginning: B16, B13! God, she was great! B2 and B5 also."

There was greater connection from the beginning with A8 than with B2. Towards different kind of behaviors from A8, the teacher reacted with rewards or recognition directed to her. These were the kind of one-on-one motivation strategies used. Caring was another strategy mentioned in the journal. See the following example of B13:

At the beginning of the lesson B13 was crying. Her two hamsters fought in the morning and one of them died because of that. I made a different task for her (write how she was feeling). At the end, she took the initiative to ask what she had to do. She caught up and voluntarily used part of her recess time to do it.

The following is a different example of the use of caring:

At the end of the class, I talked to the students who arrived late. I asked them about their reasons. We discussed about ways to avoid these incidents to happen. It was not a scolding; it was more a reflection and an invitation to do better next time.

Another strategy that was used for the full group, but also sometimes one-on-one was giving step by step guidance:

So, I told the others to go ahead, and I stayed with the students needing me and guided them step by step. I began saying: Ok, for the ones who did not understand how to do it: Go to Google classroom. Are you already there? ... and so on, until they got it.

These one-on-one motivation strategies were not necessarily used only with some students of the sample. What needs to be pointed out here is that since some students received this special attention from the teacher, coming from a greater connection with them, others did not, as is the case of B2, who was noticed, although late, because she was part of the case study, and also at the beginning the case of A11. Further, this special attention using more one-on-one motivation strategies when needed also produced more positive attitudes in these learners. On the other hand, students like B2 and also A11 did not show positive attitudes at the beginning. However, they did not show negative attitudes either, or the teacher did not notice them. Because of that, she did not register any observation

about them until they became important for her, until she connected with them. The hypothesis here is that the result of connection through the one-on-one strategies resulted in positive attitudes towards learning like participation, engagement, and efficiency, principally in the case of A8, B13 and A7. This suggests that probably some students (more than others), besides the motivation strategies directed to the group as a whole, needed special attention and caring from the teacher and individually targeted motivation strategies in order to develop greater motivation towards the class, while other students respond with greater motivation simply with the motivation strategies planned for the full group.

Effects of One-on-one Strategies on Academic Achievement

At this point the researcher decided to look at academic achievement since, according to theory, this is expected to respond also to motivation. If it was true that this special connection and the resulting one-on-one motivation strategies produced positive attitudes connected with motivation, it was expected to produce manifestation in academic achievement as well. Table 6 shows the progress of each student of the sample on a test the Spanish department was developing to measure critical reading, which focuses in the application of different concepts and contents covered throughout the terms on deep reading comprehension. Term evaluations are also included in the critical reading average.

Table 6. Academic progress in the Critical Reading Test

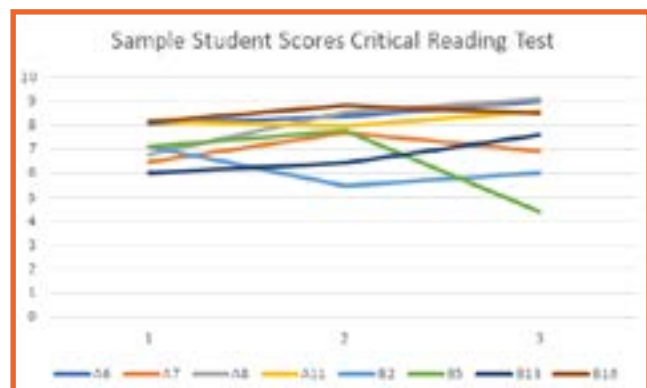


Table 6 shows the results on the critical reading test by students in the sample in the first term before the study began, and in the second term, during which most of the strategies were applied. It also shows the first test of the third term, when the process of collecting data was finished. In almost all of the cases, results are higher in the second term with the exception of A11 and B2. It is hypothesized that this lack of improvement may mean that these two students needed more than general motivation strategies, those planned for the full group that were described in the *Pedagogical Intervention* section (see Table 1). B5 improved in the second term, but her performance went significantly lower at the beginning of the third term, perhaps indicating a special need of attention as well. A7, A8 and B13, who were the most salient at the beginning, and who from the beginning received special attention from the teacher to their needs, which has been associated with *connection*, showed constant improvement in their performance, which may indicate that they benefitted from the one-on-one strategies. In contrast, A6 and B16 were alright with the general strategies, and were not affected for the least level of connection the teacher established with them.

The Need for Different Levels of Structure

In order to determine the effects of the application of theory-based motivation strategies on students' attitudes and performance, in addition to the purposive sample, a notable portion of data collected in the reflective journal was dedicated to following the whole groups' attitudes during the intervention. In some of the lessons, attitudes from the group were coded as only positive. These lessons were considered successful. In other lessons, on the contrary, only attitudes coded as negative were registered. Hence, these lessons were considered unsuccessful. The largest group of coded lessons evidence a combination of positive and negative attitudes.

The researcher analyzed each of these cases to decide which could be considered successful or not. There were three principal arguments to consider whether sessions were successful or not. First, if the attitudes coded as negative persisted during the rest of the class

or were controlled by using any motivation strategy and after that the lesson continued. Second, if despite the presence of attitudes coded as negative or because they were controlled, the objectives of the lesson were reached by most students. And third, if the attitudes coded as negative were manifested by only a few students, not all of the sample, and the objectives of the class were reached. Tables 7 and 8 show all the lessons for each group, whether positive or negative attitudes or both were registered, and whether the lesson was successful or not, and the total of successful and non-successful lessons

Table 7. Successful and non-successful lessons 2A

Lesson	Positive	Negative	Success	No success
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
Total	20	15	14	7

Table 8. Successful and non-successful lessons 2B

Lesson	Positive	Negative	Success	No success
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
Total	18	9	14	8

In general, two-thirds of all lessons were considered successful (67% of the lessons in group A [2A] and 64 % of the lessons in group B [2B]). Since the lessons were considered successful because attitudes related to motivation such as engagement, joy, understanding, participation, confidence and efficiency were present, this suggests that the motivation strategies applied produced these effects. The other lessons were considered unsuccessful (33% and 36% respectively) despite the motivation strategies applied. The difference between successful and unsuccessful lessons in both groups, although significant, is not convincing enough to confirm the positive effect of motivation strategies applied in the classroom. A question emerges from these results that needs a deeper analysis of the data: Do these unsuccessful lessons disconfirm the positive effect of the use of motivation strategies in attitudes towards learning? Or do they suggest that some other motivation strategies were missing here?

In the two groups, a total of 12 lessons were considered unsuccessful. Three were unsuccessful in both groups, four were unsuccessful in 2A, but successful in 2B. Five were unsuccessful in 2B, but successful in 2A. Ten of the twelve cases can be clearly associated with a need for greater structure, including the three shared by both groups. In addition, the successful lessons showed an adequate balance in the level of structure provided according to the need for structure in each. Not all lessons required the same amount of structure, but understanding the concept better may help in the determination of how much structure would be needed for a greater prediction for success.

From the point of view of structure, an appropriate metaphor for a lesson is the process of playing, building something using different materials. Some materials like wooden blocks are solid and have a definite shape; hollow plastic blocks still have the shape, but make the structure less stable. Other materials like cards, sand or small rocks offer different conditions and require special accommodations in order to succeed. Success in building also depends on the complexity of the building one wants to make: even using wooden blocks, a complex building needs the pieces to be accommodated or probably scaffolded so that the building remains stable. The combination of materials and complexity of the building one wants to make require different planning considerations.

Likewise, students and their previous knowledge, level of development, skills, and their individual learning styles are the materials, and they range from cards to wooden blocks, depending on the class objectives and the topics involved. When learners face new topics, or new tools to work with, or when their levels of concentration are lower due to their age, they may behave like cards or sand. However, when they have reached stronger levels of knowledge and practice, they may be compared to wooden blocks. The complexity of the building corresponds to the complexity of the activity, the thinking skills and actions to do. A writing process could be compared to a complex building while the exercise of writing sentences would be like a simple building. The greater the inner structure of students and the simpler the task, the less structure needed in the activity. The less the inner structure of the

students, and the more complex the task, the greater the structure needed. The reasons why thinking about the combination between readiness and complexity of tasks in order to determine how much structure they need in the planning have strong basis in both *Self-efficacy* and *Expectancy-value* theories.

According to the Self-efficacy theory, students are more motivated towards learning when they feel they can achieve the goal. The purpose of structure is precisely to help the student know that she will achieve the goal and to provide the scaffolding, guidance and lesson organization needed in order for her to actually do it. From the Expectancy-value point of view, when students understand, from the way the activity is designed and planned, the message that they are likely to achieve the goal, their value of the activity increases as well as their engagement and interest for the task.

Determining students' readiness as well as the complexity of tasks is mostly a subjective decision, depending on factors such as age and group characteristics. The analysis of the successful and unsuccessful lessons allowed the teacher-researcher to develop a list of criteria that may help to analyze these aspects when planning a lesson.

Complexity of Activity

- High or low order thinking skills
- Number of instructions to follow
- Number of materials involved in the task (for example, only one tab on the computer or more than one, a book to read, notebook and the computer).
- Language skills involved in the task: reading and writing vs. listening and speaking and level of use of these skills, whether more critical or more literal.
- Extension of the task
- Definition of the task: how open or closed it is. For example, open vs. multiple choice questions.

Student Readiness

- New knowledge vs. prior knowledge
- Expertise level for a task
- Emotional link involved in the task

The researcher kept a record of the activities developed, whether they were successful or not in each group, comments in the reflective journal and the teacher-researcher's memos explaining possible reasons for success or failure, as well as the level of complexity and students' readiness graded based on these parameters. The higher the complexity of the lesson and the lower the students' readiness, the greater the structure needed for the lesson. Classes that were unsuccessful were deemed lacking in enough structure. Even the two classes where this lack of structure is not demonstrable could have benefited from it. Although data from analysis of successful and non-successful lessons suggest this, further application and class observations are needed to determine whether adding greater structure to lessons according to their grade of complexity and students' readiness would result in more positive attitudes towards learning, and higher achievement. Another aspect to be pondered is under which circumstances, and to what extent it is worthy to plan very complex lessons requiring a number of rules, guidance and scaffolding for which students may not be ready, or whether this grading according to complexity and readiness may allow teachers to adjust their plans by reducing the complexity or finding tasks towards which students are readier, producing a better balance of challenge for them.

A Last Consideration About Context and Emotions

Motivation is the result of a combination of factors. A good lesson plan may consider most of these factors, but when dealing with people, plans are always subject to contingencies. A strong structure may be stable enough for most daily life situations. But even the strongest structure has its limits. Going back to the metaphor of building and materials and including in this metaphor real buildings, considering how and to what extent they

may withstand tornados, hurricanes or earthquakes could give us an idea of how to face comparable issues in the learning environments. The following are some comments extracted from the reflective journal referring to reasons for unsuccessful lessons:

This was our first day of "alternancia". They gave us a tablet, they changed classroom T.V.s for having a greater image, better sound and resolution since we have to continue working with some students in virtual at the same time (...) I planned my class to work in this new modality, but this was my first time like that. Students were so excited, all wanted to speak at the same time here and there. It was a chaos (...) Although they were happy, excited, the ones at the school, these emotions were an interference for what we were trying to do. Besides, I was struggling with the three devices I needed to control, and how to be aware of the students here and there.

Another entry in the last lesson of group 2B:

Terrible. Teacher's motivation involved. I was feeling so confused today my head was aching, and I felt like slow in thinking and I felt lost (...) I was really spaced out "jumping here and there" from one task to the other with no order and I was really distracted. I had all those tabs and windows open that I got lost all the time. I don't know if I was tired, or sick or both, but this class was terrible (...) I forgot everything. My brain was really having a hard time.

Fortunately, conditions like these found in the journal are not frequent, meaning they most likely occur only in a few lessons during a year. In the case of this research, they resulted in unsuccessful lessons although some flexibility could have transformed such chaos into a better chance for learning, or at least for learning to be motivated. Sometimes, this flexibility may imply slight changes in the initial plan; other times it would include the necessity of space for the group to assimilate what is going on, and then continue with the plan. Nevertheless, there are special cases when this flexibility may imply letting go, or flowing with whatever the contingency suggests. In these special cases, it is wiser for the sake of motivation and the well-being of both teacher and students to stop the class, go out and play a game, have some fun or relax by listening to a nice story or enjoying a short film together. Having an effective toolkit for these especial contingencies and including some of them in the daily lesson plan as an extreme plan B could be compared to the effect of systematic earthquake drills in the case real events might happen.

CONCLUSIONS

This study aimed to determine the effects of systematically applying a series of theory- and research-based motivation strategies on students' attitudes towards learning. The analysis of the case study suggests that when applied systematically in a full group, motivation strategies had a positive impact on most students' attitudes and academic performance. Nevertheless, there were some students who needed and benefitted from other specific and one-on-one motivation strategies. The data gathered and analyzed suggest that the chance for these students to learn to be motivated lies in the teacher knowing these students from the beginning, making sure of understanding their needs, and finding a way to acknowledge their individual dynamics to connect with them and provide all the care they need. Along the application, it was also found that when the structure of the lesson was strong, students were more likely to show attitudes connected with motivation. This structure resulted from a combination between the complexity of the topic and task and students' degree of readiness, in addition to the use of strategies like class rules and routines, scaffolding, guidance, and modeling to balance these two factors.

Comparing the results of this study with the literature review, there are some meeting points. Grünke et al. (2018) also found that learners responded positively to expectancy expressions and praise as motivation strategies. Although none of the studies reviewed were dedicated specifically to the effects of one-on-one strategies, Green (2019) mentions that teachers who succeed in motivating their students frequently use individual praise to recognize effort and accomplishment. Lastly, Adedigba & Sulaiman (2020) and Linnenbrink (2005) conclude that when students feel confident, safe and cared for, academic performance increases. This statement is in accordance with the findings of the present study about possible effects in academic performance.

Other studies mention the idea of the importance of structure in motivation. De Neigel et al. (2016) argue that the combination of clear expectations and delineation of steps produces the most desirable outcomes. Thonen et al. (2010) affirm the need for

greater structure, especially in students with learning disabilities or students with difficulties to conduct their own learning. Finally, Tybus (2010), while observing the effects of applying enthusiasm, evidenced the need for rules and routines to modulate the resulting chaotic excitement which without structure would result in not enough learning.

The present study has some limitations. First of all, most data were collected from a reflective journal by the teacher researcher based on direct observation, in which many behaviors and attitudes of both students and teacher may have been omitted. There may also have been significant bias to the research due to the fact that the teacher was at the same time the observer and the observed. Another important limitation of this study corresponds to the difficulty isolating the motivation strategies from other aspects that may have influenced students' attitudes towards learning, for example, influence of group directors, family issues, and emotional factors. An external observer or an indirect observation combined and triangulated with interviews, plus a deeper and more structured observation of the students in the sample could allow a greater confirmation of causation.

Finally, since it was not possible to identify increasing improvement in attitudes, only a majority of attitudes coded as positive over attitudes coded as negative. For this reason, it was not possible to confirm whether the systematic application of theory-based motivation strategies would produce long-term positive attitudes and decline of negative attitudes regarding motivation towards learning, suggesting that further and deeper research would be needed to confirm this idea. On the other hand, the idea that some students in the classroom, especially these that the teacher barely noticed, surprised her at the end of the term by having significant low achievement. Further, other students, due to their disruptive behavior, produced at the same time inappropriate behavior from the teacher. These two groups would probably need to be taken into account for more one-on-one motivation strategies and suggest that more research needs to be done focusing on this vulnerable population.



ACTION PLAN

- Schools should invest greater effort on preparing their teachers to implement motivation-based lesson plans since research has demonstrated the significance of this aspect not only on attitudes towards learning but also on academic performance.
- Schools should review the effect of grading on students' sense of self-efficacy and kind of goals they pursue. Since most schools in Colombia value grades more as indicators of achievement, students' tendency is to set performance goals over mastery goals.
- Teachers should attempt to introduce more motivation strategies in their practice, such as those suggested in this study and others confirmed by research, to promote greater intrinsic motivation and mastery goals. Teachers should then gradually dare to reduce the use of grades and other similar extrinsic rewards as their primary motivation strategy in the classroom.
- Teachers should invest greater effort in the setting of rules and routines, in getting to know their students' interests, needs and learning styles, and in connecting with them in order to generate a more motivating environment for them with the resulting positive effects on attitudes and performance.

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THE EFFECT OF ONLINE PROPRIOCEPTIVE AND BALANCE PLAY-BASED TRAINING ON THE DEVELOPMENT OF JUGGLING SOCCER SKILLS IN THIRD GRADE ELEMENTARY CHILDREN PLAYERS

Carlos Fernando Sánchez Olarte

The pandemic impacted all aspects of teaching, especially the lack of in person experiences at school, inside and outside the classroom. In the case of some classes, like physical education and additional sports activities, students were forced inside for months at a time. Even soccer class, for example, would need to be brought indoors. Carlos Sanchez' study implementing balance and proprioception (awareness of position and body movements) training represents a unique response to the confines of at home virtual learning. These skills impact directly on juggling, a key soccer skill, and hence have relevance for students. Further, the skills were trained within very small at home spaces, allowing everyone to practice at home. The results are promising in terms of motivational, cognitive, and athletic improvement, and offer alternatives for times when playing outside or at school is not an option.

ABSTRACT

The main purpose of this study was to discover how soccer skills can be developed, specifically one of the most important skills, juggling the ball, in third grade elementary school children. Further, the study sought to determine the effect of proprioception and balance training methods on the development of juggling skills in the same children. This research took place during the COVID-19 pandemic and all the intervention and instruments were applied virtually. The participants of the study were three boys in third grade between the ages of eight and nine, most of whom were students of the researcher for about one year and a half, going through first and second grade soccer classes of the Athletics Program at the school. The collection of data was implemented through pre- and post- soccer skills tests, reflective journal, observation and training. The findings revealed that soccer juggling skills can be developed through an online play-based training using proprioception and balance games. The adaptation of this method of work of proprioception and balance to digital media is possible, and many variations can be made for the development of soccer juggling skills through this proposal. The study also found that all the children dramatically developed accuracy in juggling skills through proprioception and dynamic and static balance soccer games during and after the intervention.

Keywords: Balance, Proprioception, Juggling, Soccer skills



RESUMEN

El propósito de este estudio fue descubrir cómo se pueden desarrollar las habilidades futbolísticas, específicamente una de las más importantes como el dominio del balón, en niños de tercer grado de primaria de ocho y nueve años en el *Colegio Internacional*. Además, el segundo objetivo era estudiar el efecto de los métodos de entrenamiento del equilibrio y la propiocepción en el desarrollo de las habilidades de dominio de balón en los mismos niños. Esta investigación se realizó durante la pandemia COVID-19 y toda la intervención e instrumentos fueron aplicados virtualmente. Los participantes en el estudio fueron tres niños de tercer grado entre las edades de ocho y nueve años quienes fueron el grupo experimental. La mayoría de estos estudiantes han sido estudiantes del investigador durante aproximadamente un año y medio, pasando por las clases de fútbol de primer y segundo grado del programa Atlético. La recolección de datos de esta investigación se implementó a través de pre y post test de habilidades futbolísticas, el diario reflexivo, la observación y el entrenamiento en el grupo experimental. Los hallazgos revelaron que las habilidades de dominio de balón se pueden desarrollar a través de un entrenamiento basado en el juego en línea utilizando como medio de enseñanza la propiocepción y los juegos de equilibrio. La adaptación de este método de trabajo de propiocepción y equilibrio a los medios digitales es posible y además se pueden realizar muchas variantes para el desarrollo de las habilidades de dominio en el fútbol a través de esta propuesta. El estudio también encontró que todos los niños desarrollaron dramáticamente la precisión en las habilidades de dominio de balón a través de la propiocepción y los juegos futbolísticos de equilibrio dinámico y estático durante y después de la intervención.

Palabras claves: Equilibrio, propiocepción, juego, test, habilidades, dominio, fútbol, desarrollo.

INTRODUCTION

Soccer is the sport most practiced by children in Colombia, and participation increases among children and youth every year. One of the core goals of soccer programs is to coach soccer skills to the young players because it is well known that technical skills are an important requirement to play soccer, achieve high performance and enjoy the game. Coaches and physical education teachers have carried out different methodologies in the interest of developing soccer skills among children and young practitioners.

Research has investigated the methods that coaches, physical education teachers, and young soccer players need in the learning, acquisition, practice and performance of the technical skills of the game. Even though soccer players are unique and demand individual training, it is possible to make generalizations regarding the coaching of soccer skills to young players. Literature reviews and different studies show that a solid foundation in motor skills and stability skills, such as balance and proprioception, are associated with soccer performance, young athletic development, and the improvement of technical soccer skills in children. Research in terms of soccer coaching methodologies confirm that each method stimulates and works differently in the development of technical skills in young soccer players, and that some methodologies better promote creativity and decision making as well as aid in discovering solutions of motor tasks.

Problem Statement

As a soccer coach who has been working for more than one year and a half at a private international school in Bogotá, I have noticed that there are different approaches to developing and improving coaching soccer skills to children. We especially use playing and training activities. Through time I also realized that we often use the practices that work best for us, and sometimes we do not give ourselves the opportunity to apply new concepts or methodologies that may enrich our coaching skills. Nowadays, soccer is not just a sport, but also a means of learning and development for children; for this reason, I find it very important



to search for new ways to work on skills acquisition, to unify concepts and create a concrete, scientific, pedagogical and updated approach to improving and coaching soccer skills, which might characterize us and strengthen the different programs at the institution.

Further, the understanding of proprioception, balance, motor learning, skills acquisition, children's growth and maturation are relevant aspects to improve and coach soccer skills in children. I think at the institution we are doing a great job in our coaching process, but we need to implement other approaches and concepts so that students experience new learning options, become skillful soccer players, and also for us to become innovative coaches. Therefore, it is important to work towards a scientific and pedagogical approach that provides tools to improve soccer skills in an effective way regardless of the motor differences and soccer skills of the practitioners. Also, the findings of this study may serve as a reference for the coaching of soccer skills to young people at the institution.

PURPOSE OF THE STUDY

The purpose of this study was to develop the soccer skills, specifically one of the most important skills, juggling the ball, for third grade elementary school children of ages eight and nine. Further, this study also sought to examine the proprioception and balance training methods and their effects for the development of juggling soccer skills.

LITERATURE REVIEW

This literature review obtained articles regarding two fundamental subjects: soccer skills learning and acquisition, and soccer skills training and coaching methodologies. Research on soccer skills learning and acquisition is associated with their importance and role in soccer performance and the development of young athletes. Articles related to soccer skills training and coaching methodologies compare the effect of different teaching approaches and their impact on the learning of various soccer skills.

This literature review presents studies and investigations carried out in Cuba, United Kingdom, Poland, Ecuador, Argentina, Mexico, Spain and United States between 2008 and 2019. The population of the studies were children and young soccer players, but also soccer coaches. Variables consist of soccer skills learning and acquisition, and soccer skills training and coaching methodologies. In general, the findings of these studies indicate that coordination training greatly increases technical soccer skills in children of 11 years old. In addition, the most favorable period for the development of coordination skills is from 11 to 13 years of age. Findings also state that proprioception (awareness of position and body movements) and balance training can improve amateur soccer players' technical skills. In terms of soccer coaching methodologies, the studies confirm that the global method of training works better in the development of technical skills, such as driving the ball. Additionally, the usage of nonlinear pedagogy as a tool of instruction and practice especially promotes perception, cognition, action, decision-making, sports performance and learning in young athletes compared to applications of traditional methodologies. The research also reports that coaches spend more time on training activities and explicit instruction and less on playing activities and guided discovery, which has proven to be less effective in performance in soccer.

Soccer Skills Learning and Acquisition

A number of studies focus on the best ways to teach and practice specific soccer skills, including dribbling, passing and kicking the ball. In general, these studies suggest that a solid foundation in motor skills and correct practice and instruction improved the acquisition of soccer skills in children. Williams and Hodges (2005) conducted a study to critique some of the common ideas that address current instruction and practice in soccer. In this study the information was collected by studies and academic reviews. The authors found that there were several myths about soccer training, including that demonstrations as a medium of instruction are sometimes not as effective as verbal instruction, and that these may block the learning and retention of motor skills. The article also reports that blocked practice of a single skill is not always effective

for skill learning, and instead of that teaching a soccer skill to children should be more effective when real conditions and random variations of the game are used, such as distance, speed, height or direction. In sum, the study contradicts several myths from empirical evidence, including that training of soccer skills in a game context and not in blocked practice have proven to have greater efficiency in skills acquisition.

In a similar study, Ford et al. (2010) examined and analyzed the practice activities and instructional behaviors used by 25 youth soccer coaches during 70 different practice sessions in England. The instrument used to collect coaching behavior data was observation and analysis of the information. The research reported that coaches spent more time on training activities and explicit instruction and less on playing activities or guided discovery, which has proven to be less effective in performance in soccer. This means that performance in soccer not only relies on the execution of motor skills, but also on perceptual cognitive skills. Therefore, it is fundamental that this interaction is imitated through guided discovery trainings that use small-sided conditioned games, varying the dimensions of the playing area or the number of players. Thus, young players who practice soccer through this approach may be equipped with the opportunity to develop the perceptual, cognitive, and motor skills needed to perform in a soccer match.

In another study, Ljach and Witkowski (2010) analyzed and determined the development and training of coordination skills (CSs) in 11 to 19-year-old soccer players using different methods of training in Poland. They observed the training of CS using different methods, and compared both approaches. They also interviewed soccer coaches about which coordination skills they considered the most important for effectiveness of soccer teams. They found that the period from 11 to 13 years of age was the most favorable for the development of CS in soccer players. Also, special coordination training to help the development of individual CSs improved CS indices and the degree of technical skills more than the traditional method using dexterity exercises. As has been shown, the use and implementation of special targeted coordination training program develops better coordination skills

and technical skills in young soccer players rather than using a program with just traditional dexterity exercises.

In addition to instruction, skill acquisition and training of coordination skills, Yorulmaz et al., (2017) evaluated the permanent levels of technical skills achieved by primary school children after fundamental bilateral soccer training program in Turkey. Researchers established an experimental study of a 11-12-year-old group of 80 children (40 girls, 40 boys). The scientific tests applied after an 8-week fundamental soccer training program were repeated following 15 days of passive resting. They observed the training of technical skills using different approaches, and compared both approaches. In general, the findings indicated that the bilateral eight-week soccer training program was more effective compared to the unilateral program in the development of certain fundamental technical skills such as wall pass and dribbling. The study also showed that the effect is permanent.

Articles like Kostopoulos et al., (2012) may help coaches and physical education teachers in regards to improving soccer skills and techniques in young practitioners. They investigated the effect of a 10-week proprioception and balance training program on the improvement of specific techniques in amateur soccer players. The study was conducted in Greece with 29 amateur soccer players: 15 soccer players aged 16 comprised the experimental group while the control group was made up of 14 soccer players aged 16. To evaluate the program efficiency, the researches implemented a series of technical skills tests, which were run prior to and following the program implementation. Findings showed that proprioception and balance training improved amateur soccer players' technical skills. Improvements were found regarding juggling the ball in the air as well as short and long passing. This means that proprioception and balance must be integrated into the soccer coaching process. For example, soccer is a sport where the majority of movements and positions are performed standing on one foot, so it is necessary to train these both qualities to play soccer properly and also develop motor and technical skills in young players.

Additionally, the role of motor control is important in soccer skills acquisition. For example, Davids,



et al. (2010) explored the role of motor control and biomechanics in developing an understanding of soccer skills using kicking as the main vehicle. The research was conducted in the United Kingdom, and information was collected by studies and academic reviews. They found a close relationship between motor control and biomechanics to form solid programs in talent identification and skill development. For example, the key to successful performance of kicking is for the intercepting limb to be in the right place at the right time, so that the required amount of force is used to send the ball in the appropriate direction. Also, the findings stated that the process of learning skills for adults differs from children. For children, the process starts by assembling appropriate coordination patterns, which gradually become increasingly stable with practice. This means that movement variability should be implemented by coaches until a coordination pattern is established by children.

Soccer Skills Training and Coaching Methodologies

Coaching is a key factor in the process to optimize soccer skills, and there are many studies devoted to finding the ways for better coaching for children. In general, the majority of these studies suggest that knowing the sports coaching methodology and pedagogical strategies to design training enhance the training process, sports performance and soccer skills in young players. Saja (2016) conducted a study and presented updated foundation contents that should be considered to plan soccer trainings in order to optimize children's educational process. The research was conducted in Argentina, and data was collected by studies and academic reviews. The authors found that the number of synapses between children four and nine years old greatly exceeded twice that of young people from 16 to 18. This results in higher possibilities of learning, called *optimal possibilities windows*, which are favored by early stimulation, especially in the learning of basic movements and skills. This means that coaches and physical education teachers should take advantage in these ages and through sports, play, and physical activities, stimulate children's brains to create

connections that help in the future learning of complex sports skills.

Other studies on soccer coaching focus on the work of the sensitive phases. Martínez Caro and Escudero Ferrer (2010) searched and made a proposal for working in the sensitive stages in young players at soccer schools. The research was conducted in Spain, and information was collected by studies and academic reviews. Findings showed that young athletes' training must be adapted to the capabilities and limitations of each age and gender, ensuring normal and proper development. In addition, it is recommended to practice other sports aside from soccer to obtain *sports transfers*, which help children to develop physical and technical sports skills from other perspectives of movements and trainings, assuming benefits for soccer education. To sum up, early childhood specialization in sports limits children's opportunities to experiment, discover or learn new categories of movements, and also decreases the likelihood of soccer success.

Pryor et al. (2017) evaluated the influence of prior PTP (preventive training program) exposure on movement technique in young soccer players after completing a coach-led PTP. The research was conducted in United States with twelve youth soccer teams with children from 8–14 years of age. The participants were divided into groups with experience and without previous professional-led PTP experience. The PTP consisted of 12–13 exercises that included dynamic flexibility, core and lower body strengthening, agility, plyometric, and balance exercises. The study showed that the PTP training enhanced movement technique regardless of PTP experience, but the benefits of the PTP impacted a proportionally greater number of players with previous PTP experience. In addition, some movement behaviors appeared more difficult to improve using this approach. In conclusion, coaches should implement PTP to improve and retain proper movement technique in young soccer player and also reduce injury risks.

Giordano et al. (2019) studied the best way to improve dribbling in soccer and confronted two different learning theories: the cognitive approach and the dynamic approach. The researchers observed young soccer players performing dribbling movements in

Spain. This research found that children who had been trained with the cognitive theory reached outstanding ability when compared with those who had been trained freely in the dynamic theory. This means that young soccer players need freedom and to have fun in their process of learning abilities. However, in regards to greatly improving the dribbling skill, they need the company of a coach who uses correct, progressive and methodical instructions in practice and trainings.

Ortega and Gutierrez-Cruz (2019) studied the theoretical and methodological elements that sustain training in the technique of passing in soccer players in the sub-12 category in Ecuador. The researchers found that learning passing cannot be unlinked from the rest of the soccer techniques. As such, passing as a technique should be not trained alone as it involves the team cooperation and play. This means that mastery the technique of passing in children will enable them to improve their own skills capacities and also the performance of the team.

Reyes (2015) compared the effect of global and analytical methodology teaching on some technical fundamentals in children of 8-9 and 10-11 years of age in the initiation stage football in Mexico. The technical skills evaluated were dribbling, ball control and hitting the ball with both feet and head, before and after 40 training sessions with each respective methodology. The study found that working with the global method yielded better development of technical skills such as dribbling and driving the ball, both in a straight line and with change of direction. In kicking and heading skills, the analytical method worked far better. This means that the global method develops some specific technical skills more effectively, and aids the discovery and enjoyment of children during trainings. In contrast, the analytical method works better by developing other skills, but children had less involvement at play compared to the other methodology. Similarly, Rufian (2008) compared the global and analytical model and indicated which was the most appropriate for implementation in soccer initiation. The research was held in Spain and found that the global pedagogy model allowed young practitioners to build their football skills through playing fully with autonomy on the playing field.

Correia et al. (2018) presented an analysis of the activities to facilitate learning and performance in sport during practical interventions in sport and exercise contexts, based on the use of a constraints-led approach by physical education teachers and coaches. The use of this nonlinear pedagogical approach showed that practitioners needed to continually assess and evaluate the needs of each learner to support them in the processes of seeking, discovering and exploiting their action solutions. Additionally, the use of nonlinear pedagogy as a medium of instruction seemed to notably stimulate decision-making, action, perception, cognition, sports performance and learning in young athletes compared to utilization of traditional pedagogical practices. Finally, this method has the advantage of being flexible and easy to adapt to an online context.

METHODOLOGY

Research Design

The research adopted a *comparative research design* for focusing on contrasting information and variables and establishing differences and similarities between them. The result of this approach is both qualitative and quantitative and leads to the improvement and knowledge about an established problem. The main purpose of this study was to examine the effects of proprioception and balance in order to develop juggling skills on an experimental group of third grade elementary children soccer players of ages eight and nine. In every virtual class, the researcher planned proprioception and balance trainings and recorded and evaluated their effects in the development of the children's soccer skills.

Based on the goals of the investigation, *action research* was selected because it functions as a method for developing teaching and coaching approaches and also to describe the effectiveness of teachers and coaches' practices. Action research suits the objectives of the study because it serves as a tool to shape future actions, record the learning of the students, looks for effective solutions, and helps to understand knowledge (Cohen et.al, 2018).



Context

The context of the intervention was a private, bilingual, international school located in Bogotá, Colombia. The school is a learning community with more than 1,500 students from grades K to 12. In the school, children and youth are the most important; therefore, the program and teachers focus on students so they can achieve their fullest potential for excellence. This makes the school a unique and inspiring space in Bogotá, where educating the mind, strengthening the body, and developing character in the student community are the main goals and values of the institution. The school has a leading, distinctive, and special Athletics Program that focuses on sports as a vehicle for education, healthy lifestyle, and development of the person and whole athlete. The program runs from primary to high school and offers different sports, such as volleyball, basketball, gymnastics, table tennis and soccer. The study was carried out during a complex moment. It took place from October to May, 2021 while Colombia was still in the COVID-19 pandemic. Approval from the school was sought and obtained from the institution.

Participants

The participants of the study were three boys in third grade between the ages of eight and nine. Most of these learners had been students of the researcher for about one year and a half prior to the study, going through first and second grade soccer classes of the Athletics Program Curriculum. Participants had varying levels of experience playing and practicing soccer inside and outside the school. These young soccer players had comparable levels of technical skills, and there were no significant differences performing movements or exercises of juggling among the whole group of students. The students' names were kept anonymous following the school policies of child protection, and the children's identities were not be revealed at any moment. For this study, there was no explicit consent from the parents as the school considered that there was no need to obtain this consent. The researcher was an active participant of the project, looking for information which could establish whether proprioception and balance are an

efficient method for the development of soccer technical skills in third grade players.

Data Collection Instruments

The collection of data of this investigation was implemented through pre- and post- soccer skills tests, and observation and training in the experimental group. The observation and collection of data occurred virtually and without recordings.

Reflective Research Journal

Reflective journals were tools used by the researcher to record observations that occurred during the different stages of the investigation (Cohen, et al., 2018). In the reflective journal, the researcher carried out informal diagnostic inquiry to identify the current state of students' soccer skills. The researcher described different activities planned for trainings focused mainly in proprioception movements, and static and dynamic balance games. The coach-researcher wrote observations of the trainings and described and analyzed the final product of the learning experiences. The data and analysis were written in the journal.

Pre- and Post-Assessment

In order to assess if the training program developed and improved juggling skills, it was necessary for the researcher to perform the following steps. First, a pre-test or diagnostic test evaluated students' juggling abilities. Second, the intervention took place with the specific proprioception and balance training, focusing on the development and improvement of juggling abilities in the young soccer players. Finally, the post-test measured and indicated the improvement or not of the skill at the end of the intervention. The pre-test and post-test had the same content. The guidelines indicated by Cohen, et al. (2007) were followed at the moment of the construction and administration of the instrument since both tests will be the same for the experimental group as well as the level of difficulty.

The test was conducted twice –a pre-test in October, 2020 and the post-test in May, 2021. The test consisted of seven exercises. The following video can be viewed to see the text exercises: <https://youtu.be/YVOxyNE9PVU>



The assessment began always using the players’ hands, and through the process variations occurred, gradually increasing with difficulty increased due the use of legs and other contact surfaces. In each measurement the player had three attempts to get as many juggles as possible using his feet, thighs, and hands without letting the ball fall to the ground. Each thigh and foot juggle counted as one point. If the ball touched the ground or touched another contact surface, the player picked up the ball and started the next attempt and counting. The player’s maximum consecutive number of thigh juggles was recorded. The participants completed three attempts and the average of the three scores was taken for future analysis.

Table 1. Pre- post-test measurement and instruction

Measurement	Test Description
3 attempts in each test to get as many juggles as possible	<p>Test 1: Player juggles the ball using the right and left thigh and then catches the ball without letting the ball fall on the ground.</p> <p>Test 2: Player drops the ball and hits the ball with right foot and then catches it without letting the ball fall on the ground.</p> <p>Test 3: Player drops the ball and hits the ball with left foot and then catches it without letting the ball fall on the ground.</p> <p>Test 4: Player drops the ball to the ground; the ball bounces and the player kicks the ball with the right foot and catches it without letting the ball fall on the ground.</p> <p>Test 5: Player drops the ball to the ground; the ball bounces and the player kicks the ball with the left foot and catches it without letting the ball fall on the ground.</p> <p>Test 6: Player drops the ball to the ground; the ball bounces and the player kicks the ball with the right and left foot and catches it without letting the ball fall on the ground.</p> <p>Test 7: Player drops the ball to the ground and after the ball bounces the player starts juggling as many times as possible until the ball hits the ground.</p>

Pedagogical Intervention

The coach-researcher worked with his players to develop and improve juggling skills using proprioceptive and balance drills and games. The tasks were carried out in remote learning scenarios in which learners attended class in their homes. One of the most important aspects to consider in the design of the exercises is that the space students had in their homes may have been as small as 3 x 3 meters for online soccer class.

The intervention was carried out over an eight-month period, with a relatively short vacation period in December and January. In weekly sessions, students practiced proprioceptive, and static and dynamic balance games, and also completed the pre- and post-tests. Lessons in general followed a plan, in which the coach-researcher organized the first balance play-based training and different activities, games and challenges were carried out. At the end of the class, there was a

final activity, the challenge, where the teacher allowed students to perform the skills learned in a play-based juggling challenge. In this way, the it was possible to check students' the performance and learning. The Appendix details the activities fully of the first class.

Data Analysis and Interpretation

Reflective Journal

The researcher kept a reflective journal to record students' progress and learning experiences. The reflective journal served as a place to register the daily observations, identifying points for improvement as well as strengths of the interventions. Collected data from the pre-test, intervention and post-tests were compared and analyzed with the information gathered in the reflective journal. This information was also used to obtain evidence of the effect of the proprioceptive and balance training on the development of students' juggling skills.

Pre- and Post-test

Before and at the end of the intervention the same test was applied. As can be seen in Table 2, the analysis of the pre- test and post - test was done based on different 7 juggling items. The first set of results were gathered from a juggling pre- test and post- test composed of seven items. The students had three attempts to get as many juggles according to their performance in each item. The player's maximum consecutive number of juggles in each test was recorded and the average of the scores was taken for future analysis.

Table 2. Sample data tabulation - Pre-test student 1 scores per attempt on all 7 tests

Pre-Test	Student Number	Attempt: 1	Attempt: 2	Attempt: 3
1	1	31	16	9
2	1	13	15	10
3	1	10	13	11
4	1	37	32	49
5	1	11	17	14
6	1	1	3	1
7	1	3	3	4

Table 2 illustrates Student 1's scores per attempt on all seven items or challenges of the pre-test. To analyze the information in the pre- and post-test, the data was tabulated in an Excel spreadsheet. The graphs were done in order to have an overall view of the scores, to compared information and find differences and similarities as presented in Figure 1.

Figure 1. Graph Sample - Pre-test Student 1 graph scores per attempt on all 7 tests

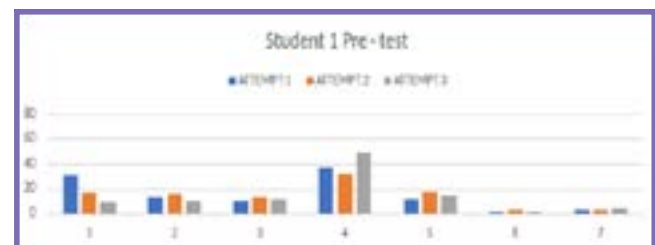


Figure 1. Illustrates Student 1's graphed scores per attempt on all seven tests or challenges in the pre-test. The first set of results was obtained from analysis of graphs comparing pre-test scores per attempt on all seven items in all the students. The data obtained helped the research to obtain a detail view of each student's performance in each test as well as the overall performance. The information analyzed from the test gives information as to which test presented greater ease or difficulty of completion by students.

The second set of results was obtained from analysis of graphs comparing pre- test vs post-tests average scores on all seven items in all the students (Table 3).

Table 3. Sample tabulation Pre- vs. Post-test average scores on all items Student 1

Pre and Post Test Number.	Student Number.	Pre-test average score in each item.	Post -test average score in each item.
1	1	18,70	22,60
2	1	12,60	64,60
3	1	11,30	32,00
4	1	39,30	60,00
5	1	14,00	15,00
6	1	1,60	5,60
7	1	3,30	3,60

Table 3 illustrates the sum of the attempts and average in each item for Student 1 in the pre- and post-test. To analyze the information in the pre-test and post-test, the data was tabulated in an Excel document. The graphs were done in order to have an overall view of the scores, to compared information and find differences and similarities as presented in Figure 2.

Figure 2. Tabulation Sample – Pre- vs. Post-test average scores on all items Student 1

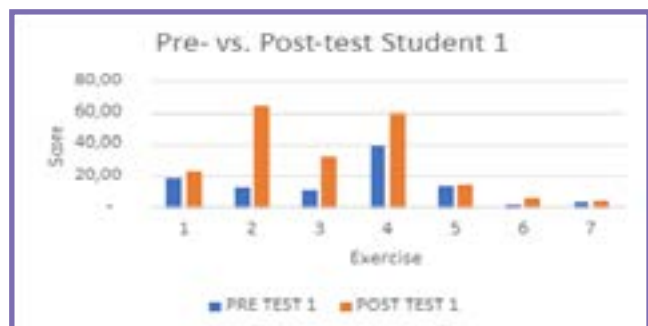


Figure 2 illustrates the results obtained from analysis of graphs comparing pre- and post-tests average scores on all seven items in Student 1. The second set of results was obtained from analysis of graphs comparing pre- vs. post-test average scores on all seven items in each student. The data obtained helped the research to obtain a detail view of the results gained after the proprioceptive and balance training in all students.

Finally, the last set of data gathered resulted from analysis of graph, comparing and contrasting pre- vs post - test in all students as in Figure 3.

Figure 3. Pre- test vs Post-test average scores on all items for all students

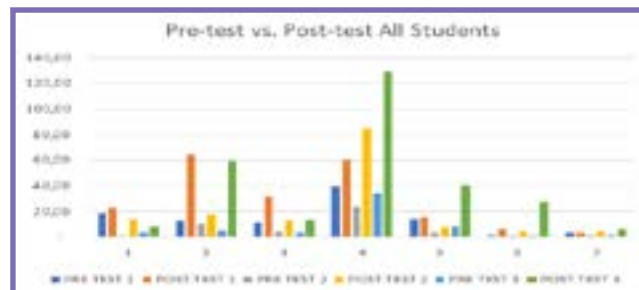


Figure 3 illustrates the last set of results, which was obtained from analysis of graphs comparing and gathering pre- test vs post- test average scores on all seven items for all students. The data obtained helped the research to obtain relevant findings and final conclusions.

RESULTS AND DISCUSSION

The main purpose of this study was to discover how soccer skills can be developed, specifically one of the most important skills, juggling the ball, in third grade elementary school children of ages eight and nine. Further, the second goal was to study the effect of proprioception and balance training methods on the development of juggling soccer skills in the same children. Throughout the investigation, the two research questions were addressed and answered based on the findings, data collection, analysis of data, the reflective journal and the practical intervention. In general, the data analysis of this project provides evidence that soccer juggling skills can be developed through an online play-based training using as a teaching medium proprioception and balance games. The adaptation of this method of work of proprioception and balance to digital media is possible, and many variations can be made for the development of soccer skills through this proposal. By creating challenges, tests, games or activities which respect to different motor skills, it was possible to address the individual capacities of the children, where everybody from the less skilled to the more skilled could participate, giving students greater motivation, enjoyment and desire to continue,

developing and reaching higher soccer skills levels. All the children dramatically developed accuracy in juggling skills through the proprioception and dynamic and static balance soccer games. Further, coordination, body awareness, and bilateral (both legs) soccer movement skills improved during and after the intervention. Finally, the findings of this study showed that proprioception and balance training demands from the children high attention, memory and cognitive effort.

To address the research question as to the ways that soccer skills be developed, specifically one of the most important skills, juggling the ball, two categories will be presented and described, which were used to develop juggling skills within the online instruction: approaches, procedures or methodologies used to develop juggling skills; and juggling skills development through proprioception and balance play-based training.

Approaches, Procedures or Methodologies to Develop Juggling Skills

In soccer skills development, in particular juggling, a progression was used from simple to complex games and activities. The trainings, games, tests and activities were planned thinking in each student, respecting the motor differences and the individual capacities of the children. This gave each student greater motivation, enjoyment and desire to continue in the intervention. The trainings started by accessing prior knowledge and helped students strengthened the connections in the brain so they could remember the prior information more easily. There were also different activities planned, including videos, games, and challenges to help students to accomplish the tasks in the best way.

It is important to highlight that the verbal explanations from the teacher were positive, but in an online medium, physical demonstration from the coach was more relevant and important for the learning and development of juggling skills in the students. Feedback was also important during the tests and intervention. It was possible to notice that providing feedback in each attempt during the tests helped students feel better and

enhanced performance in the next attempt. Feedback was used for the students to perform better and develop their juggling soccer skills during the intervention. Feedback and communication between students and the coach generated motor routines that over the time developed motor habits, which had an important outcome in the intervention.

Wait time was also used to perform the tests and activities during the intervention. The study shows that the time for the child to think about the test and task and then execute it was important. Waiting time for the child to respond consistently was necessary for best results. Students greatly improved their performance in the post-test by finding their own style of performing the exercises. Finally, the coach allowed the students to have the opportunity to create and vary the established games and activities. During the intervention, it is possible to say that students felt important and contributed to the development of juggling skills for themselves and their other soccer mates. Further, it was possible to affirm that less is more. In the organization of the sessions and contents, there were not many activities or objectives; instead, the established contents had many variations, and the coach minimized instruction or talk, allowing students to explore, share, think, analyze and find new ways to perform the tasks, tests and develop juggling skills. Another tool used to develop juggling skills was that students always knew the final objective of the study; by the intervention for six months every class served to achieve the main objective of the investigation.

Juggling Skill Development through Proprioception and Balance Play-based Training

At the school, there were different approaches before the pandemic to develop and improve coaching soccer skills in children, especially the use of playing and training activities. However, during the pandemic, the school closure and the cancellation of physical education and sports activities on the school campus and the switch to online training affected this and resulted in decreased soccer performance of the children. Despite the limitations to undertake online soccer training, the

findings in this research showed that not only playing and drill training activities were the solution to develop soccer abilities. Reducing drill training and focusing on maintaining basic fundamental skills through a proprioceptive and balance play-based training worked well and gave positive outcomes in regards to the development of juggling skills among students in this new online scenario.

By implementing a proprioceptive and balance play-based training in the students, the coach-researcher was able to determine how can soccer skills be developed, specifically juggling the ball. Overall, balance and proprioception training resulted in greater tools to develop juggling skills among children. The intervention was progressive, starting with basic balance and proprioception games and ending with more complex games. The balance intervention incorporated challenges and games that included dynamic and static games and soccer positions and postures, single legs and both legs games balance, standing in the room on different surfaces, juggling and dribbling a soccer ball of different sizes, as well as balloons. The proprioception intervention also incorporated challenges and soccer games that included soccer skipping and trapping games, juggling and dribbling a soccer ball of the different sizes and balloons, wearing soccer shoes and not wearing soccer shoes, and soccer reaction time games, pushing and pulling the soccer ball in different positions and surfaces, games while closing the eyes, with and without the ball.

As a result of the intervention, the evidences, the reflective journal, observations and mainly the post-test aimed to provide answers about the effect of proprioception and balance on the development of juggling skills. The effect was evident, and the intervention not only developed the juggling skills of the children but was also a success in the current conditions of online training as seen below in Figure 4.

Figure 4. Pre- test vs Post-test average scores on all items for all students

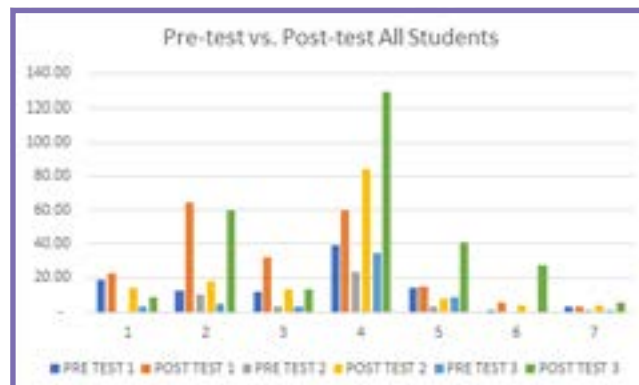


Figure 4 illustrates the last set of results. In the total group of three students, positive improvements were found between pre- test vs. post- test average scores on all seven items. As a result of the intervention, it was possible to evidence improvement in students’ juggling skills. Firstly, Tests 4 and 2 presented the highest improvements. The data show that students developed and improved juggling skills more in their dominant foot than in their non- dominant foot. Secondly, Tests 1, 3 and 5 also presented notable improvements, indicating that the intervention enhanced and developed juggling skills, not only in the non-dominant food, but also using right and left thighs. Lastly, Tests 6 and 7 also presented improvements, but not as high as the others, indicating that the intervention helped students to face the challenges juggling the soccer ball using left and right feet.

Summarizing the information by selecting the main features from the tests, the reflective journal and the practical intervention, the study indicated clearly that the role of proprioception and balance on the development of juggling skills is high. The proprioception progress was visible in particular in the way children used the proper amount of force exerted by the feet and thighs while juggling the ball. At the end of the intervention, it was possible to see that all students were able to coordinate movements better and move in a more relaxed way, performing the tests inside their rooms. Students’ body awareness also improved, and they were more conscious about their movements, quickly adjusting positions to perform the test and



soccer games in the best way. Further, findings in the study show that both bilateral and unilateral soccer movements improved through the intervention. The imbalance and differences performing the exercises and tests between dominant and not-dominant foot were not as noticeable at the end of the training as at the beginning.

In general, children improved balance skills because of the activities proposed in the intervention. Practically, the effect of balance training provided an improvement on stability and postural control of the body while children performed the juggling tests, games and activities. During the static and dynamic balance play-based training, it was possible to identify that at the beginning, students had difficulties in standing on one leg while were performing the tests and activities. As seen in Figure 4, students in the pre-test scored low because of a lack of balance performing the challenges. The pre-tests showed that all students juggle in a desynchronized way, the integration of movements, limbs, and muscles while juggling the ball did not have a proper sequence, and also the muscular tension of the whole body was noticeable. They also tended to fall while standing on one leg, lean the torso sideways, and move the support leg constantly. After the balance intervention, students became more aware about the posture and body control. As seen in the same Figure 4, students in the post-test scored higher because they had developed balance skills during the intervention. As a result of the six months balance training, students in the post-test did not move the torso excessively, did not fall while were standing on one leg, placed their support foot correctly on the ground, and were more relaxed without so much muscle tension.

An unexpected result of the study was the importance of the emotional and cognitive part during the intervention. Because of the intervention, tests and observation of students' behaviors and responses, the study showed that balance and proprioceptive exercises demanded a lot of concentration from the children in regards to executing the movements properly. When students were more focused on the games, they could execute the movements much better, faster, and in a relaxed way. The considerable demands of mental processes such as attention and memory in the

proprioceptive and balance training was demanding for all students during the intervention.

Gamification was also used to keep the children motivated through various challenges and games and gave positive outcomes in the motivation and enthusiasm of the children during training. Particularly, supporting feelings and keeping the emotional part up front were deemed important during the pandemic and the online intervention. In other words, the skill matters, but how it was taught by addressing the needs, the fears, preferences, motivations and desires of the students allowed the children to remain enthusiastic for the six months of the study.

During the period of the investigation, it was noticeable how balance and proprioception meets the new reality of online soccer training. Training form activities and soccer drills during the pandemic were difficult mediums to coach soccer because the limitation of the space and conditions. The majority of students performed their classes in a room of 3 x 3 meters, so these methodologies at that moment did not suit the reality of the online trainings. On the contrary, balance and proprioception were appropriate and adapted to the online reality because the training could be performed in a small place and the student did not need material other than their own body and one soccer ball. The same happened with the skills and abilities such as driving the ball, kicking the ball, passing the ball etc. Because of the difficulty of space at that moment, these skills were difficult to practice. Instead of this, juggling ball skills were easy to perform and allowed the student many movements and variants in a small space.

The intervention showed that challenges and simple soccer goals were effective tools for develop juggling skills. Children love challenges and competition, so the training included the opportunity for every student in each class to reach new achievements and juggling skills. The study checked students' motor performance as well as their motivations and needs, and results showed that online soccer programs need to focus on challenges that are also engaging. For example, a simple balloon helped the students improve and develop juggling skills, and students enjoyed playing with the balloon so much. The coach just showed the exercises and games and let them play and perform the movement for an extended time.

This indicates that proprioception and balance need to be based on play and enjoyment with achievable goals, and always with the ball. Games or movements without the ball may be boring for students.

In all the Tests from 1 to 7, the children increased their scores, but these positive results were not because they had done excessive training or complex activities. Rather, training was focused on simple juggling skills activities and emphasized practicing basic skills such as balance, coordination and proprioception. The study also showed that it was possible to gain positive results with a few exercises and develop soccer skills through focusing in motor skills such balance and proprioception.

Another unexpected result was students' own feedback and correction. On campus or in the field, a student rarely had the chance to correct himself in an exercise, test or activity, or adjust his body to perform a skill in the best way. There are other variables to focus on such as the weather, the teacher, the other students, the noise etc. The online intervention showed that students were more aware of themselves, their movements, and they corrected positions and postures by themselves to perform activities and the test during the intervention.

CONCLUSIONS

The main purpose of this study was to discover how soccer skills can be developed, specifically juggling the ball, in third grade elementary school children of ages eight and nine. The second goal was to study the effect of proprioception and balance training methods on the development of juggling soccer skills in the same children. According to the findings soccer juggling skills can be developed through an online play-based training using as a teaching medium proprioception and balance games. The adaptation of this method of work of proprioception and balance to digital media is possible, and many variations can be made for the development of soccer skills through this proposal. In addition, after the intervention and the comparison of pre- and post-test results, students dramatically developed accuracy in juggling skills through proprioception and dynamic and static balance soccer games. Further, coordination, body awareness, and bilateral soccer movements skills improved during and after the intervention. The findings of this study also showed that through focusing on motor skills such balance and proprioception, it was possible to gain positive results in regards to juggling skills among young soccer players. Finally, based on observations, it was possible to identify that proprioception and balance training demands from the children high attention, memory and cognitive effort.

Comparing this study with the findings in the literature review, we can see the importance and effectiveness of focusing on fundamental motor skills in regards to developing juggling abilities among young soccer players. For instance, Moore, et al. (1998) concurred with this study and affirmed that sports skills acquisition is a progressive process of learning, where children previously acquire basic patterns required for motor and fundamental skills that are primordial to sports and movement skills acquisition in soccer. In addition, proprioception and balance intervention implemented in this study had a great impact on students' juggling soccer skills development. This coincides with Kostopoulos, et al. (2012) regarding the importance of addressing proprioception and balance training programs in order to improve specific techniques such as juggling the ball in amateur soccer players. Finally, the intervention, methodology and



organization implemented in this study had a great demand not only on soccer skills, but also on students' cognitive skills, which had a positive outcome on their juggling skills development and acquisition. This affirms the idea of Saja (2016) that coaches and physical education teachers through soccer trainings can optimize children's educational process and create brain connections that will help in the future in the learning of complex sports skills.

Some limitations in this study include that there were few studies and literature about proprioception and balance training to develop soccer skills. Further, the creation of a juggling test was a difficult task because there is no official juggling soccer test for children available. Therefore, it was necessary to dedicate quite a lot of time to create a test for all students in which everyone, from the less skilled to the more skilled, could participate and demonstrate their capacities and reach new goals along the duration of the investigation. Another challenge included learning to teach soccer skills in this new online scenario.

This research opens the possibilities for areas for future research. First, a follow-up study with young soccer players could research children's needs, motivations, difficulties, and emotional support during a soccer online program. Secondly, research on pedagogical strategies to coach soccer, sports and physical education on an online program would be very important.

ACTION PLAN

After the intervention and findings of this study, the following is a proposal mainly directed to soccer coaches and physical educator teachers at the school.

- Create challenges, tests, games or activities which respect the motor differences as well as individual capacities of the children, where everybody from the less skilled to the more skilled can participate, be motivated, and find enjoyment and desire to continue, developing and reaching higher soccer skills levels.
- Train children focusing on both feet, not only the dominant foot.
- Start trainings by accessing prior knowledge in order to help them remember the prior information more easily.
- Include and emphasize basic skills such as balance, coordination and proprioception in online soccer training.
- Apply physical demonstrations for the learning and development of juggling skills in the students.
- Wait for students to come up with an answer to solve questions, tests, skills, challenges, movements and activities during training.
- Prepare fewer contents in the trainings; instead, establish many variations and minimize instruction and excessive talk.
- Practice balance and proprioception games preferably with a soccer ball.
- Address the needs, fears, preferences, motivations and desires of the students.
- Implement challenges and competition in trainings.
- Give frequent feedback.
- Encourage students to solve motor or soccer problems.

- Create self-confidence in students. A mistake performing a drill, movements, exercise or tests is part of the process and an opportunity to learn.
- Repeat motor and soccer routines so that they become motor habits.
- Assign roles according to children's skills.
- Have an enjoyable environment with humor, affection and interaction. This is critical to retaining young athletes in an online soccer program.
- Training and coaching students on complex soccer skills is not the objective in an online training scenario. Instead, reduce training and focus on maintaining basic motor and soccer skills.
- Let students interact together and create games and soccer activities by themselves. This enriches children's motivation and stimulates participation and enjoyment.
- Integrate balance and proprioception to soccer programs, not only as an excellent warm-up, but also as training components for coordination and flexibility.
- Use different size balls in juggling soccer practices and allow students to use their hands while they are juggling the soccer ball.

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APPENDIX

Lesson Plan First Class

Soccer Lesson Plan Template	
Unit / Theme: Developing Basic Balance Skills in Soccer.	
Date: October 24, 2020. Grade: Soccer - 3er grade.	
Teacher: Carlos Fernando Sánchez Olarte	
Objectives	<p>Content: Students will develop basic balance skills in soccer.</p> <p>Language: Students will be able to become familiar and practice balance skills in soccer.</p>
Aim(s)	Uses plays, drills and procedures in regards that the students develop basic balance skills in soccer.
Prior Knowledge:	<p>The teacher activates student's previous knowledge about balance skills learned in PE and soccer classes and will continue the lesson on soccer. The teacher asks: Does anyone know the postural cues for body balance?</p> <p>Can anyone tell me what parts of our body we use when practicing balancing skills in soccer?</p>
Instructional Approach:	<ul style="list-style-type: none"> • Students share their ideas about balance with the coach. • Today we are going to be working on balance skills in soccer and then we are going to play a challenge; but before we are going to watch the followings videos: <ol style="list-style-type: none"> 1. https://kiddo.edu.au/vef/load/d8e4a8330a79c9553fc96492edaded58?width=1000&height=605 2. https://youtu.be/VlsC8BKYT8o
Lesson Sequence:	<p>Explanation/Demonstration.</p> <p>1.Warm up: Dribbling and Balance Game.</p> <p>Students are dribbling the ball around their room and when they listen to coach's command (whistle) they need to stop and step on the ball with one foot for 10 seconds.</p> <p>Variation:</p> <ul style="list-style-type: none"> -Change the length of time between whistles. -Change the length of time stepping on the ball: 15, 20 and 30 seconds. -Let a players do the commands and create new fun and balance drills. -Step on the ball sometimes with the left and right foot. 10 Minutes. <p>Explanation/Demonstration</p> <p>2.The box game: Players get a box, bucket, or basket and place it in the middle of their room at a distance of 2 meters from them. Players grasp the ball with their hands, drop it, and immediately kick the ball with one foot without the ball touching the ground. The ball must be inserted into the box while the players practice static balance by kicking the ball with one foot while the other serves as a support foot. 15 minutes.</p> <p>Variation:</p> <ul style="list-style-type: none"> -Perform the challenge with both feet. -Kick the ball in different distances and positions: static and dynamic positions. - Let a players create new fun and balance drills. <p>Explanation/Demonstration</p> <p>3: Final Activity the Challenge: Challenge of Juggling. Players drop the ball and hits the ball with right foot and then catches it without letting the ball fall on the ground. Teacher allows students to juggle the ball in a play-based challenge in regards to students think, feel, experiment and discover the postural cues for body balance.</p> <p>Variation: Perform the challenge with both feet 10 minutes.</p> <p>https://youtu.be/v0d3fn8B-MM</p>



Closure and Feed-back:

- Closure
- I really liked how everyone was paying attention and the job of the whole class.
- Did everyone remember the postural cues for body balance.?
- Next Class we will continue our class and training.
- Great job today champions.

AUTHORS

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