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Using Thinking Routines to support students voice and choice in Quito, Ecuador

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DEDICATION

I dedicated this thesis to my family. A special feeling of gratitude to my loving parents, Hernán and Piedad, whose words of support and encouragement always guide me to follow my dreams. Although my dear father is no longer in this world, his memories continue to regulate my life. I also dedicate this project to my sons Juan Mateo and Nicolás, whose care and love give me the strength to continue. And finally, I want to especially thank my beloved Roberto, for being there throughout the entire master's program; and unconditionally support me to accomplish my goals.

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Resumen

"La participación activa es el compromiso constante y simultáneo de las mentes de todos los alumnos con el contenido de la lección, dicha participación aumenta la tasa y el grado de aprendizaje" según (L. Geroge, 2011). Como profesores, uno de nuestros objetivos es presentar nuestras clases de una manera accesible que facilite la comprensión de nuestros estudiantes de la información proporcionada. Para lograr este objetivo, debemos considerar sus diferentes preferencias de aprendizaje e involucrar a los estudiantes en las clases para una mejor experiencia de aprendizaje. Esta investigación se centra en la participación más activa de los alumnos durante las clases.

Durante mi desempeño en el campo de la educación como profesor de inglés, mis colegas y yo comúnmente sentimos que los estudiantes tienden a ser pasivos, insensibles, no comprometidos y desinteresados durante las clases. Esta actitud tiende a reducir la confianza de los profesores con respecto a nuestras habilidades para manejar la clase. Y esta actitud aumentó durante la pandemia debido al aprendizaje / enseñanza virtual.

Esta investigación se centra en aumentar la participación activa de los alumnos durante las clases. Según (Project Zero, 2016) "Una rutina de pensamiento es un conjunto de preguntas o una breve secuencia de pasos que se utilizan para reforzar y apoyar el pensamiento de los estudiantes". Para lograr este objetivo, propongo la implementación de rutinas de pensamiento, como instrumentos para involucrar y lograr que los estudiantes participen activamente en sus diferentes clases.

"Las rutinas de pensamiento son estrategias fáciles de usar que se pueden usar repetidamente en el aula, en una variedad de contenidos y niveles de grado". (Alice Vigors, 2016). Estas rutinas podrían cambiar la forma en que los maestros instruyen; haciéndoles que hagan del pensamiento una meta estudiantil mucho más explícita y dándoles la oportunidad de hacer visible su pensamiento. Esta investigación también proporciona herramientas para que

los maestros sigan los procesos de pensamiento de sus estudiantes. Tiene como objetivo ayudar a los alumnos a descubrir sus conocimientos, conceptos erróneos, capacidad de razonamiento y comprensión.

La metodología utilizada fue un estudio de caso transversal, que analizó la respuesta de los estudiantes al uso de Rutinas de pensamiento para la clase de Games and Projects. Se uso una estrategia de investigación de método mixto. Este estudio se basó en un marco muestral, que incluye a todos los estudiantes que pertenecen al sexto grado C de una escuela privada ubicada en Quito - Ecuador. Este estudio se realizó como parte de clases regulares.

Finalmente, la aplicación de rutinas de pensamiento durante este proyecto de investigación brindó a los estudiantes la oportunidad de demostrar y cuestionar sus conocimientos; así como las rutinas de pensamiento motivaron la participación de los estudiantes durante las clases, incluso si no fueron precisos para expresar sus pensamientos en el idioma inglés. Además, los estudiantes aprendieron más de la colaboración mutua mientras trabajaban en clase. Con estas herramientas de pensamiento, los estudiantes tienen la oportunidad de vincular lo que aprenden con su entorno y con situaciones de la vida real.

Palabras clave: Rutinas de pensamiento, compromiso, motivación y pensamiento visible.

Abstract

"Active participation is the consistent and simultaneous engagement of the minds of all the learners with the content of the lesson, such participation increases the rate and degree of learning" according to (L. Geroge, 2011). As teachers, one of our goals is to present our classes in an accessible way which facilitates our students' understanding of the information provided. To accomplish this goal, we have to consider their different learning preferences and engage students in classes for a better learning experience. This research focuses on learners' more active participation during classes.

While being immersed in the education field as an English teacher my colleagues and I have commonly felt that students tend to be passive, unresponsive, unengaged, and uninterested during classes. This attitude tends to reduce the confidence of teachers regarding our abilities to handle the class. And this attitude increased during the pandemic due to virtual learning/teaching.

This research focuses on increasing learners' active participation during classes. To accomplish this goal. According to (Project Zero, 2016) "A *thinking routine* is a set of questions or a brief sequence of steps used to scaffold and support student thinking". I propose the implementation of thinking routines, which are the cornerstones for engaging and involving students in their classroom activities.

"Thinking routines are easy to use mini-strategies that can be repeatedly used in the classroom, across a variety of content and grade levels." (Alice Vigors, 2016). These routines could change the way teachers instruct; by getting them to make thinking a much more explicit student goal, and giving the students the opportunities to make their thinking visible. This research also provides tools for teachers to follow their students' thinking processes. It intends to help learners discover their knowledge, misconceptions, reasoning ability, and understanding.

The methodology used was a cross- sectional case study, which analyzed the response of students to the use of *Thinking Routines* for the *Games and Projects class.* It used a mixed-method research strategy. This study used sampling frame, which includes all the students that belong to the Sixth grade C of the private school located in Quito – Ecuador. This study was performed as part of regular classes.

Finally, the application of thinking routines during this research project gave to students the opportunity to demonstrate and question their knowledge; as well as thinking routines motivated students' participation during classes, even if they were not accurate to express their thoughts in the English language. Besides, students learned more from the collaboration of thinking while working in class. With these thinking tools, students have the opportunity to link what they learn with their environment and with real-life situations.

Keywords: Thinking routines, engagement, motivation, and visible thinking.

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Chapter I: Introduction

One important fact is that today's students are tomorrow's leaders. As educators, we need to take a pause and consider: what do learners expect in their future? What do they need to learn? What are they going to be able to do in the future? Thus, for students to be able to face their future challenges, educators must acknowledge and provide them the tools they will need for their future lives.

An English language teacher has different roles. One of these roles is to encourage students to strengthen their understanding and their intellectual growth. This means a teacher's work is to prepare classes where creativity and communication are the core, classes that provide stimulating, supporting, and inspiring activities which improve learners' thinking. According to Costa and Kallick (2009), "Thinking is innate, but skillful thinking must be pursued." Thinking routines are effective tools that scaffold visible thinking and engage students and teachers as well (Dajani, 2016).

The purpose of this project is to explore the scope of the use of *thinking routines* inside the classroom while using games and projects on the sixth grade parallel "C" of a private school in Quito, Ecuador. By applying thinking routines, it is intended to externalize students' thoughts, identify the results of this implementation, and prove if these routines promote students thinking skills, foster their understanding, and active participation during classes. The term thinking routines emerges from the routines teachers usually use in the classroom, like the routines for classroom management or behavior management. One step further, are thinking routines, and establish the idea of routines to learning.

Thinking routines consist of a series of guided questions and activities that an English teacher can use during classes to guide students towards a deep-thinking process. The aim of this study is to enhance students thinking skills, improve their engagement and support their understanding. In order to do so, first the research consists in identifying the reactions of

students regarding their active and voluntary participation while using thinking routines during their participation at a games and projects class. The regular use of Thinking Routines is proposed as a strategy to help teachers develop students' thinking. Consequently, teachers can implement them in all their classes for all the subjects and grades given that some researchers support the use of thinking routines in English language classes and believe that the application of these routines improves students' visible thinking (Ritchhart & Perkins, 2005; Ritchhart, Church, & Morrison, 2011; Salmon, 2008). Taking in consideration that this study is proposed for English as a Foreign Language classes.

Chapter II: Literature Review

This research departs from the idea that students' preferences and likings are important in the development of the class. The aiming point of this study is the implementation of Thinking Routines in order to make students' thinking visible. Ritchhart, R., & Perkins, D. N. (2008) stands on the idea that thinking is an invisible process which takes place in student´s minds. Thus, as teachers, we must focus beyond content and student outcomes; our job goes far beyond just delivering content.

Instead of focusing on only covering content, teachers could concentrate on how to foster students´ engagement with the content and on how to develop their capacity to think with what they know. According to David Perkins, research professor of teaching and learning at Harvard Graduate School and founding member of the Harvard Project Zero (1992), "since learning is a consequence of thinking and good thinking is learnable by all students there is a call to teach children to think." (p. 31). If teachers recognize how children think, they can support their thinking and take it to a higher level. Considering this idea, an important issue is to identify students' understanding and how they are perceiving or understanding a particular content. This is what some authors call "Visible thinking"; which is any kind of observable representation that documents and supports the development of an individual's or group's thoughts and questions" (Ritchhart et al. 2006).

2.1 Visible Thinking

Visible thinking is an integral element of Project Zero, and as its name says it itself, it is making thinking visible in the context of learning. It is important to mention that Project Zero (2015), is a group of researchers from Harvard Graduate School of Education, whose purpose is to investigate how to enhance learning, thinking, and creativity in the arts, as well as in humanistic and scientific disciplines at individual and institutional levels.

Visible Thinking offers teachers the opportunity to evidence students' thinking and deepens their understanding of how students are perceiving the content or the development of their learning process. This information provides teachers with valuable evidence to plan classes where students are engaging with their ideas and opinions instead of just memorizing to pass a test or grade. Project Zero (2015).

2.2 Identify when thinking happens

In order to consider or analyze a thinking process among students, teachers must first be able to identify when a thinking process is happing in class. Teachers could first consider if students are providing a good explanation, making connections, giving a valuable point of view, proposing a new topic, discovering a pattern, etc. Teachers can identify if a thinking process is happening if students use thinking skills, which are mental processes that an individual uses to think successfully. They consist of solving problems, making decisions, planning, analyzing, synthesizing, etc. Considering, Benjamin Samuel Bloom (February 21, 1913 – September 13, 1999), American educational psychologist and his Taxonomy of Educational Objectives, "The Goal of an educator is to encourage higher-order thought in their learners by building up from lower- level skills". In other words, attempts to move students beyond simple memorization.

If teachers are conscious of a thinking process taking place, they can create opportunities for students to think visibly by highlighting their contributions in class. For example, teachers can formulate questions, listen to answers, and document what is said.

Teachers can use questioning to focus students' attention on a particular topic that is going to be explored, to build understanding, and to support students to elucidate their thinking. Teachers can use questions differently. For example, some questions that can be made during class so students get interested in upcoming concepts can be: What do you mean? Why do you

think that? Can you give an example? If the teacher wants to support students constructing of their understanding questions like these could be asked. Could you explain your reasoning? What is your argument for saying that? Could you explain your criteria?

When teachers seek to clarify students thinking they could use questions like: Could you explain your assumption? Why do you think your classmate says that? What can be the consequence of that? How do you conclude that? Could you say that in another way? Could you explain your point of view? Lastly, if teachers aim for students to contribute with additional information, they could ask questions like: Could you give me another question? How those questions help the class?

Teachers can use different types of questions to assess feedback. Nevertheless, what is most important is not only asking the right question, what is essential is the answers students give to assess if they are truly contributing to the class and understanding the content. Therefore, paying close attention to listening is important. If teachers do not listen, they will not be able to follow students´ ideas. By listening teachers can follow students thinking, and more importantly show respect and interest, which will be perceived by students and will encourage them to share their opinions and ideas in class. Teachers have to pay attention and listen carefully to the interaction among the class. Is vital not only to inquire, but to pay special attention to the answers to those inquiries. Using students' answers assists the teacher to realize what students are thinking and understanding and thus, reply with requests that help to challenge, clarify, stretch, or redirect thinking during the class. For example, if a teacher listens carefully to students' short answers it allows the teacher to have a better idea of students understanding and give them feedback.

To document students' thinking teachers can use a variety of tools. For example, photos or videos of students' work, written notes, whiteboard, etc. The important aspect of *documenting* is that students can use this documentation to monitor their progress and reflect

their understanding. According to Ritchhart (2011), "Documentation is focused on the learning process itself by trying to capture the events, questions, conversations, and acts that provoke and advance learning over time" (pg. 38). Thus, documenting just consists of assigning activities that accomplish the purpose of making their thinking visible. For example, you could ask students to make a concept map that shows connections between the ideas, so in that way, the learning concepts become visible, because students are engaging with the concepts more reliably.

2.3 Five principles of Visible Thinking

"Visible thinking", encompasses five principles which are: *learning is a consequence of thinking; good thinking is not only a matter of skills but also a matter of dispositions;* open-thinking development which is a social endeavor; fostering thinking which makes thinking visible, and classroom culture set the tone for learning and shapes it. There is also one more principle, which stands on *schools must be cultures of thinking for teachers;* related with professional learning communities between teachers. Regarding this study, the last principle was not taken into consideration because the project aims at students' visible thinking.

To begin with, *learning is a consequence of thinking*. Learning increases when you think through it. While students think about specific content, understand it, and remember it, the memory of this content increases every time they think about it, while concepts and information are studying thinking develops. The more you think the more you learn. For example, in the routine see-think-wonder the teacher asks students to make a deep observation at something that could be a piece of art, by following the three steps: see, think and wonder. Students go on rethinking and think through inquiring, in this way they are pushed to deepen their thoughts.

Secondly, we have *good thinking is not only a matter of skills and but also a matter of dispositions*. Some characteristics of a good thinker are: they develop inquisitiveness, increase attention to detail, support imagination, encourage open-mindedness over closed-mindedness, curiosity over indifference. These are traits that students acquire only if they invest time in them, and transform them into innate skills. Is the job of teachers to nurture these relevant skills. For example, the "headlines" routine encourages students to sum up the core of the topic presented, and draw conclusions about the topic being discussed. In that way, students develop the skills of a good thinker.

Afterwards, we must consider, open-thinking development which is a social endeavor. We learn from the ones around us. In class there is a constant interaction between the teacher, the students, and their peers. The learning occurs by the engagement with the class, the continuous sharing of ideas and thoughts. For example, if we reflect on writing, we picture a lonely person, sitting and writing alone. But what happens if this person works with other people throughout the writing process. This person will receive extra support, ideas, and new perspectives. If we adopt the idea that writing includes a social component, the writing process could improve.

Also, we have the principle of *fostering thinking which makes thinking visible*. Effective thinkers make their thoughts visible. Our thoughts and ideas happened in our brain; thus, they are invisible even to ourselves. The externalization of these thoughts by speaking, writing, drawing, or any other way that expresses what we think is the goal. For example, a student externalizes his thoughts after observing a picture using the routine: see- thing- wonder. See (I see a lot of black in the picture). Think (I think it means nighttime) Wonder (I wonder if the darkness reflects the artist's mood?)

Finally, we should consider *classroom culture sets the tone for learning and shapes it*. All class activities and factors that support the rhythm of learning can be class routines,

language patterns, implicit and explicit expectations, time allocation, teacher modeling, the physical environment, relationships between the class members, and the creation of opportunities. All these factors can support the learning of the class members.

2.4 Thinking Routines

Overall, Visible Thinking is an observable representation of the ideas, thoughts, reasons, questions, and reflections. In order to make thinking visible teachers can use an organized structure such as thinking routines. (Tishman, 2005). Visible Thinking leads teachers to witness students scaffold thinking while developing a thinking culture in their classrooms. Culture consists of all the aspects of human progress and consists of values and beliefs that a social group share. According to Ritchhart (2002), cultures of thinking are spaces in which each member of the group shares their thinking, and this thinking is appreciated, visible, and actively encouraged as part of the regular classes.

According to Tishman (1995); Ritchhart (2002); Project Zero (2007), this culture of thinking arises from social activities that produce thinking dispositions. Thinking dispositions are inclinations that assist productive thinking and that can be taught over time. Thinking dispositions can be developed through the use of thinking routines which are short, easy-to-learn and to apply.

As teachers, we want our students to learn and gain knowledge, grasp meaning, use their knowledge, analyze, synthesize information, make judgments, and share ideas. All of them are thinking skills (Moore, 2015). Thus, this research proposes the use of thinking routines for regular use in classes in order to engage students and promote visible thinking. The authors Ritchhart and Perkins (2004) affirm that any program that wants to teach thinking needs to state positive thinking, in a practical and operational sense.

According to Ritchhart (2011), the role of thinking routines, which consists of a few steps, provide a framework for focusing attention on specific thinking moves that help reach an enduring understanding. Teachers always handle routines during classes. The authors Ritchhart, Morrison, and Church (2011), affirm that routines are a common part of the development of a class because usually teachers handle routines for several purposes like making them pay attention, organize the work, keep rules, for turning in homework, for discourse and communication.

"Successful teachers are the ones that scaffold students thinking by using specific routines to guide and promote students' thinking" (Richhart, 2012). These routines involve a few steps which intend to focus on specific thinking that aims in reaching understanding (Salmon, 2011). When students become aware of their thinking, teachers increase their appreciation of students' thinking processes, which allows them to scaffold the children's thinking and language.

When teachers observe students learning a new topic, the focus goes to what they do not know. Nevertheless, if teachers' pay attention to what a student knows, they can guess the student thinking and create the Zone of Proximal Development (ZPD) (Vygotsky,1978); defined as the distance between the actual level of development and the level of potential development supported and guided by the teacher, and the collaboration of their peers. In other words, when the students are close to developing a new concept, knowledge, or skill with the support and encouragement of the class members and the teacher. The documentation of students' works, provides them with the chance to evidence their thinking and their growth.

2.5 A brief history behind thinking routines and critical thinking

The idea of using thinking routines came from a study Ron Richhart did with six classrooms where teachers were used to getting their students to think, where they follow thinking dispositions, and constantly nurture their habits of mind. Thus, Richhart wanted to see

what were these teachers doing? One of the things he noticed was that none of these teachers taught thinking skills, instead, they used routines and structures that support students thinking. Since we use routines for different purposes for example to perform house chores, morning routines, in class for sending homework, introducing a new topic, having a test, many scholars sustained the idea of developing patterns that teachers can use over and over again during classes with the purpose of stimulating students' thinking. Since the purpose of thinking routines is to develop critical thinking, it is important to consider the history before Project Zero. One of the valuable thinkers was the Greek philosopher Socrates (469 BC – 399 BC), who 2500 years ago purposed the method of questioning, widely used in teaching. Socrates firmly believed that people have to do their own thinking in a way to lead to the birth of their own new thoughts and ideas. By questioning he wanted to support and push the development of new ideas. He demonstrated that people may have a high intellect and yet be confused and irrational. Thus, by asking deep questions that challenge thinking people can rethink before accepting ideas as worthy of belief. Socratic Questioning is the best-known critical thinking teaching strategy.

Socrates' method was an inspiration to Plato, Aristotle, and the Greek skeptics, all of them noted that things are not as they simply appear and only a qualified mind is able to see under the surface. These Greek thinkers portrayed the necessity that someone who aspired to see deeper must first reason systematically and carefully.

The idea of systematic thinking continued in the Middle Ages; one representative author was Thomas Aquinas who affirmed that thinking is a process always methodologically stated, with a previous need of reasoning. In the 15th and 16th centuries during the Renaissance, some thinkers as Erasmus, Colet, and Moore (Europe) followed the idea that most of the fields of human life need first to be searched and analyzed. These fields comprehend religion, art,

society, law, human nature, etc. In France, Descartes presented his book Rules for the Direction of the Mind, where he depicted the need for a systematic disciplining of the mind to guide it into thinking he stood on the idea that thinking should be questioned, doubted, and tested first.

Particularly in England, Francis Bacon affirmed that our minds cannot be abandoned to their natural tendencies, that we must always seek knowledge and not waste our mind's potential.

In the 16th and 17th centuries, Hobbes and Locke sought after a critical mind to develop learning. Hobbes stood for the idea of a natural aspect of the world in which everything has to be proved explained and reasoned. Locke pursued a common sense of analysis of everyday thoughts. Other scholars such as Robert Boyle and Sir Isaac Newton characterized in their spirit of intellectual freedom, and both were against an egocentric view of the world and in favor of founded evidence and reason. Boyle criticized the chemical theory before his work he presented in his book Skeptical Chemist; while Newton criticized the world view that preceded him as did several writers like Copernicus, Galileo, and Kepler. The Renaissance and post Renaissance thinkers paved the way for science, democracy, human rights, and freedom.

Other authors that contribute to the ideas of critical thinking were Bayle, Voltaire, Diderot, and Montesquieu who determined weaknesses and strengths of thought. They supported the idea that if we trained our mind with discipline, we can reason better to figure out the nature of the surrounding world.

In the 18th century, Kant with his work Critique of Pure Reason which refers to the reasoning itself. A century later Comte and Spencer prolonged the critical thought to the social human life, as the basis of Anthropological studies, Linguistics, and in Economy in a critique of Karl Marx.

In the 20th century emerged explicit formulations of critical thinking. William Graham Summer in his book Folkways which studied the foundations of sociology and anthropology, and the propensity of the human mind to think socio-centrically, also affirmed the deep need for critical thinking in life and in education. Other authors such as John Dewey support the idea that our pragmatic basis of human thought is grounding in goals and objectives. Ludwig Wittgenstein, who supported the necessity of analyzing concepts and assessing limitations. Piaget, stood on his idea of increasing awareness of the egocentric and socio-centric tendencies of human thought and of the special need to develop critical thinking.

To summarize, the idea that thinking can be taught is ancient and began with Socrates and Plato. For many years lots of thinkers have contributed to the development of the tools and resources of critical thinking. The consequence of the cooperative influence of the history of critical thought is that the Socratic questioning method can be better framed and used in every domain of human thought.

2.6 Application of Thinking Routines

Thinking routines develop curiosity and engagement in students. Thinking routines are not recent, they have been applied in teaching for a long time ago; but a formal approach that gathered and classified them comes from the Harvard Graduate School of Education called Project Zero, by researchers, Ron Ritchhart and David N. Perkins, researched about children´s thinking and learning. These routines are short sequential steps that guide the thought process. The steps in each routine has to depend on the routine. For example, the routine: see- think- wonder, consists of these three steps which are simple, short, and easy to learn and apply. If teachers use them repeatedly, students will gain more confidence, deepen their thinking, and develop their critical thinking.

Thinking routines used on daily basis teach children to stimulate their thinking, to face problems. and be creative thinkers, which means able to look at facts, and come up with solutions, and innovatively produce ideas.

The implementation of thinking routines during classes according to Richhart (2015) declares that thinking routines function on three levels. First, it is considered a tool that supports specific thinking. It is important that teachers choose the right tool, as in any other activity you need the right tool according to your needs. Thinking routines can function as tools that promote thinking. It is the responsibility of the teacher to identify the thinking you want to elicit and, in that order, choose the thinking routine that supports the aiming thinking. For example, in the routine red light, yellow light promotes students' understanding and examines their learning at the moment. The red light represents something that stops you in your path because you doubt it is true or accurate. Thus, students can be aware of specific moments that hold signs of possible puzzles of truth. While the yellow light slows you down and makes you rethink, here students are pushed to reason, make claims, give conclusions and generalizations. Finally, the green light means students are confident, understand the idea or the statement, and are ready to move forward.

While using thinking routines teachers, encourage thinking as (Rtichhart, 2011, pp. 45-46) mentioned: "observing closely and describing what is there, building explanations and interpretations, reasoning with evidence, making connections, considering different viewpoints and perspectives, capturing the heart and forming conclusions, wondering and asking questions, and uncovering complexity and going below the surface of things".

Then, thinking routines function as structures that scaffold learning. Thinking routines were designed by the team Project Zero to sequence the thinking of learners, the routines are organized in a way that each step builds on the next offering an overall structure in which learning takes place. Thinking routines do not work if teachers use them as worksheets and

drills to complete. Salmon (2008) states that thinking routines provide learners rich experiences in an organized way. For example, in the routine chalk talk students have to write their ideas regarding a specific topic on a common paper. After that, they ask questions according to the written thoughts, and finally, give solutions. The teacher must be attentive and use students' responses and connect them to the next step in the routine, highlighting the important ideas given to scaffold the next sequential step.

Finally, these thinking routines function as patterns of behavior. They can become a common pattern in classes when teachers recognize their support for developing a lesson or a unit of work. As its name says routines, these routines were developed for use repeatedly and to become part of the daily class, for students and teachers to gain confidence.

According to (Brahal, 2008 pp. 299) "when used regularly, thinking routines help students master and internalize new thinking processes until they become second nature". The success of using thinking routines reflects on the time a teacher provides for students to share, and discuss their ideas regarding a specific topic. The approach (Project Zero,2007) can be added for usual classroom activities. If thinking comes as a part of a routine, students will acquire positive attitudes regarding thinking, and the result will be they will learn.

Some authors' reflections about the application of thinking routines are: according to (Richard and Perkins, 2008), thinking routines, aim to help students demonstrate their thinking, as they gain learning, and make connections. While, Kenneth D. Moore, (2015) mentions that thinking happens automatically, and according to (Ritchhart & Perkins, 2008) thinking is invisible to teachers and students. With the support of thinking routines teachers can unwrap the thinking and become visible, thus students process the information they acquire and interact intellectually. (President and Fellows of Harvard College, 2006) agree that the use of thinking routines for ELLs supports their second language, and helps students build vocabulary and exercise language skills.

At this particular private school located in Quito – Ecuador, teachers have some freedom regarding the selection of content as long as the main contents provided in the curriculum are maintained. (Wolberg and Goff, 2012) remark that thinking routines push students' thinking and learning visible to themselves, peers, and teachers. These routines can contribute to a classroom culture that encourages students to be self-directed learners by giving them the tools to drive their thinking.

Teachers can use thinking routines for example: to introduce new ideas, to push and challenge our students to go deeper in their thinking, as well as, engaging them. The goal of thinking routines is that students go further in their thinking. (Salmon, 2008)

There are a variety of benefits of the application of thinking routines as a part of the classroom routine to guide learners' thinking process. To begin with after using constantly, students get used to them and create a culture of critical thinking. Thinking routines are considered to be simple to follow. Each routine has only a few steps, they are easy to use and do not require extra training and are easy to learn and remember. These routines can be adapted according to the necessities, across a variety of contexts, and any topic or skill that the teacher wants to focus on in class. Also, thinking routines can be used individually and in groups, and either in class or outside it. Through the daily application and documentation of thinking routines, teachers can establish a culture of thinking and be able to identify zone of proximal development ZPDs.

2.7 Five Thinking Routines

This study explores the application of 5 thinking routines. These are: see-think-wonder; chalk talk; headlines; red light-yellow light (RLYL); tug-of-war**.** These routines were selected among the variety because the teacher considered they can be adapted to the content and the purpose

of the class, nevertheless all of them are flexible and can be adapted to the necessities of the teacher.

2.7.1 See – Think - Wonder

This routine encourages students to make deeper observations and make thoughtful explanations. Also, it supports and stimulates curiosity, and establishes students' inquiries. This routine can be used when the teacher wants students to pay attention and think carefully about something specific. It can be used as an introduction to a new theme or unit, to motivate their interest. Also, this routine can be used at the end of the unit to encourage students to apply their knowledge and go further with their ideas.

During the application of this routine students share their thinking at each step before the class moves to the next one. The class will contribute with each student´s thoughts and ideas that will result in richer discussions. In order to apply this routine; first, the teacher should select any visual media or an image, it can be a piece of art, photograph, cartoon, poster, video, etc. According to the purpose of the class, and the desired analysis. The teacher later leads students through analysis, each step needs enough time to give the students time to reflect.

During the stage "See" students are asked to elicit observations not interpretations. Students express what they think might be going on or what they think the observing object might be. Questions like these are commonly used: What do you see? What details stand out? The second to last phase, which is "Think", encourages students to support their interpretation with reasons. Questions like these may be used. What do you think is going on? support your answer. Finally, the phase "Wonder", elicits from students are set to broader questions regarding the proposed image such as: What does this make you wonder?

If the students use the three stems: I see…., I think….., I wonder….. the routine works best, the teacher has to guide their interventions and follow up with questions to reach the next

step. The routine can be applied in a group discussion, or individually on paper or in their heads before sharing with the class.

2.7.2 Chalk Talk

This routine, pushes students to consider: ideas, questions, or problems, in a silent way, so they have time to reflect and go through their thoughts with no interruptions, and later consider other points of view from their peers and make comments about them. Students are asked to write anonymously their thought onto a shared paper or board, or any way they can write down, and build on learning collaboratively. Then later the teacher inquiries about each written thought and guides according to the needs to make connections or clarifications. This routine can be used as a reflection of a specific topic, there is a degree of anonymity that allows students to take more risks in sharing their thoughts.

To apply this routine first, the teacher can decide if students work in groups or individually. The teacher presents the chalk talk prompt where students write down their ideas, responses, comments, or questions regarding the teacher's requirement. Afterwards, the teacher encourages the students to read their prompts and allows them to comment, elaborate, answer or contribute regarding all the ideas written in the chalk talk prompt.

The success of this routine bases on giving the students enough time to review the written ideas on the common paper and discuss them. The teacher has to ask about the emerging ideas, the common issues, and reactions of the class, about the surprising things debriefing about the whole chalk talk process.

2.7.3 Headlines

The headlines routine helps students to capture the core of a topic, summarize it, and draw conclusions. Thus, students have to write their headlines paying attention to the key ideas

of the topic. This routine is useful at the end of a class or unit when students have studied a topic and have enough information or ideas about it. In order to apply this routine, the teacher can ask at the end of the class, for example, to write a headline of a specific aspect that they considered important and valuable to be remembered. Then the teacher asked the students to share their headlines, and highlight the headlines that particularly get to the core of the theme. The headlines student present can be kept, saved, and reviewed in the future as the class progresses over a topic studied. Teachers and students can go back to these headlines afterwards and then address the question How your headline change or differ from what you know now? In that way students reflect on their thinking.

2.7.4 Red Light-Yellow Light (RLYL)

This routine encourages students to build up the sensitivity to face signs of puzzles of truth, to be aware and discriminate between the evidence presented. It can be applied for any interesting puzzle of truth like a questionable text, news, political speeches, a mystery story, pop science, a tale with a twist, etc. According to the desire topics, the teacher wants to puzzle students developing critical thinking skills to discriminate and evaluate the ideas presented. Students can choose between red, yellow, and green lights according to their opinions, previous knowledge, and ideas regarding the presented topic. Red lights show doubt and signs of sweeping generalizations, one-sided arguments, bold claims, no enough argument, angry claims, etc. Yellow lights are milder versions of the same thing. Green lights show certainty, veracity, and total truth.

While applying this routine, students tend to disagree on selecting red vs. yellow vs. green lights. The teacher has to explain the signs and their judgments briefly thus, the routine is for noticing potential puzzles of truth. The effective way to apply this routine is to encourage students to investigate more about the ideas presented.

2.7.5 Tug- of – War

This routine pushes students to reason about factors that are related to a problem of fairness. It also helps students to appreciate the complexity of fair situations. The tug of war routine can be applied to any situation that implies a fairness dilemma, and different ways it can be solved. For example, a story with contrasting sides. To apply this routine the teacher presents the dilemma to the whole class. Then the teacher can draw or place a rope with the two ends representing the opposing sides of the dilemma and, make the students choose one side. Students have to write their ideas defending the side they choose for example on post-it notes. The teacher inquires students to generate questions, issues, or concerns that might support solving the dilemma. At the end of the lesson ask: How their ideas changed in relation to the dilemma? Have they changed their minds?

This routine is excellent support for collaborative work. The thinking process of the class is represented through the tug-of-war game. The visible thinking is represented in the collaboration of the student's thoughts and ideas in a context of a shared inquiry.

2.8 Advantages of using Thinking Routines

Since this study aims to meet students' needs and interests, it is very important to go deeper into their minds. By applying thinking routines students can better communicate their thoughts and understandings. Another valuable fact to consider is that if students are not motivated to speak or engage with the class then you cannot possibly see what they are thinking or improve their thinking. That is why thinking routines and motivation are a virtuous circle: neither can exist without the other.

2.9 Motivation

A student's self-motivation to learn is considered as a strength that pushes someone to accomplish goals, and has always been important in education. Nevertheless, currently, it has become more significant than before the pandemic, we are facing; It has affected students' behavior towards classes. Some teachers have noted bored and frustrated students that did not visualize a need for learning or find knowledge meaningful. Of course, few students show enthusiasm in learning thus, the goal is to engage the whole class. For this reason, self-motivation gains more significance now, because students, as well as teachers, need to persevere and face setbacks, to commit to what we want to achieve.

The big question for teachers is how to motivate their students. Every single learner has needs, and if teachers satisfy their needs, learning will occur. According to Maslow's hierarchy, developed by Abraham Maslow in 1954, "The more needs that are met, the more students will learn". Maslow considered six levels in his "Hierarchy of Needs". An individual has to meet each level to move onto the next level. As teachers, we must consider students' needs. Teachers have to be able to recognize students' strengths providing them with a sense of worth. Maslow's hierarchy offers a clue for how students are motivated to learn. Currently, in a virtual environment, a teacher has limited access to the lives of students at their homes. Definitely, during this pandemic, teachers do not have the certainty if students´ needs are being met. At school, teachers can ensure that students are physically safe and have their basic needs satisfied, but now, they are at home, teachers lack information regarding their stability, for example, we don't know for sure if they feel good and safe, or if they have sick family members if they feel comfortable, and happy, etc. Teachers just can be certain of what they noticed through the computer screen.

Other noteworthy authors that developed a theory whose purpose is to focus on the inherent predisposition of an individual to move towards growth are Richard Ryan and Edward Deci both psychologists, with their theory of Self-determination. "Understanding learners' motivation is key if we want to educate children to become self-directed and lifelong learners, as a wealth of evidence suggests from self-determination theory (SDT)" (Ryan & Deci, 2017; Deci & Ryan, 2000). First to appreciate *s*elf -determination theory (SDT), we have to consider that here lies the key to transforming the way a teacher thinks about teaching and what motivates students. The psychologists Deci and Ryan presented their ideas in the book *"Self-Determination and Intrinsic Motivation in Human Behavior"* (1985). Here both authors developed a motivation theory that proposed that people lean towards a need to grow and get the achievement. Two key assumptions of this theory revolve around the need for growth which drives behavior and the importance of autonomous motivation. People are focused on growth. Facing challenges and going through different experiences is important for a person in order to develop a cohesive sense of themselves.

Self Determination Theory (SDT) aims at intrinsic motivation such as the necessity of improving knowledge and independence in opposition to extrinsic motivations such as rewards like money, acclaim, and prizes. Regarding SDT all the learners have the natural desire to learn from their environments, grow, and develop. Thus, our job as educators is to cultivate this intrinsic interest in learners. As a teacher, I have been struggling with how to motivate our students. Teachers have to deal with students' passive behavior, lack of enthusiasm, sometimes they do not want to participate or collaborate during class. SDT provides a framework that fosters learners' intrinsic motivation. The core beliefs of self-determination theory emphasize a relationship between three "basic psychological needs" autonomy, relatedness, and competence. These are the ingredients needed by learners to be enthusiastically and positively

involved in their learning process, to foster their intrinsic motivation like reading for fun, and extrinsic motivation like reading to get a grade (Ryan & Deci, 2000).

An important consideration is that intrinsic motivation coexists with extrinsic motivation even though they are opposite. At school students usually embrace both, for example, if a student is assigned to read a story, maybe this student love reading and here intrinsic motivation comes in; thus, the student is going to be graded and here extrinsic motivation appears, because the student may be motivated to gain a good grade or pass a test.

One of the most usual physiological needs involves autonomy which gives learners a sense of freedom regarding a learning activity. Creating parameters that give the students the autonomy to participate in the setting of their own learning goals. It means for example giving students choices provide opportunities for multiple ways to complete an assignment and gives them the choice to pick the method they want to use.

Relatedness which is also considered a physiological need means establishing a connection to their peers in a sense of belonging, and the need of demonstrating to their peers that the individual work each student develops has value to others and is recognized by their classmates. Thus, learners experience positive and commonly nourishing relationships which underscore the sense of familiarity and trust between them. As well as, they feel recognition. If the teacher asks for students´ feedback, opinions, and how they relate to the teaching, topics could be valuable and important to establish relatedness.

Finally, competence is a psychological necessity which means to feel effective in the context of one´s social environment. If a person feels competent, they feel ready to take on challenges and achieve desired outcomes. To accomplish this competence, teachers, have to select carefully the materials, in order for these materials to improve students' engagement and improve their confidence. SDT also takes into consideration that each student is different regarding their background, goals, personalities, and features. Teachers must aim for a

motivating style that characterizes being receptive, flexible, warm, with an open-minded attitude. This style will help teachers to know better each student. and establish the motivation strategies that support students emerging skills, interests, and preferences. Nevertheless, what we can do as teachers is work on the design of our classes where learners find the opportunity to feel autonomy, competence, and relatedness.

This research seeks to identify if the use of "Thinking Routines" really helps teachers to see learning through the eyes of students. It is considered that one key for motivating students is making thinking visible in classes, by evidencing the learning. Having classmates explain their thinking and reasoning will encourage them to be part of the class actively.

Chapter III: Research Methodology

The proposed research is a cross- sectional case study, which analyzes the response of students to the use of *Thinking Routines* for the *Games and Projects class.* It used a mixed-method research strategy. This study uses sampling frame, which includes all the students that belong to the Sixth grade C of the private school located in Quito- Ecuador. The research was performed as part of regular classes.

The research protocol was approved by the Ethics Committee for Research on Human Subjects (Comité de Ética de Investigación de Seres Humanos CEISH) at Universidad San Francisco de Quito USFQ. (Appendix A)

To accomplish this study, permission was requested from the director of the school to allow the participation of the Sixth grade C in the current study.

3.1 Participants Description

The participants of this study were selected using purposeful sampling and include a total sample of 22 students,13 females and 9 males, from ages between 10 to 11 years old, from the primary level, sixth grade parallel C on the private school in Quito, Ecuador. These students are native Spanish speakers whose second language is English. No student was excluded based on gender, race, ethnicity, social condition, ability, or other criteria. In order to record them on video, the screen recording function of Zoom was used by teachers.

All writing samples were collected, in a chart for the collection on answers, ideas, and voluntarily participation of students. To carry on with this study, I used a Sampling frame, including all the students that belong to the Sixth grade C of the school. Students participated, because the research was performed during their regular classes as they usually attend in their

class period. Students who chose not to participate in the study have the same classroom experience as those who do agree to participate. (Appendix B)

3.2 Credibility, Trustworthiness and Confidentiality

This study was conducted with the participation of minors in an ordinary classroom setting. As such, informed assent to participate and be video recorded was requested using an online form. The classes at the selected private school are already recorded by teachers as part of normal teaching practices in virtual settings; student assent was requested to use data from those recordings.

Written consent to conduct the study was obtained from the principal of the selected school, Dra. María Elena Posso Rivera (Appendix C). Her consent implies her authorization to record regular classes which are going to be watched by the research for the purpose of collecting data. The area coordinator will be informed that all data collected is confidential and reported anonymously. It is noteworthy to mention that participants were asked to have their data used for this study.

Students' names were coded and anonymized. Only the researcher named in this study had access to collected data, which was stored in a password-protected cloud folder until the study is completed. After completion, the data including videos were archived on the personal computer of the principal researcher. The video recordings were erased after completing the final report.

Risks of the study are minimum since all data collected pertain to typical teaching practices within the courses. The ethical validation of this study relies on its protocol approval by the CEIHS board at USFQ, and the authentic interest that students benefit from the opportunity to engage in classes with a different approach with the purpose of involve them and participate

more actively in their learning of the English language. Furthermore, the study gives the opportunity of making the learners' thinking visible to promote learning English through self-reflection and metacognitive awareness.

3.3 Data Collection

The purpose of this study is to analyze student's behavior and participation during a Games and Projects class in which thinking routines are used. It is majorly considered how their behavior and participation influenced in engagement, inquiry skills and understanding to develop and improve learning ESL in the sixth grade C of the private school selected.

Quantitative and qualitative data was collected since the main purpose was to analyze the responses of the students during the class. In order to observe the classes and students zoom recordings saved by teachers at this private school were used. Quantitative data considered how many times each student participated voluntarily. It was represented in the question: *How many times do students interact voluntarily during the class?*

Qualitative data was recorded such as responses, opinions, and the different comments of the students. The qualitative data was portrayed in the questions: *What does the student say? Is his/her contribution relevant to the conversation?* Other notes and observations included on focusing on *How do it contribute to the conversation?*

The different types of engagement student can reflect during a class was considered along with students' reflection, participation in learning and how they demonstrate a positive attitude during the Games and Projects class. For this I considered three student engagement variables. To begin with, behavioral engagement where students behave and don't act out. They bring everything they need during class, follow instructions, work carefully and participate in class discussion. Afterwards, emotional engagement was considered where students feel like they're

a part of the school community and are happy to be there! They greet you with a smile, interact positively with their classmates and look alert during your lessons. Lastly, cognitive engagement was taken into account which is also known as intellectual engagement, students are eager to learn and think deeply about the subject matter. They ask challenging questions, and often go above and beyond when completing assignments.

Results were analyzed towards these variables by describing the forms of participation and engagement the students reflect during the Games and Projects class. This description answers my initial inquiry regarding the effects on students after using thinking routines, and verify if students are more actively engaged and voluntarily participated during the Games and Projects class to uncover students' thinking (make it visible) and to know what students understand, think and believe.

3.4 Data Analysis

During one-week students had a *Games and Projects class* using *thinking routines for an hour each day*. This class was chosen because it is more active, connected to real-world situations, constructed with the use of students' groups, students' choice, and research tools using technology. The class is designed to enhance student engagement while positively influencing students' attitudes.

Data was collected using one recorded video for each hour of class, during a week. One Games and Projects class each day. Each class lasted 40 minutes, which is the regular time assigned for each class. The data collected was analyzed exclusively by the main researcher. After the recorded class, notes were taken in order to identify relevant information that the participants share, and for analysis according to the variables presented: behavioral engagement, emotional engagement and cognitive engagement.

A matrix was created in which the results were portrayed by transcribing the forms of participation and engagement that students reflect during the Games and Projects class after using Thinking Routines, and validate if students are engaged more actively, and participated voluntarily. Finally, students uncovered their thinking by discovering what they understand, think and believe.

The research approach used a mixed method study that combines quantitative and qualitative data collection, and a cross-sectional study in which the outcomes of the selected students were revealed on the matrix that established the following questions: How many times do students interact voluntarily during the class? (Quantitative Data. What does the student say? Is his/her contribution relevant to the conversation? (Qualitative Data). How does it contribute to the conversation? Other notes and observations. (Qualitative Data).

Chapter IV: Application of the Thinking Routines, Data, and Analysis

4.1 Application of the routine See – Think - Wonder

The purpose of this routine is to look to an image or object carefully. This close observation made learners to increase their perceptions, make deeper interpretations, search for evidence and foster their inquisitiveness. To carry out these routine teachers need:

To set up, select an image or object that includes details in order students spend some time observing it. I selected a picture of a few children that belong to the Massai Tribe, an ethnic group inhabiting northern, central and southern Kenya and northern Tanzania. And a video where a Massai girl talked and showed how her life in Kimara, Kenya is.

See, here the teacher requests students to look carefully and deeper beyond the surface characteristics, reminding them it is not a matter of time but a matter of finding deep information.

Think, here students are asked to make interpretations, based on what they see what they think about it. If students provide vague answers the teacher can ask for evidence that support what they said. (Previously students were reading some information regarding Massai culture and ways of living)

Wonder, finally according to students answers towards what do they think, the teacher here asked for "beyond" questions and wonders that make them go broader, and that really questioned the purposed of the object or image they have been analyzing.

Share the thinking, during the whole routine is essential that students share their thinking, teachers can make groups or with the whole class. Is important for the teacher to document students thinking

First students were asked to see the photo and go into the routine of see it observing carefully and sharing their observations, then they were asked to think about what they saw, and shared their thinking. Finally, the students were asked to wonder about their thinking making deep insights and questions.

For the video the class goes into the same routine. First watching the video and when it finished, they shared their thoughts and wonders regrading what they saw.

Table 1. *Students voluntarily interact during the first class.*

Figure 1. **Students voluntarily interact during the first class.**

STUDENTS	How many times do students interact voluntarily during the class? (Quantitative Data)
1	2
2	2
3	5
4	3
5	2
6	0
7	0
8	1
9	2
10	0
11	1

How many times do students interact voluntarily during the class? (Quantitative Data)
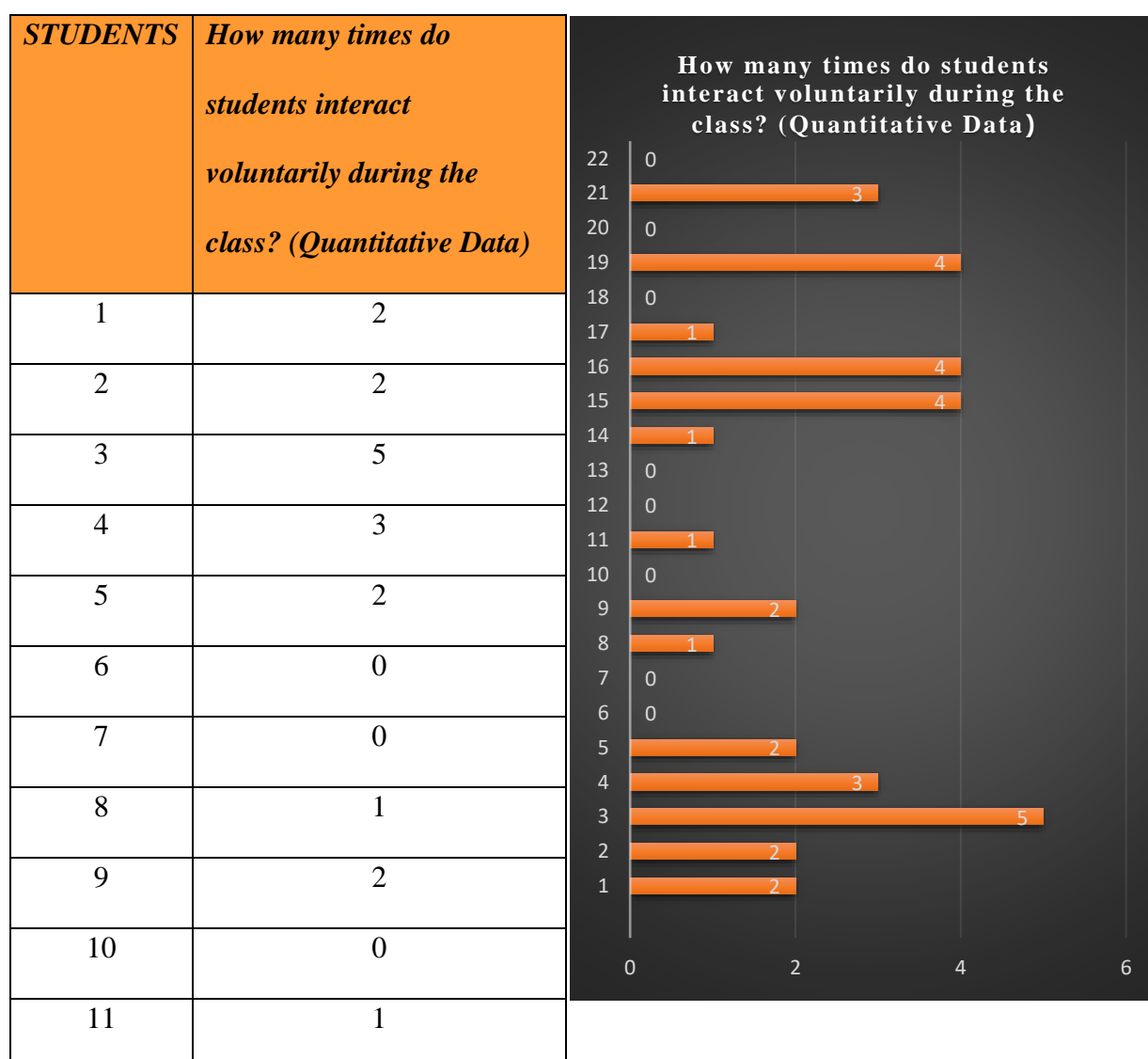
12	0
13	0
14	1
15	4
16	4
17	1
18	0
19	4
20	0
21	3
22	0

Table 2. *Students' interventions first class.*

STUDENTS	What does the student say? Is his/her contribution relevant to the conversation? (Qualitative Data)
1	• Video, "the father of the girl was death, I think the girl embraced her life, even though she faced sadness" • Video, "I see that the African children have access to animals that here in Ecuador we do not have"
2	• Photo, "I see children are dressed like if they were going to a festival" • Photo, "I wonder why the dresses made them look like if they do not have arms, because those clothes covered them a lot"

3	• Photo, "I see of kids sitting over a log, they look happy" • Photo, "I think they are wearing traditional clothes from Africa" • Photo, "I wonder if their clothes were made by their mother or grandma" • Photo, "I wonder if they are in the dessert" • Video, "I think that this family is happy, even though they do not have much money"
4	• Photo, "I see happy children" • Photo, "I wonder why they are sitting there?" • Video, "I think they can see wild animals, that we are not able to see here"
5	• Photo, "I see happy kids wearing African clothes and necklaces" • Photo, "I wonder if they are siblings or just friends"
6	• No participation
7	• No participation
8	• Video, "I wonder if there is enough to have only tea as breakfast"
9	• Photo, "I see children wearing traditional clothes from Africa" • Photo, "I wonder, why are they using so covered clothes if the climate is so hot?"
10	• No participation
11	• Photo, "I see happy children, they are in a place that looks like a dessert"
12	• No participation

13	• No participation
14	• Photo, "I wonder if in that place all children have the same race"
15	• Photo, "I see five children laughing, it looks they are in the dessert" • Photo, "I see that they are wearing African clothes" • Photo, "I wonder why do they have so tiny hair, it looks like if they do not have hair" • Video, "I wonder why sometimes we complain about insignificant things, while other children are happy even though they just have some basic and essential things for living. And they are happy with what they have. We have to learn from them"
16	• Photo, "I see children in traditional clothes" • Photo, "I think they are going to a festival or party because of the clothes they wear" • Photo, "I wonder if I am right and they are going to a party or festival" • Video, "I think we do not value the things that we have and we complain and what more unnecessary things"
17	• Photo, "I wonder where exactly they are located in Africa"
18	• No participation
19	• Photo, "I see few children happy" • Photo, "I wonder where are they, maybe a park?" • Video; "I think the girl has a simple life" • Video, "I wonder if she is really happy with her life"

20	• No participation
21	• Photo, "I see five children it looks they are in the dessert, and they are happy"
	• Video, "I think that the girl house is different from a regular house here with lots of rooms for a specific thing, she has only one room and there they cook, sleep and spend time"
	• Video, "I wonder if they are happier because they are close together"
22	• No participation

Table 3. *Students' contributions first class.*

STUDENTS	How does it contribute to the conversation? Other notes and observations. *(Qualitative Data)*
1	• The student shares his ideas regarding the video presented.
	• The student looks interested and attentive during the class, and contributes to the class by sharing his thoughts. He pointed out his attention to the fact that the girl lost his father and even though she faced life with a good attitude.
2	• The student shares her ideas towards the photo presented.
	• The student makes an important point by caring the attention of the class towards the clothing of the children in the photo.
	• The student shows interest and engagement during the class.

3	• The student makes an interesting wonder towards who made the clothes of the children. • The student also makes an important wonder towards the idea that money is not essential for happiness. • The student shows interest and engagement during the class.
4	• The student makes a good point caring attention and contrasting the fauna we have here in Ecuador regarding African fauna, and the access that African children have to these wild animals. • The student shows interest and engagement during the class.
5	• The student shares ideas regarding the relation of the children in the photo, if they are friends or siblings. • The student shows interest and engagement during the class.
6	• The student does not contribute with any idea or shares his thoughts even though he seems attentive, maybe because he is usually quiet and has a low English proficiency for oral communication.
7	• The student does not contribute with any idea or shares his thoughts even though he seems attentive, maybe because he is usually quiet and has a low English proficiency for oral communication.
8	• The student makes an interesting point and carries attention towards the scarce breakfast the girl takes in the video. • The student shows interest and engagement during the class.
9	• The student carries the attention of the class towards the clothing of the children that covered their hot body and make connections towards the climate the dessert has, a hot one.

	• The student shows interest and engagement during the class.
10	• The student does not contribute with any idea or shares her thoughts even though he seems attentive, maybe because she has troubles for communicating orally in English.
11	• The student does not make an important point, she just focusses on the traditional clothing. • The student shows interest and engagement during the class.
12	• The student does not contribute with any idea or shares her thoughts even though he seems attentive, maybe because she is usually quiet.
13	• The student does not contribute with any idea or shares his thoughts even though he seems attentive, maybe because he is usually quiet and has a low English proficiency for oral communication.
14	• The student contributes with an interesting point wondering about the ethnic group that predominates in this part of Africa.
15	• The students make important contributions regarding the physical characteristics of this ethnic group, focusing on their hair. • The student makes an interesting insight and reflection towards the basic and essential things a human being needs for living, and the attitude that we assume towards it, is vital for finding real happiness. • The student shows interest and engagement during the class.
16	• The student makes an important insight towards the attitude sometimes children have of complaining for unnecessary things.

	• The student shows interest and engagement during the class.
17	• The student makes an interesting point regarding where the place was exactly located. • The student shows interest and engagement during the class.
18	• The student does not contribute with any idea or shares his thoughts even though he seems attentive, maybe because he is usually quiet.
19	• The student contributes with an idea towards the simplicity of life and wonders if with basic things people can live happily. • The student shows interest and engagement during the class.
20	• The student does not contribute with any idea or shares his thoughts even though he seems attentive, maybe because he has a low English proficiency for oral communication.
21	• The student contributes with an important focus towards the differences between the living places, her house contrasting with houses in this tribe in Africa, and make a valuable connection carrying the attention if the closeness they have make them share more time with family. • The student shows interest and engagement during the class.
22	• The student does not contribute with any idea or shares his thoughts even though he seems attentive, maybe because he has a low English proficiency for oral communication.

Table 4. *Analysis first class.*

STUDENTS	What would the teacher do to refine, correct, and change their misunderstandings or thinking?
3	After watching the video, the student said: "I think that this family is happy, even though they do not have much money" *Poor but happy* is a cliché with no evidence. The teacher can present the following ideas so the student rethinks about the idea he expressed: -What about people meet their basic needs, do you think that person's happiness goes concerning money? -What do you think about strong human bonds and a sense of purpose is better for a person and makes someone happier? -Do you think poorness or richness is in proportional relation to happiness or sadness? Yes or no why? -Regarding the Massai, they are one of the few tribes who wanted to keep their traditions, and lifestyle, and co-exist with the wildlife. We cannot affirm they are poor or rich, they have a different perspective of how to live from us.
15	After observing the photo, the student said: "I wonder why do they have so tiny hair? it looks like if they do not have hair" *This could be considered racist. The teacher can present the following ideas so the student rethinks about the idea he expressed: -What about the style of each one's hair, do you think it reflects our individual choices?

	- The teacher can clarify Massai's hair. Massai men and women mostly shaved their heads, to celebrate different rites as marriage or circumcision. For them, this shaving head represents a fresh start for a new stage of their lives. Only warriors have long braided hair. Regarding this tradition now students can understand why Massai uses this particular hairstyle. After watching the video, the student said: "I wonder why sometimes we complain about insignificant things, while other children are happy even though they just have some basic and essential things for a living. And they are happy with what they have. We have to learn from them" *This is a heavy assumption; this reflects a lack of knowledge regarding the Massai. -The teacher can clarify that traditional Massai people's lifestyle centers on their cattle which is their main source of food. The Massai measure their wealth in terms of cattle and children. If they have many children and cattle, they are considered wealthy. According to this idea of wealthiness how different it is according to the idea of wealthiness in our country?

4.2 Application of the routine Chalk Talk

This is a routine that ensures that all the students participated, because they do it anonymously, this routine makes them construct their learning in a collaborative way. Chalk talk helps the students that usually do not participate because it is like a silent conversation conducted on a paper, so every student takes the risk and share her or his ideas. For the routine teachers need:

Set up, the teacher usually uses a chart of paper where students write their ideas regarding a proposed theme. By using questions that encourage students to express their ideas regarding the topic. Currently classes are dictated by zoom, consequently I used first a video of *Habitats* a topic that was going to be introduced to the class, and using Nearpod platform where they could post their thoughts, ideas, explanations, etc. regarding the purposed topic. They were asked to express their ideas regarding their understanding of what is a habitat?

Present the chalk talk prompt, here students are asked to read and share what they wrote. And encourage them to read and add comments to each other responses.

Share the thinking, here students can discuss, about common ideas, or different perspectives towards the topic presented and look for the relevance of students' contributions.

Table 5. *Students voluntarily interact during the second class.*

Figure 2. **Students voluntarily interact during the second class.**

STUDENTS	How many times do students interact voluntarily during the class? (Quantitative Data)
1	3
2	2
3	2
4	3
5	2
6	3
7	3
8	4
9	2
10	0
11	2
12	3
13	3
14	3
15	3
16	2
17	2
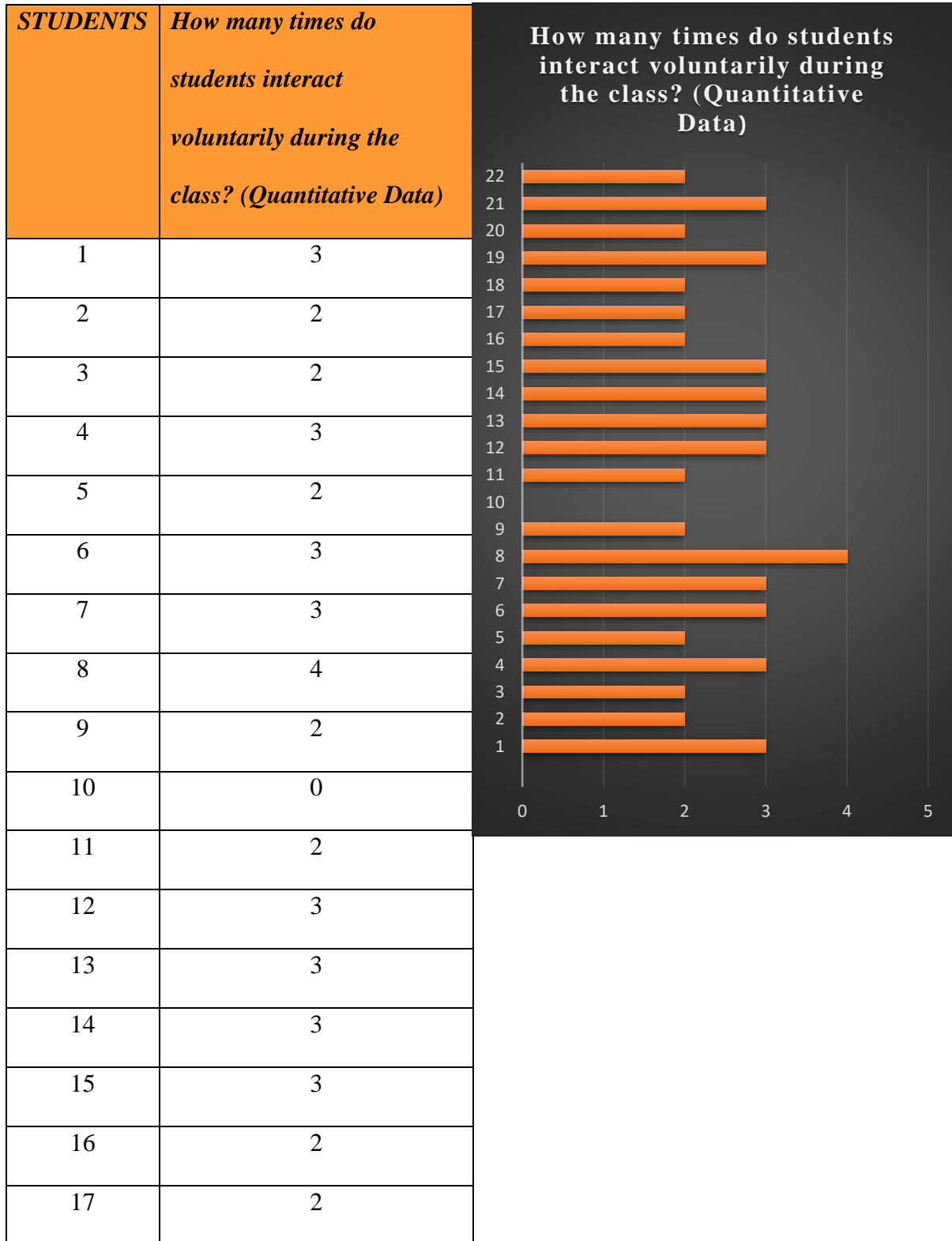
18	2
19	3
20	2
21	3
22	2

Table 6. *Students' interventions second class.*

STUDENTS	What does the student say? Is his/her contribution relevant to the conversation? (Qualitative Data)
1	• Posted a picture as an example of habitats. • "Habitats are where we and every living thing lives"
2	• "Animals and plants live in different habitats"
3	• "A habitat is the house of different species, where they live happy, because they have everything they need like: food, water, shelter, and air"
4	• "Habitat is the same as the home, and like to our homes we must take care of them"
5	• "Habitats are places where animals, plants, and humans live, and habitats provide with food, air, space and water"
6	• Posted a picture as an example of habitats. • "Habitat is a place where living things live is like our house"
7	• Posted a picture as an example of habitats.

	• "Habitats are very important to animals and plants, because they live on them"
8	• Posted a picture as an example of habitats. • "Habitats are the home of many species, and is very important to respect the species and do not remove them from their homes"
9	• "Habitat is the home of a great variety of species"
10	STUDENT ABSENT FROM CLASS
11	• "Is a place where animals and plants live"
12	• "Posted a picture as an example of habitats" • "Lots of animals and plants live together and share different habitats. Some are very small others are as big as an ocean"
13	• Posted a picture as an example of habitats. • "The habitats provide 4 essential things: air, food, water, and space lo live"
14	• Posted a picture as an example of habitats. • "Is a place where many animals and plants live, this place provides them everything they need to live, is like their homes"
15	• Posted a picture as an example of habitats. • "A place where many species live"
16	• "Habitats provide with essential things for living like air, water, food and shelter"
17	• "Habitats are places where living things live and develop"

18	• "Habitats are everything that surrounds us, where we live with animals and plants"
19	• Posted a picture as an example of habitats. • "If a habitat is destroyed with it many animals and plants will be destroyed"
20	• "In a small habitat we can found many living things sharing space"
21	• Posted a picture as an example of habitats. • "A habitat is the house of many living things"
22	• "We must protect habitats and do not destroy them, if we preserved them many species will survive"

Table 7. *Students' contributions second class.*

STUDENTS	How does it contribute to the conversation? Other notes and observations. (Qualitative Data)
21	• Every student in the class shares his or her ideas regarding their understanding that answers the question: Share the ideas that come to your mind after watching the video regarding what is a habitat? • Every student in the class participates actively. First, they wrote a post in Nearpod, and then they read it to the class. • Every student contributes to make a good response to explain what is habitat. • Students 4,8,19, and 22. Draw attention to the importance of habitats protection and preservation.

	• Students 3,5,13,14, and 16. Draw attention to the essential things' habitats provide to living things, in order they live and prospered. • Students 1,6,7,8,12,13,14,15,19, and 21. Posted pictures with examples of different habitats. • Students 1,2,6,7,9,10,12,15,17,18, and 20. Shared explanations of what is a habitat. • Student 10 was absent.

Table 8. *Analysis second class.*

STUDENTS	What would the teacher do to refine, correct, and change their misunderstandings or thinking?
2	The student post on Nearpod: "Animals and plants live in different habitats" *The teacher explains this is actually incorrect. Animals and plants share habitats. -Plants and animals share the same habitat. -Animals and plants that coexist in a habitat form a community. -The community of living things interacts with the non-living world around it to form the ecosystem. -Do you know about a habitat where only animals live with any vegetation around?

3	The student posted: "A habitat is the house of different species, where they live happy, because they have everything they need like: food, water, shelter, and air" *The teacher explains: - Habitat includes the geographic location where plants or animals live in, combined with abiotic features as landscape, water, and air. A habitat provides the needs of its occupants for their survival. -Do you think a habitat is like your house? Do you have to hunt or protect yourself at your home? What about the food chain? Consider that each living thing needs energy which is taken from food. Some animals eat plants and some animals eat other animals.
6	The student posted: "Habitat is a place where living things live is like our house" *The teacher explains: -A house is built to keep families safe, warm and protect. Their designs vary according to the local state and cultural customs. -The habitat provides water, food, shelter and space; but animals are not protected from predators, harsh weather and many other threats. -According to these ideas, do you think that habitats for animals are like houses to us?
9	The student posted: "Habitat is the home of a great variety of species" *The teacher explains: It depends on the habitat -Consider the Polar Habitats, they are very cold, located on the highest latitudes of Earth, during winter they do not receive sun light and during

	summer little sun light. In the South Pole we can find colonies of penguins, leopard seals and whales can be found just off shore. They feed with fish, and krill. By the way krill eat mostly plankton (microscopic type of plants). In the North Pole we can find also larger predator like narwhals and polar bears. Considering this fact Do you think in the Polar Habitat we can find a great variety of species?

4.3 Application of the routine Headlines

This routine consists in asked students to create a headline that pushes them to synthesize their ideas, discern, and be able to identify the key ideas. This routine helps students to sum up larger ideas of a proposed lesson and pay attention to what is essential in the lesson developing in them the habit of look for deeper understanding. The Headline routine works well if the teacher applies it, at the end of a lesson for concluding a topic before moving on to the next theme. When students have previous knowledge. It can also be used at the start of a discussion or also at the end.

Set up, the teacher presents a whole task and then students are asked to write a headline that summarizes or captures a key aspect that they think is significant or important. For this routine I share with the students a video *Volunteer your time,* then I showed them different pictures of different scenes of the video where they have to analyze in order for posting a headline.

Write a headline, the teacher asked to write a headline that captures the core idea of the presented topic. For this class, I asked the students in accordance to what they saw. To look for key aspects that are significant and sum their ideas in a headline that represents the image of each scene.

Share the thinking; students have not only to write the headline and share with the class; they have to support and explain their headline reasoning behind their thinking and reflecting on their understanding. The video presented is one with a message that supports kindness and helping others. The main purpose is to make students participate and engage with the activity.

Table 9. *Students voluntarily interact during the third class.*

Figure 3. **Students voluntarily interact during the third class.**

STUDENTS	How many times do students interact voluntarily during the class? (Quantitative Data)
1	0
2	5
3	7
4	3
5	3
6	0
7	6
8	5
9	7
10	4
11	3
12	2
13	4

How many times do students interact voluntarily during the class? (Quantitative Data)

14	5
15	6
16	5
17	4
18	2
19	3
20	0
21	4
22	3

Table 10. *Students' interventions third class.*

STUDENTS	What does the student say? Is his/her contribution relevant to the conversation? (Qualitative Data)
1	STUDENT ABSENT FROM CLASS
2	• Scene 1, "The elevator of love" • Scene 2, "Mr. and granny" • Scene 3, "Help me!" • Scene 6, "Liar for a good reason" • Whole story, "Ready to help!"
3	• Scene 1, "The man and the woman, story of an elevator" • Scene 2, "The man helps" • Scene 3, "Crossing together" • Scene 4, "The balloon of solidarity"

	• Scene 5, "It is my turn to teach" • Scene 6, "Help the blind man" • Whole story, "the man who changes and improves the world "
4	• Scene 3, "Walking with grandma" • Scene 5, "The man chooses another man" • Scene 6 "Learning to learn"
5	• Scene 1, "Helping the girl" • Scene 2, "The mysterious granny" • Scene 4, "Helping a child"
6	STUDENT ABSENT FROM CLASS
7	• Scene 1, "The man who doesn't help" • Scene 2, "Changing while you help" • Scene 3, "Walking with granny" • Scene 4, "Helping people" • Scene 6, "Pretending to be blind" • Whole story, "Changing lives"
8	• Scene 1, "Help in the elevator" • Scene 2, "Help to cross" • Scene 5, "The decision of helping others" • Scene 6, "Blind help" • Whole story, "Helping persons"
9	• Scene 1, "A man that doesn't know about solidarity" • Scene 2, "The street story"

	• Scene 3, "Granny crosses the street with the help of a kind man" • Scene 4, "Helping people" • Scene 5, "It is my turn to change" • Scene 6, "Can you help me?"
10	• Scene 1, "The serious man" • Scene 2 "The old and the young" • Scene 4, "The rescued" • Scene 6, "The same trick"
11	• Scene, 3 "Helping grandma" • Scene 5, "Also you can teach" • Scene 6, "The blind secret"
12	• Scene 3, "Helping others make you happy" • Scene 6, "The blind man"
13	• Scene 2, "More people for helping" • Scene 3, "The man decided to help" • Scene 4, "A man helping a girl" • Scene 6, "Pretending blindness"
14	• Scene 1, "Waiting for help" • Scene 2, "Helping an old woman" • Scene 3, "Ready for granny" • Scene 4, "Catch the balloon" • Whole story, "working in helping people"
15	• Scene 1, "We learn by example"

	• Scene 2, "Help!" • Scene 3, "Lets walk together" • Scene 4 "The balloon escapes, help!" • Scene 6, "Blind help" • Whole story, "Today is my turn"
16	• Scene 1, "Elevator delay" • Scene 2, "Helping each other" • Scene 4, "Rescuing the balloon" • Scene 5, "Changing more people" • Whole story, "Helping vibes"
17	• Scene 1, "The elevator accident" • Scene 2, "Helping!" • Scene 4, "The child´s balloon" • Scene 6, "Blind help"
18	• Scene 2, "Helping makes you great" • Scene 6, "Finding pleasure in helping others" • Whole story, "Helping people is the key for changing your life"
19	• Scene 1, "Girl running to hug her husband" • Scene 3, "Helping to cross" • Scene 5, "Another person as him"
20	STUDENT ABSENT FROM CLASS
21	• Scene 2, "Helping a man" • Scene 3, "Helping people"

	• Scene 4, "Helping is good"
22	• Scene 2, "The granny"
	• Scene 4, "Another man joins for helping"
	• Scene 6, "Mr. Blind"

Table 11. *Students' contributions third class.*

STUDENTS	How does it contribute to the conversation? Other notes and observations. (Qualitative Data)
19	• Every student in the class participates and give headlines for the different six scenes presented. • Every student in the class participates actively. First, they wrote their headlines by using the option of annotations during the zoom class. • Every student contributes with their thoughts making them visible by giving synthesized ideas that capture the key points of the presented scenes. • Students 2,3,7,8,14,15,16,18, and 21 also provided headlines that sum the whole video. • Students' headlines reveal a good understanding of the video presented, and also shows interesting and imaginative ways of summing and caring the attention to the main points of each scene. • Students 1, 6, and 20 were absent.

Table 12. *Analysis third class.*

STUDENTS	What would the teacher do to refine, correct, and change their misunderstandings or thinking?
19	The purpose of this routine was to engage all the students, making them participate by watching a video *Volunteer your time,* which is about kindness and helping others.
	They watched different scenes and wrote a headline about them. The purpose was to push students to write and sum what they saw in the scene.
	This routine pushes students to summarize by discerning the most important ideas of the scene and ignore the irrelevant ideas, integrating into a headline the important ideas in a meaningful way.
	Because the video presented is one with a message of the good feelings that helping others give to you, the corrections the teacher makes are regarding spelling or grammatical mistakes or incorrect pronunciation when students read their headlines.
	For future classes the teacher can introduce content words, which are words that have semantic content and contribute to the meaning of the sentence in which they occur. Content words can be nouns, adjectives and adverbs and main verbs. Considering that a headline should be carefully
	A headline should be carefully written to catch attention and get that person interested.

4.4 Application of the routine Red Light – Yellow Light (RLYL)

This routine helps students to become more critical about the topics presented. The purpose is that students develop more awareness and an attentive attitude in order to consider if the material presented has veracity. This routine uses the colors of the traffic light. The red color means, students need to stop and question the material in consideration. The green color means, students have a clear understanding, the material is true, and are ready to continue. The yellow color means, students need to slow down and make a pause to analyze the presented material.

Set up, the teacher can select material regarding claims, conclusions or generalizations. For this class I chose a video that explains what fake news is, and then a small quiz activity where some headlines are posted and students have to think carefully and select if the headlines are fake or real.

Look for different color lights, students questioned the veracity of the material. Regarding we are in zoom class mode, previously I handle them three faces with the color red, green, and yellow. They have to show them and support their selections.

Support their selections, students have to provide reasons and support their selections towards the colors they showed.

Share the thinking, the teacher has to question the students in order they share the reasons and present evidence for supporting their selections if the news is fake, true, or need to wonder and investigate about it.

Table 13. *Students voluntarily interact during fourth class.*

Figure 4. **Students voluntarily interaction during fourth class.**

STUDENTS	How many times do students interact voluntarily during the class? (Quantitative Data)
1	2
2	3
3	3
4	4
5	3
6	3
7	3
8	4
9	3
10	3
11	3
12	3
13	3
14	3
15	3
16	3
17	3

How many times do students interact voluntarily during the class? (Quantitative Data)
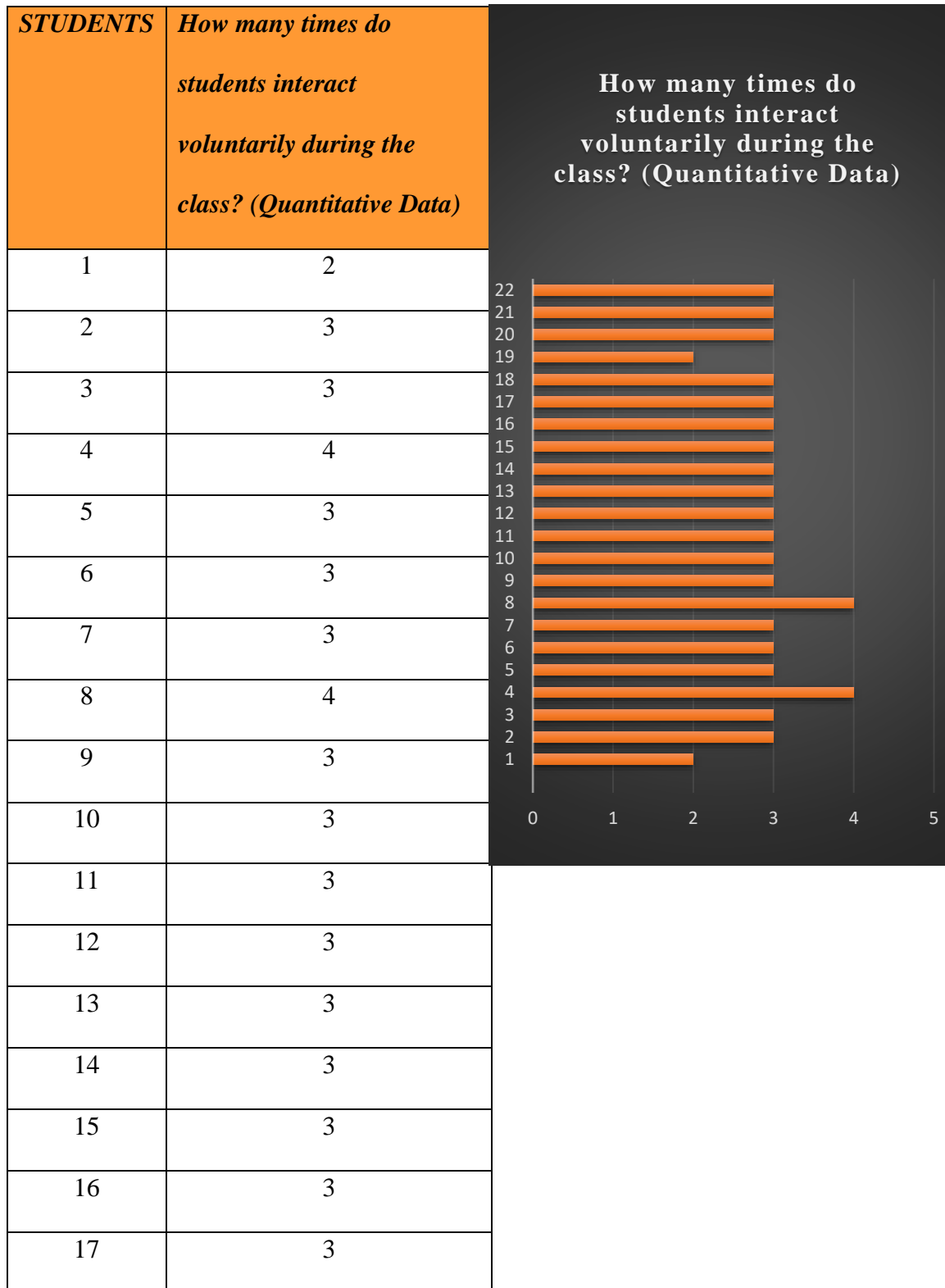
18	3
19	2
20	3
21	3
22	3

Table 14. *Students' interventions fourth class.*

STUDENTS	What does the student say? Is his/her contribution relevant to the conversation? *(Qualitative Data)*
1	- Voted for every single headline. - Support headline 2, with a green face, "many old people run marathons they are healthy and strong enough"
2	- Voted for every single headline. - Read headline 8 - Support headline 17 with a yellow face explaining that "all the other news regarding Canada were fake, so maybe this one is also fake, I need to check"
3	- Voted for every single headline. - Read headline 21. - Supported headline 2, with a yellow face, "it can be true if you have a healthy life with good habits a person can live a lot and be in good shape, I need to doble check"
4	Voted for every single headline.

	• Read headline 4 • Read headline 15 • Support headline 8, with a green face, "if a mom gets too angry is capable to call 911 to stop her child from playing video games"
5	• Voted for every single headline. • Read headline 5 • Support headline 6 with a green face, "this can be true you can get stuck if you lick something frozen, it happens to me once with dry ice"
6	• Voted for every single headline. • Read headline 11 • Support headline 1 with a red face, "there is no scientific evidence that ghosts exist, and that they eat bagels sounds like fool"
7	• Voted for every single headline. • Read headline 13 • Supports headline 7, with a red face, "cellphones are inventions of recent years"
8	• Voted for every single headline. • Read headline 14 • Support headline 10, with a yellow face, "squirrels like mice can be intruders and make strange noises" • Support headline 11, with a red face, "cookies can't be healthy, they have lots of sugar"

9	• Voted for every single headline.
	• Read headline 16
	• Support headline 19, with a red face, "I hope this never happens but in a year is impossible"
10	• Voted for every single headline.
	• Read headline 9
	• Support headline 18, with yellow face, "maybe lots of animals specially pets are too fat, I need to doble check"
11	• Voted for every single headline.
	• Read headline 17
	• Supported headline 20, with a yellow face, "this man is very unlucky, maybe is true I need to doble check"
12	• Voted for every single headline.
	• Read headline 20
	• Support headline 12, with a red face, "snakes don't have limbs and the news is absurd"
13	• Voted for every single headline.
	• Read headline 7
	• Support headline 21, with a green face, "many countries are working to prevent contamination"
14	• Voted for every single headline.
	• Read headline 2

	• Support headline 11, with yellow face, "cookies can have healthy ingredients like oatmeal and use Splenda instead of sugar"
15	• Voted for every single headline. • Read headline • Support headline 4, with a red face, "the photo looks that the man was from the 1800´s and TV doesn't exist so long ago"
16	• Voted for every single headline. • Read headline 1 • Support headline 15, with a red face, "a bear can easily eat a little penguin"
17	• Voted for every single headline. • Read headline 3 • Support headline 9, with a yellow face, "I look at the date of the article is on October 2017, so this news can be real, and usually president's visit many places"
18	• Voted for every single headline. • Read headline 6 • Support headline 16, with a red face, "cats do not whistle maybe other noises but not this sound"
19	• Voted for every single headline. • Support headline 14, with green face, "if a mother screams angry could scare anybody, and also bears"
20	• Voted for every single headline.

	• Read headline 10 • Supported headline 13, with a yellow face, "this headline could be an excellent news because I do not like Mondays and one more day of weekend will be incredible, but I think is a joke"
21	• Voted for every single headline. • Read headline 18 • Support headline 9, with yellow face, "I need to doble check if this city really exists"
22	• Voted for every single headline. • Read headline 19 • Support headline 14, with a yellow face, "maybe a mom can shout so strong buy I need to double check"

Table 15. *Students' contributions fourth class.*

STUDENTS	How does it contribute to the conversation? Other notes and observations. (Qualitative Data)
22	• Every student in the class participates and give their vote, by showing the red, yellow or green face, according to their beliefs regarding the different headlines presented. • Every student in the class participates actively, and enjoyed the action of voting.

	• Every student contributes with their thoughts, making thinking visible, by giving their supports and reasons why they vote with red, yellow or green face.
	• Students 2 to 22 read the different headlines.
	• Students show engagement during the activity, and all the class participates and collaborates.

Table 16. *Analysis fourth class.*

STUDENTS	What would the teacher do to refine, correct, and change their misunderstandings or thinking?
19	*The teacher presented first a video that explains what is fake news? Then a fun quiz was presented with three headlines, 2 fake and one true. Some headlines might be a bit obvious as being fake, *The teacher explains the following: There's so much fake news online, but there are some media literacy skills you can use to learn to view what you read from a critical point of view. Some facts to consider are: -Who wrote this? -Is it a website you know and trust? -Is this the only place you'll find this story? If no one else knows about it, then it might be fake. -Who might benefit or be harmed by this message? -Is it a comedy or satire website?

	-Is this credible and what makes you think that? If it's a story about a miracle cure for a major disease, be skeptical.
	-How does it make you feel? Fake stories try to get a strong reaction so if the story you're reading makes you angry, it could be fake.
	The activity's purpose is to engage the whole class to participate and vote, but when students vote they have to support their election. The teacher pushed them to speak using the English language. The whole class was so engaged with the activity that they effort to use English and express their thoughts.
	Corrections regarding pronunciation and incorrect vocabulary or sentence agreement were made during students' interventions.
	The discussion in the whole class was established into the headlines that offer signs of possible non-truths.

Table 17. *News Headlines used for the application of the routine Red Light – Yellow Light.*

News headlines presented
1. Ghost is caught stealing bagels from local bakery.
2. 101-year-old man finished marathon
3. Werewolf buys $500 glasses so he can see the full moon
4. Sir John A. Macdonald said "do not believe everything you see on TV!"
5. 7-year-old lives on Mars, has amazing space garden.
6. Boy rescued after tongue get stuck to frozen pole.
7. 500 – year- old cellphone found in ancient Rome temple.
8. Boston mom calls 911 over son´s video game habit

9. President of Canada visits school in Nova Scotia.

10. Home intruder turns out to be a squirrel after woman calls police over strange noises.

11. Researchers say cookies are world´s healthiest snacks.

12. Snake taught to tap dance for competition brings home gold.

13. Mondays cancelled until further notice.

14. Woman uses "mom voice" to scare away bear from porch.

15. Polar bear and penguin have a fight – penguin wins!

16. Cats learn to whistle. Wins Grammy for best new artist!

17. Canadian capital Calgary has highest number of puppy adoptions in country.

18. World´s fattest hedgehog goes on a diet.

19. Officials say Niagara Falls will be out of water by next year.

20. Man bitten by a shark, bear and snake had odds of 893 quadrillion to one.

21. Canada bans all balloons along with plastic straws.

4.5 Application of the routine Tug – of – War

This routine helps students to develop their strength on supporting evidence presented, order their arguments from weakest to strongest and be able to defend their point of view.

Set up, the teacher has to choose a topic with two contrasting sides and introduce the dilemma. For this class I selected a short story tale, with a different plot from the original tale. *The true story of the three little pigs,* after watching the video that tells this story, students were divided in two groups. The group *piglets* defend the point of view of the pigs. The group *wolves* defend the point of view from the wolf.
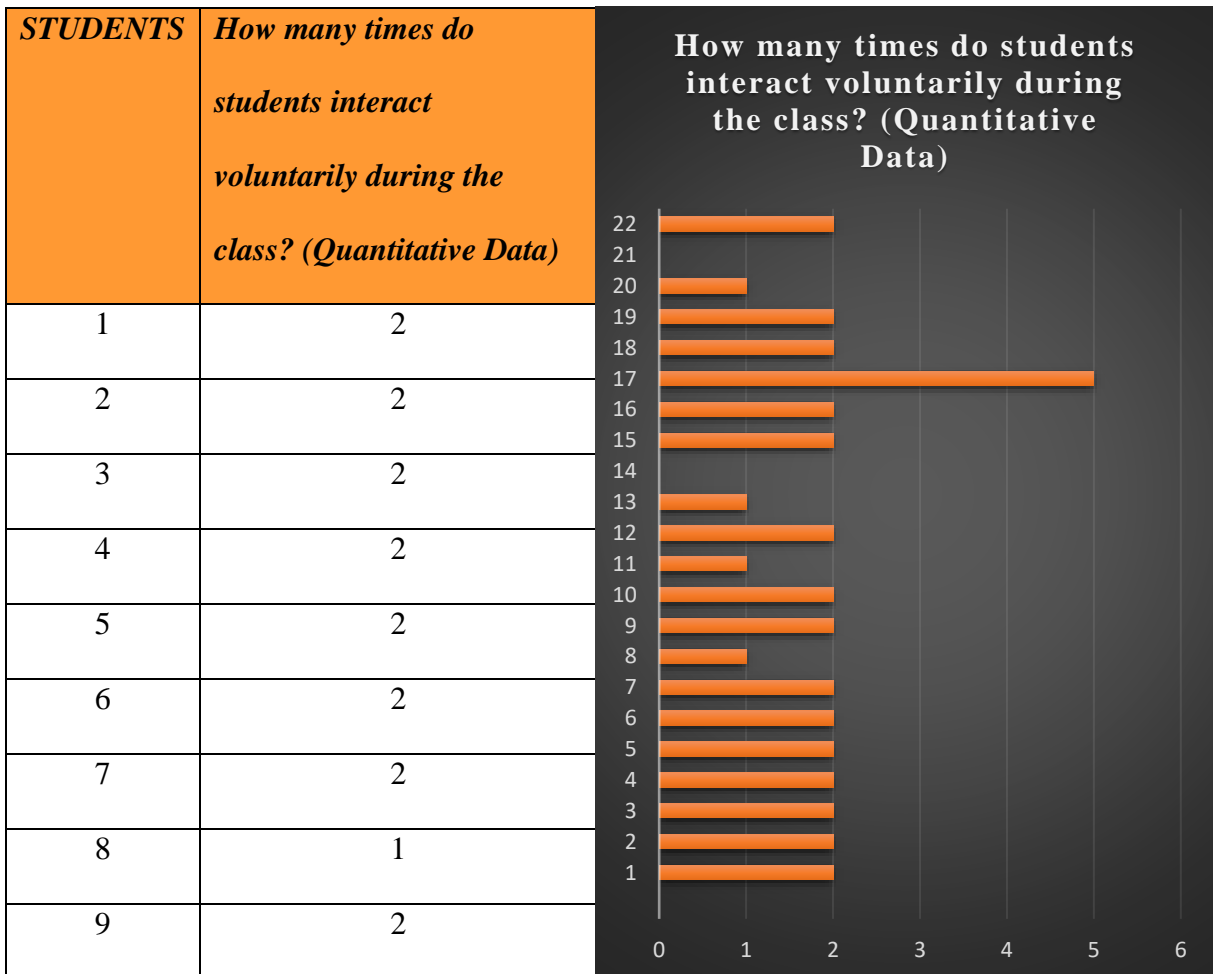
Consider the tugs, piglets' group as well as wolves' group, were divided into break up rooms, here they prepared for the debate so they discussed and get ready with their tugs or reasons that support each position.

Ask what if? What about? These questions pushed them to think better in their positions, and provide more explanations towards the point they defend during the debate.

Share the thinking, while the activity, and after this activity, students were asked about what they think about the dilemma, and if their points of view changed after the arguments presented.

Table 18. *Students voluntarily interact during fifth class.*

Figure 5. **Students voluntarily interact during fifth class.**

STUDENTS	How many times do students interact voluntarily during the class? (Quantitative Data)
1	2
2	2
3	2
4	2
5	2
6	2
7	2
8	1
9	2

10	2
11	1
12	2
13	1
14	0
15	2
16	2
17	5
18	2
19	2
20	1
21	0
22	2

Table 19. *Students' interactions fifth class.*

STUDENTS	What does the student say? Is his/her contribution relevant to the conversation? (Qualitative Data)
1	• Break up room - wolves, "I think a good argument is that the wolf is a predator and like every living thing he needs to eat" • Debate, "the pigs were lazy, their houses were weak and they prejudge the wolf"
2	• Break up room piglets, "I think the pigs were careful, and do not let the wolf entered"

	• Debate, "the little pigs were afraid, the wolf is a predator, and they didn't know the wolf real intentions"
3	• Break up room piglets, "one fact is that the wolf is a carnivorous" • Debate, "the pigs were afraid, each one was alone and the wolf was not clear when he asked for a cup of sugar, so the pigs were terrified"
4	• Break up room piglets, "I think a good message is prevent first and do not regret later, this is what the pigs did, they tried to prevent" • Debate, "the pigs really didn't know the wolf wanted sugar"
5	• Break up room piglets, "the pigs were helpless" • Debate, "the wolf is big in size if we compare to the pigs, the fact he is a predator scared them a lot"
6	• Break up room wolves, no participation • Debate, "the pigs were prejudiced"
7	• Break up room wolves, "I think the pigs were so lazy that their houses were too weak, that when the wolf sneezes the houses went down" • Debate, "the pigs were lazy and prejudiced all the time"
8	• Break up room piglets, "the intentions of the wolf could be mean, because he is a predator" • Debate, no participation
9	• Break up room piglets, "the boys maybe will say that the pigs are rude because they never asked the wolf what he really wants, so is important to think in some justifications"

	• Debate, "if someone goes to your door asking for sugar and you didn't know the person you will not open the door, that is what the pigs did, they were cautious"
10	• Break up room piglets, "we can say that at the end the pigs died, because of the wolf" • Debate, "the two first pigs tragically died, the wolf destroyed their houses and then took advantage of the situation and ate them"
11	• Break up room piglets, "we have to consider that the wolf was a strange for the pigs, the pigs didn't know his intentions" • Debate, no participation.
12	• Break up room piglets, "we can say that the wolf was not clear he didn't ask for the cup of sugar as soon as he arrived to each pig´s house" • Debate, "the wolf was sick with a strong cold, but he could sneeze into another direction instead of aim the houses and destroyed them"
13	• Break up room wolves, "we have to say that the wolf was sick, he couldn't control his sneezes" • Debate, no participation.
14	STUDENT ABSENT FROM CLASS
15	• Break up room piglets, "we can say that the pigs just defend from the wolf" • Debate, "the pigs just tried to protect themselves, they were not rude with the wolf, they were careful"

16	• Break up room piglets, "we have to be careful because the wolves will say that the wolf was sick"
	• Debate, "the pigs were at their homes, and they didn't know that the wolf was sick"
17	• Break up room wolves, "first we can say that the wolf just was asking for a cup of sugar for a birthdays cake for his granny"
	• Debate, "the wolf didn't have options first, he couldn't find sugar, he lived in the forest, that is why he asked for sugar to his neighbors the pigs"
	• "The wolf went to knocked the door of the pigs with good intentions, he loved his granny he just wanted a cup of sugar"
	• "The wolf couldn't control the sneezes; he was very sick"
	• "The piglets' group are just repeating over and over similar arguments to defend the pigs, the wolf couldn't sneeze in another direction because the sneezes came so fast and strong, the wolf is innocent"
18	• Break up room wolves, how we are going to say? First let's say the wolf was sick.
	• Debate, the wolf was innocent, he was sick and just take the opportunity when he ate the dead pigs.
19	• Break up room piglet, "we can say that the pigs are herbivores and are preys, not predators"
	• Debate, "wolves have a bad fame they always want to eat pigs. In the bottom of his heart, he wanted to eat the pigs"

20	• Break up room wolves, "the wolf was not hungry he just wants a cup of sugar, we can say that he loves his granny so much" • Debate, no participation
21	STUDENT ABSENT FROM CLASS
22	• Break up room wolves, "I support the idea that if someone is sick with cough you couldn't control the sneezes" • Debate, "the wolf was sick and maybe when he saw the opportunity, he took it and ate the dead pigs, he didn't kill them on purpose, it was an accident"

Table 20. *Students' contributions fifth class.*

STUDENTS	*How does it contribute to the conversation? Other notes and observations.* *(Qualitative Data)*
20	• Every student in the class showed engagement in the purposed activity, they decided to go in groups, boys vs girls, thus the boys defend the wolf and the girls the pigs (wolves vs pigs) • Every student in the class participates actively, and enjoyed the short tale. • Most of the students contributes with their thoughts, making thinking visible, by giving their supports and reasons for defending the wolf or the pigs.

	• Student 17 participates more during the debate, rejecting and objecting the defense of the piglets, and giving strong arguments to defend the wolf.
	• Students 14 and 21 were absent from the class.

Table 21. *Analysis fifth class.*

STUDENTS	What would the teacher do to refine, correct, and change their misunderstandings or thinking?
20	*The Teacher explains, how students can explore characters' motivations? Character motivations are important because it tells the reader or the spectator, why the character might be making the decisions they do. Characters' actions are consistent, even when they are opposing, and ensures that even their worst decisions can be traced back to the motivation driving the plot forward. Build out their background story, so they can have a clear idea of how they behave during the story. The first purpose of this activity is to practice listening comprehension, in order for students to develop the ability to understand what they heard and relate in some way to be able to debate or discuss the main issue of the short story *The true story of the three little pigs*. Students have to defend the actions of the wolf and the piglets. Encouraging students to reason about the dilemma of fairness presented in the story.

	The teacher corrects the English: pronunciation, sentence agreement, vocabulary, etc. And clarify any misunderstanding regarding the short tale plot.

Chapter V: Data Analysis, Findings and Results

The analysis of the results exposed that thinking routines work for improving student's engagement. During the whole week that the teacher applied them, as it is shown in the charts that portrait the results of the question: How many times do students interact voluntarily during class? (Quantitative data) As teachers, we need to improve students' engagement and motivation. After applying thinking-routine activities the teacher evidence learners with more predisposition to communicate their thoughts and ideas to their peers, and the teacher. And the most important thing students start to actively engage in their learning. "Thus, thinking skills are the mental processes we use to do things like solve problems, make decisions, ask questions, make plans, pass judgments, organize information, and create new ideas. Often we're not aware of our thinking – it just happens automatically." (Moore, 2015, p. 376)

After reflecting on the data, some patterns were identified. First, students' engagement was limited in some activities that require speaking, some students whose English language is weak did not participate in the first class, (Table 1), but when thinking routines become part of everyday classroom activities, students' engagement improved. On the first day with the routine *see – think – wonder*, some students that are strong in their communication shared their thoughts, contributed with outstanding conclusions, and make connections between the photo they observed and the video they watched, but some students that are not so strong in their speaking skill stayed in silence. (Figure 1) But, on the second day applying these routines, specifically the routine *chalk talk,* every student contributes to making a good response to explain what is habitat. (Figure 2).

While applying the strategies it was observed that the teacher guides students thinking during the different classes encouraging students to participate, discuss, inquire, interact, etc. (Tables 8,12,16,21). The teacher noticed positive changes occurred during the class and in students' engagement. The Class activities became more entertaining and outstanding. For

example, during the class of the routine *red light- yellow light* the whole class participated. Every student in the class contributed and gave their vote, by showing the red, yellow, or green face, according to their beliefs regarding the different headlines presented. Every student contributed with their thoughts, making thinking visible, by giving their supports and reasons why they voted with a red, yellow, or green face.

It was observed that students began to connect ideas and provide orientations that facilitated them to go deeper into the contents they studied. For example, during the routine *chalk talk*, the purpose was to dig deeper into the theme of the class*, Habitats*, every student in the class participates actively. First, they wrote a post in Nearpod, and then they read it to the class. Each student contributes by making responses to explain what is habitat. Some of them draw attention to the importance of habitats protection and preservation, and to the essential things' habitats provide to living things, in the order they live and prospered.

Few students also shared their misunderstanding (Table 8) as students 2-3-6-9 for example, student 2 post on Nearpod: Animals and plants live in different habitats. The teacher explains this is actually incorrect. Animals and plants share habitats. Plants and animals share the same habitat. Animals and plants that coexist in a habitat form a community. The community of living things interacts with the non-living world around it to form the ecosystem. Finally, the teacher asked with the purpose of a reflective answer from student 2: Do you know about a habitat where only animals live with any vegetation around?

During classes students became protagonists, and they strove to express themselves using the English language to share their thoughts. For example, during the routine *tug-of-war*, where students watched a video of the story of the *Three Little Pigs* with a different plot from the traditionally known. They had to debate and they took sides, most of the students contribute with their thoughts, making thinking visible, by giving their supports and reasons for defending the wolf or the pigs. The debate, reject and object according to the sides they chose, *The piglets,*

and the Wolf. One condition previously established was to use the English language all the time.

The application of thinking routines provides opportunities to practice English and support student's communication. While using thinking routines students were challenged to used English, some routines like *see-think-wonder* provide the opportunity to express themselves orally, while for example, the routine *headlines* allow them to express themselves in a written way.

In addition, during class students learn some new words and their concepts. For example, during the class of *Habitats,* using the routine *chalk talk*, students build on their knowledge while they share the concepts, they construct by themselves and shared in Nearpod, they also use new vocabulary. Some vocabulary learned was: habitat, ecosystem, species, endangered.

It is important to mention that even though it was an ESL class, some students used their L1 in activities that required deep thinking, but this did not go in opposition to the teachers' objective to improve students' engagement and foster their learning. For example, during the routine *tug-of-war*, some students used their L1 when they were assigned in break-up rooms, but they consolidated interesting and strong ideas for the debate they had later using only the English language.

The application of thinking routines exposes students' thoughts, beliefs, opinions, and also some misconceptions. For example, in the *see-think-wonder* routine, some ideas students had regarding Massai culture were not correct, because they lack information about the Massai culture. This routine was applied as an introduction to a new theme regarding different tribes like the Massai. Thus, it allows the teacher to clarify and teach some main facts of the Massai people in posterior classes.

During group activities students debated with each other, shared their ideas, dialogue for making decisions to reach the best criteria together. For example, during the activity with the routine *tug-of-war*, they agreed on common criteria when they were divided into break-up rooms, and later, students debated according to the decisions they built up together previously.

As a teacher, I can affirm that making thinking visible through the application of thinking routines, allow me to witness my students' understanding as well as some misunderstandings and errors. "When we think about our thinking, we are not only reviewing what we have done or the products of thinking we generated but also examining the processes we used or didn't use" (Ritchhart, 2015, p. 69). During all the week of classes using thinking routines, I evidenced my students' thoughts, ideas, criteria, and understanding of all the topics presented.

I consider all this information valuable because it provides the teacher's first students thinking visible, if you know what they think no matter what sometimes this thinking is incorrect, you can give accurate feedback that helps them to achieve learning. Thinking routines activities help me to identify areas of strengths and weaknesses of my students and know if I have to reinforce their strengths or address their weaknesses. For example, during the routine Chalk Talk, some students posted good definitions of habitat, while others posted incorrect definitions like student 9 posted: Habitat is the home of a great variety of species. The teacher explains: It depends on the habitat and gives an explanation of the Polar habitats; this habitat does not have a great variety of species.

Chapter VI: Conclusions

The results indicate that the application of thinking routines in the English language sixth-grade class represents a challenge for students as well as, for the teacher. For the students sometimes their lack of vocabulary to express themselves using just the English language

signifies to them more effort. For the teacher, the extra work represents applying these routines, because it was the first time using them. The virtual mode in which classes are delivered regarding the pandemic, also presented a challenge because the teacher has to adapt these routines into the virtuality.

6.1 Limitations

For this particular study, the first limitation faced was the long period that the IRB took for approving this project. The limited time frame to accomplish this study limited the time of the application of thinking routines to just one week.

Another limitation was the virtual mode, in which classes were delivered during the application of the project. Due to the pandemic, we are facing, the teacher had to adapt the routines into the virtuality. Thinking routines were developed to work in presential classes, sometimes in groups or pairs. The virtual classes restricted at some point their application, modifications, and adaptations were needed. For example, in the routine chalk talk, instead of using a big paper where students write their thoughts, the teacher uses the platform Nearpod, provides the students an ID so they can go into it, and posted their ideas regarding the question asked. Finally, the last limitation worth to mention is that the teacher in charge of delivering these classes and applying thinking routines to the students of the sixth grade C, was also the researcher.

5.3 Recommendations

According to the results, the following recommendations are suggested:

First, to apply thinking routines to support student's development. Because these routines consist of a few steps and are easy to learn and teach. Therefore, it is essential to have in mind that thinking routines are not content. They are helpers for exploring the content. Thus, teachers

have to deliver the content according to the needs and the curriculum previously established. Second, the implementation of thinking routines in earlier stages could shape students thinking and way of learning. Take always in considerations that thinking routines are very flexible, and teachers can create or adapt thinking routines according to their needs and the content. Third, teachers should comprehend that the application of thinking routines is a process that needs practice, so it demands time; consequently, teachers need to be patient, and persistent. Finally, I recommend sharing and implementing in classes.

5.4 Final conclusions

This study points to the importance of supporting students' voice and choice, by making students' thinking visible through the implementation of thinking routines during classes.

As a teacher, is essential to value the importance of thinking, and to make students realize that they should go far beyond. For students, is vital that they understand that learning is not just retelling information, or having a good grade, but it is realizing the importance of developing thinking skills.

The application of thinking routines gives to students the opportunity to demonstrate and question their knowledge; as well as thinking routines motivated students to participate in classes, even if they were not accurate to express their thoughts in the English language. Besides, students learn more from the collaboration of thinking while working in class. With these thinking tools, students have the opportunity to link what they learn with their environment and with real-life situations.

Concluding, thinking routines could become one approach, in which English language teachers will be able to create richer classroom environments where more students participate and engage, while they nurture a culture of creative and critical thinking.

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FIGURE INDEX

APPENDIX A. Research Protocol Approval

UNIVERSIDAD SAN FRANCISCO DE QUITO USFQ

Oficio N°. CE-017-2021-CEISH-USFQ
Quito, 28 de abril de 2021

Señora
Valeria Cortez
Investigadora Principal
Universidad San Francisco de Quito USFQ
Presente

De nuestra consideración:

El Comité de Ética de Investigación en Seres Humanos de la Universidad San Francisco de Quito "CEISH-USFQ", notifica a usted que analizó la investigación "*Using Thinking Routines to support students´ Voice and Choice, 2021*" con código 2021-055TPG determinando que es "*exenta*", de acuerdo con las regulaciones internacionales que rigen las investigaciones en seres humanos.

El CEISH-USFQ otorga este certificado, toda vez que la investigación cumple con uno o más criterios elegibles para una exención:

Investigación con recopilación y/o análisis de datos anonimizados obtenidos de registros existentes.	☐
Investigación con recopilación y/o análisis de datos disponibles públicamente.	☐
Investigación con recolección de datos de manera anonimizada.	☐
Investigación que evalúe anónimamente programas públicos o prácticas educativas.	☑
Investigación que evalúe anónimamente el sabor y/o calidad de alimentos, o estudios de aceptación del consumidor	☐

Datos de la investigación:

Título del estudio	Using Thinking Routines to support students´ Voice and Choice, 2021
Código CEISH-USFQ	2021-055TPG
Área de Investigación	Ciencias de la Educación
Duración de la Investigación	Dos (2) meses
Investigadores e instituciones participantes	**IP:** Valeria Cortez **DT:** Janine Berger

Documentación de la investigación:

	Documentación	**Versión**	**Fecha**	**# Pág.**
1	Protocolo de investigación	I2.0	27 abr 2021	07
2	Asentimiento informado menores de edad	E2.0	27 abr 2021	02
3	Instrumento: Chart for collecting data form games and projects class.	I1.0	12 abr 2021	13
			Total	**22**

Este certificado tiene una vigencia dos meses, desde **03 de mayo al 02 de julio del 2021**.

La investigación deberá ejecutarse de conformidad a lo descrito en el protocolo de investigación presentado al CEISH-USFQ. Cualquier modificación a la documentación antes descrita, deberá ser presentada a este Comité para su revisión.

El CEISH-USFQ deslinda cualquier responsabilidad en cuanto a la veracidad de la información presentada.

Atentamente,

Iván F. Sisa Caiza, MD, MPH, MS
Presidente CEISH-USFQ
comitebioetica@usfq.edu.ec
(593) 2 297-1700, Ext. 1149
cc. Archivos digitales y físicos   - IS/ammt

APPENDIX B. Asentimiento informado para estudiantes

UNIVERSIDAD SAN FRANCISCO DE QUITO USFQ

Formulario de Asentimiento Informado

Título de la investigación: _Using Thinking Routines to Support Students´ Voice and Choice_
Organización del investigador: _Universidad San Francisco de Quito_
Nombre del investigador principal: _Valeria Anelise Cortez Ramos_
Datos de localización del investigador principal: vcortez@estu.usfq.edu.ec
Co-investigadores : _x_

Población menor de edad: Edades entre 10-11

Hola. Mi nombre es **Valeria Anelise Cortez Ramos** y trabajo en el **Liceo José Ortega y Gasset.**
Estamos realizando un estudio para **Analizar el efecto de utilizar Rutinas de Pensamiento en las clases Games and Projects** (en el idioma inglés) y para ello queremos pedirte que nos apoyes.

Tu participación en el estudio consistiría en formar parte de una semana de instrucción en el horario normal que comúnmente recibes clases de inglés. La fecha se te dará a conocer de manera oportuna.

Toda la información que nos proporciones nos ayudará a analizar la mejor estrategia para desarrollar clases utilizando rutinas de pensamiento en el idioma inglés, y se utilizará sólo para fines de investigación científica-académica.

Te solicito que me autorices revisar las grabaciones de nuestras clases para conocer las formas de participación los estudiantes utilizan en el curso de "Games y Projects" Esta información será confidencial, es decir no diremos a nadie tus respuestas y tu participación y opiniones. Sólo lo sabrán las personas que forman parte del equipo de este estudio.

Si aceptas participar, te pido que por favor pongas un visto (✓) en el cuadrito de abajo que dice "Sí quiero participar" y escribe tu nombre.
Si entiendes todo lo que se te ha explicado y aceptas participar en este estudio, debes decírselo al investigador, quien solo entonces iniciará las actividades planificadas para recolectar tus datos. Tu aceptación se tomará como tu consentimiento.

Si no deseas participar, no pongas ningún visto (✓), **ni** escribas tu nombre.

☐ Sí quiero participar   Nombre: _____

APPENDIX C. Asentimiento informado para autoridades

UNIVERSIDAD SAN FRANCISCO DE QUITO   USFQ

FORMULARIO DE CONSENTIMIENTO INFORMADO PARA AUTORIDADES
Comité de Bioética, Universidad San Francisco de Quito
El Comité de Revisión Institucional de la USFQ
The Institutional Review Board of the USFQ

Título de la investigación: Using Thinking Routines to Support Students´ Voice and Choice at Liceo José Ortega y Gasset, during the school year 2020-2021.

Uso de Rutinas del pensamiento para estimular la voz y elección de los estudiantes en el colegio particular Liceo José Ortega y Gasset, durante el año lectivo 2021-2021

Organizaciones que intervienen en el estudio: Universidad San Francisco de Quito
Investigador Principal: Valeria Anelise Cortez Ramos, estudiante de la maestría de enseñanza de inglés como segundo idioma de la USFQ.

valikacortez@gmail.com
vcortez@estu.usfq.edu.ec

DESCRIPCIÓN DEL ESTUDIO
Introducción
Como profesores nuestra meta es presentar clases de una forma accesible que facilite a nuestros estudiantes un claro entendimiento de la información presentada. Para lo cual los maestros debemos considerar las diferentes preferencias y formas de aprendizaje y debemos buscar la manera de captar la atención y la activa participación de nuestros estudiantes. En mi experiencia como maestra al compartir con colegas diferentes experiencias en el aula, y aún más durante la pandemia que hemos afrontado, he evidenciado en ocasiones estudiantes pasivos, que no participan ni aportan a la clase, desinteresados en su aprendizaje. Es por este motivo que se propone el siguiente proyecto de investigación que consiste en el uso de rutinas del pensamiento con el objetivo de que su aplicación resulte en clases con estudiantes interesados que participen activamente, demuestren lo aprendido y aporte a la enseñanza del idioma inglés.
Propósito del estudio
El objetivo del estudio es analizar el efecto del uso de rutinas del pensamiento en clases de inglés como lengua extranjera y conocer si estas están siendo efectivas en la participación activa de los estudiantes durante clases y aportan al proceso de aprendizaje-enseñanza del idioma inglés.
Descripción de los procedimientos para llevar a cabo el estudio
Se informará a los estudiantes de sexto de básica EGB paralelo C, sobre el proyecto de investigación que se llevará a cabo por el período de una semana regular de clases y ellos decidirán si desean participar en las clases destinadas al mencionado proyecto esto se lo hará a través de una encuesta en un documento de Google Forms a través de la plataforma Classroom, utilizada regularmente durante

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clases. Si ellos no desean participar pueden dejar la clase sin ningún problema. Su participación no afectará su rendimiento académico. Al final de la semana, el investigador principal analizará las clases grabadas a través de la plataforma Zoom. Para ver el resultado obtenido en los estudiantes y analizar si están siendo efectivas en el proceso de enseñanza-aprendizaje.

Riesgos y beneficios

Los riesgos de este estudio son mínimos. Todos los datos recopilados serán anónimos y ninguna información de los estudiantes será parte de este estudio. Los profesores se beneficiarán de la oportunidad de saber si las rutinas de pensamiento que se usan en el proceso de enseñanza son efectivas y ayudan a una participación activa de los estudiantes que refleja lo aprendido. Los estudiantes se beneficiarán al saber que sus percepciones ayudarán a sus profesores a implementar el uso de rutinas del pensamiento, como un método de enseñanza del idioma inglés.

Confidencialidad de los datos

Solo el investigador principal de este estudio tendrá acceso a los datos recopilados, que se almacenarán en una carpeta personal hasta que se complete el estudio. Una vez finalizado el proyecto, los datos se archivarán en la computadora personal del investigador principal y los videos serán eliminados en su totalidad.

Derechos y opciones del participante

Usted puede decidir retirar su consentimiento como autoridad de la institución en cualquier momento durante el estudio. Usted tiene derecho a saber qué información y datos se recopilarán, como se utilizarán y a la confidencialidad de la información recopilada. Si usted tiene preguntas sobre el estudio, comuníquese con el investigador principal.

Información de contacto
Si usted tiene alguna pregunta sobre el estudio por favor envíe un correo electrónico a Valeria Cortez Ramos valikacortez@gmail.com vcortez@estu.usfq.edu.ec
Si usted tiene preguntas sobre este formulario puede contactar al Dr. Iván Sisa, Presidente del CEISH-USFQ USFQ, al siguiente correo electrónico: comitebioetica@usfq.edu.ec

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P á g i n a 2 | 3

Consentimiento informado para participar en el estudio	
x **Acepto voluntariamente que los estudiantes de la institución participen en esta investigación y me entregaron una copia de este formulario.**	
☐ No acepto participar en esta investigación.	
Nombres y apellidos de la autoridad: Dra. María Elena Posso Rivera	Fecha: 07/05/2021
Firma /huella del participante:	CC: 1700529207
Nombres y apellidos del investigador: Valeria Anelise Cortez Ramos	Fecha: 07/05/2021
Firma del investigador:	CC: 0603014028
Revocatoria del consentimiento	
Nombres y apellidos de la autoridad:	Fecha
Firma /huella del participante	CC
Nombres y apellidos del investigador:	Fecha
Firma del investigador	CC:

APPENDIX D. Material used for the five thinking routines applied in this study

Routine See- Think- Wonder

Photo:

Google. (n.d.). Google search.
https://www.google.com/search?q=photo%2Bmassai%2Bchildren&sxsrf=AOaemvIH7
93R0HKpLFBjtuCRu5nKnA3Hvw%3A1630812851667&source=lnms&tbm=isch&sa
=X&ved=2ahUKEwjLut-l8-
byAhWYQzABHR2tCVwQ_AUoAXoECAEQAw&biw=1366&bih=625#imgrc=W9R
N-_ecCDHogM.

Video – Massai children:

operationblessing. (2013, August 28). *Maasai life through a child's eyes*. YouTube.
https://www.youtube.com/watch?v=XQ7wV9DeEqw.

Routine Chalk Talk

Video – Habitats:

SBTNReview. (2020, May 1). *Exploring habitats*. YouTube.
https://www.youtube.com/watch?v=FIsgHW11nOs.

Routine Headlines

Video – Volunteer your time:

YouTube. (2019, February 20). *Best inspiring animated short film volunteer your time.*
YouTube. https://www.youtube.com/watch?v=DtujJRFuIi0.

Routine Red Light – Yellow Light

Video – Fake News:

YouTube. (2020, May 5). *What is fake news? tips for spotting them - fake news for kids.*
YouTube. https://www.youtube.com/watch?v=D0Cd9-eJ-No.

Quiz – Fake News:

CBC/Radio Canada. (n.d.). *Fact or fake - can you tell the difference online? | CBC Kids*. CBCnews. https://www.cbc.ca/kidscbc2/the-feed/fact-or-fake-can-you-tell-the-difference-online.

Routine Tug of War

Video True Story of the Three Little Pigs:

YouTube. (2015, January 20). *The true story of the 3 little pigs by a.wolf as told to Jon Scieszka. grandma annii's Story time*. YouTube. https://www.youtube.com/watch?v=vB07RfntTvw&list=PLO7QcrludwUdJl0DKU0aqBqoxL1BF3pv9.