# Promoting Critical Thinking through the Use of Portfolios and Self-assessment

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This is a report of a case study carried out with sixth graders in a public school in Bogotá. The main goal of this study was to analyze if through the use of portfolios and self-assessment practice critical thinking was developed. In this case different study instruments were used to observe the students' critical thinking process: a teacher's journal, students' portfolios, video recordings, interviews and a questionnaire. The results showed that self-assessment helps to develop critical thinking in students, especially as regards self-regulation and evaluation skills. Likewise, using portfolios increased students' autonomy. In addition, self-examination and self-correction skills were developed.

Key words: portfolios, critical, thinking, self-assessment

Éste es un reporte de un estudio de caso llevado a cabo con estudiantes de sexto grado en un colegio público en Bogotá. El objetivo principal de este estudio era analizar si se desarrollaba el pensamiento crítico a través del uso de portafolios y la práctica de auto-evaluación. Para observar el proceso de pensamiento crítico de los estudiantes se utilizaron diferentes instrumentos: el diario del profesor, los portafolios de los estudiantes, grabaciones de video, entrevistas y un cuestionario. Los resultados mostraron que la auto-evaluación ayuda a desarrollar el pensamiento crítico en los estudiantes, especialmente las habilidades de autorregulación y evaluación. Asimismo, el uso de portafolios incrementó la autonomía en los estudiantes. Además, se halló que se desarrollaron las habilidades para autoexaminarse y autocorregirse.

Palabras claves: portafolios, pensamiento crítico, auto evaluación

### Introduction

An investigation was carried out with sixth graders to analyze if self-assessment practices when using portfolios could inform their critical thinking and the role of portfolios in its development. This was done through a case study of thirty three students who kept portfolios during the academic year. The project was developed over an eight month period as an attempt to analyze the following types of observation: a teacher's journal, video recordings and students' interviews. In addition some literature of critical thinking and self-assessment in the teaching context was consulted.

This study had the following two main questions, which were answered through data analysis:

- How do self-assessment practices when using portfolios inform us of sixth grade students' critical thinking?
- What is the role of portfolios in the development of critical thinking?

# **Research Methodology**

This research followed the case study methodology. Nunan (1997) says that "case studies centre on a single individual or limited number of individuals, documenting some aspect of their language development, usually over an extended period of time" (p. 8).

Concerning the participants of the study, I worked with sixth grade. There were thirty three students, ten boys and twenty three girls. The students' ages were between 11 and 13. I collected data from all the students in that group. Their parents signed the consent form to authorize the development of the study. Along the process, the parents and the students helped me a lot.

The process of data analysis was as follows: I collected my students' portfolios and made copies of the work included in them. I had my journal in which I described every class from August until November. I video recorded some activities and transcribed them. As I read all the data, I highlighted the most recurrent topics and started to categorize the information. Additionally, I conducted interviews that were video recorded to gather information on the way the students demonstrated critical thinking principles. After analyzing all the information, it was necessary to triangulate it. According to Freeman (1998), triangulation means including multiple sources of information or points of view on the phenomenon or question that is investigated.

# **Instructional Design**

The teaching activities I engaged in to carry out this research project were to invite the students to share products of their own literacy learning, to explain to them

the purpose of the portfolio and its status as a means of monitoring and evaluating their own progress, to ask my students to develop three literacy goals according to the content of the terms, and to explain to them the key concepts of the study and their importance: assessment, peer feedback, family feedback, and self-assessment. The students were assigned autonomous work too.

In this research there was a special characteristic: the subject called Languages that was a mixture of English and Spanish class (8 classes of 45 minutes each) and was taught by the same teacher. In all the written activities, code switching was allowed because if students use previous language they know and incorporate the words they do not know into the mother tongue they would understand the text when they read it and would be including new English words as they got familiarized with them. According to Heredia and Brown (1998), code switching has been considered a tactic to compensate for diminished language proficiency.

Presentations were an important part of the process. I worked with presentations explaining to my students how to plan and give a presentation. I then gave them different topics and after they read the article, we went to the library to look for more information on the topics and used the Internet to read more about the topics given. Finally, the students made their presentations.

The students also presented their portfolios and received feedback from their peers. The portfolios included the following: work samples, peer-feedback, parents' feedback, teacher's feedback, the goals set by them and students' reflections.

Throughout the whole year one of the ways to assess my students was through conferences to analyze their development in critical thinking. Thus, I told them what they needed in order to improve the clarity in their writing, spelling mistakes, coherence in their texts, and use of vocabulary. Also, it was an important moment to know what they thought about their performance in the class. There are a number of benefits to having conferences and the GTA Weekly Newsletter (2006) shares some of them: "They provide a means for one-on-one feedback that cannot be done in a regular classroom; allow you to build your teacher-student relationship; address concerns that do not fit in the regular class setting-true for both students and the teacher; and let you and the students closely examine an assignment, which can boost the overall outcome of that project. Students become familiar with outside help". My students used to give feedback to their partners. I was inspired to do it in class because I consider students can help each other. It is highlighted in The Houghton Mifflin Education Place (1997), that involving students in the assessment and evaluation process is an essential part of balanced assessment. When students become partners in the learning process, they gain a better sense of themselves as readers, writers, and thinkers. As students reflect on what they have learned and on how they learn, they develop the strategies to become more effective learners. Students need to examine their work and think about what they do well and in which areas they still need help. Once students have reflected on their learning, they are ready to set new goals for themselves. As they work toward these goals, they should be encouraged to reflect on their learning journey at regular intervals. It is stated that with practice, students who self-assess become more conscious learners, able to apply knowledge of their learning needs and styles to new areas of study.

Project work was one of the most interesting activities for my students. As Goodrich, Hatch, Wiatrowski and Unger (1995) assert, "Projects are long-term, problem-focused, and meaningful activities that bring together ideas and principles from a number of subject areas or disciplines". We worked with short projects such as Valentine's Day, Easter, Halloween, poetry and at the end of the year, we worked on a final project.

## **Theoretical Framework**

This section will discuss the main constructs that guided this investigation. The first one is about portfolios and the second one addresses critical thinking.

### Portfolios

Portfolios were a source of analysis in my study because they showed students' critical thinking in their goal setting, reflections and work. According to Paulson, Paulson and Meyer (1991), a portfolio is a purposeful collection of student's work that exhibits the student's efforts, progress, and achievements in one or more areas of the curriculum. The collection included the following: student participation in selecting contents, criteria for selection, criteria for judging merits, and evidence of a student's self-reflection. It represented a collection of the student's best work or best efforts, student-selected samples of work experiences related to outcomes being

assessed, and documents according to their growth and development about mastering identified outcomes.

A portfolio is understood as a research tool and a part of a pedagogical intervention. Likewise, the portfolio shows the student's creativity, autonomy, beliefs, and attitudes toward literacy when s/he creates their portfolio and selects the work to include. Furthermore, a portfolio is a sample of decision making in all the literacy process.

Peer feedback was a common practice and portfolios helped the students also to self-assess their learning. In the portfolios my students included some goals to develop during the term, they made decisions about the contents, and reflected on their literacy process. The portfolios also gave me information about the students' literacy progress.

Some very interesting research based on portfolio use was carried out by Courtney and Abodeeb (1999), who describe the process of keeping diagnostic-reflective portfolios. The teacher, Theresa Abodeeb, collects diagnostic data that, together with work samples and goals for learning, give an in-depth, accurate portrayal of students' progress. The student and the teacher reflect upon these goals alone and together in order to understand the students' individual learning processes. This type of portfolio assists all children in becoming critical thinkers who understand their own literacy and literacy learning. The research carried out in second grade over five years shows that it is necessary to introduce the concept of portfolios to parents and students at the beginning of the process. Abodeeb begins the portfolio with a reading interview, then includes a running record based on miscue analysis, work samples, checklists, anecdotal records of her early observations of reading and writing behaviors, and other diagnostic surveys. This collection of assessments and observations becomes the diagnostic section for each portfolio. The teacher and children construct together three appropriate goals, the teacher writes them on index cards and tapes them to the children's desks and sometimes emphasizes them for the students. Some aspects of this research were important when planning my project.

Some other very relevant research with portfolios done at Universidad Nacional is reported by Ariza and Viáfara (2004), who asked students to keep learning aids such as photocopies of activities, exercises and handouts of study items, quizzes, and assignments in their portfolios throughout a whole semester. Finally, the teachers

asked their students to select three samples of material which caught their attention most during the term and responded to some questions about how that material could help them learn and how they liked the materials and activities implemented. This research shows the importance of the stages of material selection, adaptation and creation as students' interact with them.

## What about Critical Thinking?

For Elder and Paul (1994) critical thinking is best understood as the ability of thinkers to take charge of their own thinking. This requires that they develop sound criteria and standards for analyzing and assessing their own thinking and routinely use those criteria and standards to improve its quality.

On the other hand, Cárdenas (2001) defines critical thinking as the art of taking charge of our own minds. This art encompasses the mental processes, strategies, and representations we use to solve problems, make decisions, and learn new concepts. In addition, Tim van Gelder (2003, p. 3) defines critical thinking as "The art of being right".

Facione (1998) explains that Critical Thinking (CT) is understood to be purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based. For Facione, CT is essential as a tool of inquiry. As such, CT is a liberating force in education and a powerful resource in one's personal and civic life. While not synonymous with good thinking, CT is a pervasive and self-rectifying human phenomenon.

Aguirre (2004) presents significant results in a study that explored the critical thinking skills of analysis and evaluation through the use of authentic materials and the Socratic Method. The students analyzed and judged topics by using internal evidence and external criteria. In general, this research showed that when students have the chance to analyze and state their viewpoints, this may result in significant benefits for their attention and engagement in the activities, and, in general, for their learning process.

After reading different theories and analyzing my students' data, we can conclude that critical thinking means having and developing the abilities of making decisions, analyzing, judging with arguments, interpreting and finding solutions when there is a problem to solve and the ability to generate questions. Besides, critical thinking is the capacity of planning and achieving goals creatively and using these abilities to assess ourselves.

According to Facione (1998), good critical thinkers can be described in terms of how they approach specific issues, questions, or problems. For Facione the ideal critical thinker is habitually inquisitive, well-informed, trustful of reason, open-minded, flexible, fair-minded in evaluation, honest in facing personal biases, prudent in making judgments, willing to reconsider, clear about issues, orderly in complex matters, and diligent in seeking relevant information. Additionally, the critical thinker is reasonable in the selection of criteria, focused on inquiry, and persistent in seeking results which are as precise as the subject and the circumstances the inquiry permits. Thus, educating good critical thinkers means working toward this ideal. It combines developing CT skills with nurturing those dispositions which consistently yield useful insights and which are the basis of a rational and democratic society.

Facione (1998) defines the mental abilities and attitudes or habits as cognitive skills and affective dispositions. The cognitive skills identified as the core of critical thinking are as follows: interpretation, analysis, evaluation, inference, explanation, and self-regulation. The critical thinking skills involve meta-cognition and using all the skills when it is necessary to solve a problem or to face a situation. To use the skills it is necessary to have the disposition to do so. "The general idea of thinking dispositions is that people behave more or less intelligently, governed not only by abilities but by predilections or tendencies" (Perkins & Tishman, 1998, p. 4).

A critical thinker is not only thinking correctly; people act according to their inner energy or spirit. Facione (1998) divides the affective dispositions in approaches to life and living in general and approaches to specific issues, questions or problems. These aspects led my study in the sense of promoting activities to train my students to make decisions, to be inquisitive, to have different sources of information, to be flexible in considering alternatives and opinions, to understand others' opinions, to display honesty when recognizing their own mistakes and aspects to be improved, and to be persistent despite difficulties encountered in the parents', teacher's and peers' feedback.

### Results

As mentioned before, I collected data from a teacher's journal, the students' portfolios, videos, interviews and questionnaires. All these sources allowed me to

analyze the critical thinking skills evidenced during the study in order to answer the main questions of the study. It was necessary to compare different findings and look for patterns of similarities and differences among all the data. I triangulated the different sources in order to establish the most recurrent findings and identified two categories. The data was analyzed following the grounded theory: first I named the categories, then I found relationships and grouped them and finally I displayed the data. In the categories there are subcategories according to the relationships between them. Table 1 depicts the categories found.

Categories	Subcategories
Capability to fulfill a goal	<ol> <li>Interpreting &amp; explaining to conclude &amp; judge</li> <li>Monitoring</li> </ol>
	3. Analyzing & inferencing
Willingness to accomplish tasks	1. Curiosity to expand knowledge
	2. Open-mindedness

Table 1. Categories and subcategories derived from data analysis

# Capability to Fulfill a Goal

The first category, "capability to fulfill a goal", makes reference to the cognitive abilities the participants have for achieving a goal. It was necessary to create subcategories to relate the different skills that were found in the data analysis. This category includes a first subcategory: interpreting and explaining to conclude and judge. This subcategory explains what occurred when my students interpreted a text or a situation and explained it. In that process they drew conclusions and sometimes added a judgment to their partners' or an author's ideas. A second subcategory, monitoring, describes different students' statements and teachers' observations, the evaluation process seen when the students evaluated some texts or authors, their partners, and themselves. There is a third subcategory that was found with less frequency in the data: analyzing and inferencing. In the next paragraphs a description of each category and subcategory is presented supported with students' evidence. **Interpreting and explaining to conclude and judge.** Facione (1990) defines **interpretation** as the skill to comprehend and express the meaning or significance of a wide variety of experiences, situations, data, events, judgments, conventions, beliefs, rules, procedures or criteria. According to Facione, interpretation includes these sub-skills: categorization, decoding significance and clarifying meaning. Facione (1990) describes **categorization** as "The skill to apprehend or appropriately formulate categories, distinctions or frameworks for understanding, describing or characterizing information" (p. 6).

My students tried to categorize the poems and the authors read in class as shown in these comments:

"García Lorca escribió sobre sus propias experiencias".
"Los poemas de Bécquer son como románticos".
"Julio Flórez es diferente, como de despecho, triste..."
"García Lorca wrote about his own experience".
"Becquer's poems are romantic".
"Julio Flórez is different, like sad...".

(Journals 25 and 26).

Working with poetry was a way for the students to paraphrase the content of the poems. They used to express their understanding of them. For instance, when we watched the film *The Postman*, they said,

"Los poemas de Neruda son más tiernos". "Es muy lindo todo lo que Neruda escribía". "Neruda's poems are more tender". "It is so pretty all that Neruda wrote". (Journal No. 27)

**Decoding significance** is defined by Facione (1990) as a skill to detect, attend to, and describe the informational content, affective purport, directive functions, intentions, motives, purposes, social significance, values, views, rules, procedures, criteria, or inferential relationships expressed in convention-based communication systems, such as in language, social behaviors, drawings, numbers, graphs, tables, charts, signs and symbols.

Facione (1990) defines **clarifying meaning** as the act of paraphrasing or making explicit through stipulation, description, analogy or figurative expression, the contextual, conventional or intended meanings of words, ideas, concepts, statements, behaviors, drawings, numbers, signs, charts, graphs, symbols, rules, events or ceremonies.

In almost all the classes, when we read stories or different texts, the students interpreted, paraphrased and retold them in their own words to decode significance and try to clarify meaning.

In the presentations there were situations when the students engaged in clarifying meaning and decoding significance. They explained the topics according to their reasoning. The students used description to explain the topics or to talk about their portfolios. For example, in one of the presentations one of the students considered it necessary to complement the information one of the girls in the class was presenting. The student presented his own arguments and finally the girl explained how she included all the information in her presentation.

Mary: "La criptología es la ciencia que estudia los fenómenos paranormales como los ovnis, los muertos, las almas vivas y muertas".

Juan: "Los criptólogos no siempre se concentran en los muertos, se concentran más en acciones como la tabla güija, de dónde salieron los vampiros, las momias, las brujas y no en los muertos".

Mary: "Por eso es que yo dije se concentran en TODOS los fenómenos paranormales".

Mary: "Cryptology is the science that studies paranormal phenomena like ovnis, dead people, souls both alive and dead".

Juan: "The cryptologists are not always concerned about dead people, they are more concerned about actions such as the use of the Ouija board, where vampires came from, the mummies, the witches and not about dead people".

Mary: "That's why I said they care about ALL the paranormal phenomena".

(Video transcription No. 1)

Mary was trying to clarify something she had just said using a marker "TODOS". In this first aspect of the subcategory, it can be said that when the students have a point of comparison among different possibilities they categorize. Questions are means to clarify meaning. Paraphrasing is used to decode significance and the students interpret to conclude or define if they are asked to do it.

Interpretation and explanation were both present in my students' data to achieve the same goals: concluding and judging. Facione (1990) defines **explanation** as the skill to state the results of one's reasoning; to justify that reasoning in terms of the evidential, conceptual, methodological, criteriological and contextual considerations upon which one's results were based; and to present his or her own reasoning in the form of cogent arguments. Explanation includes three sub-skills stating results, justifying procedures and presenting arguments.

Throughout the observation period I could see that my students stated results. According to Facione (1990) **stating results** is a skill to produce accurate statements, descriptions or representations of the results of one's reasoning activities so as to analyze, evaluate, infer from, or monitor those results.

A demonstration of stating results is in the portfolios. In Carolina's portfolio, she included a situation in her life history in which she stated results regarding that situation in her childhood:

"Luego de ocho días después de mi nacimiento mi mamá me llevó al hospital San José por unos resultados para poderme registrar y cuando salió un señor que estaba manejando un taxi se ofreció a llevarla. Pero mi mamá se dio cuenta que la estaban engañando y le dijo que mejor no. Luego el señor que estaba manejando el taxi de atrás le dijo que esos señores lo que querían era robarme para venderme, y gracias a Dios no me robaron".

"Eight days after I was born, my mother took me to the hospital San José to get some exams, and to register me and when she came out a man who was driving a taxi offered to take her. But my mom realized that he was going to cheat her in some way and she said no. Then the man who was driving the taxi behind the first taxi told her that those people wanted to kidnap me to sell me. Thank God it didn't happen".

(Carolina's portfolio)

In this reflection Carolina gave her opinion and evaluated a fact. She explained in her own words the fact and said "thank God it did not happen", so concluding with an evaluation of that situation.

Throughout the period of this research project, there were demonstrations of justifying procedures. Facione (1990) defines **justifying procedures** as the skill to present the evidential, conceptual, methodological, criteriological and contextual

considerations, which one used in forming one's interpretations, analyses, evaluation or inferences. So that one might accurately record, evaluate, describe or justify those processes to oneself or to others, or so as to remedy perceived deficiencies in the general way one executes those processes.

At the end of the school year my students created projects, one of which was a case invented by the students. In that project they created a situation, some characters, steps to solve the problem and also included the best solution. This process included arguments, procedures, and solutions. It was a project that had steps that were previously planned by the students. They justified each one of the activities to represent the case (Journal No. 41).

Presenting arguments is the third sub-skill of explanation. **Presenting arguments,** defined by Facione (1990) as the skill to give reasons for accepting some claim, also means meeting objections to the method, conceptualizations, evidence, criteria or contextual appropriateness or inferential, analytical or evaluative judgments.

In the portfolio presentations there was demonstration of presenting arguments, as can be seen in the following:

Adriana: "Mi vida resumida es mi trabajo favorito".

Teacher: "Por qué?"

Adriana: "Porque puedo recordar momentos de mi vida como por ejemplo mi primera comunión aquí está"

Adriana: "My life summarized is my favorite work".

Teacher: "Why?"

Adriana: "Because I can remember moments of my life; for example, my first communion, it is here".

(she showed a picture)

Later when I asked her what she liked most about working with portfolios she presented her argument:

"Que uno incluye trabajos de la vida de uno". "That you can include work about your own life". (Video transcription No. 14)

In the argument given by Adriana, she preferred to talk about herself and her past.

All the demonstrations presented in the subcategory **interpreting and explaining to conclude and judge** show the presence of the skills: interpretation, clarifying meaning, decoding significance, categorization, explanation, stating results, justifying procedures and presenting arguments. In some samples, one of the skills is found but normally two or more skills are present.

**Monitoring.** In this subcategory there are two cognitive skills included: evaluation and self-regulation. Each one of the skills has sub-categories that will be defined in this section. Both cognitive skills have a close relationship. It is because when a person monitors processes, texts or peers' performance, s/he evaluates targets. Likewise, when the person evaluates her/himself, there is self-regulation. I will begin by defining what is meant by **monitoring.** According to Webster's Universal College Dictionary (1997), to monitor is to oversee, supervise or regulate. // To watch closely for purposes of control. // To serve as a supervisor, monitor, detector.

According to this definition, to monitor would be to evaluate, to watch, to supervise.

Facione (1990) defines **evaluation** as a skill to assess the credibility of statements or other representations which are accounts or descriptions of a person's perception, experience, situation, judgment, belief or opinion. In addition, evaluation is to assess the logical strength of the actual or intended inferential relationships among statements, descriptions, questions or other forms of representation.

When we read different texts in class my students judged them and gave opinions about them. For example, in Pablo's portfolio, he included a text called "Los Toros", which was a reaction about a text I read in class about bullfighting. He wrote the following:

"Los animales también tienen derecho a ser respetados y no ultrajarlos, no matarlos. Debemos darle la libertad".

"Animals have also the right to be respected and not to be injured or killed. We must free them".

In the **monitoring** subcategory self-regulation was also evidenced. **Self-regulation** is defined by Facione (1990) as to monitor self-consciously one's cognitive activities, the elements used in those activities, and the results educed, particularly by applying skills in analysis and evaluation to one's own inferential judgments with a view toward questioning, confirming, validating, or correcting either one's reasoning or one's results.

During the development of the portfolio the students were very autonomous. When they had to set their goals they showed self-regulation. This is an excerpt from a student's presentation of her portfolio:

"Mi objetivo es aprender a escuchar, aprender palabras en Inglés, aprender a pronunciarlas, aprender a pronunciar los números, personas, objetos".

"My objective is to learn to listen, learn words in English, learn to pronounce them, learn to pronounce the numbers, people, objects".

(Video transcription No. 7)

Autonomy was also evident when we worked in the computer room. The students had to make decisions about the program they were going to use: Word, PowerPoint, or Word Pad.

Kirkwood (2000) did a case study on a thinking curriculum and learning to learn in the context of secondary education by exploring one subject area, computing studies, at the Scottish secondary with 16-year-old students. Kirkwood had evidence of the metacognitive skills of monitoring, checking, planning and self-testing. The students showed learning preferences such as working individually or with a partner. There was also autonomy. My study obtained similar findings to those of Kirkwood (2000) in regard to the value of self-assessment as necessary practice in the process of becoming a critical thinker.

The first sub-skill of self-regulation is **self-examination**. Facione (1990) defines self-examination as a skill to reflect on one's own reasoning and verify both the results produced and the correct application and execution of the cognitive skills involved.

During the presentations made in class there was a demonstration of self-examination. After asking my students "How did you feel during the presentation?" they answered as follows:

Mary: "Y es que nosotros nos sabíamos todo pero ella por los nervios se le olvidó". Julia: "Yo primero, pues yo digo que debía estar más planeado pero yo me lo tenía estudiado pero por los nervios me dejé llevar".

Mary: "We knew everything but she forgot that because she was nervous". Julia: "First, I say, everything should have been planned more but I had studied it and because I was nervous I forgot it".

They also included self-correction during the self-assessment activity.

Mary: "La próxima vez yo averiguaría más datos sobre la exposición". Mary: "Next time, I would look for more information for the presentation". (Video transcription No. 1)

Dily: "Pues bien porque las opiniones que nos dan tenemos que mejorar lo que nos están diciendo".

Dily: "It was OK, because with the opinions we receive we have to improve what they are saying".

(Video transcription No. 3)

Carolina: "Pues yo me aprendí eso y todo y yo creo que fue mi error que empecé como a tartamudear al principio".

Carolina: "Well, I learned that and I believe it was my mistake that I began like hesitating at the beginning".

(Video transcription No. 4)

Diana: "Me hace falta la pronunciación de las palabras". Diana: "I need to improve the pronunciation of the words". (Video transcription No. 7)

According to Facione (1990) **self-examination** is reflected in one's motivations, values, attitudes and interests with a view toward determining that one has endeavored to be unbiased, fair-minded, thorough, objective, respectful of the truth, reasonable, and rational in coming to one's analyses, interpretations, evaluations, inferences, or expressions.

The students presented demonstrations of self-examination in the portfolios as well as in the interviews. For example, Karen wrote a fable where she expressed her opinion about disobedience as a reflection because a boy left his house and suffered so much:

"Él le dijo a sus padres que había sufrido mucho y que nunca los iba a volver a dejar".

"He said to his parents that he had suffered very much and that he was never going to leave them again".

And as a moral she wrote,

"No tenemos que dejarnos influenciar por las malas personas". "We don't have to let ourselves be influenced by evil people".

The third subskill of self-regulation is self-correction. Facione (1990) defines **self-correction** as a process where self-examination reveals errors or deficiencies, to design reasonable procedures that will remedy or correct those mistakes and their causes, if possible.

Throughout the development of the presentations I asked them questions to know their self-evaluation. I asked them: What do you think you should improve next time in a presentation. There were different answers. Mónica said:

"Controlar los nervios y tener más seguridad". "To control my nervousness and to be more confident". (Video transcription No. 5)

Pablo said: "Que los nervios, y debo mirar más y mirar más al público". Pablo said: "Not to be nervous, and I have to look at the audience more". (Video transcription No. 6)

As a conclusion for the category **monitoring**, I can say that the students monitor themselves if they are asked to do it or if they are guided. The students evaluate their partners and give solutions to their own problems. Moreover, if the students are exposed to frequent evaluation of texts and activities, they have arguments to evaluate. Self-examination is more frequent than self-correction. It was also evident that if the students are given the chance to choose between different options, they make decisions and practice self-regulation.

Analyzing and inferencing. This is the third subcategory identified in the main category, capability to fulfill a goal. This subcategory was less frequent in the analysis of the data. According to Facione (1990) "analysis is to identify the intended and actual inferential relationships among statements, questions, concepts,

descriptions or other forms of representation intended to express beliefs, judgments, experiences, reasons, information, or opinions".

There were moments to analyze the language. In September when I explained nationalities and the names of the countries, Juan reflected on the ending of the nationalities. He said: "A todos se les pone an Paraguayan, Venezuelan, Canadian?", I said no, and he read the other nationalities and said, "También ese, Portuguese, Chinese...". He analyzed the form of the words, the suffixes, language in general in Journal No. 12:

He said: "You add an to all of them, Paraguayan, Venezuelan, Canadian? Teacher: "We have ese as an ending, Portuguese, Chinese".

Detecting arguments is a sub-skill of analysis. Facione (1990) defines **detecting arguments** as being given a set of statements, descriptions, questions or graphic representations to determine whether or not the set expresses, or is intended to express, a reason or reasons in support of or contesting some claim, opinion or point of view.

When we watched *The Postman* one student argued:

"Pablo Neruda era como el ídolo del cartero por eso él aprendió a leer con sus poemas".

"Pablo Neruda was like the mailman's idol; that's why he learned to read with his poems".

(Journal 27)

It is possible to conclude at the end of this part regarding this sub-skill that the students analyze their work, other people's work and their attitudes. Analysis requires training and guidance because it is evidenced only when the teacher guides and induces it, but it is not spontaneous.

The second skill included in this subcategory is inference. According to Facione (1990) **inference** is to identify and secure elements needed to draw reasonable conclusions; to form conjectures and hypotheses; to consider relevant information and to educe the consequences flowing from data, statements, principles, evidence, judgments, beliefs, opinions, concepts, descriptions, questions, or other forms of representation. Inference has as sub-skills querying evidence, conjecturing alternatives, and drawing conclusions.

When I read stories in English to my students they asked me some questions to understand the whole text. By the time we prepared the presentations in Spanish, the same happened: they wanted to know all the information about the topics.

When I read stories to my students they drew conclusions about the situations that happened in them, which is one sub-skill of inference. Facione (1990) defines **drawing conclusions** as the skill to apply appropriate modes of inference in determining what position, opinion or point of view one should take on a given matter or issue; in this case, authors or texts.

When the students analyzed their participation in the video, they evaluated and drew conclusions such as:

"Debemos respetar cuando alguien habla" "We should respect when someone speaks" (Journal No. 21).

On the other hand, when I explained a new topic I made my students guess and infer as regards their understanding. An example could be found when I explained the difference between first language, second language and foreign language. My students gave some examples and, through them, they could explain their understanding and inferred the meaning of each one of the terms.

Querying evidence is one sub-skill of inference. Facione (1990) defines **querying** evidence as recognizing the premises which require support and to formulate a strategy for seeking and gathering information which might supply that support.

When the students presented their projects there was one project that was designed to be acted: a case. There was a product stolen from a factory and the lawyer interviewed all the suspicious people but one of the facts they repeated was as follows:

"Un testigo que no sea familiar suyo y que pueda comprobar lo que Ud. hizo ese día". And one of the girls asked me "Profe, ¿Por qué una persona de la familia no puede atestiguar?"

"A witness different from a relative of yours and that he/she can prove what you did that day". And one of the girls asked me, "Teacher, why can't a person from the same family be a witness?"

(Journal No. 41)

Of course this girl did not belong to the group; she was a volunteer in the play but she was inquisitive.

As has been noted, this subcategory **analyzing and inferencing** is the least evidenced in the category **capability to fulfill a goal**. I think that the skills of analysis and inference need to be got in training because most of the students did not show many demonstrations of them in the daily activities worked in class.

Autonomy was one of the characteristics found in the analysis of the data. It was seen mostly in the portfolios. According to Holec (1981) autonomy is the ability to take charge of one's learning. Boud (1988) holds that someone qualifies as an autonomous learner when he independently chooses aims and purposes and sets goals; chooses materials, methods and tasks; exercises choice and purpose in organizing and carrying out the chosen tasks; and chooses criteria for evaluation. To all intents and purposes, the autonomous learner takes a pro-active role in the learning process, generating ideas and availing himself of learning opportunities rather than simply reacting to various stimuli of the teacher. Boud (1988) mentions some aspects that were used in my research: my students set goals, made selections in different activities and during the development of those activities.

# Willingness to Accomplish Tasks

I define willingness as the students' dispositions and attitudes toward all the activities in class. I named this category "Willingness to accomplish tasks" because it shows the students' interest in the activities proposed.

There are dispositional components to critical thinking. Each cognitive skill can be correlated with the cognitive disposition to act. A person who is proficient in a skill has the aptitude to execute that skill but the person may or may not use it in a situation when it is needed. Facione (1998) says, "The ideal critical thinker can be characterized not merely by her or his cognitive skills but also by how she or he approaches life and living in general" (p.8). According to Facione and Facione (1992), the dispositions toward critical thinking are inquisitiveness, systematicity, analyticity, open-mindedness, critical thinking, self- confidence, truth-seeking and maturity.

This category includes a first subcategory: curiosity to expand knowledge. This subcategory demonstrates students' inquisitiveness and truth-seeking dispositions. Regarding curiosity to expand knowledge, there were also demonstrations of systematicity while students planned and developed activities proposed during the research. A second subcategory was identified: open-mindedness. It explains students' attitude when they were evaluated or when there were other points of view about a topic.

**Curiosity to expand knowledge.** Taking into account the definitions of truth-seeking and inquisitiveness, this subcategory includes all the demonstrations that show the presence of curiosity and the desire to expand knowledge.

Collins English Dictionary defines inquisitive as: an excessively curious person, eager to learn whereas Webster's Dictionary defines inquisitiveness as the disposition to seek explanation and information; curiosity to learn what is unknown. Likewise, WordNet Dictionary defines inquisitiveness as a state of active curiosity. On the other hand, Facione and Facione (1992) define *inquisitiveness* as being curious and eager to acquire knowledge and learn explanations even when the applications of the knowledge are not immediately apparent. Therefore, in the following section there will be situations that showed *curiosity to expand knowledge*.

When we read poetry one of my students was so impressed by the poets. Juan wanted to know everything about them. For instance, he asked when poets write poems. He also asked about the kind of paper they use and if there were rules for writing poems. We had this conversation:

### Juan: ¿Cuándo escriben poemas los poetas?

I just said: "En la cocina, en el campo, en la casa, no hay un lugar especial donde ellos sienten que deben escribir algo, pueden ir en un carro, en un bus. ¿Recuerdan la bailarina de los pies desnudos de Rubén Darío? Tal vez fue un momento en donde el poeta vio a alguien bailando y quiso escribir eso o lo recordó".

Juan: ¿Ellos escriben en papel especial?

I answered: Por supuesto que no, ellos pueden escribir en un cuaderno, en un pedazo de papel, en un libro, en una hoja de árbol, eso depende del poeta.

Juan: ¿Pero no hay reglas para escribir poemas?

I said: Las que vimos, rima, ritmo, distribución en versos pero los poetas son libres de escribir en la forma en que les guste hacerlo.

After that conversation Jaime said:, 'Juan, ¿por qué no se inventa Usted las reglas?" Juan answered: 'Nadie me haría caso"; Jaime: "Pues no importa nos da las reglas a nosotros y si funcionan en el curso pueden publicarse para todo el mundo".

Juan: "When do poets write poems?"

I just said: "In the kitchen, in the countryside, at home, there is not a special place, it is where they feel they want to write something, they can be in a car, in a bus. Do you remember the barefoot dancer from Rubén Darío? Maybe it was at a moment when the poet saw someone dancing and wanted to write about it or he remembered that". Juan: "Do they write on a special paper?"

I answered: "Of course not, they can write in a notebook, on a piece of paper, in a book, on a tree leaf, it depends on the poet".

Juan: "But aren't there rules for writing poems?"

I said: "The ones we saw in class, rythm, rhyme, the verse distribution but the poets are free to write in the way they like". After that conversation Jaime said:, "Juan, why don't you create the rules?"

Juan answered: 'Nobody would follow them''.

Jaime: "It doesn't matter, you give us the rules and if they work in the group, they can be published for everyone".

Self-regulation was present throughout the study. During the development of the portfolio the students showed autonomy. When they had to set their goals they showed self-regulation. This is an excerpt from a student's presentation of her portfolio:

"Mi objetivo es aprender a escuchar, aprender palabras en Inglés, aprender a pronunciarlas, aprender a pronunciar los números, personas objetos".

"My goal is to learn to listen, learn words in English, learn to pronounce them, learn to pronounce the numbers, people, objects".

(Video transcription No. 7)

Drawing conclusions was illustrated in the comic process, the presentations, and the proofreading activities. When Jaime made his presentation he showed an open-minded attitude; when he finished, he received peers' feedback:

"Yo les agradezco a las personas que me dijeron que miraba al piso y todos mis errores yo voy a tratar de mejorarlos".

"I thank the people who mentioned I looked at the floor and all my other mistakes, I am going to try to improve them".

(Video transcription No. 2)

In general when the students received feedback from their peers they were open minded.

In addition, there were demonstrations of peer feedback and reflection in the portfolios:

Mónica: "Al mito le falta el procedimiento de cuando tocó la mancha y casi no le entendí la letra".

Juan's reflection: "Mónica tiene razón y voy a mejorar lo que me dijo".

Mónica: "The myth does not have the proper procedure when it touched the dirt and I did not understand your handwriting".

Juan's reflection: "Mónica is right and I am going to improve on what she said".

(Video transcription No. 7)

**Open-mindedness.** This second subcategory includes two dispositions: *critical thinking self-confidence* defined by Facione and Facione (1992) as trusting one's own reasoning skills and seeing oneself as a good thinker and *open-minded*, as tolerance to divergent views, self-monitoring for possible bias.

In this subcategory I included the demonstrations of students' dispositions towards feedback and the students' demonstrations of self-confidence. In most of the peer correction activities, the students showed they were open-minded because they accepted the comments and made the changes suggested by their peers or the teacher. This was illustrated in the comic process, the presentations, and the proofreading activities. For instance, when Jaime made his presentation he showed an open-minded attitude when he finished and had peers' feedback:

In video transcript No. 3, I could see that after two students presented a role play in English they received feedback. One of the girls said:

"Bueno ellos tienen razón por todo lo que nos dijeron y tenemos que mejorar". "Well, they are right about everything they told us and we have to improve".

In general when the students received feedback from their peers they were open minded. After finishing the presentations there were comments like:

Ana: "Pues yo les doy las gracias a todos por corregirme". (Video transcription No. 4)

Mónica: "Vamos a practicar lo que nos dijeron". (Video transcription No. 5) Another evidence of tolerance was after the portfolio presentations:

Pablo: "En algunas ocasiones me queda mal el cuento o la historia y debo mejorar esos trabajos".

(Video transcription No. 13)

Jaime: "Me gusta que me lean para saber las opiniones y mejorar". (Video transcription No. 19)

Briyid: "Yo me sentí bien por lo que mis compañeros me dijeron porque me dieron su opinión".

(Video transcription No. 20)

Ana: "I thank everyone for correcting me". (Video transcription No. 4)

Mónica: "We are going to practice everything that you said". (Video transcription No. 5)

Another evidence of tolerance was after the portfolio presentations:

Pablo: "On some occasions, my story or tale is not good and I have to improve those tasks".

(Video transcription No. 13)

Jaime: "I like to be read to know my partners' opinions and improve". (Video transcription No. 19)

Briyid: "I felt fine because of what my partners told me because they gave me their opinion".

(Video transcription No. 20)

Likewise, I read my students' work and gave them feedback for improving their writings and when we worked with poetry, a girl, Angie, wrote a letter instead of a poem. I read it, explained to her the correct form of presenting a poem, read her some examples. She was very open-minded and started to write poems and showed me them. Two weeks later she wrote different kinds of poems.

As a conclusion of this first part of the category, it can be said that if the students have the opportunity to evaluate their peers and themselves, a different concept of evaluation emerges and they constantly monitor their learning process. In addition, tolerance is a part of this process of evaluation and self-regulation. In this subcategory I include some examples of critical thinking self-confidence:

When we worked with comics, my students had to create one. However, Juan wrote a long story. He explained to me that he was not good at drawing and preferred to write. I accepted his work because it was very creative and including that work in a comic would have been a waste of the story because of the length and all the descriptions that would disappear in a comic. Juan explained to me why he had done something different and his attitude showed CT confidence.

On August 26, Mary said she wanted to have a model to illustrate the presentation she was going to have. I explained to her that it would be possible if the model was related to the topic; otherwise, it would not make any sense. I told her it would be better to use charts according to her topic. She understood that and presented a confident attitude (Journal No. 4).

In general, during the oral activities performed in English, the students expressed self-confidence and used English to interact in conversations or interventions in class. Likewise, at the beginning of some lessons, I used to work with prediction of the new topic taking into account the title. Most of the students showed a confident attitude trying to define topics such as a video forum. As the students had been video recorded they associated it with a video forum. Then, when they realized through analysis that a forum was a group activity to discuss a topic, they defined the concept very well after several attempts. When we developed the video forums the students were also very confident. They participated in all the discussions and gave opinions about the films.

There were also demonstrations of critical thinking self-confidence when I worked with poetry. My students participated actively giving their points of view on the poems and showing confidence to speak. For example, when I read an Alfonsina Storni poem there were comments like:

"Es muy fantasioso, yo no creo que eso pueda ser verdad". "Es una persona que le gusta el mar".

"It is so imaginative, I don't think this could be true". "It is a person who likes the sea".

Of course I explained to them that in literature you can write any fantastic topic because literature is a way to dream. In general, reading poems was an opportunity to analyze the poets' ideas.

On the other hand, when we worked on the computers, students like Johan explained to the other groups how to include images with movement or how to animate the images in a PowerPoint presentation. It showed his confidence in computers and at the same time it showed willingness to accept help from a peer.

Students also showed *systematicity* in their work. Systematicity deals with order, organization of situations or problems the students had to face. In almost all the activities done in class the students sometimes followed an order I proposed, but on other occasions they were autonomous in their organization.

An example of systematicity was Lucy's work. She presented a folder with many articles taken from newspapers. I had told my students to keep an article every week and she did it systematically. She presented a well organized work with opinions that needed more arguments because she was working by herself; but after receiving the teacher's feedback, she made some changes to present her work better the second time.

The following excerpt from a presentation also shows systematicity. When Jaime was going to do a presentation he said:

"Nosotros vamos a hablar sobre Alejandro Magno, él (poining to Juan) va a hablar de la vida de él y yo de las guerras, luego concluiremos con...".

(Video transcription No. 2)

Also, when Daniela presented her portfolio she had an order to introduce her work:

"Este es mi árbol familiar, esta es una historia que leímos de Gregory (she read it) y un cuento que hicimos, esta es una fábula que se llama el cabrito y el lobo", she read it, then she said, *"las opiniones las leo?"* and then continued with all the material.

(Video transcription No. 7)

"We are goint to talk about Alexander the Great, he (poining to Juan) is going to speak about his life and I am going to talk about the wars, then we would conclude with..." (Video transcription No. 2)

Also, when Daniela presented her portfolio she had an order to introduce her work:

"This is my family tree, it is a story we read about Gregory (she read it) and a story we did, this is a fable called the little goat and the wolf", she read it, then she said, "the opinions-do I read them?" and then continued with all the material.

(Video transcription No. 7)

Furthermore, in the portfolios there were features of systematicity. For example, there were some portfolios that included a list of work and others had indexes to present the work in an organized way. There was very good organization shown in the life histories written by the students. They began by telling how their parents met, then all that was relevant with the pregnancy and then their childhood until now. For example, Lorena's life history has the following on the first page:

## "Título: autobiografía.

### **Objetivos:**

- 1. Que la gente y mis compañeros me conozcan.
- 2. Me gustaría alcanzar mis metas.
- 3. Que mis compañeros también realicen sus metas.

### Producto: una pintura.

Materiales que necesito para el proyecto: hojas y cartón, colores y una máquina de escribir".

"Title: autobiography"

### Objectives:

- 1. That people and my partners know me.
- 2. I would like to achieve my goals.
- 3. I would like for my partners to achieve their goals, too.

#### Product: a picture.

Materials I need for the project: paper and cardboard, crayons, and a typewriter."

To sum up this category, it can be said that the students expressed that they were open-minded, mature and self-confident in their critical thinking because they presented some features of systematicity, a lot of tolerance and leadership. Students become autonomous and critical thinking confident if they are guided to do so and if the teacher gives them responsibilities. Therefore, if the teacher allows leadership there will be leaders in the classroom.

# Conclusions

The findings of this study show that sixth graders are able and willing to achieve tasks where critical thinking is promoted. If the students are trained and led to work with assessment practices like self-assessment or peer correction, they assume those activities normally and incorporate them in their daily routines. According to Facione and Facione (1998), habits and skills nurtured and honed by use that are equally important are practical experience, content knowledge and critical thinking.

As related to portfolios we can conclude that they promote critical thinking because the students are free to express and show creativity. In the project portfolios were a means to record students' progress. They were files that showed students' interests, thoughts, beliefs and reflections. Reflections were demonstrations of critical thinking, especially of self-regulation and self-examination.

The use of the portfolio showed that the students participated either as readers or as writers in the process. The students were both presenters and audience in the development of the study. Portfolios promoted a different way of evaluation (CT skills: judging and expressing opinions). When the students did proofreading exercises, they judged and expressed opinions about their peers' work.

Portfolios involved students and the teacher in the learning process and the students were engaged in examining other people's ideas. They provided a way to get students aware that they were learners (self-examination) because the students evaluated their own work after receiving feedback and then they proposed changes and ways to improve their work or oral activities.

Keeping portfolios gave opportunities to give and obtain help from peers (judging and presenting arguments). As the peers acted as helpers, it was necessary for them to argue why a work needed to be rewritten or why a presentation needed to be done again. Working with portfolios allowed students to be autonomous and make decisions. In doing so, students showed creativity in the elaboration of the portfolio (self-regulation).

Regarding self-assessment, we can conclude that by using portfolios, we can foster students' critical thinking and the dispositions toward it. Throughout the portfolios and the interviews the students demonstrated self-regulation because they selected their work to include in their portfolios and explained why they selected them. In the interviews the students were open-minded with their peers' opinions and showed evidence of autonomy; for example, setting their own learning goals.

It was found that the students liked to give opinions and judge. At the same time, they had a good disposition to accept their mistakes, correct them and to be tolerant. The data collected were provided by the thirty three students and in most of them it was evidenced that when the students were able to judge or evaluate their own work, presentations and performance in general, they started to have criteria to judge and self-correct what was not working well. Furthermore, they became aware of their weaknesses.

By promoting other ways of assessment the students become critical thinkers. Self-assessment practice made students aware of their weaknesses and strengths, and it was a way to revise and set new learning goals.

From the data, I obtained information that confirmed students' understanding of being an active and reflective person in the learning process. Some of the students who reflected on what they had learnt tried to develop strategies to be better learners and evidence self-regulation.

Portfolios play an important role in the development of critical thinking and can be used to get students to explore their interests and make contributions as active members in the educational context. Portfolios are also a powerful tool to follow the track in literacy development.

When Spanish and English are used at the same time the mother tongue becomes a tool to give meaning and solve problems. Spanish was the bridge between the students and me. On the other hand, the foreign language was used to have fun, introduce general information and give or receive the basic commands. The students chose which language to improve or reinforce. English learning was spontaneous, without pressure. Spanish was preferred for complex activities and writings. There was code switching in the writings because it was allowed by me with the suggestion of using only the known vocabulary.

Teachers have a great responsibility concerning the development of critical thinking skills in all the process of selecting, adapting and creating material and activities to be used in class. The pedagogical intervention which was planned and used as part of this research allowed the sixth graders to reflect upon their own learning. This is, in turn, a characteristic of self-regulation.

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