

# Evidence of Critical Thinking in High School Humanities Classrooms<sup>1</sup>

Evidencias del Pensamiento Crítico en las Clases de Ciencias  
Humanas en Bachillerato

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## Abstract

Critical thinking skills (CTS) are a group of higher order thinking abilities related with complex processes of learning like contextualization or problem solving. This exploratory research study identified whether critical thinking skills were present in high school humanities classrooms. The study was carried out in a private school in Bogotá, Colombia through qualitative methods and content analysis. The study sought to identify CTS in students' actual learning processes. Data collection techniques included classroom observations, document analysis and focus groups to identify skills in teachers and eighth grade students 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.

*Keywords:* Critical Thinking, Skills, argumentation, analysis, motivation

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## Resumen

Las habilidades de pensamiento crítico hacen parte de las habilidades de pensamiento relacionadas con procesos complejos de aprendizaje como la contextualización o la resolución de problemas. Esta investigación exploratoria ha sido desarrollada para identificar cuáles habilidades de pensamiento crítico son evidentes en un salón de ciencias humanas, a través de diferentes trabajos en clase y percepciones. El estudio fue realizado en un colegio privado de Bogotá, Colombia a través de métodos cualitativos y análisis de contenido. El estudio trató de identificar las habilidades de pensamiento crítico en los procesos de aprendizaje de los estudiantes. Las técnicas de recolección de datos incluyen observaciones de clase, análisis documental y grupos focales para identificar dichas habilidades en profesores y estudiantes de octavo grado de la especialidad de ciencias humanas. Los resultados demostraron la presencia de argumentación en el material oral y escrito propio de la clase. El análisis también es demostrado a través de preguntas, inferencias y ejercicios. Se destaca en este punto, los debates autónomos dirigidos por los estudiantes. Finalmente, se refleja la motivación en las expresiones explícitas, los gestos y el material adicional.

*Palabras claves:* Pensamiento crítico, habilidades, argumentación, análisis, motivación.

## Resumo

As habilidades de pensamento crítico fazem parte das habilidades de pensamento relacionadas com processos complexos de aprendizado como a contextualização ou a resolução de problemas. Esta pesquisa exploratória foi desenvolvida para identificar quais habilidades de pensamento crítico são evidentes em uma sala de aula de ciências humanas, através de diferentes trabalhos em classe e percepções. O estudo foi realizado em um colégio privado de Bogotá, Colômbia através de métodos qualitativos e análises de conteúdo. O estudo tratou de identificar as habilidades de pensamento crítico nos processos de aprendizado dos estudantes. As técnicas de coleta de dados incluem observações de classe, análise documental e grupos focais para identificar ditas habilidades em professores e estudantes de oitava série da especialidade de ciências humanas. Os resultados demonstraram a presença de argumentação no material oral e escrito próprio da classe. A análise também é demonstrada através de perguntas, inferências e exercícios. Neste ponto se destaca os debates autônomos dirigidos pelos estudantes. Finalmente, se reflete a motivação nas expressões explícitas, os gestos e o material adicional.

*Palavras chave:* Pensamento crítico, habilidades, argumentação, análise, motivação.

## **Introduction**

**C**ritical Thinking Skills (CTS) are a group of skills that include criteria, analysis, inference and argumentation. CTS have been receiving importance for the past thirty years, and philosophers, psychologists and educators have researched how to identify, develop and assess them. More recently, these skills are considered even more important in their conceptualization as 21st century skills, which are understood as innovative and learning skills that are requisites to succeed in this century. CTS are also important because they enhance the understanding of arguments and the expression of points of view and critical judgments about any topic. In other words, when critical thinking skills appear in educational settings, they can be seen as guarantors of learning.

Consequently, research has tried to understand which demographical, cognitive or environmental elements are related with critical thinking in order to enhance their application in educational contexts. At the same time, studies have focused on how to improve instruments in order to develop and evaluate these skills, and to avoid other less effective tools.

This study was guided by the following questions: What elements of the development of critical thinking can be observed in the eighth grade humanities classes? How do teachers develop critical thinking? How do students perceive the complexity of academic tasks? The study had as a starting point the following objectives: to identify if there was evidence of critical thinking, as well as development of critical thinking with the use of complex academic tasks. Findings demonstrate some evidence of CTS in high school classrooms within the humanities emphasis, specifically argumentation, analysis and motivation. This exploratory research points the way for a variety of possibilities and perspectives in order to continue researching the same skills, other CTS, or even other higher order thinking skills in the same school.

## **Literature Review**

### **28 Critical Thinking**

The complex process of thinking is divided into higher order thinking and lower order thinking. Higher order thinking is used when someone relates stored and new information to solve extraordinary and difficult problems, or to obtain new ideas. Lower order thinking is used to develop daily routines and mechanical processes. Higher order thinking skills include contextualization, metacognition, creativity, insight, intelligence, problem solving and critical

thinking. Critical thinking means to have criteria, analyze, infer, explain arguments, and develop them (King, Goodson & Rohani, 2009; Pearson, 2011).

Many authors talk about Higher Order Thinking Skills (HOTS). King et al. (2009) trace their development historically and mention several key movers in this regard: Dewey explained how thinking is evoked by problems, and Bruner argued that inquiry is necessary in the learning process. Piaget clarified that these skills are needed in the last developmental stages of thinking; on the other hand, Bloom explained how HOTS require previous levels of knowledge. Gagné put HOTS in the top of his taxonomy, and Marzano situated these skills as a dimension of learning. Glaser declared HOTS are the type of thinking for problem solving, and Vygotsky affirmed that HOTS are necessary to move into the zone of proximal development. Further, Haladyna sustained that HOTS are a level of mental processes, and Gardner declared HOTS are developed by our multiple intelligences (as cited in King et al., 2009).

Definitely, each theory posits a different way of understanding thinking and how to develop HOTS. There are also theories about the different skills themselves. However, one of the most important skills is critical thinking, divided also into other skills such as analyzing and solving problems, as well as creating new arguments (Beyer, 1990; Pearson, 2011). In fact, critical thinking has been studied by different sciences. Philosophers like Bailin, Ennis, Lipman, McPaul and Peck focus on what people are capable of doing under the best circumstances to get to the truth. Psychologists like Halpern, Sternberg, and Willingham tend to focus on how people actually think. Finally, educators like Bloom and Marzano explain critical thinking based on research about their own experience in the classroom and observation of student learning (King et al., 2009; Lewis & Smith, 1993; Pearson, 2011).

Barry Beyer (1990), based on other philosophers' theories (Richard Paul, Matthew Lipman and Robert Ennis), explains what philosophy offers to the teaching of thinking, and which facts have to be taken into account to develop critical thinking:

*Reasoning* to make systematic inferring of information, argumentation to structure thinking, *critical judgment* to judge according to prescribed criteria, point of view to contextualize information, *dialogue* to obtain with other the truth by asking and answering questions, and *dispositions* to deepen the things making probing questions walking to the truth. (pp. 55-58)

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Critical Thinking Skills (CTS) and education have been researched in different fields since the age of Socrates (Fahim, 2012). However, in the last fifteen years the majority of studies added pedagogical elements to improve these skills. Other research studies try to identify if critical thinking is related with demographic information, cognitive aptitudes or environment. Finally,

a few studies describe how to demonstrate and assess critical thinking in the classroom.

### **Improving Critical Thinking**

It is common to find studies in which participants of similar characteristics are divided into two groups. One of the groups receives direct instruction about critical thinking strategies (Bensley, Crowe & Bernhardt, 2010; Hove, 2011) or pedagogical tools like mind maps (D'Antony, 2009), dialectic journals (Enabulele, 2011), classroom discussions with student feedback (Hayes, & Devitt, 2008), different curricula models (Hepner, 2012), different teaching strategies (Miri, David, & Uri, 2007), syllabi (Mok, 2009), environmental based education programs (Ernst, & Monroe, 2004), or face to face communication (Harrigan, & Vincenti, 2004). After the intervention, participants are evaluated by tests. These studies generally found that after the intervention, participants show significant improvement in CTS compared to the other students, except in the case of mind maps and dialectic journals.

### **Critical Thinking and Demographic Elements**

Another research tendency is to understand which demographic factors are related with CTS. In these kinds of studies, researchers analyze significant numbers of participants from different schools that are chosen following specific characteristics. Edman, Robey, and Bart (2002) selected a sample of 232 college and university students, Mahiroglu (2007) studied a sample of 134 schools from Turkish provinces, and Yang and Lin (2004) selected 1119 male senior high school students from military schools. The study sought to determine if these demographic elements isolated from others generate a disposition for CTS by tests specially designed to identify disposition of critical reasoning, such as the Minnesota Test of Critical Thinking II, a demographic information sheet, or a general survey mode. Demographic studies have been carried out in the United States (Edman, Robey, & Bart, 2002), Taiwan (Yang & Lin, 2004), and Turkey (Mahiroglu, 2007). They found that demographic differences as gender, age, region, school, class, grades or parent's education level are related significantly with CT disposition.

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### **Critical Thinking and Cognitive Aptitudes**

Equally, researchers try to understand critical thinking skills and make hypotheses about internal structures that could generate the optimal conditions inside the brain to develop critical thinking skills. Different instruments are used to measure participants' thinking, for example, minute papers, online tests

or periodical questionnaires. Stupnisky, Renaud, Daniels, Haynes and Perry (2008) focused on critical thinking disposition, perceived academic control, high school academic performance, and grade point average. Ramasamy (2011), on the other hand, considered the age, discipline, program, grade point average, and number of reading hours of the participants. LaPoint-O'Brien (2013) analyzed understanding and reasoning.

Findings of these studies sustain only that disciplines, programs (humanities) and age directly influence results of CTS Tests positively. In fact, Ramasamy (2011) concludes that age is an essential part of developing critical thinking. According to her, this is because age is related with maturity and only maturity helps making critical and complex judgments.

### **Evidence of Critical Thinking**

Critical thinking skills are thinking abilities. As with other abstract concepts, they cannot be demonstrated in isolation, rather it is necessary to find them inside other processes. Some researchers try to answer this last hypothesis and by searching for the best way to prove the existence of CTS. These studies also use tests. However, it is more common to find observations, interviews or recording of classes to obtain data. It is not necessary to divide the group because variables belong inherently to the context.

Some studies in this area include Shoemaker (2012), who argues that arts are the correct way to express CT. Mizell and Friedman (2012) suggest that CT is developed by students learning from primary sources. On the other hand, Swartz (2004) looked for collaborative relationships and contextualized interaction. McGuire (2012) studied CT intervention during and after a specific CT semester course. The Virginia Adult Education Research Network (2000) collects definitions made by students. These studies show how students' spontaneous discussions in class reveal CTS, such as comparison, judgment and evaluation of different situations. Additionally, Mizell and Friedman (2012) concluded, based on their method, that videotaped classes could be used as a strategic opportunity to identify and to model CT in the students.

### **Assessing Critical Thinking**

Which is the adequate method to assess CT? Some studies analyze pedagogical processes and observe participants' results. However, instead of focusing on people, researchers tend to center themselves on instruments. Usually, studies apply tests at the beginning and end of observation exercises. In the exams, the most important elements are the form and the assessment

tool itself, not the pedagogical content. Renaud and Murray (2007) make a comparative study based on three pieces of research studies. In these experiments, they sought to find out if assessment could be accurate with higher order questioning inside trials. Additionally, Bissell and Lemons (2006) identified whether questions are made considering topic and critical thinking skills.

Findings evaluating higher order questions show a positive impact because they give reference to teachers and students providing feedback, and remembering objectives of learning. However, to assess with higher order questions requires a long and continuous training for teachers and students.

## **Methodology**

### **Research Design**

In terms of qualitative research, this project intended to carry out an exploration of the use and development of critical thinking inside the classroom. It hoped to accomplish this through the analysis of behaviors, comments, perceptions and products of different classes. At the same time, it tried to infer how critical thinking is promoted and perceived by talking with teachers and students. This approach follows the parameters of qualitative research with ethnography and documentary components. After collecting the data, analysis was conducted via a triangulation process, proposed by Cohen, Manion, and Morrison (2007), as a way to compare and synthesize information from different sources and make conclusions with more precision and quality of the academic elements studied.

### **Context**

The context for this study was a private school in Bogotá, Colombia. Students at this school receive traditional education where values and academic responsibilities are very important. Students' families are low to middle-income and receive a scholarship from the school. This scholarship is preserved indefinitely if the students obtain the required grades.

32 When students are in eighth grade, they receive education with special emphases, such as humanities, accounting and electricity. All the students receive core subjects in common, but parallel to this, they receive additional special subjects according to the emphasis they choose. Accounting and electricity specialties at the end of high school receive a diploma from SENA, the national system of vocational training. The humanities emphasis is focused on languages like English and French, and literature and social studies. Because

each course from eighth grade on is divided into the specialties, these special subjects have 25 students maximum, fewer than in core subjects where there is an average of 40 students in a class.

Students are free to choose their area of emphasis. Along with the smaller class size, this provides a positive and friendly environment inside the classroom. Some classes in the humanities emphasis are conducted as seminars. Usually, students choose their future career based on the area of emphasis developed in the school.

All classes in the school use course books or guides developed by the teachers. These help instructors follow a similar pedagogical structure. Each syllabus begins with a motivational class and ends with reinforcement and review classes. Each subject is evaluated by specific activities previously agreed on with the students. Because students' scholarships depend on the grades they obtain, the majority of them maintain a high academic performance and disposition towards the classes. It is not common to have serious disciplinary problems in the school.

## Participants

Participants in the study were fourteen to sixteen year old students from eighth grade. In the case of the humanities specialization, there were twenty-six students, all participants of the research. They went to four specific seminars directed by four different teachers, also participants of the study. Three teachers have teaching certificates in their specific subject, but only have one or two years of experience after graduation. The social studies teacher is an exception, with four years of experience, and is studying a Master's in Education as well.

## Data Collection Instruments

In the middle of the second semester, three qualitative instruments were applied to humanities students and teachers to obtain data in order to answer the research questions.

**Classroom observation.** This was used to analyze classroom realities in all the special subjects including social studies, literature, French and English. The method for classroom observation proposed was *ethnographic* and *non-structured observation* in order to report the events of the classrooms and understand behavior and dialogues in context (Cerda, 2008). Four classes were audio recorded, transcribed and independently codified, one per each subject. It was hoped that the dialogues, relations, argumentation and class activities might reveal insights as to the use of critical thinking by both teachers and students.



**Document analysis.** This analysis intended to identify written expression, arguments and other reflections in samples of student work such as class work, homework and tests from different subjects. It was hoped that these documents might speak to the degree of challenge in tasks, and the extent to which these activities demonstrated evidence of critical thinking.

**Focus group.** Two focus groups were carried out: one session with students and another with teachers. As in the classroom observation, they were audio recorded, transcribed and independently codified. The objective of the students' focus group was to explore their opinions about the humanities seminars through discussion, especially about aspects they might consider challenging or complex. It was hoped to possibly reveal students' viewpoints of the subjects and to extract data about critical thinking practices identified in the observations. The teachers' focus group had the aim of obtaining the point of view of the humanities teachers about their subjects. It was hoped to explore teachers' attitudes and practices towards the development of critical thinking.

### **Data Analysis and Interpretation**

After collecting data with the different instruments, the triangulation and interpretation of data was made applying the principles of content analysis. Codification was the first step to identify categories as evidence of critical thinking. The majority of categories were repetitive in the instruments. The common categories identified were argumentation, absent analysis, contextualization, contradictory indication, encouraging, exemplification, inference, lack of understanding, passion, questioning, students' argumentation, student's creations and teacher' contextualization. Later, a matrix was created as an instrument of analysis to count and identify core categories where the other categories seem to be repeatedly and closely related (Strauss, as cited in Cohen, et al., 2007). Later, the frequency of codes allowed the researcher to deduce which areas are more important or significant. Finally, conclusions were drawn based on relating findings and identifying common patterns between categories and to the theoretical framework (Cohen, et al. 2007).

### **Results**

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The results of the data collection, analysis and interpretation demonstrate clear evidence in all humanities classes of critical thinking in both teachers' and students' work. The results were divided into categories: *argumentation*, *analysis* and *motivation*, which were all determined as showing evidence of critical thinking (Beyer, 1990). All categories are explained from teachers' and students' perspectives.

## Argumentation

Argumentation is the ability to create structured thinking through different statements to prove or demonstrate something. It is an important element to explain a topic or illustrate a point of view. It is also a required skill to debate with others, and creates a personal perspective (Beyer, 1990). These skills of argumentation were present in different levels through the study, as discussed below. In only one case, in the language class, argumentation was not present in teachers' speech; it was, however, evident in students' speech.

**Teachers' argumentation.** Examples of teachers' argumentation can be found in the course guides, which are like course books to study, review, practice content, and follow the learning process during the unit. Teachers decide which content and activities will be developed, and they choose the sources to explain, illustrate and work with course content. The course guides are an institutional practice and are mandatory for all subjects. They are compilations, however, in which some parts were made originally by other teachers. Arguments were more common in the course guides for social studies and literature than in English and French.

Oral argumentation was present in the focus group and in classroom observations. In the focus group, teachers explained their own method, objectives and feelings about the classes with clear reasons, and examples based on their experiences from the classroom. In classroom observations, some teachers made argumentation with their speech, adding examples and clarifications, persuading students about new meanings, contextualizing a reading and amplifying students' sentences to create an argument.

Conversely, the only class observed that did not reflect teachers' argumentation was the English class, which contained simple indications, such as "I want you to pay attention, be active," or "Please be quiet." Clarifications, however, were common in the class, even though they did not build complex reasoning by the teacher, just comments about students' work. e.g. "Improve your pronunciation, you have to improve."

**Students' argumentation.** Argumentation was observable in the students' focus group, where the students had the opportunity to defend their point of view about their classmates, teachers and subjects. Most students in the focus group did this without effort, with common words and in a natural way.

Students' use of arguments did not seem to be related to their academic performance. The only student who created arguments or coherent ideas to support his ideas in the English work was the average student. However, students with all levels of academic achievement demonstrated argumentation

in their work in the French and literature courses. In the case of social studies, the only student who evidenced argumentation in the written work was the student with higher performance. It is possible that students' argumentation is related with defending a point of view or explaining a topic in specific tasks. However, this was only evidenced in some subjects.

Paradoxically, it was possible to observe that, at least in the classroom observations, when teachers do not create arguments in class, then students may seize the opportunity to do so. In fact, students were seen using argumentation during oral presentations in the English class. They even carried out this argumentation in the absence of such discourse on the part of the teacher. In this case, students explained and argued about the subcultures they were asked to present to the class. On the other hand, almost none of the students argued when teachers led the class. In some classes, teachers did not provide students time to do arguments orally.

Still, students' argumentation was promoted in all the course guides analyzed, in the form of exercises designed by teachers, for example, creating an infographic in social studies, writing a story in literature, a letter in French, or an opinion paper in English.

### **Analysis**

Analysis is a critical thinking skill related with critical judgment and point of view, to examine a topic with different elements and perspectives (Beyer, 1990). Similarly to argumentation, analysis was found present during the study, by both teachers and students. However, even when teachers failed to promote critical judgment, it was possible to observe students using it.

Teachers promoting analysis. Teachers develop this critical thinking skill when they apply different pedagogic actions to relate content and real life; for example, the social studies teacher clarified concepts during class, and designed an analysis workshop on race discrimination in which students had to describe news, identify actors and actions, causes and how to solve conflicts. This teacher is conscious of his role as an analytical promoter when he said in the focus group, "We have to look facts and human actions without judgment and it is avoiding prejudgments and it is trying to generate other points of view."<sup>3</sup>

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The literature teacher promoted analysis by contextualization by relating content with student' lives as well as his own life in order to engage them.

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<sup>3</sup> Nosotros tenemos que mirar los hechos y las acciones humanas, sin juzgarlas, evitando los prejuicios, y tratando de generar otros puntos de vista. (Teachers' focus group)

“We live in an image world. There are movies that changed my life.”<sup>4</sup> The teacher also assigned sensitivity exercises as homework in which he invited the students to act like the characters of stories. He defined his class as an experiment of trial and error, where students can make mistakes to learn and build original deductions.

On the other hand, the French teacher developed her class by questioning. In this way, she promoted analysis of oral presentations and workshops on reading comprehension. She promoted analysis of mistakes through questions and arguments. She said, “I try to make them conscious of their mistakes. They provide feedback to each other. I didn’t say: ‘This, in this way.’ I change the sentence or situation, and they analyze it to identify their mistake.”<sup>5</sup>

In contrast, the English teacher tended to ask only simple questions related with grammar, pronunciation and class organization, so analysis was only related with simple problems like: “Do you have more information or that’s all? Do we have volunteers?”

Finally, the course books from the English and French classes included analytical exercises to improve vocabulary skills. These types of exercises are not common in other subjects.

**Student analysis.** Students were analytical when they were encouraged to evaluate news, points of view, life styles, social problems and literature in class. However, in the classes observed, even when teachers did not promote analysis, students did it independently, in a similar fashion as with argumentation. One student debated about *Cosplay* and motivated other students to participate. Another one explained the *Otaku* subculture and then led a discussion about it. Additionally, students inferred from the teacher’s arguments and answered his questions. For example, in the observation of the social studies class, the teacher promoted analysis by questions and explanations and related the concept under discussion with others seen before. In other subjects students’ analysis was more evident in the worksheets than orally. In literature, students were asked to write an essay about Anime and relate it to social conflicts. By comparison, in the social studies class, students were asked to analyze racial discrimination in the news. This exercise allowed students to infer and contextualize.

<sup>4</sup> Estamos en mundo de imágenes. Hay películas que me cambiaron la vida (Literature classroom observation)

<sup>5</sup> Yo hago que ellos se den cuenta que están cayendo en el error, cuando hago las correcciones, y ellos son los que se hacen las correcciones ellos mismos, o sea yo nunca tengo que corregir: “No esto es así, se dice así”. Sino que lo llevo a otro lado para que ellos caigan en cuenta de cuál es su error. (Teachers’ focus group)

Students specializing in humanities evaluated their own process and recognize the analytical skills related with each subject. “I love Humanities for languages and social studies. I begin to have criteria and rationalize more about everything with them. Then, I’m going to be someone who matters.”<sup>6</sup>

## Motivation

Motivation is a critical thinking skill related with disposition, interest and a safe environment in the classroom. It is a group of reasons or causes to learn a specific subject, and can be expressed by gestures, postures and words (Beyer, 1990). Motivation is related with critical thinking because it is a requirement to learn and demonstrate academic skills. This element was evident through students’ actions, even when in some cases feedback or motivation was not provided by teachers. However, teachers’ actions, such as lack of encouragement or disapproval, interrupting or ignoring students, had a negative impact on students’ participation in class.

**Teachers promoting motivation.** If students experience novelty in their learning process by activities and topics, then they have a proper environment to develop critical thinking skills. This safe environment allows them to connect content and life experiences, and engages students with the dynamics of the class. Teachers obtain this goal when they create meaningful experiences through creativity and appropriate relationships during explanations, exercises and evaluation activities.

Actually, students related the social studies and literature classes with learning and novelty. “It is more about research and we learn more about culture.”<sup>7</sup> “I like literature because there we start to reflect about things I never had done before or had not considered important.”<sup>8</sup> They feel motivated with innovation and different activities. In fact, the course book for social studies includes new learning strategies like infographs. The teacher expressed concern about generating motivation in the students, and when he described an ideal group, he described how he tries to motivate his class: “The ideal group is not related with exceptional skills but with motivation to learn about

<sup>6</sup> A mí me gusto mucho estar en Humanas, por los idiomas, como dije. Y por sociales, porque empieza uno a tener más criterio y razonar más sobre las cosas. Entonces, uno como que ya va a ser una persona que sí importa. (Students’ focus group)

<sup>7</sup> Es como más investigativa y uno aprenda más como de cultura (Students’ focus group)

<sup>8</sup> Me gusta literatura porque ahí digamos que uno empieza a reflexionar sobre cosas que uno no sabía, lo hace pensar en cosas que uno nunca pensaría que en realidad son importantes. (Students’ focus group)

humanities.”<sup>9</sup> “I always teach them with examples to project themselves more than just class work.”<sup>10</sup>

Direct motivation to participate in class activities could be a good strategy to promote motivation for learning. Positive reinforcement and expressions of encouragement were observed during the French class, such as, “We are going to sing together (a song created by students), and does not matter if sound bad or funny. We are going to try.”<sup>11</sup>

**Feedback and motivation.** Related to motivation, another important opportunity to develop and promote critical thinking is through assessment. When students are evaluated with clear criteria and they receive feedback on their work, they know how to progress and move on. One student said these assessment elements are absent in social studies. “Sometimes I make a lot of effort making my duties but teacher puts a low grade, and other times I make my homework in a simple way and the teachers put a high grade. I do not think this is correct.”<sup>12</sup> However, it is necessary to explore further to identify if this is an isolated experience or a characteristic of the class.

**Students’ motivation.** Students showed motivation according to particular dynamics in each subject. In general, students were punctual and responsible in all classes. They asked about topics and activities in social studies during the classroom observation; they brought their homework and research material to class, and worked on the assigned activities. In this particular subject, it was interesting to note that it was not necessary to discipline students to work because the majority of the class did it.

Similarly, students created more material than required by the teacher in both the English and French classes. They explained that activities in which research was required and that were related with other topics were more enjoyable. “I love to record street interviews. We learn from other, we

<sup>9</sup> Sí, yo creo que el grupo ideal va como en el sentido de lo que decía E., no necesariamente en el sentido de que tengan grandes habilidades académicas, pero sí que tengan el interés por conocer las humanidades. (Teachers’ focus group)

<sup>10</sup> Siempre les traigo a la clase como ejemplos para que ellos puedan proyectarse un poquito más afuera y no se queden solo en el ejercicio de hacer un trabajo. (Teachers’ focus group)

<sup>11</sup> Démosle todo. No nos vamos a reír. Va a sonar chistoso, pero vamos a cantar todos. (French classroom observation)

<sup>12</sup> Yo me siento bien en Humanas, pero lo único que no me gusta es que en Sociales, que digamos uno se esfuerza hartito haciendo los trabajos. Por ejemplo, a mí me ha pasado, y a L. que digamos en el infograma a él le pusieron 3.7. Uno se esfuerza hartito en los trabajos y el profesor coloca una nota, y me ha pasado que yo lo hago así porque sí y me coloca un 4.0 o un 4.3. No me parece que sea así. (Students’ focus group)

learn investigating.”<sup>13</sup> Activities included composing a song to explain parts and elements of the house, creating a matching game, or making a video or audio interview. Others brought toys or buttons to argue their presentations, and some of them came dressed like the urban tribe they were presenting. Students expressed joy when it was their turn to present: “Let’s do it”, “Yeah, it is our turn to sell,”<sup>14</sup> and it is common to hear merriment between the activities. However, these motivational signs were not recognized by teachers during any classroom observation or focus group.

Towards the literature class, on the contrary, students were divided in terms of their motivation. Some students showed that they were engaged with the topic and encouraged by activities because they had a good posture and were working in the class, but some others showed signs of disapproval like “Again the same” or postures of laziness such as lying down on the desk during class. These postures were evident during classroom observations.

In general, students expressed that they feel the humanities specialized training is the best in the school. When asked which activities prefer, they described activities like debates, essays, games, multimedia activities, and oral presentations.

## Conclusions

Clear evidence of learning through critical thinking skills such as argumentation, analysis and motivation were found in this research project in students and teachers’ work. Teachers’ argumentation via oral explanations and written texts and course books was found in all subjects. Teachers developed analysis with images, videos, questions and other exercises. They also promoted analysis when they invited students out to participate in classroom activities and when they designated homework with research and relationship elements.

40 Students answered this encouragement, but they also demonstrated their own internal motivation by creating more than required by teachers. They applied additional tools such as songs, games, videos and costumes in oral explanations. When encouraged to be analytical, students demonstrated this skill, as when they practiced critical judgment through assessment of their process and teachers’ work in the focus group. However, it is most notable that students were observed carrying out analysis and promoting their classmates

<sup>13</sup> Nosotros nos gusta por ejemplo las entrevistas a otras personas de la calle o cosas así. A parte que aprendemos de los demás, aprendemos diferentes cosas de los demás, nos gusta investigar, nos gusta esas vainas: entrevistas, todo eso, el video o audio. (Students’ focus group)

<sup>14</sup> ¡A vender! ¡Sí!, Somos nosotros. (French classroom observation)

to do so even when they were not persuaded by their teachers. Students were interested in complex activities because they worked autonomously, and considered these opportunities for learning through investigation.

As such, the research questions in this study were answered. Teachers applied and promoted critical thinking skills with different strategies as hypothesized. However, students performed beyond expected. They demonstrated critical thinking skills with or without teachers' encouragement. Further, they are not overwhelmed but rather motivated by complex tasks.

As mentioned in the literature review, there are studies about how to improve critical thinking, but just a few focus on evidence of critical thinking inside the classroom. This study sought to fill this research need. As with other investigations, this study was based on observation and did not divide the research group or modify it because variables belong inherently to the context.

However, there are some limitations to this study. Some teachers were not willing to provide sample papers or agree to meetings. More French language skill on the part of the researcher was necessary to analyze the French data with more precision, and more time was needed to apply the same instruments more frequently, or different instruments to deepen the data.

Nevertheless, it was possible to identify similarities between this study and others of the same type. Students expressed critical thinking and felt motivated by activities promoting artistic development like songs, or interaction task like debates. These findings concur with Shoemaker (2012) and Swartz (2004), who argue that arts and collaborative relationships are proper instruments to reflect critical thinking skills, arts demonstrating metaphorical connections and teamwork, promoting complexity, flexibility and self-reflection.

Finally, this research project opens many possibilities to continue exploring CTS. It could be useful for the school to explore these skills in the other departments, follow the process of the same group of students next year, or analyze other groups from Humanities classrooms to assess, promote and apply CTS in the classroom. Other possibilities could be to analyze motivation and feedback, to research independently each CTS, or to explore other HOTS such as creative thinking or metacognition to establish action plans and prepare students to be more competent than competitive in their academic purposes.



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