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The Use of Problem-solving Tasks to promote Critical Thinking Skills in Intermediate English level students

critical thinking get enligthened!

»ABSTRACT

This project aims to promote critical thinking skills in intermediate English level learners through the application of problem solving tasks. The main goal is to show the extent to which problem solving tasks promote critical thinking, and to identify the type of tasks that work best to promote critical thinking. This was carried out through an observation, videotaping and an interview. Upon examination of these data collection procedures, it was found that problem solving tasks is a useful tool when fostering students' high order thinking skills. This research highlights the importance of contextualized tasks and argumentation as key components to developing students´ critical thinking skills.

Key words: Critical thinking, problem-solving, higher order thinking skills, argumentation, contextualized tasks.

»RESUMEN

Este proyecto busca promover habilidades de pensamiento crítico en estudiantes de nivel Intermedio de Inglés a través de tareas de resolución de problemas. El objetivo principal es mostrar hasta qué punto las actividades de resolución de problemas promueven el pensamiento crítico, e identificar el tipo de tareas que funcionan mejor para promover pensamiento crítico. Lo anterior fue logrado a través de una observación, videograbación y una entrevista. Una vez fueron examinados estos procedimientos de recolección de información, se encontró que las tareas de resolución de problemas son una herramienta muy útil cuando se promueven habilidades que requieren procesos complejos de pensamiento de los estudiantes. Esta investigación resalta la importancia de tareas contextualizadas y la argumentación como componentes clave para desarrollar las habilidades de pensamiento crítico de los estudiantes.

Palabras clave: Pensamiento crítico, resolución de problemas, habilidades que requieren procesos complejos de pensamiento, argumentación, tareas contextualizadas.

»INTRODUCTION

The importance of developing critical thinking skills in our students has become a significant goal in many countries. In the United States, it all started back in the 80s with the importance critical thinking has in the curriculum (Marzano et al, 1988). In Asia, it has been the main focus of changes in curricula at many universities such as the National University of Singapore for over ten years (University of Singapore, 2003). In some countries of Latin America like Peru and Venezuela, it has been one of the main issues of discussion among experts since 2005 (Altuve, 2010). In Colombia, however, it was not until 2009 that the ministry of education considered it a generic competence that university students should acquire (MEN, 2009). In the field of education, teachers and researchers have been trying to change the way students think. Hashemi & Shabihi (2012) explain that "the banking concept of education has been rejected by critical pedagogues who aim at liberating students from the confines of those classrooms." In the field of FLT (foreign language teaching), Shirkani & Fahim (2011) stated "that nowadays enhancing critical thinking in learners is considered one of the foreign language teachers' tasks". Furthermore, teachers should not only be worried about the comprehension of information in a second language, but also to go beyond that because second language learners are expected to encounter the challenges of the real world (Bahadur , 2011). Regrettably, there are still some schools and universities in Colombia which refrain students from taking an active role in the process, and do not teach them how to put to the test everything they are taught. Therefore, this affects the Colombian educational system tremendously by not equipping our population with the skills they need to meet the demands of our world. This issue also affects the research group´s teaching scenario. For this reason, the focus of this research is on promoting critical thinking through problem solving in order to improve students´ English level. Tung & Chang (2011) express that "It is believed that with good critical thinking ability, college graduates can be better prepared to compete and exercise their rights and responsibilities of citizenship in a global community." It is, therefore, safe to assert that to think critically should become one of the main goals of education nowadays. However, through the labor of the researchers involved in this study,carried out at a language center in the Caribbean Coast of Colombia, It was observed that six intermediate level students who had been taught English for over 8 months, presented problems when analyzing, telling the difference from reliable and unreliable information and proposing solution to oral interaction problems presented in class. Therefore, it is believed that through the application of problem-solving activities on intermediate students at a language center in the city of Sincelejo, they will possibly gain or develop critical thinking skills which can help them improve their English language learning. For this reason, the main purpose of this study is to provide students with a set of problem–solving activities that will eventually enable them to develop their critical thinking skills. As a result, this study will greatly benefit the students of a certain

language learning center and English teaching institutions in the Caribbean coast of Colombia, and other teachers or researchers who are aiming to do further research on this topic.

RESEARCH QUESTIONS

- How can problem-solving tasks promote critical thinking skills among second year English students at a private language center?

- What problem-solving tasks are more accurate to promote critical thinking skills among second-year English students at a private language center?

OBJECTIVES

- To determine to what extent problem-solving tasks can promote critical thinking skills among second-year English students at a private language center.

- To identify the most appropriate problem-solving tasks to foster critical thinking skills among second-year English students at a private language center

METHOD

This study followed a qualitative research since this type of investigation has the characteristics that encompass a list of methods that at the end led the research team to understand certain variables that have to do with human behavior.

Nevertheless, this paper was more focused on the case study method which is defined by Yin (1984) as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used".

Setting and Population

This study was conducted at a private language learning center located in a small city in the Caribbean coast of Colombia. It is relevant to mention that this institution is the most well-known private university in the area which makes this alma mater one of the most well –equipped in terms of audio-visual resources. The majority of its students come from wealthy families, whereas other ones are supported by scholarships. With regards to the population, this study was performed with six students of intermediate level (1 female and 5 male) whose ages range from 14 to 20 years. They have been learning English for almost 2 years.

»Instruments

Task 1. Littering: Buzz Group.

First of all, the buzz group task was applied. In this task the participants had to create a graphic organizer to brainstorm and then, they had to answer the question : How could you prevent people from littering in the city of Sincelejo?. They had to use the graphic organizer to answer the questions and give 2 solutions, and the consequences of the solutions.

Task 2. Smog and landfill sites: Discussion.

In this second task, the participants were asked to compare two environmental problems and answer the following questions: How common are these problems where you live? And which of them do you think is more serious? Justify your answer.

Task 3. Mototaxismo: Essay.

As a final task, the participants were asked to write an opinion essay. For this essay the participants had to decide whether Mototaxismo in the city of Sincelejo was a problem or not, and provide reasons to support their view.

RESULTS

This final stage also presents the description and discussion of the data gathered in this study.

After collecting and analyzing the aforementioned data collection procedure two main resulting categories arose: **Critical Thinking Skills and Problem- Solving Tasks.** As a result of the tasks implementation, a great amount of indications about the use of Critical Thinking skills were evidenced, especially when the participants were working cooperatively(in groups) to provide arguments to tackle a situation; a great deal of this was observed during the applied tasks. During the report phase as indicated in the task cycle (Willis, 1996), some trails of Critical Thinking were detected as it can be appreciated in the following transcripts.

Transcript 2

Mr. Gylleenhal: We can reuse eeh the natural resources and mmmm … it wouldn't be a problem and also a disvantage of recycling would be lack of specialized enterprises why? Because today there are only few enterprises that aaah eeehh accept the eeehh recycled products or also there are only few eehhh … enterprises that are ecofriendly with the… the environment, I mean that they help the environment to… to be better.

In the second task, there were a big number of indications of Critical Thinking Skills while conducting this task. However, only some of them will be underlined, which were the ones the research team considered to be of upper most trails of importance.

Transcript 3

Mr. Corleone: In my opinion smog is… mmm … more serious because we are breathing all the time… so eeehhh it could ehhhh represent problems like respiratory … illness … illnesses. It represents difficult eeeeh seen mmmm eehhhh and It could represent like mmmm bad mmmm smells   sooo it is aahhh ..One the most contamination waste ehhh those are common. Eeehh Junior!!! (Asking his partner to back him up)

Mr. Novak: In my opinion eehhh both problems are serious but I think that the smog is more serious than the landfill site because it carries respiratory illnesses, and the smoke I sink (think) … it's a problem that will affect us in this moment but the landfill sites will be a problem but in more years, at a …in a longer time … In a longer time.

Transcript 4

Mr. Gylleenhal: and also this problem with the factories and all this smog will lead to the eeeehhh will affect the atmosphere and the … and will lead to …. Efecto invernadero?

Teacher: The greenhouse effect.

Mr. Gylleenhal: <u>The greenhouse effect ehhhhh you know that's eee really bad because the whole pole…the pole will… will melt and maybe the … that is just…</u>

Mr. Mercury: and it's … it's easier to solve the problem of land… landfill site because we eeehh have the option to recyclate (Recycle) but… or recycle but for the …. For the … smog? … ok, for the smog is… <u>it's really more complicated because it's a process that takes years and years and it needs eeeehh specialized machines to solve the problem.</u>

In the three different transcripts that have been exposed above, the participants showed that great critical thinking skill levels have been accomplished through the use of the inference, argumentation and evaluation of facts at stake; this fact is noticed when some of the participants intervene in the discussion by talking about the causes of respiratory ailments, the hazard of greenhouse effect, the consequences of landfill sites and the facts that make smog a threatening problem.

To finish this implementation process, the students were asked to provide an argument and state their opinion on a contextualized matter that is affecting their own hometown's traffic system. During the observation, and the interview, they manifested to take a liking for this topic since they are full in contact with this reality. In the two previous task it was noticed a high content of critical ideas, and this one was not the exception. After going over the essays in the feedback phase of the task, it was noticed that the students were well informed, and provided some information about statistics. Based on this aforementioned data, not only did they enrich the content of their writing, but also they use them to support their opinion for or against the matter being discussed. They were informed about what to do with the task in advanced. They made use of those found out data to corroborate, judge, argue, analyze and eventually provide an opinion. The use of problem solving tasks applied in the students 'language teaching contributes to higher order thinking skills to take place; however, there were some drawbacks in the execution of the tasks such as: long sessions and limiting factors with respect to technical words related to environmental problems.

Problem Solving Tasks

This category identifies what tasks out the three work best when fostering Critical Thinking.

Mr. Cat : I think that the more helpful was to write an essay because we are trying to make a solution about a problem that we have in our society and that would be great for its result.

Mr. Mercury: Para mí la segunda porque sinceramente creo que de las 3 habilidades en ingles la parte del habla, la argumentación es la más compleja porque en ese aspecto tenemos pues…que practicar el listening tenemos que estar atentos a los que otros dicen comprender el mensaje, dar una idea y sustentarla tenemos

que practicar pronunciación, pues la gramática a su manera cuando se hace oral entonces pienso que esa fue la actividad que más me llamo la atención.

As it can be seen on the transcript from the interview, when the participants were asked to choose one of the tasks as the most helpful one out of the three, the majority selected the second task that had to do with comparing two environmental issues as well as the third one whose goal was to provide an argument with respect to Mototaxismo. They stated that the second activity was the most helpful for them because not only did they have the chance to use almost all the language skills of the language in just one single "activity", but they also considered that this one was more challenging in comparison with the other two. The participants said that with this type of task you must be attentive to what the others are saying so you can contribute with your opinion and support it. Furthermore, it allows you to express your viewpoint by speaking, which according to them is the most useful ability skill in comparison with the rest.

Regarding their second favorite task, which was to draw up an essay stating their opinion about Mototaxismo, the students manifested this activity was the one they liked the most. because that is a reality that helped them reflect about a problem that is present in their own context and it somehow affects them directly. Nevertheless, out of the three tasks, this one was the one that took them longer to complete, and at times they would have to ask for help to their neighboring partners.

Keeping in balance the two choices of the participants, they also stated that:

Researcher: Do you consider these types of activities helpful when learning a second language?

Mr. Novak: Si… pienso que… ayudan mucho en la aprendizaje del segunda idioma ya que hacen que el estudiante también participe no siempre el profesor en el trablero explicándonos sino que nos pone a producir con nuestros conocimientos también ….

Bill Murray: Claro, porque además de estar hablando en otra lengua y de estar aplicando todas las habilidades de otro idioma, lo estamos haciendo con cosas de la vida diaria, con cosas de nuestro diario vivir…

One more time, the students pointed out the usefulness of the tasks with regards to the use of the language skills, not only they made an emphasis on autonomy as a characteristic that comprises Critical Thinking but also they highlight the fact that it is not good to be depending all the time on what the teacher says. The students should also seize the initiative to build their own knowledge. They also made some remarks concerning the effect this type of tasks will have on their professional development stating that:

Mr. Novak: si, Pienso que si nos ayudara en nuestro desarrollo profesional ya que aprendimos un poco más de como pensar… con un poco más de crítica de… y entonces cuando ya estemos en un futuro profesional analizaremos todos los aspectos y tomaremos más a fondo nuestro análisis sobre las situaciones que se nos presentan.

This will benefit them greatly when it comes to decision making because there will be lots of aspects to consider, and will lead them to think deeper when facing situations in the future.

CONCLUSIONS

After the implementation of the project and the discussion of the data, two conclusions can be drawn: the first one refers to the fact that problem-solving Tasks do promote Critical thinking in learning, and secondly, students acquired more benefits from challenging argumentative problem solving tasks.

Firstly, it was determined that when implementing problem-solving Tasks students became active critical thinkers in the entire process. In this sense, problem-solving Tasks provided a good ambience for students to participate and express their arguments critically.

Secondly, students found more interesting solutions to solve a problem and interact orally when such problem was contextualized. When implementing problem-solving tasks, students were exposed to certain situations that were closely related to their own reality, and others that they had had knowledge of, but which were not of big concern for them at the time of the implementation. This fact was very significant for them, since their performance showed clear hints of confidence, and good knowledge on the topic when stating their viewpoint with respect to the matter that was being discussed.

Lastly, having the participants work with problem solving tasks in which they had to provide arguments to back up an idea granted them important benefits. They encouraged the learners to give their absolute best, and made them work on the activities with great enthusiasm. Problem solving tasks also helped them to defend their position more strongly and to be more persuasive by providing more solid arguments as it was seen in the transcripts. Last but not least, they helped train the participants in the kind of problems they might encounter in the world out there.

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