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Critical Thinking Skills Training Following Bloom's Taxonomy

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Abstract

The main purpose of this action research was to identify the impact of critical thinking skills training in English Language Teaching and Learning contexts in a group of eighth graders from three different public schools in Colombia. Ninety-three students from Lorenza Villegas de Santos in Medellin, Francisco Manzanera Henriquez in Girardot, and Kilometro Doce School in Monteria participated in the study. An initial needs analysis showed students' difficulties performing skills such as reasoning, problem solving, making judgments and drawing conclusions. Researchers addressed that situation by implementing a training which consisted of three stages. First, a critical thinking profile that aimed at measuring the students' critical thinking skills entry level. Second, a critical thinking skills training which consisted of implementing lesson plans incorporating strategies and tasks based on Bloom's Taxonomy. Third, a critical thinking verification phase that measured the impact of the training. Data was collected through tests, artifacts, field notes and a students' questionnaire. The results showed a progress in terms of collaborative work, EFL proficiency and critical thinking skills development after implementing the training proposed in the study.

Key words: *Bloom's taxonomy, critical thinking, critical thinking skills training, drawing conclusions, making judgment, problem solving, reasoning.*

Resumen

El objetivo principal de esta investigación-acción era identificar el impacto del entrenamiento de habilidades de pensamiento crítico en contextos de enseñanza-aprendizaje del idioma Inglés en un grupo de estudiantes de octavo grado de tres colegios públicos en Colombia. Noventa y tres estudiantes de las Instituciones Lorenza Villegas de Santos en Medellín, Francisco Manzanera Henríquez en Girardot y Kilometro Doce en Montería participaron en el estudio. Un análisis de necesidades inicial mostró dificultades de los estudiantes en el desempeño de habilidades tales como razonamiento, solución de problemas, toma de decisión y formulación de conclusiones. Los investigadores respondieron a esta situación implementando un plan de entrenamiento que consistió en tres fases. Primero, un perfil de pensamiento crítico cuyo objetivo era medir el nivel de entrada de las habilidades de pensamiento crítico. Segundo, una fase de entrenamiento en pensamiento crítico el cual consistió en la implementación de planes de clase incorporando estrategias y tareas basadas en la Taxonomía de Bloom. Tercero, la etapa de verificación de pensamiento crítico que consistía en verificar el impacto del entrenamiento. Los datos fueron recolectados a través de pruebas, artefactos, notas y un cuestionario aplicado a los estudiantes. Los resultados mostraron un progreso en términos de trabajo colaborativo, competencias en Inglés como lengua extranjera y desarrollo de pensamiento crítico después de implementar el entrenamiento propuesto en la investigación.

Palabras clave: *Concluir, entrenamiento en habilidades de pensamiento crítico, pensamiento crítico, razonamiento, solución de problemas, taxonomía de Bloom, toma de juicio,*

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Acronyms

CT: Critical Thinking

EFL: English as a foreign language

SDL: Self-directed learning

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Chapter 1. Introduction

Thinking is a process inherent to the human brain which helps people make decisions or solve problems in life. It entails skills and attitudes to apply intellectual methods such as inquiry and reflection. Halpern (2003) says that when we think critically, we are evaluating the outcomes of our thought processes and how good a decision is or how well a problem is solved. Pohl (2000) asserts that thinking involves higher levels such as knowledge, comprehension, and application, which are also part of the 21st century skills vital to succeed in school and beyond.

Twenty-first century skills provide the 4 C's which stand for communication, critical thinking, creativity, and collaboration. Communication is the ability to transmit the ideas, Critical thinking helps students solve problems appropriately; Creativity is the ability to make something happen and finally, collaboration is the ability to work with others effectively. Special attention should be paid to critical thinking since it provides the basis to be creative, to communicate adequately, and to collaborate according to situations.

Rich (2010) affirms that the term "21st-century skills" is generally used to refer to certain core competencies such as collaboration, digital literacy, critical thinking, and problem-solving that advocates believe schools need to teach to help students thrive in today's world. In the Colombian context, national policies advocate for the development of integral human beings where students not only get isolated knowledge, but they also grow as social people with values, life skills and strengths to be part of a specific society. In fact, students are taught different subjects or content domains such as Math, Science, Social Studies, Ethics, Arts, Foreign Language, Physical Education, and Technology, to form an integral individual.

Educational International (2001) defines education as being a key tool to combating poverty, in promoting peace, social justice, human rights, democracy, cultural diversity and environmental awareness. For example, students as social beings learn by collaborating and interacting with others. To be consistent with this statement, Halpern (2003) affirms that critical thinking has to be regarded as a hierarchical multi-dimensional construct comprising the facets verbal reasoning, argument analysis, hypothesis testing, using likelihood and uncertainty, and decision making/problem solving skills.

Beaumont (2010) states that “school systems demand that critical thinking be incorporated into curricula, and standardized testing increasingly assesses it.” In some Colombian institutions thinking critically is limited to evaluating results of standardized tests, such as Pruebas Saber ¹ which includes critical thinking question types. Colombian institutions only receive the information from the Ministry of Education, but most of them do not design any plan to improve in the qualification of the education.

Another drawback is that students do not take enough instruction and guidance to reinforce those skills, which help them to perform a simple or complex task quickly and effectively. Thinking tasks include problem solving, drawing conclusions, make judgments, reasoning, evaluating information, and planning; actions in which students have trouble developing imperative competencies for school and life.

Adbullah (2012) stated “a survey indicated that schools and universities are not teaching the skills and dispositions of the critical minds and thus students’ intellects are not cultivated”. This commonly happens in our schools where teachers do not prepare students to put together ideas,

¹ Prueba Saber is a standardized test administered to eleventh graders prior to graduation in Colombian high schools. It evaluates five subjects: Critical Reading, Math, Social Studies, Science and English.

use different pieces of information and make good decisions for their lives. In the school setting of this research, students literally perform actions or answer questions, they simply re-act to questions by answering with true/false statements without doing any deeper reasoning or applying thinking strategies. Engaging in critical thinking tasks may help students better understand and assume a critical position about the topic or situation presented.

Fortunately, today's teachers' role is changing and they are encouraging students to develop the skills that they will carry with them for the rest of their lives. Research teachers who faced the situations described above decided to find out how critical thinking skills training can be carried out following a revised Bloom's taxonomy in such a way twenty-first century skills are developed. Ninety-three eighth graders from three different public schools in Colombia in the cities of Monteria, Medellin and Girardot were chosen as the subjects for this research.

1.1. RESEARCH QUESTION

- What is the impact of critical thinking skills training in English Language Teaching and Learning contexts in a group of eighth graders from three different schools?

1.2. Objectives

- To find out what happens during the self-directed learning processes when promoting critical thinking skills training in English Language Teaching and Learning contexts for eighth graders.

- To identify the impact of the use of some stages and the application of English Teaching and Learning of critical thinking skills training in a group of eighth graders from three different schools in Colombia.

Chapter 2. Theoretical Framework

This is a discussion on the constructs that underlie the project as valuable tools to understand and guide the research process in the development of critical thinking skills. Thus, some definitions about critical thinking, as well as Bloom's Taxonomy, self-directed learning and EFL proficiency are considered in order to support our theme of study through the analysis of different theories and models related to the topic. In addition, some previous similar studies are presented to allow the researchers to identify possible advances in the light of the research aims.

2.1. Twenty-first Century Skills

The world in which we live today is different from the one two years ago. Nowadays individuals need a wide range of skills in order to meet the needs of the modern life. Individuals need cognitive and effective skills to work in collaboration with others while adapting to changing environments. These skills help individuals become better thinkers.

Thinkers must have life and career skills, learning and innovation skills, information, media, and technology skills, combined with creativity, communication and innovation abilities which are needed to generate new ideas to resolve challenging problems or events that happen in daily comings and goings. People need these skills to be citizens of the twenty-first century. In consequence, twenty-first century skills "are a set of abilities that students need to develop in order to succeed in the information age" as stated by the Partnership of twenty-first century skills (2011).

Students who are able to develop twenty-first century skills have more chances to succeed in the future. At this point four forms of thinking – usually called the 4 C's - should be considered.

These four interdependent and interrelated Cs stands for creativity, communication, collaboration, and critical thinking.

Creativity: Robinson (2014) states that creativity is not just about the arts, you can be just as creative in math, in science, in technology, in history, and any field at all that involves your intelligence and intuition. Creativity is necessary to demonstrate originality and inventiveness in work to adopting or implementing new ideas or new perspectives to others.

Communication: Communication lets students share and interchange ideas or thoughts. Learners develop face-to-face or technology mediated communication to work, to interact and to be successful in getting new knowledge.

Collaboration: Collaboration demands working together with a common goal in mind, having a specific individual obligation but at the same time the right accountability to develop and achieve team work.

Critical Thinking: Critical thinking is looking at problems from different perspectives. This skill is deeply explained in next section.

All twenty-first century skills are necessary abilities to analyze any situation and succeed in life. There have been many organizations in charge of conducting research on these skills. For example, the Partnership for twenty-first Century Skills or P21 has built a road map for twenty-first century learning and developed the framework for twenty-first century learning. The former states a planning tool for educational leaders. The roadmap highlights the major indicators school districts must achieve. Findings are presented around the topics of learning, professional development, assessment and accountability, leadership and infrastructure. Milestones like

instructional strategies, monitoring of learning, organization philosophies, learning environments, and students' profiles are crucial to develop twenty-first century skills. The latter "was developed with input from teachers, education experts, and business leaders to define and illustrate the skills and knowledge students need to succeed in work, life and citizenship, as well as the support systems necessary for twenty-first century learning outcomes" (P21, 2009). The framework includes content knowledge, specific skills, expertise and literacies. All the considerations provided by P21 were taken into account in this research study, mainly if one considers that schools were in three different areas in Colombia and students were supposed to differ.

Other organizations like Pearson, Lego, Walt Disney and others sponsored a series of research studies on the 4C's in the 21st Century (P21, 2015). The collaboration of these research partners supported the University of Connecticut and P21 to release a research series on key aspects of conceptualizing, developing, and assessing each of the 4Cs. Each of the research studies presented current research in practice, interventions to bring the 4Cs to life in the classroom, assessment recommendations for educators to track student growth and progress, best practices and bibliography. Findings for this research were organized considering education level, learning environments, intervention and assessment. In all cases, it was recommended to describe and understand school contexts, to promote the corresponding C by focusing on everyday life, and finally to assess by including different tasks and assignments that students should report. These recommendations were incorporated in the intervention proposed in this research.

Aspects such as assessment, type of learning and learning environment play an important role. Findings also give importance to emotions and feelings when learning by expressing their opinions and perceptions in front of suggested topics.

2.2. Critical Thinking Definition

Critical Thinking (CT) is one of the most important skills for students. It involves problem solving, making judgments, drawing conclusions, and giving arguments. CT appears anywhere and anytime, in every single activity people do, for example, when sending or receiving an email message. CT also comes out when asking or answering any question, when choosing a friend, or when deciding what to buy. Everybody has the same innate abilities and capacities, differences rely in the way people give reasons, provide arguments or solve problems; in simple words differences rely in how critical people are.

There are several different interpretations of CT. On one side Beyer (1995, p. 8) offered the simplest one when he says "critical thinking means making reasoned judgments". It means that thinking is more than simply action of using your mind to produce ideas, it involves a continuous process where the individual chooses the correct decision after analyzing some diverse aspects, such as determine the relevance of arguments and ideas, approach the situation in a consistent way and reflect on beliefs and values, among others.

On the other side, Bass (2011, p.1) takes into consideration the right and the left hemispheres of the brain and says that "good thinking is clear rather than muddled, precise rather than vague, accurate rather than inaccurate, consistent/inconsistent, logical/illogical, complete/incomplete, fair/ biased, it requires effort and practice". Bass implies that thinking is not a simple or an immediate process, it is a gradual practice in which students move from understanding factual

aspects to comprehending more complex concepts in which they infer or make their own decisions. The thinking process is enriched when both sides of the brain take part.

In the same direction Willingham (2007 P.10) explains that critical thinking is a type of thought rather than a set of skills in which even 3-year-olds can engage in—and trained scientists can fail in. For Kreitzber & Kreitzberg (2015 P1) “critical thinking is about getting good decisions, and every day we make thousands of decisions. Most are minor, others more significant.” This insight, in particular, shows that the decisions we make every single moment depends on the quality of our thoughts. Decisions are based upon the type of problem and the comparison of alternatives for solution.

Various theorists focused CT on different areas. McPeck (1981), Ennis (1987) and Siegel (1988) give importance to reasoning and reflective thinking. It means the critical thinker is the individual who is appropriately moved by reasons. Halpern (2003) and Lipman (1988) focus their CT definitions on the nature of the thought process; for people to make good decisions, they need to think deeper. Undoubtedly, we use our thoughts to make decisions and to solve problems by generating some possible alternatives and solving.

During recent years, research on critical thinking has become an important part of English as a Foreign Language (EFL) teaching and learning process. National and international studies agree on the importance of developing CT tasks to help students become better critical thinkers. Vargas (2015) developed a study in a private school in Bogotá (Colegio Hispanoamericano) with the title: Evidence of Critical Thinking in High School Humanities Classrooms. He applied a focus group to identify skills in teachers and eighth graders from a humanities-focused high school curriculum. Results demonstrated the presence of argumentation in written and oral

classroom material. Analysis was also evidenced through questioning, inferencing and other exercises. Motivation was also an observable element, reflected in explicit expressions and gestures, and in the use of extra material in the classes.

Murcia (2012) worked on a study that embedded the area of critical thinking to the English language classroom by implementing the action research approach. The study took place with a group of upper-intermediate students of English who enrolled in language courses as a requirement for their bachelor's degree. The language teacher and participants were involved in active reflective cycles that sought to describe the impact of critical practices in the EFL classroom. The analysis data revealed how critical thinking is a pedagogical innovation that triggers reflective processes and impact learners by increasing their motivation towards language learning and raising awareness of their cognitive and language development.

Pineda (2004) reported the results of a research study that was undertaken by a group of teachers working in the English program ascribed to the School of Education at Universidad Externado de Colombia. Tasks related to critical thinking were designed and implemented with three groups of students. A qualitative interpretative case study was conducted to examine how students constructed meaning when dealing with meta-cognitive processes. The findings indicate that language competence and criticality are on-going, never-ending processes. However, teachers can refine them through stimulating materials.

2.3. Bloom's Taxonomy

Beginning in 1948, a group of educators undertook the tasks of classifying education goals and objectives. They intended to develop a classification system for three domains: cognitive,

affective and psychomotor. Work on the cognitive domain was completed and it is commonly referred to as Bloom's Taxonomy of the Cognitive Domain.

Such taxonomy was created in 1956 by Benjamin Samuel Bloom in order to encourage higher forms of thinking in education. The taxonomy is a hierarchical structure to analyzing and evaluating given concepts. The original Taxonomy provided carefully developed definitions for each of the six major categories in the cognitive domain. The categories were knowledge, comprehension, application, analysis, synthesis, and evaluation. With the exception of application, each of these was broken into subcategories. The complete structure of the original taxonomy is shown in table 1. Categories were ordered from the simplest to the most complex and from concrete to abstract thinking.

Table 1: *Structure of the Original Bloom's Taxonomy, Krathwohl, D. (2002)*

1.0 Knowledge
1.10 Knowledge of specifics
1.11 Knowledge of terminology
1.12 Knowledge of specific facts
1.20 Knowledge of ways and means of dealing with specifics
1.21 Knowledge of conventions
1.22 Knowledge of trends and sequences
1.23 Knowledge of classifications and categories
1.24 Knowledge of criteria
1.25 Knowledge of methodology
1.30 Knowledge of universals and abstractions in a field
1.31 Knowledge of principles and generalizations
1.32 Knowledge of theories and structures
2.0 Comprehension
2.1 Translation
2.2 Interpretation
2.3 Extrapolation
3.0 Application
4.0 Analysis
4.1 Analysis of elements
4.2 Analysis of relationships
4.3 Analysis of organizational principles
5.0 Synthesis
5.1 Production of a unique communication
5.2 Production of a plan, or proposed set of operations
5.3 Derivation of a set of abstract relations
6.0 Evaluation

- 6.1 Evaluation in terms of internal evidence
- 6.2 Judgments in terms of external criteria

The major idea of Bloom's Taxonomy was to encourage students to make decisions in a hierarchy way from the less (recognizing and recalling facts) to the most complex (generating, planning, producing). Once a level was achieved, next level could be reached.

2.4. Revised Bloom's Taxonomy

Since the first publication of the Bloom's Taxonomy, there have been changes. For example, the taxonomy was revised by Pohl (2000, p. 8) as shown in figure 1.

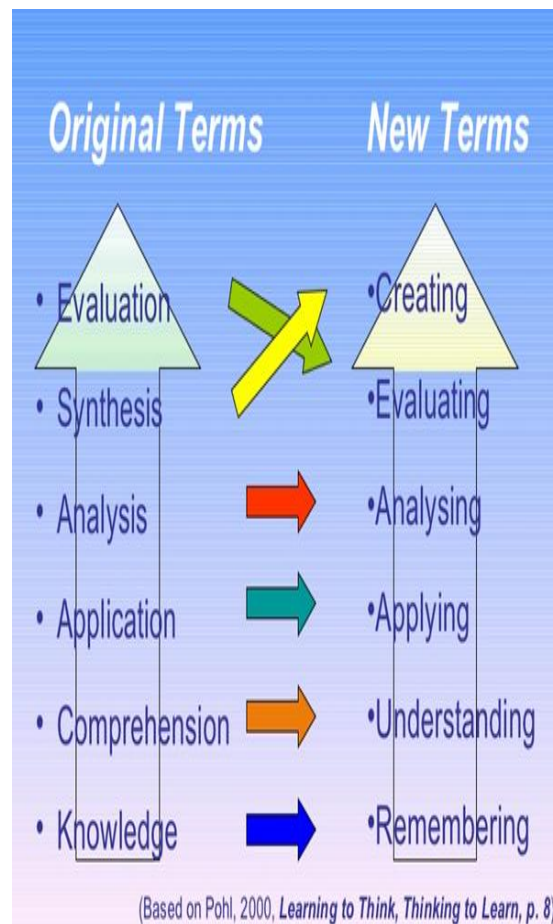


Figure 1. Revised Bloom's Taxonomy and Pohl (2000)

A year later the model was redefined by former students Lorin Anderson and David Krathwohl (2001) (See figure 2).

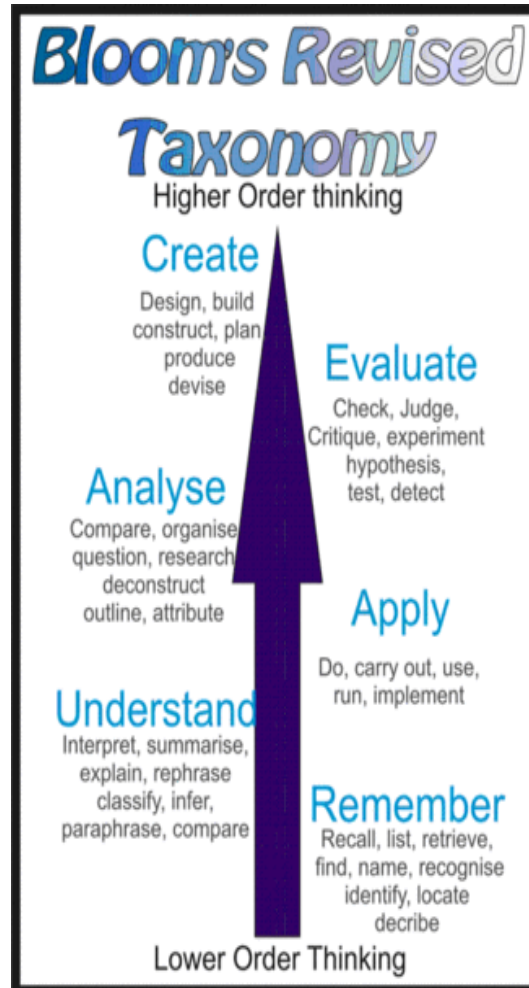


Figure 2. Anderson and Krathwohl (2001) revised Bloom's Taxonomy

This new taxonomy is adjusted to the modern education objectives. It included switching the names of the levels from nouns to active verbs, and reversing the order of the highest two levels. The lowest-order level (knowledge) became remembering, comprehension became understanding, application became applying, and analysis was revised to become analyzing.

Clark and Chopeta (2004) identified five contents different from those presented by Anderson (2001). These new concepts were facts, concepts, processes, procedures, and principles which were also developed in 2007 by Clark, and Mayer.

In Colombia, some researchers have conducted studies on CT focusing on question types which directly relates to Bloom's levels of questioning. Carvajal (2012) conducted a research project at Juventas Foundation with displaced children of elementary English language level who came from different parts of Colombia like San Jose del Guaviare, Villavicencio and Antioquia. She focused her research on questioning as one of the most effective strategies that contributed to develop critical thinking, as participants had to analyze, interpret and understand different topics that were closely related to their lives. She concluded that when teachers design, contextualize didactic material by considering a critical perspective, students' motivation may increase and create a more participatory environment. In relation to the cognitive domain, students may develop understanding of topics in an easier way. Additionally, students may become analytical by exemplifying, categorizing and comparing information.

Sarmiento-Sierra (2010) carried out a study by means of a program for guided reading of images using the questioning technique in an EFL context that aimed at helping students develop critical thinking and communicative skills through a qualitative descriptive research study carried out with third graders from a public school in Bogotá, Colombia in which field notes, artifacts, and questionnaires were used as data collection instruments. The study showed that the program activated children's mental processes to allow them to move from basic to higher levels of critical thinking while communicating their thoughts in Spanish as well as using vocabulary in English.

Guthrie (2000) used a class discussion as a means of documenting the highest critical thinking level that focused on CT development. By using Bloom's Taxonomy, she identified six levels of thinking in her students' writing and speech - knowledge, comprehension, application, analysis, synthesis, and evaluation. She said that whether we teach it or not, critical thinking is going on in our students' work, particularly in discussion. The value of Guthrie's study is that it alerts researchers to the possibility that even in the absence of formal training students may informally and unconsciously develop rudimentary CT skills on their own. If so, CT training may not need to begin from ground zero, for some students. For them, educators may just need to identify and sharpen these pre-existing skills.

In this technological era, a digital revised theory appears called Bloom's digital taxonomy by Andrew Churches (2007). The different taxonomical levels can be viewed individually via internet. It is an updated Bloom's Revised Taxonomy that emerges as a need associated with Web 2.0 technologies to facilitate learning and achieve, recall understanding, application, analysis, evaluation and creativity through some digital activities. Finally, Rex Heer (2009) proposed a kind of inter-active taxonomy with a statement of a learning objective which contains a verb related with a cognitive process and an object that shows what learners are expected to achieve.

At this point, tasks gain importance if one thinks how the taxonomy promotes CT and varies in new generations. For example, Fischer et al. (2009) demonstrated that certain types of tasks are more likely to elicit critical thinking than others, tasks requiring the exercise of judgment were better for assessing critical thinking than those focused on simply understanding material presented in stimulus text. In particular, a task requiring examinees to either accept or reject a

manuscript for publication elicited more questions of belief and checks on thinking than a task asking examinees to identify the main topic of a set of materials or to explain a scientific study described in stimulus materials.

2.5. Critical Thinking in EFL proficiency

Critical thinking is claimed to be important in the acquisition of language skills particularly writing and reading (Elder & Paul, 2006; Shaharom Abdullah, 2004; Seung-Ryul Shin, 2002; Stapleton, 2001; Moore, 1995). This connection is relevant due to the fact that students can improve their language abilities through the use of adequate reading strategies which will help them develop their critical thinking skills in English.

Paul (2004), Csapó and Nikolov (2009) assert that critical thinking involves an intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing and/or evaluating information gathered to accomplish these critical thinking actions. Good language proficiency depends on good language ability.

Different studies have confirmed the role of critical thinking in improving EFL writing ability (Rafi, n.d.); language proficiency (Liaw, 2007); and oral communication ability (Kusaka & Robertson, n.d.). The learners may become proficient language users if they have motivation and are taught the ways of displaying critical thinking in foreign language usage, which signifies that the learners must have reflection on their production of ideas, and they may critically support those ideas with logical details (Rafi, n.d.). Language development and thinking are closely related and the teaching of higher-order thinking skills should be an integral part of an L2 curriculum. Educators have emphasized the importance of developing higher-order thinking skills in foreign language classrooms (Chamot, 1995; Tarvin & Al-Arishi, 1991) and empirical

evidence supports the effectiveness of teaching critical thinking skills along with the foreign language (Chapple & Curtis, 2000; Davidson, 1994).

2.6. Critical Thinking and Self-directed Learning

Self-directed learning (SDL), which has its roots in adult education, is an approach that has also been tried with learners in elementary and secondary schools (Abdullah, 2001). The ability to acquire skills in SDL must be provided through learning opportunities that promote self-confidence, question asking and reflection.

One key element of SDL is promoting critical thinking through self-assessment and reflection. Bearing this in mind, the eighth grade students from this project are to be guided to develop tasks following Bloom's Taxonomy to recall, infer and evaluate relevant information based on their own schemata and experiences which will encourage students to develop a more self-directed critical thinking process.

Chapter 3: Research Design

This is a description of the type of study to investigate the problem and its implications in the daily pedagogical practices in the classroom. The design embraces a description of the context where study takes place and gives an account of participants, role of researchers, ethical considerations, and data collection procedures. Table 2 shows the main elements that frame the research design.

Table 2: *Research design elements*

Type of study	Action Research (Nunan and Bailey, 2009)
Context and Participants	98 eighth graders from three public schools located in Girardot (FMH), Montería (KM12) and Medellín (Lovis).
Researcher's Role	Teacher – Researcher
Data collection Instruments	A pre-test A post-test Artifacts Field notes Student's questionnaire
Data collection procedures	First stage: CT profile: data from pre-test Second stage: sixteen sessions of classroom Implementation for CT training: data from questionnaire, artifacts and field notes Third stage: CT Verification: data from post-test

3.1. Type of study

This study adopted a qualitative action research paradigm to answer the question on what is the impact of critical thinking skills training in English Language Teaching and learning contexts in a group of eighth graders from three different schools. According to Mills (2003) action research is any systematic inquiry conducted by teacher-researchers to gather information about the ways that their particular school operates how they teach, and how well their students learn.

Action research usually produces positive changes in the school environment and on educational practices in general by improving student outcomes (p, 4).

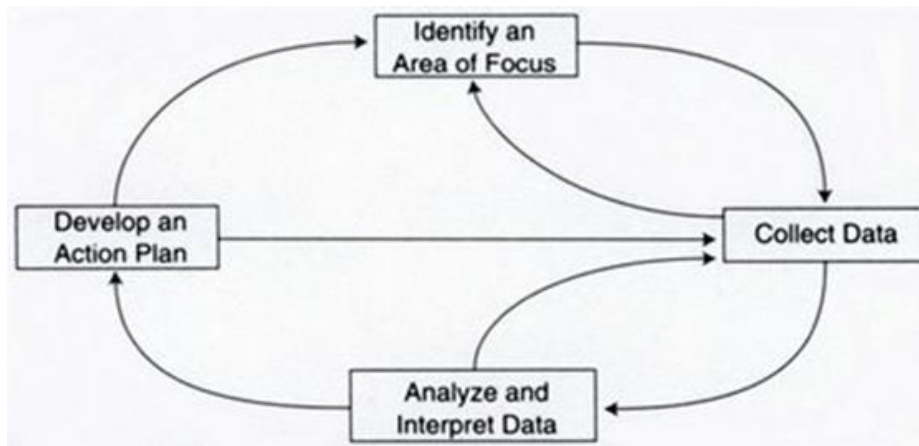


Figure 3. Mills' Dialectic Action Research Spiral

In this study, the researchers carried out Mill's cycle by following all four steps. First, the topic was identified and limited. A needs analysis was done by means of a document analysis in which Pruebas Saber and eighth grader tests were analyzed. It was found out that students were not being critical thinkers and some training needed to be done. Second, some literature related to critical thinking was explored. Research studies in the field and theoretical constructs including Bloom's Taxonomy were revised. In this step the information was expanded and provided more focus and reasons behind the stated research question. This second stage also demonstrated that there were important methodological developments on the focus area and that the chosen topic gained relevance in the field of education.

Third, bearing in mind Mill's cycle, an action was proposed. In this case, a Critical Thinking Skills Training phase was carried out and data was collected and analyzed. Artifacts, field notes and questionnaires were the chosen tools for that purpose. The analysis permitted to identify

relationships among outcomes. Reporting results and informing pedagogical implications informed the readers of patterns that emerged after the training.

Finally, the action research cycle let the researchers frame the intervention or innovation through an action plan that included pedagogical changes. Such innovation was represented in three stages in which critical thinking training helped eighth graders of three public schools become better critical thinkers.

In conclusion, implementing action research let the researchers deal with specific classroom-based situations that could be analyzed in short term. Systematic research guided researchers to collect evidence and reflect upon class events.

3.2. Researchers` role

Action research involves the teacher in a double role, teacher and researcher. The researchers of this study carried out several actions, such as identification of the problem, research question writing that involved a pedagogical intervention to tackle the problem, designing a theoretical framework about the subject of research, planning and implementing a pedagogical intervention, analyzing and interpreting the data, and finally concluding with implications in order to generate a constructed theory to respond to the research question.

3.3. Context

The research was conducted in three different public schools located in three different regions in Colombia: Monteria, Antioquia y Girardot. Bearing in mind the diversity of the contexts, some educational and social similarities and differences were identified, as it is shown in table 3.

Table 3: *Schools' context information*

School and location	Population	No. of students	Strata	Area	Pedagogical model
LOVIS - Medellin	Female	36 girls	3	Urban	Socio-humanistic
KM12 - Monteria	Male and Female	14 boys and 10 girls	1	Rural	Socio-cognitive
FMH - Girardot	Male and Female	18 boys and 20 girls	2	Urban	Socio-cognitive

It can be observed that there are two mixed schools and one all-female school. The average of students per group is thirty two and most of them belong to low income strata, two of them located in urban areas and the other one in a rural area. Regarding the pedagogical model, two schools followed a socio-cognitive one which means the approach was focused on mental processes rather than observable behaviors. For the cognitive model knowledge is seen as something that is actively constructed by learners based on their existing cognitive structures and framework that is central to understanding. Each learner interprets experiences and information in the light of their cultural background to organize their experience and select and transform new information.

On the other hand, the socio humanistic school based its principles on personal acts to fulfill students' talents. Students are encouraged to make choices of activities to set future life goals. It allows students to focus on a specific subject of interest for any amount of time they choose, within reason. Teachers are facilitators who engage in the material they are learning. This happens when the topic is something the students like and want to explore.

FMH School located in Girardot was founded 37 years ago. It has a technical emphasis on TICS. The population is around 1900 students, 900 in the main headquarters and 1000 in the

seven primary schools, including one in the rural area. The school has the vision of an institution open to new changes to form integral students, not only academically but also as individuals with principles and values required by the society. Its mission is to graduate students with a technical degree. As a result, students may continue their higher education as technologists or enroll in the working world in a short time.

LOVIS School was founded 49 years ago. The school emphasizes girls' behavior rather than the academic area. The administrative staff does not permit students to be part of artistic groups since they consider it is not beneficial for students. There are computers in each classroom with internet connectivity but neither the students nor the teachers make use of them because nobody has access codes. The LOVIS school vision is to be recognized as a research leader. The curriculum follows Piaget model reason why students are engaged in project work. Lovis' mission is to provide students an environment of democracy.

KM12 School located in Monteria emphasizes academic performance. The school mission is to have integral citizens by developing labor competencies that will permit students to be qualified individuals to get jobs. The vision is to become a leader in foreign language training as an important element of higher education and labor world.

All schools are implementing the Derechos Básicos de Aprendizaje presented by the Ministry of Education (2016). Lovis and KM12 schools offer two English hours per week (60 minutes each) and the FMH offers four hours (60 minutes each).

3.4. Participants

Ninety-three eighth graders were chosen as the participants of this research. 38 students belonged to Lovis School, 21 to KM12 School and 34 to FMH School. Students were grouped due to shared similar characteristics. All participants were basic A1 users of English according to the Common European Framework; they had received classes from the teacher-researchers for two years. Students' ages ranged from 11 to 14 years old, most of the students were part of one single parent family or dysfunctional families. Finally, students' parents and relatives did not hold a professional degree, due to their social and economic situation. This information was provided by the three schools' principals and taken from database in the enrollment process.

3.5. Ethical Considerations

The primary concern in research is to avoid that participants are harmed or damaged themselves. Nunan and Bailey (2009) stated that it is very important to be honest and fair with accomplish professional standards regarding how the research will be carried out.

Ethical Issues were kept by submitting consent forms to explain the purpose of the research and the possible results that benefited eighth graders at the three public schools. The consent letter (Appendix A) clarified the fact that students' participation in the study was voluntary, as well as confidential when applying the instruments. Moreover, students were told that the results would be used only for research purposes, rather than part of the passing criteria. Those forms were signed by the schools' principals, the academic coordinators and eighth graders' parents.

3.6. Data Collection Instruments

This research aimed at finding out what happens during the self-directed learning processes when promoting critical thinking skills training in English Language Teaching and Learning contexts for eighth graders, and identifying the impact of the use of some stages and the application of English teaching and learning of critical thinking skills training in a group of eighth graders from three different schools in Colombia. To reach the objectives, data was collected from two tests (pre and post), students' artifacts, field notes and a questionnaire.

3.6.1. Tests

Pre-test and post-test scores provided relevant information on critical thinking skills. Tests were adapted from the Pruebas Saber (9th grade citizenship skills) designed by the Ministry of Education (2014 and 2015). The tests were used since they presented questions in contextualized settings and evaluated how the participants dealt with critical thinking situations. In this research a critical thinking profile and a verification tests were used.

The critical thinking profile pre-test (Appendix B) measured students' critical thinking skills at entry level. Skills such as reasoning, judgment, problem-solving, and making conclusions, which corresponded to Bloom's Taxonomy were considered. The pre-test consisted of fourteen multiple-choice questions on real life situations. Questions one to six were about reasoning, questions seven to nine explored problem-solving and questions ten to fourteen responded to judgment.

The critical thinking verification post-test (Appendix C) was compared with the pre-test. The post test was applied at the end of the pedagogical intervention and measured the impact of the critical thinking training. It showed whether or not participants had any improvement, as well as

strengths and weaknesses during the training in such a way teacher-researchers redirected class instructions or planned for new actions if considering Mill's action research cycle. The post-test was similar to the pre-test; both tests were in Spanish and measured same critical thinking skills, questions considered higher thinking Bloom's Taxonomy levels.

3.6.2. Artifacts

Artifacts are "objects used in the process of teaching and learning or products that result from the process of teaching and learning. Artifacts in educational settings might include desks, sample lesson plans, portfolios or anything else found or produced in the school. (Lodico, Spaulding and Voegtle, 2010 p. 344). Artifacts in this study were the products of all the activities students developed during the second phase of the pedagogical implementation. Products included written tasks, short-term creative projects, and social network postings (Appendix H).

3.6.3. Teacher's field notes

Field notes referred to notes taken by the researchers during the act of qualitative fieldwork to record the behaviors, attitudes and reactions of the observations during the intervention tasks. Burns (2003) says note-making is a flexible tool for action research and it can be utilized in different ways (p. 85). In this research, field notes were also utilized to document and analyze the CT categories already identified as the main purpose of the research. The field notes format design had two columns. The first column reported information on students' insights, comments and behavior. The second column reported researchers' questions, reflections or perceptions during the pedagogical implementation (Appendix D).

3.6.4. Students' questionnaire

Students answered a questionnaire at the end of each critical thinking lesson. The questionnaire included eight questions that addressed topics preferences, type of instructions, use of resources, time devoted for each task, questioning and critical thinking skills development.

These instruments were used to find out the impact of the CT skills training in English language teaching and learning contexts in a group of ninety-three eighth graders. Using different instruments and different perspectives (teachers and students) gave validity and reliability due to the researchers' use of the triangulation method. Methodological triangulation entails combining both quantitative and qualitative data collection methods (Banister *et al.* 1994). This is based on the rationale that a single data collection method is insufficient to provide adequate and accurate research results, the intention was to capture different dimensions of the phenomenon.

Anderson et al (1994: 30-33) and Burns (2003) set a list of five validity criteria recommended to apply in any action research. **Democratic validity** relates to the extent the research is truly collaborative. In this research the voice of students and teachers in three different contexts are heard and solutions to the research question benefit not only local stakeholders but anybody facing similar situations. **Outcomes validity** relates to the notion of actions leading to outcomes. Outcomes refer not only to answering the question but in our case to show evidence of students' progress which eventually leads to a new action research cycle. **Process validity** refers to the possibility to determine the process. In this case, researchers were able to adapt Mill's research cycle and follow the process in such a way that different sets of data were collected and all participants got involved. Catalytic validity allows participants to understand the social realities

of the context and make changes. This validity gained importance in this study since researchers belonged to different social contexts and Colombian regions. Working together permitted to identify they shared common interests and students (participants) shared similar characteristics.

Finally, **dialogic validity** parallels the process of peer review. The research group was integrated by three researchers and a research counselor. Being organized in this way let participants to share points of view, improve skills, provide feedback and in the future share findings in a publication.

Chapter 4: Pedagogical Intervention and Implementation

The pedagogical intervention is an important step in action research considering the fact that research results depend on it. This chapter explains the methodology and procedures researchers followed in order to plan the intervention and accomplish it. Thus, implementation outlines the stages developed with the eighth graders from three public schools contexts. The aim is to find out the impact of critical thinking skills training in English language teaching and learning contexts in a group of eighth graders. Following Mill's dialectic cycle, this action research stage corresponds to the action itself since researchers intervene class instruction.

4.1. Implementation

The pedagogical intervention consisted of three stages: Critical Thinking Profile, Critical Thinking Training, and Critical Thinking Verification. The stages are shown in figure 4.

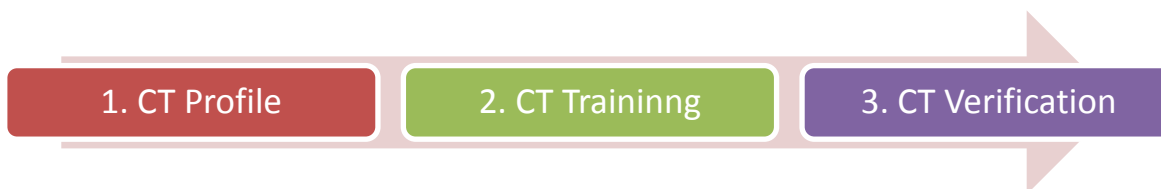


Figure 4. Stages of the pedagogical intervention

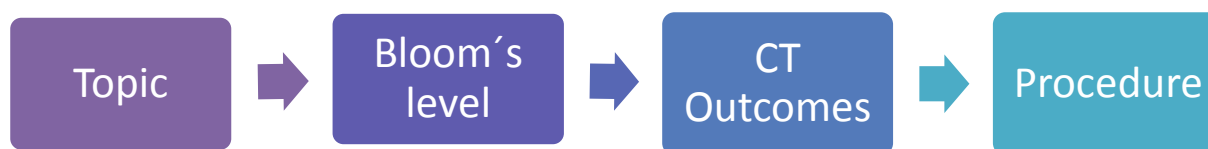
4.1.1. Stage 1: Critical Thinking Profile had the objective to identify the critical thinking skills of the participants. A test from Citizenship Competencies was adapted based on Bloom's Taxonomy levels. The test was chosen because it had some specific components that encouraged students to think critically. For instance, students were directed to solve real-life situations and to choose the best option according to those situations. The Critical Thinking Profile test had the components shown in table 4.

Table 4: *Components of the critical thinking profile*

COMPONENT	OUTCOMES
Knowledge	Students understand what the Constitution of Colombia is and its foundations.
Arguments value	Students analyze and evaluate the relevance of statements.
Judgment	Students analyze the different perspectives present in situations where different parts interact.
Problem solving	Students interpret and compare problems and solutions involving different dimensions and recognizing relations between them.

4.1.2. Stage 2: Critical Thinking Development had a lesson plan format focused on CT in which researchers identified specific tasks based on Bloom's Taxonomy. Tasks trained eighth graders on critical thinking skills. This second stage covered a minimum of six-hour training per topic. Bearing in mind participants in this research were placed in an A1 level according to the Common European Framework, it was convenient to use Spanish for clarification or checking for understanding during the training process.

The CT Training stage had specific characteristics that can be easily identified in the lesson plan format (Appendix E). The format took into account the following components:

**Figure 5.** Lesson plan components

To start, lessons followed a topic-based approach. The main characteristic of topic-based instruction is that classroom activities are organized around a particular topic or theme in which students acquire a specific skill. Paul & Elder (2002) stated that this type of thinking is biased

and distorted; for that reason, to cultivate critical thinking it is necessary to raise and formulate clear and specific questions and problems to gain relevant information and to grasp main ideas in order to interpret them effectively. This was done to obtain well-reasoned conclusions and finally to communicate information effectively by developing or studying specific topics.

Bear in mind the above assertion, students had to be exposed to new opportunities and environments where they could be encouraged to ask, analyze, interpret and evaluate any kind of information on topics of interest for them. For that reason, topics were chosen keeping in mind students' age, needs and likes which engaged and motivated them for learning and thinking critically.

Second, each lesson incorporated critical thinking elements such as: generating purposes, raising questions, using information, utilizing concepts, making inferences, making assumptions, generating implications and embodying a point of view. Each stage involved Bloom's taxonomy levels from simply recalling a piece of information to creating something new based on provided information on a given topic.

Third, critical thinking learning outcomes were established. Outcomes included conducting comparisons, describing facts, analyzing the impact of some topics in teen aging environment, and creating as part of short-term projects. Outcomes were connected to the topics and the procedure to become valuable to achieve Bloom's levels via artifacts.

Fourth, evidences used to measure the achievement of learner outcomes were determined. In this case, the best way to measure critical thinking skills was through artifacts. This stage covered a minimum of six-hour development per topic where artifacts were classified according to the four categories established to analyze CT skills based on Bloom's Taxonomy. It means

that artifacts that had to do with identification, comparing, organizing or selecting were classified in reasoning; tasks related to supporting ideas, defending, applying, interviewing and solving got the problem-solving level; agreement, explanation, justification and criticizing were organized as judgment; finally, creation, elaboration, designing and building were in the category of drawing conclusions.

Table 5 summarizes the Critical Thinking Development stage with number of lessons, topics, sequence of Bloom's levels, CT outcomes and procedure.

Table 5: *CT development stage summary*

Topic	Bloom's level	CT Outcomes	Procedure
Lesson 1: Colombian music styles	Remembering: recalling facts, opinions and concepts about music.	-Recognize different music styles by listening to some pieces of music.	Remembering Stage (recalling facts and opinions) Listening to some fragments of different rhythms and genres to activate their previous knowledge and concepts about music.
	Understanding: interpretation of information in one's own words.	-Predict information based on some images given. -Revise new vocabulary.	Understanding Stage (solving problems) Singers and genre matching. Images description.
	Applying: support what is learned on music to apply it in a new situation.	-Answer reasoning questions from the situations presented.	Applying Stage (Drawing conclusions) Comparing activity using different rhythms and music styles, answer of some reasoning questions. Finally, presentation of their comparisons to criticize or defend those music groups on a poster.
Lesson 2 : Who's your hero?	Understanding: exhibiting material to recall facts, basic concepts and answers. Applying: solving	-Paraphrase a text about what a hero is. -Decide which characteristics from a list a hero should have, and	Understanding Stage (explaining ideas and concepts) Reading about what a hero is presented, after internalization of the text to understand the hero concept and specific qualities a hero should have. Paraphrasing of the text trying to express what heroes are in our real

	<p>problems by applying acquired facts with favorite heroes in a different way.</p> <p>Analyzing: determining internal relationships among heroes.</p>	<p>support one`s decision.</p> <p>-Organize ideas to describe and create the ideal hero and explain how or why they identify with them.</p> <p>-Debate similarities and differences among the heroes they know, and discuss why they exist.</p>	<p>world.</p> <p>Selection from a list what characteristics a real hero should have for them.</p> <p>Applying Stage (solving problems) Analysis and discussion of the chosen characteristics to create an ideal hero for them. Explanation of reasons to identify oneself with that hero.</p> <p>Analyzing Stage (Giving reasons) Changes of similarities and differences among heroes to create an innovative one.</p>
<p>Lesson 3: What is on nowadays?</p>	<p>Applying: predicting situations based on images and previous knowledge.</p> <p>Analyzing: Understanding classification of information in a mind map.</p> <p>Evaluating: Preparing a list of criteria to judge some facts.</p>	<p>-After looking at some images students will write some ideas to express in a short sentence any important updated news.</p> <p>-Classify news in two different groups based on the concept of amazing and boring.</p> <p>-Identify the most important news of the week and explain why.</p> <p>-Design a headline and they will create news in groups of four to present it in front of the class.</p> <p>-Combine different</p>	<p>Applying Stage Students will see some images about current news, they will underline some ideas and in a short sentence they will express updated news. After this activity, students will classify news into amazing and boring.</p> <p>Analyzing Stage Classification of the most important news from the week and explanation of reasons of why with the rest of the class.</p> <p>Evaluating Stage Design and present a headline about important news. Students will create and judge it in front of the class,</p>
<p>Lesson 4: Coffee break cartoons</p>	<p>Analyzing: Integrating new material with what they already know.</p>	<p>comic strips to understand some presented details.</p> <p>-Identify the elements of</p>	<p>Analyzing Stage Identification of a comic strip with their elements and their relationship; students will combine various comics to understand</p>

<p>Evaluating: making judgments using a checklist.</p>	<p>agreement mixed in with the dissent in aa comic strip and the relationships among those elements.</p>	<p>better a new way they are presented today. Evaluating Stage Critique of details from comics by giving logical insights about premises shown in the comics.</p>
<p>Creating: Designing a creative product by linking facts together.</p>	<p>-Take the details and provide logical insights from premises shown in the comics. -Create one comic after applying what they have learned about them.</p>	<p>Creating Stage Design and creation of a comic strip in which they take into account all the elements provided during the lesson.</p>

4.1.3. Stage 3: Critical Thinking Verification had an objective to verify the impact of CT training on students' CT skills progress. The verification took into account Bloom's Taxonomy levels and was done via a post-test of Saber citizenship competencies in Spanish. To show the impact of the training, this verification post-test was compared to the initial one obtained from the pre-test in the first stage or CT profile.

Chapter 5: Results and data analysis

This chapter shows the procedures and methodology used to analyze and to interpret data. Qualitative and quantitative data were collected to draw conclusions to identify the impact of such training on eighth graders' critical thinking skills. Quantitative data were collected from document analysis Pruebas Saber, tests and a students' questionnaire. Qualitative data was gathered through reflections in the form of field notes and artifacts.

5.1. Data management procedure

Triangulation was used to check for validity by using different data collection instruments and comparing and contrasting them.

Due to the type of study, we used a priori approach to analyze data. Bealer (2000) suggests "the idea to approaching the a priori to the topic of evidence (or reasons)". Therefore, analyzing data and existing information means to make conclusions based upon deductive reasoning rather than calculation. Categories were set at the beginning of research bearing in mind CT skills and Bloom's Taxonomy. Categories were reasoning, judgment, problem solving and drawing conclusions which were evidenced from the lowest to the highest level of Bloom's Taxonomy.

5.1.1. Quantitative and Qualitative Analysis

According to Aliaga and Gunderson (2000) quantitative research is "an explaining phenomena by collecting numerical data that are analyzed using mathematically-based methods". Thus, quantitative data were collected to show if students improved or remained at their current CT level. Two tests and the students' questionnaire focused on gathering numerical data.

Researchers compared the statistical results of the profile pre-test (analyzing pre-existing Pruebas Saber results), the verification post-test median.

This holistic approach allowed the researchers to better define the main four categories of reasoning, problem solving, judgment and drawing conclusions in order to make a complete descriptive action. Creswell (1994) defines that “qualitative research is also described as an unfolding model that occurs in a natural setting that enables the researcher to develop a level of detail from high involvement in the actual experiences.” In this paper, the qualitative analysis consisted of a set of instruments such as observations and reflections about students’ attitudes and reactions, which were registered in the teachers’ field notes to interpret the information collected during the implementation phase at the three Colombian schools, and thus, to write the conclusion of this research.

Table 6: *Data collection summary*

Data collection instruments	Participants	Nature of data	Data analysis method
Pruebas Saber results	Students	Quantitative	A priory approach Content analysis
Tests	Students	Quantitative	A priory approach Content Analysis
Teachers’ Field Notes	Teachers	Qualitative	A priory approach Content Analysis
Students’ Questionnaires	Students	Qualitative	A priory approach Content analysis

Table 6 shows the different instruments used to gather data by mixing qualitative and quantitative approaches. A priory approach was implemented since categories were made with the existing information taken from the document analysis (Pruebas Saber), Bloom’s Taxonomy and most importantly CT skills.

One of the challenges of content analysis is setting up relevant coding categories (Burns, 2003). However, in this research, categories were defined in advanced based on CT and Bloom's characteristics. A priori categories were developed before examining the current data. The four categories were established prior to the analysis, revisions were made and the categories were tightened up to the research questions based on CT skills following Bloom's Taxonomy. Data was analyzed and categories coded. Finally, the data was quantified. Table 7 shows the categories established and some of the words or codes that may be identified when doing the analysis.

Table 7: *Categories and coding*

Categories	Codes (verbs related to revised Bloom's Taxonomy)
Reasoning	Recognize, identify, compare, infer, organize, select
Problem-solving	Choose, support, determine, defend, describe, generate, apply, interview, solve, plan.
Judgment	Agree, compare, criticize, decide, explain, judge, justify
Drawing conclusions	Build, create, make up, elaborate, invent, imagine, design

All the information and evidences from the three schools were collected, analyzed, and integrated into quantitative and qualitative data to finally obtain results to answer the research question.

During the study some statistical and numerical data from questionnaires and tests were converted into narratives that could be analyzed qualitatively, and qualitative data from observations and artifacts (images, text data) was converted into numerical codes that could be statistically analyzed. The following section presents the analysis at two different moments, first

as a needs analysis to diagnose and later during the implementation to show impact of CT skills training.

5.2. Diagnosis before implementation –Needs Analysis

Every school in Colombia receives a statistical analysis of the Pruebas Saber Test. In this research the results of the Pruebas Saber exam were received in 2014 and 2015 were analyzed. The average scores achieved in English, Critical Reading and Math were similar in all three schools as it is shown in table 7.

Table 8: *Pruebas Saber results 2014-1015*

SCHOOL	SUBJECT	2014	2015	AVERAGE
LOVIS	Math	47,52%	49,22%	48,37%
	English	47,1%	48,29%	47,69%
	Critical thinking	51,23%	52,1%	51,66%
K12	Math	47,47%	45,55%	46,51%
	English	46,1%	45,67%	45,88%
	Critical thinking	46,29%	45,84%	46,06%
FMH	Math	48,67	47,56%	48,11%
	English	47,47%	47,21%	47,34%
	Critical thinking	45,77%	47,24%	46,50%

The National average was 48, 9 (2014) and 49.6 (2015) in the three subjects. Lovis School scores were above average in critical reading, the other two schools were below, K12 School obtained the lowest percentages. CT was below the national average.

Additionally, school quizzes were part of the document analysis done during the needs analysis. Some samples showed teachers usually used closed-ended questions at the level of knowledge if referring to Bloom's taxonomy (See Appendix F for sample of quizzes). This is a way to find a specific answer and can be responded to with a couple of words. It is used to determine whether students understand a concept or for review. Bearing in mind the type of

questions and activities students performed in the classroom it should be more than just possible to suggest that students are not critical thinkers.

The following excerpt from Spanish quiz shows questions that reflect dialogue or creative thinking is not encouraged (Appendix F):

Question 1 ¿Quién escribió la obra La Vorágine? – Who wrote La Voragine?

Question 3 ¿Cuáles son las ideas principales de la obra? – What are the main ideas?

Question 5 ¿En qué tiempo y espacio se desarrolló la obra? – When and where did the story happen?

Question 6. ¿Quiénes son los personajes primarios y secundarios de la Vorágine? – Who are main and secondary characters?

It happens the same in other subject areas that demand more discussion or reflection, for instance, Social Studies where students face questions and opinions at the basic level of knowledge as seen in questions 2 and 3 from appendix F Social Studies exam.

Question 2. La participación política de los ciudadanos se hace efectiva al ejercer los siguientes derechos:

- | | |
|---|--|
| a) Derecho a sufragio | b) Derecho a optar cargo de elección popular |
| c) Derecho a participar en algún partido político | d) Todas las anteriores |

Question 3. En un sistema democrático la elección debe ser:

- | | |
|---------------------------------|-----------------------------------|
| a) Libre y comunitario | b) Comunitario e Informada |
| c) Libre, periódica e informada | d) Libre, periódica y comunitario |

Based on the needs analysis, students at the three schools are exposed to lower levels of thinking and results from the last two years of national exams demonstrated that their CT skills

were at a low level. It means that students in school recalled facts and listed information but were not frequently exposed to making judgment or solving problems themselves.

In order to answer the research question, the researchers implemented a CT Skills training which consisted of three stages as explained before. The training included tasks with questions from the lowest levels of Bloom's Taxonomy, particularly knowledge and comprehension (closed-ended questions) to the highest order reasoning such as applying and creating, stimulated through the use of open-ended questions. This was a way to elicit discussion, brainstorming, problem solving, and create opportunities for thinking outside the box. The highest order open-ended questions involved students in active thinking and learning, where they were encouraged to synthesize information, analyze ideas and draw their own conclusions.

5.3. Data Analysis and Interpretation during the Implementation

This research paper stated a question of what the impact of such CT training is on students' CT skills. In order to answer the question, data is analyzed from two angles. First, from the perspective of CT training lesson implementation (stage 2) in which questionnaires and field notes are analyzed. Second, from the perspective of CT tests (stages 1 CT profile, and Stage 3 CT verification).

5.3.1 Analysis of Stage 2 – CT Training

An open coding procedure was done to analyze data. Open coding started with individuals and group phenomena then the concepts were interrelated to construct the four categories established according to the CT skills worked in each lesson and put together addressing same levels of CT.

The categories were: reasoning, problem-solving, judgment and drawing conclusions, which were part of the cognitive domain of the revised Bloom's Taxonomy designed to teach CT skills. Cognitive objectives were divided into six levels that were used to structure the action plan, ranging from simple (remembering) to complex (creating).

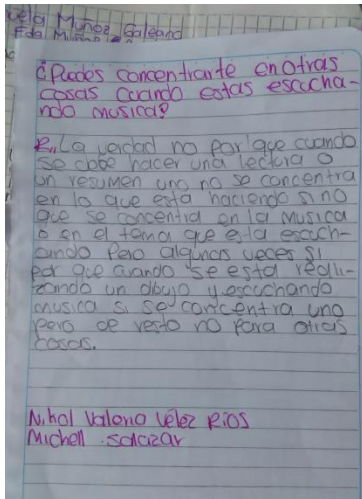
5.3.1.1. First category: Reasoning

“All reasoning is an attempt to figure something out, to settle some question, to solve some problem” said Paul, R. and Elder, L. (1997). During the CT training, participants were encouraged to carry out tasks by reading and observing images, as well as questioning exercises and short projects to reach CT outcomes. Thus, the analysis of the students was developed through the practice of different cognitive levels (Revised Bloom's taxonomy) through which they recalled information from the readings and images to finally make inferential analysis and evaluate by expressing their own points of view about the topics.

The data collected during the CT intervention showed that learners improved their reasoning as they were more attentive towards the information presented as input. In addition, they could infer some literal meanings from texts and images, by activating their previous knowledge, schemata and previous experiences that were shared in work groups showing an improvement in EFL proficiency.

Artifacts analysis showed that 45% of the participants carried out reasoning tasks, 30% remained in basic level and the other 25% were not able to be classified due to the fact that they were absent more than 60% of the class time or were not on task. This analysis permitted us to conclude that reasoning occurred only when students are constant and follow the whole process. Otherwise there is a risk of continuing at low levels of thinking.

Sample of artifact



¿Puedes concentrarte en otras cosas cuando estás escuchando música?

R/ la verdad no porque cuando se debe hacer una lectura o un resumen uno no se concentra en lo que está haciendo si no que se concentra en la música o en el tema que está escuchando pero algunas veces si porque cuando está realizando un dibujo y escuchando música si se concentra uno pero de resto para otras cosas.

Nicol Valeria Vélez Ríos.
Michelle Salazar.

The situation described above explained why field notes showed that students presented their points of view easily when the teacher built background information and related some ideas to the ones they identified as familiar. Students needed guidance to construct their arguments and ideas. The following excerpt from the field notes exemplifies how students were able to express ideas after the teacher modeled for them. Additionally, this excerpt highlights the fact of providing opportunities for students to practice.

OBSERVATION	REFLECTION
During the session peer work was promoted to share knowledge and provide reasons as a group to complete the tasks based on their own experiences. Students took some ideas given by the teacher to do reasoning.	That situation invited us to provide more opportunities to engage students in gathering information to look for possible causes and solutions, as well as to prompt students to identify and clarify overall situations.
Note: Excerpt from field notes in the first session	

Artifacts and field notes analysis of lesson one showed us that students were able to do reasoning by sharing knowledge with peers and taking ideas provided by the teacher during the

tasks. Furthermore, in lesson three, it was observed that participants provided reasons when using the vocabulary given by the teacher. On the other hand, most of students selected lesson number two as the one they could reach a higher reasoning level because the topic was attractive for them (Table 9).

5.3.1.2. Second category: Problem solving

During the CT training, participants were encouraged to carry out tasks by reading and observing images, as well as questioning exercises and short projects to evidence production and improvement in EFL proficiency. Such lessons included open questions which demanded students to think, reflect, and go beyond each particular answer. In addition, prediction was encouraged where participants had to write down or talk about what they thought a passage would be about before reading by stating their thoughts. Artifact analysis included answering to problematic situations.

Artifacts analysis based on categories showed that 53% of the participants carried out problem-solving tasks, 33% of the artifacts remained in concepts based on given information, and the other 17% complained of the tasks saying that they were very difficult (field notes) or they just did not show up those sections. The following artifact sample shows how students gave possible options and solutions to everyday life situations.

To be able to show some comments taken in the field notes, they were translated into English since students made them in Spanish.

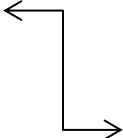
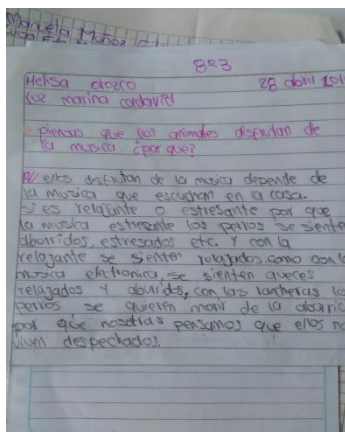
Students` comments using predictions task
<p>S1:“Music is very important in a lot of fields, for therapies, relax, study, or have fun”</p> <p>S2:“Music can affect humor on people, because when we listen romantic music we feel lovely, however when we listen to tropical, electronic or reggaeton we feel happy” “popular music invite me to drink and be with my family”</p> <p>S3: “I read when a woman is pregnant and listening classical music they baby could be more intelligent”</p> <p>S4:“No, I think Rockers are not bad people, they love this music because they are more active and need more emotions”</p> <p>S5: “Heroes, are similar because they have powers and they like to help people”</p> <p>S6:“Heroes have a real life where they are a normal person, but they have a hide life where they use a specific cloth or mask to protect humanity form enemies”</p> <p>S7:“for me my hero is my mom, she is always with me, protect me, loves me, care me, works the whole they in a company, and at home too, she is strong”.</p> <p>S8 “Many people don` t trust on the news given by some media because many of them belong to a specific company or politician”.</p> <p>S9: “However news is very important to try to be updated, but do not believe in everything it is important to have at least another different version of the situation”.</p> <p>S10:“journalist and their columns could be good and dangerous at the same time because their information has a strong power on the society.”</p> <p>S11:“comics` designers are very good readers of the reality and have good imagination to create the comic”.</p> <p>S12:“comics are more that make a draw, they have a political, social or cultural incidence or power”.</p>

Comments from students taken in teachers` field notes show how relevant was to encourage students to predict situations based on students` previous knowledge, ideas and points of view. The CT training included other tasks, such as listing relevant facts, restating a problem on their own words and describing related known situations which were considered problems.

5.3.1.3. Third category: Judgment

In order to solve a problem it is necessary to form an opinion by thinking or analyzing carefully the pros and cons to draw a conclusion. This category was included with the aim to address a higher Bloom`s Taxonomy level, evaluating, which means checking, judging, critiquing and justifying a decision. This skill was evidenced in the field notes and questionnaire. Students worked in groups, discussed and shared thoughts with continuous support and feedback from peers and the teachers. Some tasks demanded the students to compare, justify and conclude based on facts.

This category showed a higher percentage of skills training. Artifacts evidenced that 58% of the students developed judgment tasks satisfactorily, 35% of the students artifacts showed low level when they were encouraged to make judgment (32 students out of 93), and 17% (15 students out of 93) did not participate in the tasks because they did not attend the lessons. The following excerpt from the field notes exemplifies how students made judgments.



¿Pienzas que los animales disfrutan de la música?
 ¿Por qué?

R/ ellos disfrutan de la música depende de la música que escuchan en la casa. Si es relajante o es estresante por que la música estresante los perros se sienten aburridos, estresados etc. Y con la relajante se sienten relajados con la música electrónica se sienten a veces relajados y aburridos, con las rancheras se quieren morir de la aburrición por que nosotras pensamos que no viven despechados.

Melisa Orozco
 Luz Marina Cadavid

Field notes

It was observed that students were constructing a critical point of view when they were encouraged to give personal opinions based on experiences and background. In addition, they felt challenged at the time to ask different type of analysis, despite the topic that had some current important people who were not familiar to them, because they were part of daily news. That situation invited us to reflect that students had a clear critical purpose based on the questioning and analysis as the tasks went through, their critical thinking was getting strength without students realized.

Note: Taken from field notes, third lesson.

With the specific information acquired during the four lessons, they produced new ideas and concepts; they also made judgments, supported their ideas, and took the implicit information to defend their own arguments and opinions. The following are some of the students ‘opinions on how they judged situations.

S13:“Yes, music is essential in all societies they are part of the cultural and social development”.

S14: “we know new are manipulated by the government, it means power, but we need to be informed about what is happening in our society”.

S15: “comics are more complex than a funny image”, are some samples about the students’ own opinion, which have enriched their way of thinking”

5.3.1.4. Fourth category: drawing conclusions

During the CT training, students drew conclusions through analysis of facts. The teacher used key words to state concepts and questions that encouraged students to express what they knew about the topics. Background knowledge and text information including images were presented in different lessons.

Artifacts showed 51% of students drew conclusions at a high level supporting and defending their ideas (47 students out of 93), 28% of the artifacts (26 students out of 93) showed basic conclusions that were extracted from the given information without making an effort to go beyond, and the other 21% (27 students out of 93) did not try to reinforce this skill because of different reasons, such as boredom towards the tasks, lack of regular attendance or discouragement.

Researchers could evidence that an average of 70.8% students were able to draw conclusions. For each particular school results were up to the 60%. For example the 60.3% of students at Lovis School were able to reach higher CT level skills, 65.4% of students at K12 School received said skill, and 84% of students at FMH School reached an upper level.

Students at this stage had reached higher levels as it can be seen in the type of comments they made. The following excerpts were taken from the field notes. The researchers took note of the comments students made when evaluating or designing artifacts.

Students` comments taken from field notes
S16: “Si Colombia pudiera exportar su corrupción, seriamos millonarios.”.
S17: “Nunca sabemos quiénes son las personas que realmente conocemos y más por internet!”.
S18: “The teacher did not understand that every student think and feel different from her, but she persisted to teach them in the same way”.
S19: “Ahorrar agua es muy importante para la tierra y para nosotros porque en el futuro estaremos anhelando una gota de agua, aún estamos a tiempo de no malgastarla.”
Note: Taken from field notes in the second session of comics.

5.3.2. Students Questionnaire in Stage 2 – CT training

A student's questionnaire was used to measure how students perceived the training lessons that teachers carried out (Appendix G). It was an instrument to find out what happened during the SDL processes when promoting critical thinking skills training for eighth graders by reflection and self-assessment (Table 9). The results were collected after each lesson to identify some aspects of the CT training that could show us the reflection and self-assessment of 93 eighth graders had in each lesson.

Table 9. *Students' perception questionnaire*

Statements	Music	Heroes	News	Comics	Average
1 El tema me gusto	99%	98.3%	89.9%	96%	95.9 %
2 Las instrucciones fueron claras y sencillas	94.%	97.2%	98%	99.3%	97.2 %
3 Los recursos fueron motivantes	97.2%	100%	94.4%	99%	97.7 %
4 El tiempo fue adecuado	94.7%	94.7%	82.2%	97%	92.2 %
5 Las actividades invitaron a razonar, analizar, juzgar, interpretar, dar conclusiones, solucionar problemas, crear e innovar.	99%	98.4%	83.8%	100%	95.4 %
6 El docente realizó diferentes tipos de preguntas que pude entender.	97.3%	97.8%	88%	94.3%	94.4 %
7 Este tipo de actividad se deberían realizar en otras áreas.	94%	94.8%	86.1%	99%	93.5 %
Sub-total	96.3%	97.3%	89.9%	97.8%	95.3 %
8. El tema que más me gustó fue:	27%	31%	18%	24.%	

In average, 95.9% perceived the lessons very appealing and interesting. 95.6% of students enjoyed the topics. In regards to the type of instructions, 97.2% said that they understood without significant problem at the time to develop the four categories skills, 97.6% of the participants

thought resources were motivating to develop the lessons. In regards to time management, 92.2% of the students said that time to do the activities was enough.

Additionally, 95.4% of the students considered that the kind of questions allowed them to think, solve problems, draw conclusions, innovate and share their points of view with more encouragement. 94.4% of the students agreed that questioning strategies were clear. Finally, 93.5% of the students agreed on the fact that the proposed activities should be done in other subjects because they inspired and motivated students.

Fifty students out of ninety-three (54%) developed creative tasks that had to do with short peer projects. These projects evidenced decision-making and analysis when creating products based on given topics. Those students reached the higher order thinking skills in Bloom's taxonomy because they went beyond the basic levels of comprehension, that is to say, they could process texts at deep levels, make judgments, and make critical interpretations to demonstrate higher levels of insight and sophistication in their thinking.

On the other hand, 32% of the participants remained in the lowest level of learning in the cognitive domain in Bloom's Taxonomy. It means learners memorized and recalled information without necessarily understanding. 13% of the participants did not carry out the tasks due to the fact they missed those classes.

5.3.3. Data Analysis Stages 1 – CT Profile and Stage 3 (CT Verification)

65% of FMH students, 51.8% of Lovis School and 85,6% of KM12 answered correctly reasoning questions (questions 1 to 6). Table 10 presents a summary of the results obtained during the pretest and post-test. The table is explained in light of the four established categories.

Table 10. *Critical Thinking pre-test and post-test comparison*

# Q	Pre-test LOVIS	%	Post- test LOVIS	%	Pre- test K12	%	Post- test k12	%	Pre-test FMH	%	Post- test FMH	%	Pre-test media %	Post- test media %
1	21	58,3 %	32	94.1 %	19	90,4 %	20	95.2 %	28	80%	34	94.4 %	76,2%	94.5%
2	20	55,5 %	32	94.1 %	21	100 %	21	100 %	34	97,1 %	34	94.4 %	84,2%	96.1%
3	21	58,3 %	26	76.4 %	18	85,7 %	14	66.6 %	15	42,8 %	25	69.4 %	62,2%	70.8%
4	19	52,7 %	20	58.8 %	20	95,2 %	11	52.4 %	29	85,2 %	30	83.3 %	77,7%	64.8%
5	15	41,6 %	25	73.5 %	18	85,7 %	10	47.6 %	29	85,2 %	32	88.8 %	70,8%	70%
6	16	44,4 %	23	67.6 %	12	57,1 %	16	76.2 %	16	47%	20	55.5 %	49,5%	66.4%
7	16	44,4 %	27	79.4 %	14	66,6 %	20	95.2 %	23	65,7 %	28	77.7 %	58,9%	84.1%
8	13	36,1 %	12	35.2 %	6	28,5 %	15	71.4 %	11	31,4 %	25	69.4 %	32%	58.6%
9	19	52,7 %	26	76.4 %	11	52,3 %	19	90.4 %	21	60%	31	86.1 %	55%	84.3
10	17	47,2 %	23	67.6 %	18	85,7 %	15	71.4 %	25	71,4 %	29	80.5 %	68,1%	80.5%
11	20	55,5 %	21	61.7 %	12	57,1 %	14	66.6 %	25	71,4 %	34	94.4 %	61,3%	74.2%
12	11	30,5 %	21	61.7 %	12	57,1 %	16	76.2 %	25	71,4 %	28	77.7 %	53%	71.8%
13	7	19,4 %	20	58.8 %	13	61,9 %	13	61.9 %	21	60%	31	86.1 %	47,1%	68.9%
14	5	13,8 %	20	58.8 %	2	0,9%	12	57.1 %	2	5,7%	28	77.7 %	6,8%	64.5%
15			16	47%			13	61.9 %			34	94.4 %		67.7%
16			16	47%			12	57.1 %			31	86.1 %		63.4%
Sub- total	36 Ss.	43,6 %	34 Ss.	66.1 %	21 Ss.	60,1 %	21Ss.	71.7	35 Ss.	57,3 %	36 Ss.	82.2 %	53,6%	73.3%

- reasoning
- problem solving
- judgment
- white: drawing conclusions

5.3.3.1. First Category – Students not able to solve reasoning questions

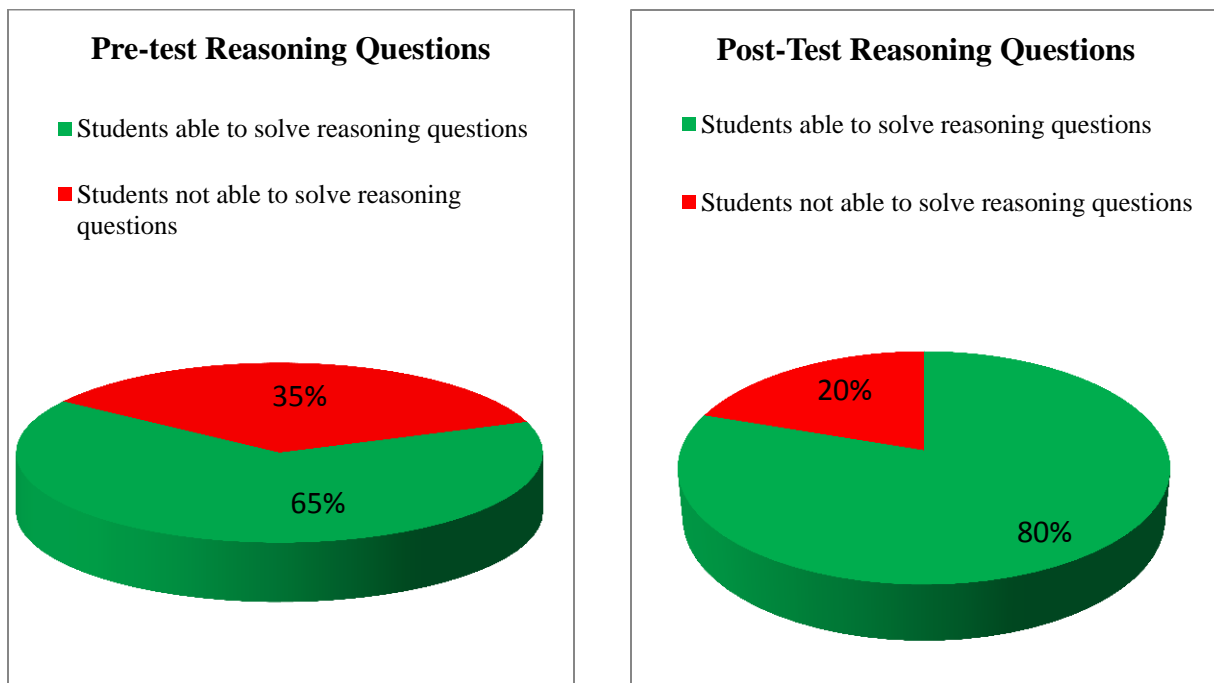


Figure 6. Reasoning Comparison

5.3.3.2. Category 2 – Problem Solving

For problem solving questions, 48.6% of the students were able to answer these kind of situations correctly. At Lorenza Villegas de Santos High School, 44.4% of its students were able to answer correctly these kind of questions; on the contrary Francisco Manzanera Henriquez School showed the best results in this section questions with 52.3%.

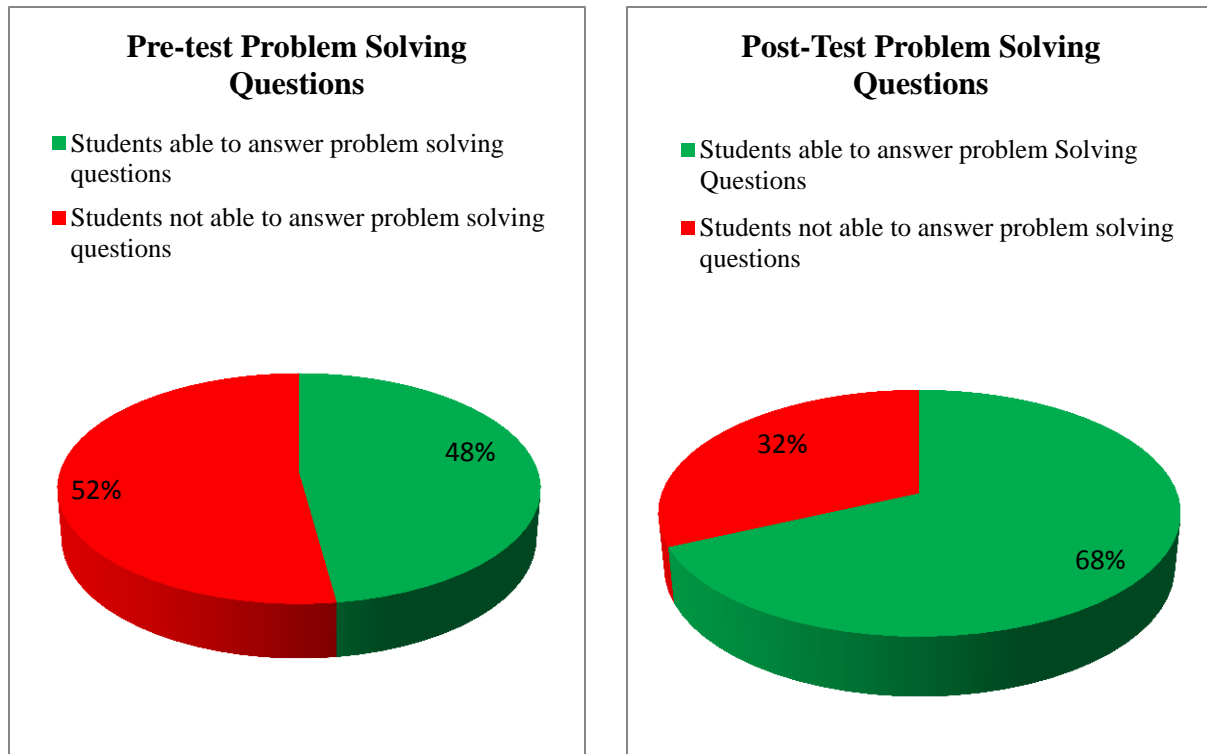


Figure 7. Problem solving comparison

5.3.3.3. Third and Fourth Category – Judgment and draw conclusions

In the last section of judgment and draw conclusions the questions were put together. 47.2% of the students got the appropriate answers. 33.2% of the students at Lorenza Villegas de Santos High School developed these two levels of knowledge, while the 56% of students at Francisco Manzanera Henriquez School did better in facing judgment situations. This data had a close and similar relationship with the one it was shown by the Saber Test.

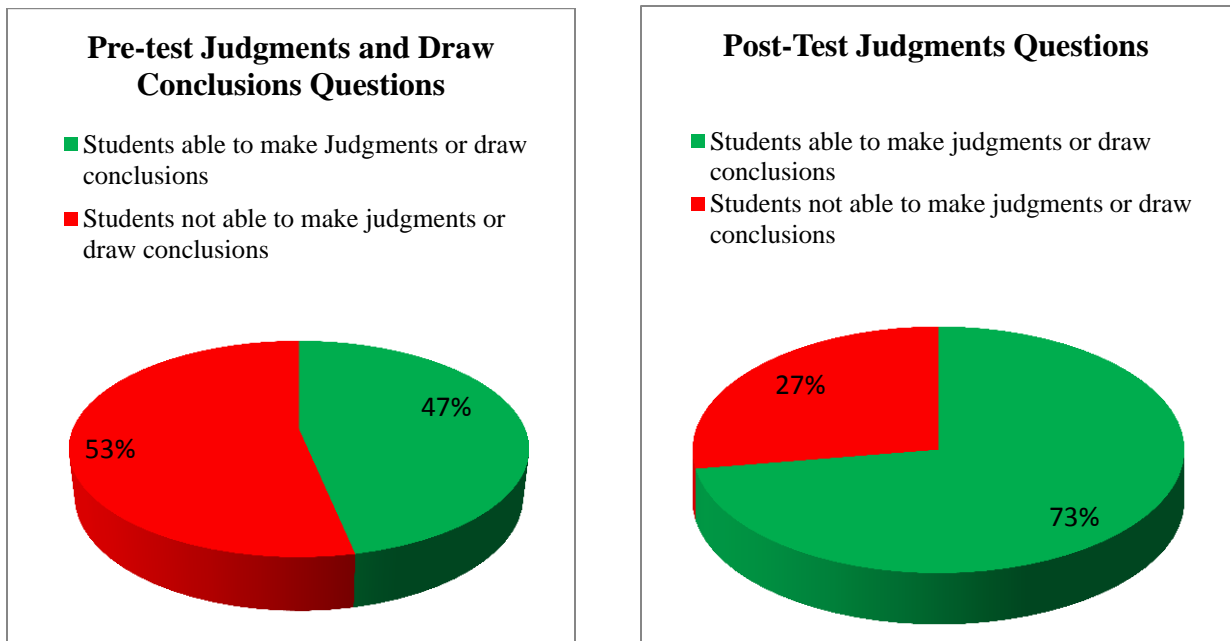


Figure 8. Judgment and draw conclusions comparison

Figure 8 shows a progress when questions were more complex. Based on the analysis, we could infer that eighth graders of LOVIS had a basic thinking level, placing in just knowledge performance. Meanwhile the two other schools got a higher thinking level.

In conclusion, data collected permit to say that most of the students moved to a higher level and those who did not was due to not attending class or could not get involved in a full lesson.

Chapter 6: Pedagogical Implications and Conclusions

The conclusions outlined in this chapter are the result of a complete analysis of the critical thinking training of eighth graders at three different public schools in Colombia. The results of this study can help teachers understand and deal with the problem of low critical thinking skills in high school students. This section focuses on four aspects: first, the educational impact of the findings; second, the difficulties faced during the research process; third, recommendations for further research and finally explicit answer to the research questions.

6.1. Significance of the Results – Educational Impact of Findings

The results of this study revealed that critical thinking skills can be promoted and improved using CT training and strategies (reasoning, problem solving, making judgments and drawing conclusions). The main impact of the study is on the teachers' role and the lesson plan sequence.

Teachers need to become CT trainers. It was relatively successful to help learners improve their critical thinking abilities when they participated in lessons in which there was a clear sequence of thinking skills. Students moved from basic levels to higher levels of thinking. "Language teachers have the role of facilitating learning by providing strategies, developing communicative skills and enhancing collaborative environments," according to Nunan, (1999).

That is to say, that teachers need to develop strategies so students can become active participants of their progress, being able to be creative, making inferences and solve problems. In other words, to become critical thinkers. Hence, training using the CT strategies may foster students' abilities because it was evidenced that the more they were getting involved in the training, their performing was getting better.

If objectives are stated as higher-order outcomes, then tasks that promote CT can be included in classroom lessons. Researchers designed four lesson plans that included sub-lessons in which topics, outcomes and thinking levels were stated. Class sequence and outcomes were stated in the form of thinking production. In fact, one of the biggest impacts was to have students create or innovate as part of a lesson as a means to improve EFL proficiency, as well as reflect and self-assess their progress.

In conclusion, teachers can carry out CT skills training by changing their role and planning lesson that follow the characteristics stated in this study. Being a trainer and sequencing lessons from basic thinking levels to complex ones and stating measurable outcomes help students raise their critical thinking abilities and gain confidence to produce more complex and advance thinking level answers.

6.2. Limitation of the present study

During the development of this study some limitations related to time appeared. The main obstacle was time itself because of the continuous interruptions during the implementation. These interruptions were national strikes, faculty meetings or extracurricular activities. To overcome the difficulties, some colleagues voluntarily allowed us to use their class time.

Another constraint we faced was the students' language level. Students were A1 users according to the CEF. We had to allow the use of Spanish for verification or clarification. Moreover, strategies during the training included vocabulary activities for students to receive the basic words to express themselves. In regards to language thinking, the CT profile demonstrated students were at low level. It requires the training to be adjusted and include a class sequence in which students moved from basic levels to higher levels in every lesson. In consequence lessons

lasted more time and included sub-lessons. Doing explicit language and thinking strategy training encourages students to express feelings with more confidence in the foreign language.

6.3. Further research

The action research presented in this paper sets the basis for further studies. This research was done in three regions in Colombia. It would be interesting for other teachers in different areas in the country to engage in this type of research in such a way one may find out if they get similar results.

Participants also provide a window for other studies. This research focused on high school students. It would be relevant in the field to carry out a research project in which subjects pursue higher education. Entry tests, exit tests, artifacts and field notes may provide an insight of how critical students are at higher levels of schooling.

This study can also be part of an interdisciplinary project. Critical thinking as a skill should be developed and promoted in all content areas. It was explained in this paper that Pruebas Saber evaluate thinking skills and also how CT is a factor to succeed in life; in consequence, CT strategy training may be incorporated into other core content areas. Deciding the type of training would be part of a research study.

Finally, this study helped us understand that it is possible to transform our students' performance through the use of planned strategies. It is not just a matter of teaching content; it is a matter of planning learning outcomes and setting the evidence to measure them. Teaching students to think critically is possible when planning for thinking skills which are vital to succeed in school and beyond.

6.4. Conclusions

Teachers can carry out CT skills training by planning lessons that explicitly state thinking skills, outcomes and procedures around a topic. Implementing training like the one described in this research requires educators to follow three stages. The first stage, CT profile, lets educators know who their students are and assesses their CT skills. The second stage, CT training supports critical thinking by structuring lesson plans focused on Bloom's Taxonomy levels of cognitive domain. Each lesson should consider the characteristics explained in this paper. Additionally students should be involved in the whole process to guarantee progress. The last stage, CT verification, evidences students' progress and challenges for critical thinking.

Data analysis showed that CT skills training bettered students' thinking skills and EFL proficiency. In every lesson students followed a process that helped them move from the lowest level (remembering) to the highest one (creating) of Bloom's Taxonomy. Eighth graders came up with well-reasoned conclusions and solutions to specific situations by sharing opinions and expressing likes and dislikes with confidence. At the same time, participants communicated effectively with peers in figuring out solutions to complex problems.

Through the CT training students could reflect about their own process and learning experience. It means they were aware of their improvement during the training, comparing their abilities from the beginning to the end of the CT training. Learners demonstrated to themselves they were able to achieve objectives, recognizing their strengths and overcoming their weaknesses during the training process.

Regarding Self-directed learning, the researchers concluded that the participants became more autonomous learners as they learnt how to design short projects where collaborative and

independent work were noticeable. Most of the time students were monitoring their own learning and progress through reflection and self-assessment.

The main profit of using critical thinking in English Language Teaching and Learning contexts is that it encourages active learning on students because they learn how to think rather than what to think, and at the same time, it increases their chances of academic success. Besides, students will think deeply, they will connect what they learn with what they already know, and they will be able to select the information they receive in order to create something completely new. On the other hand, teachers need to change their pedagogical views and adopt a more flexible attitude towards their teaching style by using trial and error as a habit into the classrooms in order to provide students with quality learning and encourage critical thinking.

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Appendices

Appendix A- Consent Letters

CONSENTIMIENTO INFORMADO PARA ESTUDIO DE INVESTIGACION

Girardot, Abril 26 de 2016

Licenciado

OSCAR ROA RIAÑO

Rector Institución Francisco Manzanera Henríquez

Con la presente quiero solicitar muy comedidamente su autorización para realizar un estudio de investigación en la Institución como requisito de mi trabajo de grado de la Maestría en Enseñanza del Inglés para el Aprendizaje Auto-dirigido, programa virtual de la Universidad de la Sabana y Anaheim University de California, U.S.A.

Los estudiantes del grado 802 han sido seleccionados para participar en este estudio relacionado con un entrenamiento en habilidades de pensamiento crítico, trabajo colaborativo y desarrollo de estrategias innovadoras que les permitirán mejorar su inglés comunicativo y su habilidad para juzgar y resolver situaciones en diferentes facetas de sus vidas. Esta investigación implica la planeación e implementación de actividades durante ocho semanas, al igual que evidencias tales como: tests, encuestas, entrevistas, registros fotográficos o de video, entre otros.

Aclaro que los padres de familia ya firmaron la autorización para que sus hijos formen parte de este estudio, señalando que de ninguna manera afectará la nota de los estudiantes durante el período y que el proceso es estrictamente confidencial, lo que indica que los nombres de los estudiantes no serán utilizados en ningún informe cuando los resultados y hallazgos de la investigación sean publicados.

Agradezco de antemano su apoyo para llevar a buen término mi investigación.

María Patricia Molina R.



INSTITUCION EDUCATIVA TECNICA FRANCISCO MANZANERA HENRÍQUEZ



Girardot – Cundinamarca – Nit. 890.680.240-7
Creado por el Decreto N° 1445 del 19 de Jio de 1979 – Emanado del Ministerio de Educación Nacional
Código ICFCES: Jornadas MAÑANA: 036152 – TARDE: 036160 – NOCTURNA: 036178- DANE N°. 225307-000824
Cra 12 No. 19-45 Barrio Sucre – Tels.: 8889942 - Cel. 3204203663 - iemanzanera@hotmail.com

Girardot, 06 de Marzo de 2016

Licenciada
MARIA PATRICIA MOLINA R.
Docente de Inglés
Ciudad

Asunto: Autorización desarrollo de Proyecto

Para su conocimiento y fines pertinentes le informo que está autorizada para que realice el Proyecto de Investigación relacionado con un entrenamiento en habilidades de pensamiento crítico siguiendo los niveles de la Taxonomía de Bloom durante los meses de Marzo, Abril y Mayo del año en curso. Estas actividades les permitirán a los estudiantes del grado 802 mejorar sus habilidades para razonar, juzgar y resolver situaciones en diferentes facetas de sus vidas. Espero que los resultados de dicho proyecto se pongan a disposición de la Comunidad Educativa Manzanerista.

Cordial Saludo,

OSCAR ROA RIAÑO

RECTOR

Consent Letter for Parents

Institución _____

Le estamos informando como padre o acudiente, que nosotros Edgar García, Yumir Gómez y Ma. Patricia Molina, con la asesoría de la Ph.D. Mónica Rodríguez y el acompañamiento de la Universidad de La Sabana, estamos realizando una investigación sobre entrenamiento en pensamiento crítico en tres Instituciones Educativas de Medellín, Montería y Girardot. Esta es requisito para obtener el título de Magister en Didáctica del Inglés para aprendizaje auto-dirigido. El objetivo es mejorar en los estudiantes las habilidades para razonar, juzgar y resolver problemas en diferentes facetas de sus vidas.

Solicitamos autorización para que su hijo(a) participe voluntariamente en éste proyecto de investigación donde se hace necesario dejar algunas evidencias tales como exámenes, encuestas, entrevistas, registros fotográficos o de video, entre otros. La participación o no, en ninguna manera afectará la nota del o la estudiante durante ciclo lectivo del año 2016. Este proyecto no conlleva a ningún riesgo ni recibe beneficio económico alguno. El proceso es estrictamente confidencial y el nombre del o la estudiante no será utilizado en ningún informe cuando los resultados y hallazgos de la investigación sean publicados.

Yo _____ identificado con c.c. No. _____ de _____ y con domicilio _____ he leído, he sido informado(a), he comprendido y voluntariamente doy mi consentimiento para que me hijo(a) _____ del grado _____ participe en el proyecto de investigación.

Firma y C.C.

Appendix B - Pre-test (CT Profile)

CRITICAL THINKING PROFILE TEST

Student's name: _____
 Date: _____, Institution: _____
 City: _____. Teacher: _____

Answers` Sheet

1	A	B	C	D
2	A	B	C	D
3	A	B	C	D
4	A	B	C	D
5	A	B	C	D
6	A	B	C	D
7	A	B	C	D
8	A	B	C	D
9	A	B	C	D
10	A	B	C	D
11	A	B	C	D
12	A	B	C	D
13	A	B	C	D
14	A	B	C	D

Instrucciones

Para cada situación presentada encierre en un círculo solo una respuesta que de acuerdo a su análisis considere apropiada.

1. Durante la época electoral, el gerente de una empresa les dice a sus subalternos que deben votar por el candidato de un determinado partido político, y que si no lo hacen, perderán su trabajo. Un empleado afirma que esto es inapropiado. ¿Cuál es la frase que mejor apoya lo que dice el empleado?

- Amenazar a la gente para que vote por un determinado partido es un abuso.
- hablar de política siempre lleva a conflictos porque nadie se pone de acuerdo.
- la obligación de los superiores es ilustrar a los empleados en política.
- los gerentes de las empresas no deberían interesarse en temas políticos.

2. Los papás de Diego, un niño de 11 años de edad, se van a separar. Están discutiendo ante un juez porque el papá quiere que Diego viva con él, pero la mamá quiere que Diego viva con ella. En esta situación, ¿Diego a qué tiene derecho?

- A dejar de estudiar hasta que la situación se resuelva.
- a que el juez lo escuche y tenga en cuenta su opinión.
- a verse con su papá sin que su mamá se entere.

d. a denunciar a sus papás por la separación.

3. El papá le habla a su hijo de la importancia de cuidar el medio ambiente. Le dice que no se debe arrojar basura a la calle, no se debe desperdiciar el agua, y se debe apagar la luz siempre que no se necesite. Mientras escucha a su papá, el niño recuerda haber visto un letrero en el que se contradice lo anterior. ¿Entre las siguientes opciones, cuál corresponde a lo escrito en el letrero?

a. Venta y mantenimiento de trituradoras de basuras.

b. se vende helados gigantes de todos los sabores.

c. lavado de carros con chorros de agua a presión.

d. se vende lámparas y reflectores

4. Un niño pierde el año. En la entrega de notas el profesor les comenta a los papás la situación de su hijo. Les dice que el año anterior era muy disciplinado y obtenía muy buenas notas, pero que este año se veía muy distraído y rara vez hacía las tareas. Los papás le cuentan al profesor que recientemente se han divorciado. De acuerdo con lo anterior, es probable que

a. La situación familiar haya perjudicado el rendimiento académico del niño.

b. el niño no pueda sacar buenas notas, porque es un mal estudiante.

c. la situación familiar haya favorecido el rendimiento académico del niño.

d. el niño se haya arrepentido de haber sido disciplinado y de haber sacado buenas notas el año anterior.

5. La alcaldía local convoca a los habitantes de un barrio para votar sobre la idea de construir una cancha de fútbol en un terreno abandonado. La mayoría vota a favor de la idea. Sin embargo, un grupo se opone y propone que en lugar de una cancha se construya un parque con varias zonas para deportes como atletismo, patinaje y otros juegos. La idea de la cancha de futbol recibe la mayor votación porque

a. Los habitantes del barrio son muy buenos en ese deporte.

b. es un deporte muy popular y muchas personas lo practican.

c. el atletismo y el patinaje son deportes muy aburridos.

d. los habitantes del barrio odian hacer otros deportes.

6. Carlos escribió el siguiente texto para explicar por qué hay que lavarse las manos antes de comer y cuándo hay que lavarse las manos. Al leer lo que escribió Carlos se da cuenta de que hay una información que no corresponde al tema propuesto. ¿Cuál es la información que no corresponde al tema de la tarea?

a. “Al lavarte las manos te liberas de los gérmenes”.

b. “las manos se deben lavar antes de comer”.

c. “también es importante lavarlas después de jugar”.

d. “para lavarte las manos utiliza agua templada y jabón”.

7. Dos compañeras de un colegio están hablando sobre lo injusta que es una profesora, pues siempre regaña y castiga a todos los estudiantes sin importar quién fue el que se portó mal. ¿Qué pueden hacer las estudiantes para cambiar esta situación?

- a. Nada, pues la profesora tiene derecho a castigar a todos los alumnos.
- b. portarse mal, para que cuando las castiguen sea por una razón justa.
- c. hablar con el personero para que discuta la situación con el gobierno escolar.
- d. cada vez que alguien se porte mal, contarle a la profesora quien fue.

8. En el descanso un estudiante le quita el balón a otro. Enfurecido se lanza a recuperarlo y terminan peleando dándose fuertes golpes. Los compañeros se aglomeran alrededor. Algunos tratan de separarlos diciendo que no vale la pena la discusión; otros los animan para que peleen más, otros se muestran indiferentes y otros salen a buscar ayuda. ¿Cuál de las actitudes de los compañeros impide terminar la pelea?

- a. Los que los animan para que peleen más.
- b. los que tratan de separarlos.
- c. los que se muestran indiferentes.
- d. los que salen a buscar ayuda.

9. Inés cree que su profesora es más exigente con ella en las calificaciones que con los demás niños. Inés intenta reclamarle por esto a la profesora. La profesora, que es muy estricta con los horarios de clases no le ha dado la oportunidad de hablar con ella. ¿Cuál es el conflicto para Inés en esta situación?

- a. Que la profesora no le suba sus calificaciones.
- b. que la profesora premia a los estudiantes destacados.
- c. que la profesora no permite el diálogo sobre las calificaciones.
- d. que la profesora es estricta con todos los estudiantes.

10. Juan sufre un accidente mientras juega frente a su casa. Un vecino, al advertir que los padres de Juan no se encuentran en su casa, decide llevarlo al puesto de salud más cercano. Una vez han llegado al puesto de salud, la recepcionista le exige al vecino que se comprometa a pagar los gastos; de lo contrario, no atenderán a Juan. El vecino afirma que no le corresponde a él pagar los gastos, y que aunque no lo haga tienen que atender a Juan. ¿Quién tiene la razón y por qué?

- a. El vecino, porque la salud es un derecho fundamental de Juan, y por lo tanto deben atenderlo aunque nadie se comprometa a pagar los gastos.
- b. la recepcionista, porque si nadie se ha comprometido a pagar los gastos, en el puesto de salud no están obligados a atender a Juan.
- c. el vecino, porque él no es el papá de Juan, y solamente los papás de Juan están obligados a comprometerse a pagar los gastos.

d. la recepcionista, porque aunque el vecino no sea el papá de Juan, por haberlo llevado al puesto de salud debe comprometerse a pagar los gastos.

11. En un colegio se les pide a los estudiantes que escriban una nota para apoyar una campaña sobre el cuidado y defensa de las mascotas. ¿Cuál de las siguientes notas apoya más la campaña?

a. Los animales domésticos nos sirven para alimentarnos y vestirnos con la carne, la leche y la lana, entre otras cosas. ¡Ayudémoslos!

b. las mascotas son animales domésticos que acompañan y son fieles a sus dueños. ¡Tratémoslas bien a ellas también!

c. las mascotas, como los perros y los gatos, pueden ser peligrosas si no las mantenemos dentro de nuestra casa. ¡Controlémoslas!

d. los animales domésticos pueden ser bonitos o feos, estar sanos o enfermos, ser mansos o bravos. ¡Elijámoslos bien!

12. El papá de un estudiante le dice a su hijo: “Si pierde una o más materias, lo mejor es que en vacaciones de Semana Santa no vayamos de paseo, sino que nos quedemos repasando lo visto, para que en el otro periodo le vaya mejor”. En la situación anterior, ¿qué elementos están en conflicto?

a. El religioso y el académico.

b. el familiar y el recreativo.

c. el recreativo y el académico.

d. el religioso y el familiar.

13. Andrés y Carlos juran que siempre se apoyarán en todo y por toda la vida. Un día Andrés le dice a Carlos: “Ayer me di cuenta de dónde guarda el señor de la tienda el dinero de lo que vende durante el día; en la noche podemos entrar, tomarlo y repartirlo en partes iguales”. En esta situación, ¿qué se pone en riesgo y por qué?

a. La amistad entre Andrés y Carlos, porque Carlos puede aceptar actuar de la manera deshonesta que le pide Andrés.

b. la confianza que Carlos le tiene a Andrés porque Andrés le propuso que repartan el dinero en partes iguales.

c. la amistad entre Andrés y Carlos, porque Carlos puede negarse a actuar de la manera deshonesta que le pide Andrés.

d. la confianza que Carlos le tiene a Andrés, porque Carlos no propuso que repartan el dinero en partes iguales.

14. Quieres escribir una carta a tus padres y convencerlos de que te regalen una bicicleta en navidad. ¿Cuál de las siguientes frases escribirías?

a. Papá y mamá, espero tener un regalito de navidad.

b. papá y mamá, una bicicleta sería el mejor regalo de navidad.

c. papá y mamá, quiero un regalo de navidad que sea útil para mantener el peso.

d. papá y mamá, mi regalo podría ser una bicicleta, pero también puede ser un gato.

Appendix C - Post-test (CT Verification)

Student's name: _____ Date: _____, Institution: _____. City: _____, Teacher: _____

Answer Sheet

1	A	B	C	D
2	A	B	C	D
3	A	B	C	D
4	A	B	C	D
5	A	B	C	D
6	A	B	C	D
7	A	B	C	D
8	A	B	C	D
9	A	B	C	D
10	A	B	C	D
11	A	B	C	D
12	A	B	C	D
13	A	B	C	D
14	A	B	C	D
15	A	B	C	D
16	A	B	C	D
17	A	B	C	D

Este post-test pretende medir el nivel de pensamiento crítico a los estudiantes de octavo grado en tres Instituciones Públicas de Medellín, Montería y Girardot, en algunos aspectos importantes, tales como solución de problemas, razonamiento y juicios ante las situaciones presentadas.

Las preguntas corresponden a situaciones de contexto real tomadas de pruebas de Competencias Ciudadanas Saber Grado 9° del Ministerio de Educación año 2014, proyectos del Ministerio de Educación y de inovablog.com. El resultado de la prueba pretende verificar los alcances de razonamiento en los estudiantes al enfrentarse a preguntas de pensamiento crítico.

Las preguntas están organizadas para medir diferentes niveles. Las primeras seis corresponden a razonamiento; las preguntas siete a la nueve miden el nivel de solución de problemas (understanding), las preguntas de la diez a la once a responder juicios (evaluating), de la pregunta doce a la catorce se refiere a preguntas de juicios (creating), y las dos últimas corresponden a obtener conclusiones (applying).

Para cada situación presentada, sombree en la tabla de respuestas la letra que usted considera correcta de acuerdo a su análisis.

Preguntas 1 a 5 Razonamiento (Reasoning)

1. ¿En cuál de las siguientes situaciones los padres estarían maltratando a un niño de 12 años de edad?

- a. Si no le permiten ir a una fiesta.
- b. si le exigen que cumpla los deberes escolares.
- c. si no lo escuchan ni hablan con él.
- d. si le exigen que ordene su cuarto.

2. Ernesto y Ricardo son aficionados al baloncesto y presentaron una solicitud para ingresar en el club de baloncesto de su municipio. El club rechazó la solicitud argumentando lo siguiente: que la solicitud no fue hecha por un mayor de edad, que no juegan bien y que en esa institución está prohibido el ingreso de miembros de la comunidad homosexual. Ricardo y Ernesto podrían demandar al club debido a que les está violando el derecho a la igualdad, al discriminarlos por:

- a. No tener el apoyo de sus padres.
- b. su orientación sexual.
- c. su nivel deportivo.
- d. no ser mayores de edad.

3. Los habitantes de un municipio están muy inconformes con la gestión del alcalde. Ya varias veces han hecho protestas pacíficas frente a la alcaldía sin ningún resultado. Un grupo de habitantes se reúne y considera dos opciones en busca de resultados. La primera, acercarse a la alcaldía con palos y piedras y hacer lo que sea necesario para que el alcalde se pronuncie y le responda a la población. La segunda, reunir firmas para exigir que entregue el cargo, es decir, la revocatoria de su mandato. De las opciones que consideran los habitantes, se puede afirmar que:

- a. La primera opción es un mecanismo de protesta legal, porque los habitantes tienen derecho a exigir respuestas, como sea necesario.
- b. la segunda opción es ilegal porque es violenta, al exigir que el alcalde quede desempleado.
- c. las dos opciones son mecanismos de protesta ilegales. La primera porque usa la violencia y la segunda porque viola el derecho al trabajo.
- d. la primera opción es un mecanismo de protesta ilegal, porque se vale de la violencia. La segunda opción es un mecanismo de protesta legal porque está previsto en la Constitución.

4. Como brigadista del colegio tienes que escribir un texto en el que expliques a tus compañeros de primaria qué es un terremoto y por qué se origina. Hasta el momento llevas escrito el siguiente enunciado:

Un terremoto, también llamado seísmo o sismo (del griego “ ”, temblor) o temblor de tierra, es una sacudida del terreno que se produce debido al choque de las placas tectónicas y a la liberación de energía en el curso de una reorganización brusca de materiales de la corteza terrestre al superar el estado de equilibrio mecánico. Como brigadista del colegio tienes que escribir un texto en el que expliques a tus compañeros de primaria qué es un terremoto y por qué se origina. Hasta el momento llevas escrito el siguiente enunciado:

Al leer el texto sientes la necesidad de adecuar el léxico que estás usando, porque:

- a. Se hace uso de un lenguaje extravagante que le resta seriedad a lo que se dice.
- b. se da información que no es coherente con lo que realmente se necesita explicar.
- c. se está usando un vocabulario demasiado informal lo que no es pertinente.
- d. se emplea un lenguaje técnico que impide la comprensión del texto

5. Tu profesora de español y literatura te ha solicitado escribir una autobiografía. Antes de iniciar tu escrito decides que el texto debe estar escrito en:

- a. Tercera persona, porque el narrador debe demostrar objetividad y alejamiento frente a los hechos que se van a narrar.
- b. primera persona, porque quien narra la historia debe ser el mismo protagonista.
- c. primera persona, porque quien narra debe contar lo que le sucedió a otra persona.
- d. tercera persona, porque el narrador debe dar a conocer lo que hacen y piensan los otros personajes.

Preguntas 6 a 8 sobre Solución de Problemas (Problem Solving)

6. Un grupo de estudiantes que trabaja para el periódico escolar quiere hacer un reportaje sobre los hábitos de consumo de golosinas de los estudiantes del colegio. Están interesados en analizar cuánto dinero gastan semanalmente los estudiantes en golosinas y cuáles son los dulces que más les gustan. Para hacer su reportaje, estos estudiantes podrían encontrar información más confiable a través de

- a. Los padres de familia que conocen de cerca los gustos de sus hijos.
- b. el vendedor que surte de golosinas a la tienda escolar cada semana.
- c. la vendedora de la tienda escolar quien les vende golosinas a los niños.
- d. los profesores del colegio que observan a los estudiantes durante los recreos.

7. Beatriz, de 15 años de edad, está embarazada. En el colegio se enteraron y por eso la

expulsaron. Una amiga de su curso le aconsejó que pusiera una acción de tutela y Beatriz le hizo caso y acusó al colegio de violar sus derechos. ¿Cuál es el origen del conflicto en la situación anterior?

- a. Que Beatriz haya puesto una tutela.
- b. que la amiga la haya aconsejado.
- c. que Beatriz vaya a ser mamá soltera.
- d. que el colegio haya echado a Beatriz.

8. En los debates acerca de la adopción de niños por parejas del mismo sexo, se ha mencionado el siguiente argumento en contra de permitirlo: "En la naturaleza, la familia se constituye sobre la relación de una pareja compuesta por una mujer y un hombre, y no por dos mujeres o por dos hombres". ¿Cuál de las siguientes formas de pensar explica o apoya mejor este argumento?

- a. La sociedad se basa en la libertad de sus individuos para definir su identidad y su forma de vida.
- b. existe un orden natural que todos los seres humanos deben seguir y respetar.
- c. cada sociedad tiene como base unas tradiciones culturales que sus miembros deben respetar.
- d. la sociedad humana supera al mundo natural ya que en ella domina la razón sobre los instintos.

Preguntas 9 – 10 responder a Juicios (Make Judgments)

9. Un muchacho llevaba de paseo a su perro. Un policía se le acercó para exigirle que le pusiera bozal. El muchacho respondió que no era obligatorio el bozal para perros de esa raza, lo cual era cierto. El policía, al ver que el muchacho cuestionaba su autoridad, le pidió su identificación y lo retuvo durante cuatro horas. ¿Actuó correctamente el policía?

- a. Sí, porque la Policía tiene derecho a retener a cualquier ciudadano en cualquier momento.
- b. sí, porque el policía debe hacer cumplir las normas que rigen para las mascotas.
- c. no, porque el trabajo de la Policía no es retener jóvenes sino atrapar criminales.
- d. no, porque al retener al muchacho sin justificación el policía estaba abusando de su autoridad.

10. El rector de un colegio empieza una campaña para promover entre los estudiantes la buena presentación personal y los buenos modales. Por eso les ha pedido a los profesores que les hablen de esto a los estudiantes, y les expliquen sobre su importancia. En una reunión con los profesores del colegio, este anuncia que también se exigirá a los

profesores que cuiden sus modales y su presentación personal. Con base en el enunciado anterior, sobre el anuncio del rector a los profesores se puede afirmar que

- Se contradice con la campaña dirigida a los estudiantes porque está exigiendo a los estudiantes algo que los profesores no hacen.
- es coherente con la campaña dirigida a los estudiantes porque solo los profesores pueden enseñarles buenos modales.
- se contradice con la campaña dirigida a los estudiantes porque no es posible exigir a los profesores lo mismo que a los estudiantes.
- es coherente con la campaña dirigida a los estudiantes porque les pide a los profesores lo mismo que les pide a los estudiantes.

Preguntas 11 a 16 para sacar conclusiones (**drawing conclusions**)

11. La siguiente caricatura pretende:



Tomado de El Tiempo Marzo 2013.

- Cuestionar que se celebre el día de la mujer mas no el día del hombre.
- criticar irónicamente algunas celebraciones culturales cuestionando su sinceridad.
- resaltar los trabajos cotidianos que llevan a cabo las mujeres.
- ilustrar los hechos que originaron la celebración del día de la mujer.

12. En una ciudad los habitantes enfrentan un grave problema de tráfico. Las vías no son suficientes para la cantidad de carros que tienen los habitantes de la ciudad y la oferta de transporte público es limitada y de mala calidad. El gobierno de la ciudad decide que para solucionar el problema de tráfico va a limitar la cantidad de carros particulares que pueden circular diariamente, de acuerdo con el último número de la placa. En lo que concierne al transporte de los ciudadanos, ¿qué efectos no deseados podría traer la medida?

- Que disminuya el número de carros particulares en circulación y aumente el número de usuarios de transporte público.
- que aumente el número total de carros particulares y el servicio de transporte público se vuelva aún más deficiente.

c. que disminuya la contaminación del aire y se debiliten los controles al nivel de contaminación máximo permitido por tipo de vehículo.

d. que aumente el precio de los vehículos particulares y los vehículos de transporte público no circulen con pocos pasajeros.

13. La entrada a un museo de la ciudad no tiene el mismo valor para todos los ciudadanos, pues para los menores de edad hay una reducción de la tarifa a la mitad. La diferencia en la tarifa es:

a. Injusta, porque el museo invierte la misma cantidad de recursos en prestarles un buen servicio a todos.

b. justa, porque los menores de edad generalmente no cuentan con recursos económicos propios y su acceso a la cultura debe promoverse.

c. justa, porque únicamente debe promoverse el acceso a la cultura de las personas que se encuentren en edad de aprender.

c. injusta, porque al haber tarifas reducidas el museo recibe menos ingresos de los que recibiría si todos pagaran la tarifa completa.

14. Para atender a todos los niños en edad escolar que no están recibiendo educación, la Secretaría de Educación de un municipio decide ordenarles a los colegios públicos que aumenten a 50 la cantidad de estudiantes en cada salón.

¿Cuál de las siguientes es una probable consecuencia no deseada de esta medida?

a. Que la Secretaría de Educación se quede sin presupuesto para continuar pagándoles el salario a los profesores.

b. que desde el preescolar la educación se reduzca a un mero entrenamiento para el trabajo.

c. que con el aumento demográfico haya cada vez más niños que requieran educación y que no puedan ser atendidos.

d. que disminuya la atención que el profesor puede prestar a cada niño y con ello la calidad de la educación prestada.

Una de las conclusiones del foro nacional de una organización social es la siguiente:

“Se hace necesario que fortalezcamos nuestra propia identidad como grupo. Sin identidad no lograremos un reconocimiento político, económico y social. Los jóvenes deben aprender a trabajar como lo hacíamos antes. Nuestras escuelas deben enseñar a respetar nuestros valores y prácticas políticas”.

15. Estas conclusiones se concentran en promover:

a. Los saberes culturales.

- b. el trabajo y la economía.
- c. los valores ciudadanos.
- d. la educación de calidad.

16. El director del periódico escolar te pidió informar de manera clara y completa sobre los eventos de la próxima semana cultural. Para que los estudiantes asistan a las actividades de su interés, lo fundamental es incluir información sobre:

- a. La importancia que tiene la semana cultural.
- b. el lugar, la fecha y la hora de cada evento.
- c. los patrocinadores que presentan cada evento.
- d. la historia de la semana cultural en tu colegio.

Appendix D- Field Notes Format

The field notes main purpose was to have a record of students' behavior, activities, advances, drawbacks, which may occur during the CT training process. It could also be taken as an important contribution to our evidences of the training, using descriptive and reflective information collected in this instrument.

DESCRIPTIVE INFORMATION	REFLECTIVE INFORMATION

Booklet

Appendix E – Lesson Plan Format

Lesson Plan No. 1

Instructor	Edgar Garcia, Yumir Gòmez, Ma. Patricia Molina.
School	Lorenza Villegas de Santos, km.12, Francisco Manzanera Henríquez.
Branches:	Main Headquarters
City	Medellin, Monteria, Girardot
Department:	Antioquia, Còrdoba, Cundinamarca
Date:	April, May
Number of students:	93
Grade:	Eighth
Outcome	
General	General
Students will be able to develop and demonstrate critical thinking skills through mental processes, as they take positions in front of presented situations	Students should consider other viewpoints, identify reasons in support of their positions, evaluate supporting reasons for acceptability, and draw conclusions based on some images
Topic:	Music beyond singers and songs.
Length of the practice:	Each strategy should be developed in a minimum of four hour period.

Bloom's Stage		
Critical Thinking Strategy	Outcomes Aim	Procedure
Problem Solving		
Pattern finding	This lesson encourages students to think more deeply and solve situations they find.	Ss. match images and description of musical singers.
Make Judgments		
Comparing and contrasting	This activity provides students information to make better judgments.	Ss. say similarities and differences related to cultural aspects.
Give Reasons		
Creation	With the information given students can draw their own conclusions.	Ss. create a new music style by combining parts to make a new whole.
<p>Music plays an important role all times and it is considered a universal human aspect which offers both intellectual and emotional knowledge. According to Etzkorn, (1989) music is "a part of every culture on Earth"</p> <p>Procedure Strategy 1. Seeing, remembering & explaining</p> <p>Objective: Students will see some images of singers and music bands of different genders, they will match the picture and descriptions to identify them and describe what they see.</p> <p>Description In this process, research-teachers ask students to describe what they see in the images, learners can answer questions such as: What does it make tell you? What do you think about? What questions do you have? Do you like them?</p> <p>Stages: 1-Watch the image: It is interesting for you? Which one is disgusting? Why? 2-Match the pictures: Why did you decide to do it in that way? Do you agree with them?</p>		

<p>What do you know about this band or singer?</p> <p>Strategy 2. Comparing and contrasting</p> <p>Objective</p> <p>Students will be able to say similarities and differences related to cultural aspects</p> <p>Description Teacher-researchers choose different pieces of recording music styles. After playing an excerpt, the music instructor engages students in a discussion using critical thinking questions.</p> <p>Stages:.</p> <p>1-Similarities: What could you find similar on the excerpts given? Are the sounds from the same culture? Could you identify any similar instrument? 2-Differences: Students: listen carefully and consciously the different music excerpts and articulate different ways to interpret and analyze its structure and its content, and identify its essential dissimilar characteristics. 3-Discussing: The teacher researcher can divide students into four small groups and give each group a series of critical thinking questions. After fifteen minutes, each group shares their responses and what they have identified to the questions: Why do you think this song makes you happy? If the musician or band played a different instrument what would happen Why do instruments change in every different country? Does this type of music always have strings, or wind, or percussion? What do the lyrics mean to you? Strategy 3 - Questioning</p> <p>Objective Students will be able to compare the various interpretations and they will argue in favor or against using their own preferences and reasons</p> <p>Description Teacher –researchers guide students in order they express their value judgments; in this part students grow in their willingness to express themselves and share their thoughts among their peers.</p> <p>Stages:</p> <p>1.Society and the music: Students will accept the diversity of the music, identify and understand the causal relations which involve all the different musical genre. 2.Musical fusion: Students will be by groups of five and they will bring to the class a new contemporaneous or modern example of combination of rhythms, in order learners develop independent reasoning regarding the role of the dominant music culture in a society. This stage will encourage students to expand their questions answer questions as: what more can you find? What is going to the music nowadays and in the future?</p>
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Resources	Resources used in the implementation are provided by the researchers, the school will only permit the use of computers for the last lesson development.
Evidences	Workshops, field notes, pictures, samples of tasks, final product, learners comments, observations, video,










LESSON PRESENTATION


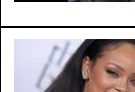





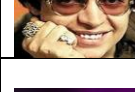
Strategy 1. Seeing, remembering & explaining







Stages 1- Watch the image: In groups of four, watch the images and identify some of the characteristics.

Stage 2- Match the pictures: Remember their names and write them in the column number three

	Description	
	He is a Mexican old Singer, he sings rancheras, he has been in Colombia many times	
	He is an opera Singer , he was born in Italy, 12 October 1935, he died when he was seventy one.	
	He is a famous Singer from Argentina, He sings a well known song called "A pura sangre"	
	He is a very famous Salsero musician and composer, he was born in Manhattam, New York, his real name is Hector Juan Perez	
	He is a salsa music singer and composer, he was born in in New York, his real name is Ismael Ruiz Hernandez	

	Brazilian music band with four members, they play trash metal, its origin was in Belo Horizonte , 1984	
	A Colombian singer and composer, its genres are are urban, pop, hiphop music and reggaeton, he is thirty years old.	
	He is a Colombian Singer, he plays pop, and folkloric rhythms, "arroyito is a famous song"	
	He is a Colombian Singer a, composer, and designer its genre is urban reggaeton, he is twenty two years old.	
	A Colombian Singer and composer, it genres are pop, rock, he plays the guitar, and he was a part of Ekimosis band.	
	He was born in Santo Domingo, he is 58 years old, he sings merengue, bachata, salsa and Latin pop.	
	A Young female Singer from Argentina , she Works in a tv serie in Disney Channel.	
	Robert Nesta is his real name, who born in Jamaica, he was, a musician, composer, and guitar player, he is death.	
	Poncho and Emiliano are musicians and composers from a traditional family in the Caribbean cost. This music was named international patrimony.	

	It is a Britain band founded in 1962, the most representative vocalist is Mick Jagger, they were in Bogotá and Cuba weeks ago. They play rock genre.	
	He was a Venezuelan rap singer, composer, and activist, he was born in Caracas. His real name was Tyrone José Gonzalez.	
	She is a Colombian, ceramic artist singer and composer , she played with the Arteciopelados.	
	He was and actor, singer and composer, he was born in Toulouse, France and died in Medellin in an accident	
	Robyn is her name, she is and actress, singer, model, and designer, she is twenty eight years old, she was born in Barbados, her famous last song is diamond.	
	She is a Colombian actress, model and singer, sheis forty three years old, she was born in Cali.	
	Úrsula Hilaria is her real name, she was born in Cuba, and she sang son, rumba, guaracha, and salsa music genres. Her famous word was "azuca"	
	He was a dancer, singer, actor, composer, producer, and business man, he was born in Los Angeles, California , and was considered "the king of the Pop"	

	Edwin Rosa Vasquez is his real name, he is from Puerto Rico, he sings hip pop, reggaeton, and rap. He is thirty four years old.	
	She is Isabel Mebarak a Colombian singer, composer, dancer, model, actress, and designer. She is thirty nine years old, and she is married with a famous soccer player.	
	They an alternative hip hop Colombian Band its members are Goyo, Tostao, and Slow. "cuando te veo" is one of its songs.	
	He is very courageous champeta singer from Cartagena, he is singer, composer and producer , his real name is Edwin Arteaga Mercado.	
	She is a singer, dancer, actress, composer, model, and designer. She was born in Mississippi, she well known as "the gold girl", she is thirty four years old.	
	This is a pop and Rock Englan Band during the sixties, its origins was in Liverpool, its members were Ringo, Lenon, Paul and Geroge.	

<p>Strategy 2. Comparing and contrasting</p> <p>Students are going to listen 28 different pieces of songs, each song is 20 seconds, while learners listen to the songs they will identify similarities or differences, which instruments they could listen to, and the teacher- researcher will ask some critical thinking questions for a discussion, such as:</p> <ul style="list-style-type: none"> -Which instruments could you hear? -What could you find similar on the excerpts given? Are the sounds from the same culture? ----Could you identify any similar instrument? <p>For discussion: The teacher- researcher divides students into six small groups and gives to each group a series of critical thinking questions. After fifteen minutes, each group shares their responses and what they have identified to the questions:</p> <ul style="list-style-type: none"> -Why do you think this song makes you happy? -If the musician or band played a different instrument what would happen? -Why do instruments change in every different country? -Does this type of music always have strings, or wind, or percussion? -What do the lyrics mean to you? <p>Strategy 3 - Questioning</p> <p>In this case teacher –researchers guide students in order they express their value judgments; in this part students grow in their willingness to express themselves and share their thoughts with their peers. They will be against or in favor of any specific musical style given arguments about the position taken; they also would be able to accept o refuse comments given by their peers.</p> <p>To finish the discussion, students in groups of five will bring to the class a new contemporaneous or modern example of combination of rhythms (musical fusion), in order learners develop independent reasoning regarding the role of the dominant music culture in a society. This stage will encourage students to expand their questions answer questions as: what more can you find? What is going to the music nowadays and in the future?</p> <p>Teacher-researcher will ask some other of this questions which start with simple (knowledge) and increases to make students reflect and discuss beyond the activity.</p> <ul style="list-style-type: none"> -How did you do the match? -Do you know all of them? Why? -Why it was difficult the activity? -Which are the different kinds of musical genres represented here? -The information given was relevant for you to develop the activity? -“What do the lyrics mean to you?” -Can you concentrate on other things when you are listening to music? Give reasons? -Can you play a musical instrument? Explain. If so, what do you play? How long have you been playing? -Are you good at it? -What do you think about reading music?

<ul style="list-style-type: none"> -Why do people enjoy more music videos? -Why do you listen to any special genre of music? -Give some reasons why people like American rock bands? -Why most of the people do not like to listen to classical music? -Why do people love singing karaoke? What about you? Why? -Why do some people listen to music while doing homework? Do not you? Explain. -Why do many people sing while taking a bath? Do you? -Do you think there is a relationship between drugs and music? How about violence and music? Explain -Do you think your favorite music twenty years from now will be the same as it is today? -Have you ever been to a concert? Which one? Tell us about that experience -How does music make you feel? -Can you think of examples of music calming people or increasing their efficiency? -How have your musical tastes changed, Last years? -Why do you think music is important and how does it affect different people? -Why is music so important to people and culture? -Do you think music can heal sick people? Explain. -Do you think that animals can enjoy music? How do you know? -Do you think that music can help make world peace? How? -How much does music affect unborn children? -Do you think that people from different cultures react to music in same or different ways? Explain.
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Lesson Plan No. 2

Instructor	Edgar Garcia, Yumir Gómez, Ma. Patricia Molina.	
School	Lorenza Villegas de Santos, km.12, Francisco Manzanera Henríquez.	
Branches:	Main Headquarters	
City	Medellín, Montería, Girardot	
Department:	Antioquia, Córdoba, Cundinamarca	
Date:	April, May	
Number of students:	93	
Grade:	Eighth	
Outcome		
General	General	
Students will be able to develop and demonstrate critical thinking skills through some tasks, as they take positions in front of presented situations	Students should consider identify reasons in support of their positions, contrast and compare and draw conclusions based on some images	
Topic:	You can become a hero, too	
Length of the practice:	From four to six hour period	
Bloom's Stage		
Critical Thinking Strategy	Outcomes Aim	Procedure
Problem Solving		
Exchanging ideas	This lesson encourages	Ss. Interact about what type of

	students to think more deeply and solve situations they find.	people they are
Make Judgments		
Comparing and contrasting	This activity provides students information to make better judgments.	Ss. Makes comparisons and differences.
Give Reasons		
Questioning	With different elements given, learners could give their own and strong reasons.	Ss. Answer reasoning questions.
Draw Conclusions		
Creation	With the information given students can draw their own conclusions.	Ss. Uses tics, design and present outcome based on heroes knowledge
<p>Heroes' stories can be used in classrooms to instill character strengths and values in children, as well as an inspiration to recognize their struggles and rewards.</p> <p>Procedure</p> <p>Strategy 1. Pair work sharing</p> <p><i>What sort of person are you? Describe yourself to your partner.</i></p> <p>Objective:</p> <p>Participants will be grouped in pairs to share own feelings about the kind of people they are, using some of the following adjectives list:</p> <p>brave, courageous, responsible, dedicated, discipline, noble, inspiring, humble, smart, trustworthy, fearless, proud, selfless, persevering, adventurous,</p>		

powerful, idealist, tough, reliable, determined.
<p>Description</p> <p>In this process, research-teachers ask students to define themselves using some of the adjectives used for heroes.</p> <p>Strategy 2. What sort of person are you? Try the quiz and find out!</p> <p>Objective</p> <p>Students will be able to answer a quiz in pairs, then to check their answers at the bottom to see if they are wonderful, selfish or good people based on their answers.</p>
<p>Description</p> <p>A set of questions is provided to students where ten situations are presented to choose an answer according to the spirit of solidarity they have.</p> <p>Strategy 3 – Understanding</p> <p>Objective</p> <p>Students will be able to recall facts, basic concepts and answers.</p> <p>Description</p> <p>Teacher-researchers will guide students to read the definitions and description of some superheroes. Participants will identify their favorite ones.</p> <p>Strategy 4 – Comparing and contrasting</p> <p>Objective:</p>

Students will be able to compare the different heroes` descriptions and they will argue in favor or against using their own preferences and reasons.

Description

Teacher –researchers will support students so that they can express their value judgments. In this part students share their thoughts among their peers.

Decide which characteristics from a list a hero should have, and support one`s decision.

-Organize ideas to describe and create the ideal hero, explain how or why they identify with them.

Strategy 5 - Applying: solving problems by applying acquired facts with favorite heroes in a different way.

Objective

Students will be able to work in groups of three to carry out some tasks by organizing ideas.

Description

Stage 1: Students will select a photograph of a friend, a family member, a friend or someone they have heard of or seen on T.V. who is a hero to them.

Stage 2: If possible, they will interview their real-life hero or find information on internet or in the news. Then, they will list the qualities their hero has, for example, brave, caring, loyal, dedicated, etc. After that, they will make a

timeline of the important achievements in their hero`s life.


Stage 3: Students will set up an imaginary homepage in ``Facebook`` and complete the profile for their real-life hero.

Stage 4: Students will present their profile of their real-life hero to their classmates.

Resources	Photocopies with images and texts.
Evidences	Workshops, field notes, pictures, samples of tasks, final product, learners` comments, observations, videos.

LESSON PRESENTATION

YOU CAN BECOME A HERO, TOO!



SPEAKING

I. What sort of person are you? Describe yourself to your partner.

II. In pairs, do the quiz. Then check your answers at the bottom.

WHAT SORT OF PERSON ARE YOU? TRY THE QUIZ AND FIND OUT!

1. You see some students bullying another student. You:

- tell them to stop.
- feel bad, but it isn't your problem.
- look for a teacher or an adult.

2. You see the new kid in your class eating his lunch alone. You:

- have lunch with him.
- sit with your friends as usual.
- invite him to join your friends.

3. You see a nine-year-old child drinking beer on the street. You:

- talk to him/her and explain to them why it's a bad idea.
- think it's funny.
- tell your parents.

4. If you have some money, you usually:

- spend it on things for your family.
- spend it on things for yourself.
- spend it on having fun with your friends.

5. You see a young child on the street without an adult. You:

- ask the child if he/she is lost and look for their parents.
- don't do anything. It's normal, right?
- tell a police officer.

6. Your best friend asks you to skip school to go downtown. You:

- don't want to go. Your exams are more important.
- go!
- want to go, but decide it's a bad idea.

7. You see someone having difficulties in the pool, but you can't swim. You:

- go into the water to help them.
- do nothing. They're probably fine.
- shout for help – someone else on the beach can help them.

8. When your sports team wins, you say '...' to the other team:

- 'You played really well.'
- 'Haha, losers!'
- 'Good game, but the best team won.'

9. Who or what do you protect?

- everyone and everything
- myself
- my family and friends

10. If you won the lottery, you would

- give it all to charity
- spend it on elegant things for you and your family
- spend the money on what you need

Check your answers

• **Most of your answers are A.**
 Congratulations! You are a wonderful person. People like you change the world. But be careful – don't put yourself in danger if it isn't necessary.

• **Most of your answers are B.**
 You are quite a selfish person. Maybe life is good for you right now, but what about if you need someone to help you one day? We all need to help each other in this life!

• **Most of your answers are C.**
 You are a good person who likes helping others, and you usually make the right decision. Continue doing the right thing, but consider taking more risks.

Lesson Presentation



READING

Read the definition of a superhero and the descriptions of some of them.

In modern popular fiction, a superhero is a type of heroic character who possesses extraordinary talents, supernatural phenomena, or superhuman powers and who is dedicated to a moral goal or protecting the public.



Batman

Bruce Wayne has intellect genius, martial arts abilities, detective skills, science and technology, vast wealth, intimidation, and indomitable will.



Elektra

Elektra Natchios is an Olympic-level athlete and gymnast strength, speed, agility, reflexes. She is a superb hand-to-hand combatant and martial artist.



Captain America

Steven Rogers, a small and weak soldier was made into Captain America and became the perfect American soldier. He was given special medicine called a ``super serum`` to make him as strong and powerful as a man can be. He doesn't really have super powers. His weapon is a

super shield.




Spiderman

Peter Benjamin Parker has super strength, he is able to lift 10 tons optimally, and is roughly 15 times more agile than a regular human. The combination of his acrobatic leaps him to travel rapidly from place to place. His spider-sense provides an early warning detection system linked with his superhuman kinesthetics, enabling him the ability to avoid any injury.




Supergirl

Linda Danvers possesses vast superhuman strength, speed, and stamina; invulnerability; flight; super breath; x-ray vision; telescopic and microscopic vision; freeze breath; heat vision; and super hearing.



Superman

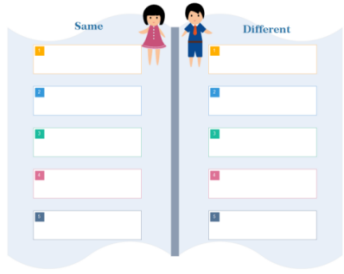
Clark Kent is from a planet called krypton, but he grew up on the Earth. The Earth has weaker gravity than Krypton so it mean that Superman has super strength, speed, stamina, hearing, can fly and has x-ray vision.



Wonder woman

Diana Prince is Wonder Woman, and is a princess. She has the skills of flight, incredible strength, speed, wisdom, and beauty. Her weapons include the Lasso of Truth, a pair of indestructible bracelets, and a tiara to throw at her enemies.

III. Make comparisons and differences among heroes in the following chart.



IV. Work in groups of three to carry out the following tasks:

- Select a photograph of a friend, a family member, a friend or someone you have heard of or seen on T.V. who is a hero to you.
- If possible, interview your real-life hero or find information on internet or in the news. Then, list the qualities your hero has, for example, brave, caring, loyal, dedicated, etc. After that, make a timeline of the important achievements in your hero`s life.

V. Set up an imaginary homepage in ``Facebook`` and complete the profile for your real-life hero.

VI. Present your profile of your real-life hero to your classmates

Appendix N
Lesson Plan No. 3

Instructor	Edgar Garcia, Yumir Gómez, Ma. Patricia Molina.	
School	Lorenza Villegas de Santos, km.12, Francisco Manzanera Henríquez.	
Branches:	Main Headquarters	
City	Medellín, Montería, Girardot	
Department:	Antioquia, Còrdoba, Cundinamarca	
Date:	April, May	
Number of students:	93	
Grade:	Eighth	
Outcome		
General	General	
Students will be able to develop and demonstrate critical thinking skills through some tasks, as they take positions in front of presented situations	Students should consider identify reasons in support of their positions, contrast and compare and draw conclusions based on some images	
Topic:	What`s on nowadays?	
Length of the practice:	From four to six hour period	
Bloom`s Stage		
Critical Thinking Strategy	Outcomes Aim	Procedure
Applying		

Predicting situations based on images	This lesson encourages students to activate and express knowledge they have about something.	Ss. Interact about important facts that are happening
Analyzing:		
Understanding and classifying	This activity provides students information to Classify it according to concepts given.	Ss. Classify information in two groups
Evaluating:		
Making judgments	In this activity students will identify the most important success for them	Ss make a list of the most important news and explain why
Creation	With the information given students can draw their own conclusions.	Ss design and create a headline based on news knowledge
<p>News is a useful topic to get students into the real world, through the use of this topic they will develop confidence in using oral language and creative skills.</p> <p>Procedure</p> <p>Strategy 1. Pair work sharing</p> <p><i>What can you see in the images?</i></p> <p>Objective:</p> <p>Participants will observe some images about current news of the week, they will share with his/her partner trying to underline some ideas and express in a short sentence the updated news.</p> <p>.</p> <p>Description</p>		

<p>In this process, research-teachers ask students to activate their knowledge about the topic presented and try to express it in a sentence.</p> <p>Strategy 2. Analyzing</p> <p><i>Is it boring Or amazing for you?</i></p> <p>Objective</p> <p>Students will be able to classify news in two different groups based on the concept of amazing and boring and explain reasons of their election.</p> <p>Description</p> <p>A mind map will be presented for them to classify news, taking into account two concepts given.</p> <p>Strategy 3 – Evaluating</p> <p>Objective</p> <p>Students will be able to design and create a headline based on information given</p> <p>Description</p> <p>Teacher-researchers will guide students to design and create a headline, giving them the opportunity to judge and express their concept about news</p>	
Resources	Photocopies with images and texts.
Evidences	Workshops, field notes, pictures, samples of tasks, final product, learners' comments, observations, videos.

Appendix F

INSTITUCION EDUCATIVA TECNICA**FRANCISCO MANZANERA HENRÍQUEZ**

Girardot – Cundinamarca – Nit. 890.680.240-7

Creado por el Decreto N° 1445 del 19 de Jio de 1979 – Emanado del Ministerio de Educación Nacional

Código ICFES: Jornadas MAÑANA: 036152 – TARDE: 036160 – NOCTURNA: 036178- DANE N°. 225307-000824

Cra 12 No. 19-45 Barrio Sucre – Tels.: 8889942 - Cel. 3204203663 - iemanzanera@hotmail.com**Evaluación de Lengua Castellana**

Nombre: _____ Fecha: _____

Responda las siguientes preguntas basadas en lectura de la obra la Vorágine

1. ¿Quién escribió la obra La Vorágine?
2. ¿Por qué esta obra es importante en la literatura?
3. ¿Cuáles son las ideas principales de la obra?
4. ¿Cuáles son las ideas secundarias de la obra?
5. ¿En qué tiempo y espacio se desarrolló la obra?
6. ¿Quiénes son los personajes primarios y secundarios de la Vorágine?
7. ¿Cuál es el conflicto o problemática en la obra?
8. ¿A qué género literario pertenece la obra?
9. ¿Te gustó la obra? Si ____ No____ . ¿Por qué?
10. ¿Qué tipo de narrador predomina en la obra?
11. ¿Qué pasa al final de la obra?
12. ¿En dónde vivía Juan Pablo Castel?



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Evaluación de Sociales

Nombre: _____ Fecha: _____

Encierre en un círculo la respuesta correcta

1) Implica reconocer que todos somos importantes y que cada uno tiene algo que decir, que entregar y aportar para la construcción de un mundo mejor.

- | | |
|---------------------------------------|------------------------------|
| a) La democracia | b) La participación activa |
| c) La participación de los ciudadanos | d) La participación política |

2) La participación política de los ciudadanos se hace efectiva al ejercer los siguientes derechos:

- | | |
|---|-------------------------|
| a) Derecho a sufragio | |
| b) Derecho a optar cargo de elección popular | |
| c) Derecho a participar en algún partido político | d) Todas las anteriores |

3) En un sistema democrático la elección debe ser:

- | | |
|---------------------------------|-----------------------------------|
| a) Libre y comunitario | b) Comunitario e Informada |
| c) Libre, periódica e informada | d) Libre, periódica y comunitario |

4) En Chile el voto se caracteriza por ser:

- | | |
|----------------|-------------------------|
| a) Personal | b) Secreto |
| c) Igualitario | d) Todas las anteriores |

Appendix G- Students' Questionnaire

CUESTIONARIO DE SATISFACCION

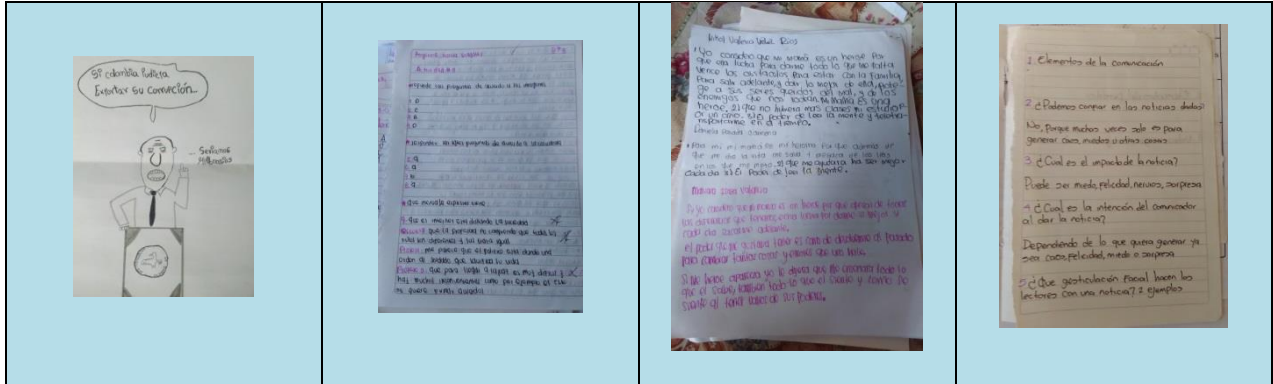
Objetivo: identificar la percepción de cada sesión de entrenamiento en habilidades de pensamiento crítico en los estudiantes de grado octavo del colegio _____

Lea cada uno de los siguientes enunciados y decida su nivel de satisfacción.

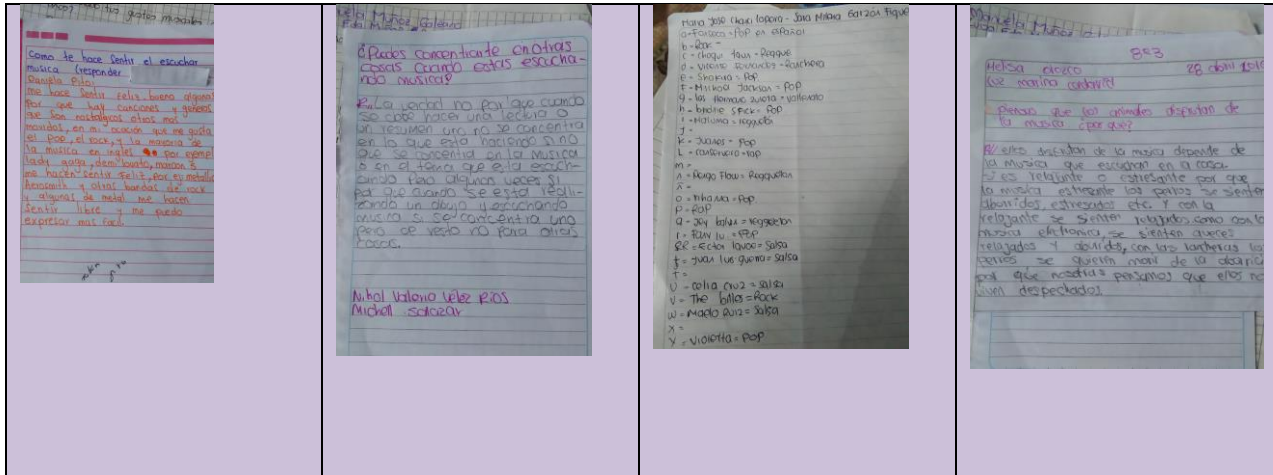
Enunciados	Totalmente de acuerdo	De acuerdo	En desacuerdo	Totalmente desacuerdo	No aplica
1.El tema me gustó					
2.Las instrucciones para desarrollar las actividades fueron claras y precisas					
3. Los recursos utilizados (imágenes, música, lecturas, etc) fueron motivantes.					
4. El tiempo para el desarrollo de las actividades fue adecuado.					
5.Las actividades propuestas me invitaron a: -razonar -solucionar un problema -compartir mi punto de vista -crear e innovar					
6.El docente realizó varios tipos de preguntas que pude comprender					
7. Este tipo de actividades deberían realizarse en otras asignaturas.					
8. La lección que más me gustó fue... (Última lección)					

Appendix H - Artifacts

Draw Conclusions



Judgment





Problem Solving

