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# BUILDING CREATIVITY THROUGH ONLINE DISCUSSION FORUMS

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## RESUMEN

El objetivo de este estudio fue motivar a

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los estudiantes a desarrollar habilidades de pensamiento de orden superior, específicamente "crear" a través de foros de discusión en línea. Para este propósito se presentó una propuesta, siendo el primer paso fue crear un Aula Virtual para que los estudiantes interactuaran activamente en los foros de discusión.

La propuesta duró 15 semanas y durante

la intervención los estudiantes tuvieron que publicar y participar en 5 los foros de discusión sobre diferentes temas relacionados con el plan de estudios del Centro de Inglés para el Nivel Cuatro. La muestra estuvo compuesta por 30 estudiantes del Centro de Idiomas, de la Escuela Superior Politécnica de Chimborazo a quienes se les aplicó una encuesta inicial y una encuesta de satisfacción, así como un examen al inicio y uno al final de la intervención. Se manejaron dos grupos de investigación, el experimental y el de control. Una vez que concluyó la intervención, se analizaron las puntuaciones del grupo experimental en la prueba inicial y en la prueba final, al mismo tiempo, se compararon los resultados de las pruebas del grupo de control y el grupo experimental. La participación de los estudiantes en los foros de discusión en línea fueron evaluados por medio de una rúbrica. Para la comprobación de la hipótesis se utilizó el estadístico Chi-cuadrado. La retroalimentación efectiva del docente, el tiempo que los estudiantes tuvieron para participar en los foros de discusión y el entorno (virtual) jugaron un papel importante en esta investigación. Se concluyó que la interacción de los estudiantes en los foros de discusión en línea influye positivamente en el desarrollo de la habilidad de pensamiento creativo.

**Palabras clave:** habilidades de pensamiento de orden superior- habilidad de crear- foros de discusión en línea- interacción- Aula Virtual.

## ABSTRACT

The objective of this study was to motivate students to develop high thinking skills, specifically “creating” through online discussion forums. For this purpose, a proposal was presented; the first step was to create a Virtual Classroom for students to actively interact in the discussion forums. The proposal lasted 15 weeks and during the intervention students had to post and participate in 5 discussion forums about different topics related to the English

Center syllabus for Level Four. The sample were 30 students from the English Center at Escuela Superior Politécnica de Chimborazo who filled an initial and a satisfaction survey and took a pre-test and a post-test. There were two research groups, the experimental and the control one. Once the intervention concluded, the scores of the experimental group in the pre-test, post-test were analyzed, at the same time, the pre-test, and post-test of the experimental group and control group were compared. The students’ participation in the online discussion forums was assessed by applying a rubric. The statistic Chi-square was used to prove the hypothesis. The teacher’s effective feedback, the time students had to participate in the discussion forums, and the environment (virtual) played an important role in this research. It was concluded that the students interaction in the online discussion forums influence positively in the developing of the “creating” thinking skill.

**Keywords:** high order thinking skills- creating skills- online discussion forums- interaction- Virtual Classroom.

## INTRODUCTION

*“Learning is not a spectator sport”* D. Blocher. If you want to master English, get involved and practice as much as possible.

According to Rajendran Nagappan, Ph.D., teacher of Division Ministry of Education in Malasya, the last three decades have seen a growing educational interest in thinking and teaching thinking skills such as creating. Even though, we think spontaneously, we do not think as effectively as we might (Nickerson, 1988). Goleman, 1995; Nisbett and Ross, 1980 as well as Tversky and Kahneman, 1974 explain that teaching students to think really means that we want to improve the quality of their thinking so they can think more deeply, more consistently, more productively, and more effectively. (Nagappan, 2001)

Therefore, by taking into account the demands of today's world and the deficiencies detected in Level Fourth students at Escuela Superior Politécnica de Chimborazo which complied the need to apply new methods and techniques and the importance of combining face-to-face with online instructions, this project was relevant for both students and teachers. Through interaction in online discussion forums, students increased their vocabulary and had enough time to analyze, understand, reply and interact in the Virtual Classroom assigned in the Moodle Platform with the objective of improving high order thinking skills.

Regarding the theoretical foundation, this research was based on Vygotsky's theory who encourages teachers not to concentrate too much on teaching concrete facts, but to also push their students into an abstract world as a means to assisting them to develop multiple skills that will enable them to deal with complex learning tasks. Simiter (2004) recognizes the importance of the students' personal vice and claims that emphasis on the regurgitation of facts and repetition of accepted ideas will only produce dull and uninspired students. This implies that students should be taught how to create, adjust their strategies and assimilate learning activities into their own personal world. As a result of the recognition of the role of abstract thinking in students' intellectual development, nowadays there is a call for the introduction of literature in L2 classrooms. Students switch from the parrot-like types of learning and focusing on language structure into abstract thinking, whereby students can have personal appreciation of the language, consequently developing a self-motivated attitude to learning the language (Aimin, The study of second language acquisition under sociocultural theory, 2013).

## **PROBLEM IMPORTANCE**

The programs for the English classes at Escuela Superior Politécnica de Chimborazo are based

on the Bloom's Taxonomy; therefore, students have not developed high order thinking skills, especially creating, in the classroom. One of the causes is the lack of motivation students have, since they see English learning only as a requirement but not as a necessary tool, they could use to interact in real-life. Another limitation is that since the syllabus is grammar-based the time students have to participate on discussions or use a Virtual Learning Environment is reduced. (Torres, 2007)

There is some relevant data, which mentions the problem of study, according to the International Commission on Education, Equity, and Economic Competitiveness in Latin America (Torres, 2007) in Latin America and the Caribbean the teaching of language is very poor in most countries. Few students develop appropriate skills in the areas of creating, problem solving and decision-making. In an era when good schools are increasingly crucial to economic development, Latin America is falling behind and the situation in Ecuador is consistent.

Another interesting fact is that by 2001, the country had achieved universal primary education, but academic performance has remained low and has even declined in the past decade (UNESCO, 2005). As far as the language material tested, students in all grades knew an average of 60 percent or less (Paul Carrillo, 2010).

The National Curriculum Guidelines for English as a Foreign Language proposed by the Ministerio de Educación del Ecuador published on August 2004 states that "Language techniques are designed to engage learners in the authentic, functional use of language for meaningful purposes". Unfortunately this statement does not apply to our surrounding, students in Level Fourth "N" at the English Center have not developed high order thinking skills through critical thinking activities considered as 21<sup>st</sup> Century skills and besides that technology is

not been used for effective feedback or support to overcome difficulties in the learning process.

Therefore, during the study, there were some constraints. The most noticeable were lack of familiarity of the students with the Moodle Platform and some students' limitations to internet access. Regarding the platform, the researcher inferred students were familiar with Virtual Learning Environments for that reason there was not a previous diagnostic of students mastering of the activities develop in the Virtual Classroom and even though Moodle is a friendly environment, students had some problems to post pictures, videos, and additional resources, which could have been useful for the interaction. On the other hand, some students who were not from Riobamba did not have 24-hour access to internet, for that reason, the majority of activities regarding discussion were developed during the class time.

Discussing is a very important skill for students to interact in real-time and the use of technology surely motivates them to develop activities such as online discussion forums, especially when the topics are interesting.

## OBJECTIVES

### General Objective

To improve high order thinking skills development, specifically "creating" by using online discussion forums.

### Specific Objectives

To develop students ability to think critically by interacting in a Virtual Classroom.

To use asynchronous communication for engaging students in active discussions.

## HYPOTHESIS

### General Hypothesis

Online discussion forums improve high order thinking skills specifically "creating."

### Specific Hypotheses

Virtual Classrooms interaction develop students' ability to think critically.

Asynchronous communication engages students in active discussions.

## THEORETICAL FRAMEWORK

### Background Studies

This research took advantage of online discussions, which are a great tool to extend classroom conversations, and learning by getting students to engage with class material online. Discussion forums were managed in the Virtual Classroom and they contributed with the learners' ability to learn asynchronously. Students were able to reflect upon their ideas before sharing them with the class, leading to more reflective responses and in-depth learning. (Eutopia, 2009).

Other researchers have studied the importance of developing high order thinking skills in students. The first one is D. McLoughlin in the University of Tokyo, Japan, he points out the importance of evaluating the usefulness of online forums and the potential benefits these have in promoting high-order thinking. McLoughlin concludes that online discussion forums have the potential to encourage high-order thinking processes. It would seem that the nature of the course, the type of task, and the wording of the initial prompt could all affect the type of the higher-order thinking skill, which will emerge in an online discussion. (McLoughlin, 2009)

In one of these articles entitled Using Online Forums in Language Learning and Education,

Manprit Kaur, mentions that the online forum is an ideal place to put a learning community and its learning participants on the same page (Harman and Koohang 2005). At the same time, he states that teachers need to be fully skilled in practical use of the Virtual Environment to engage students to actively participate in the forums by dedicating time for these activities with the students every class. As Salmon (2004) advises, teachers need to take time to induct students to online discussion tools and focus on familiarization and socialization into the online forum from the outset. Manprit concludes that online forums may provide a way for teachers to improve the quality of their students' language learning skills. Thus, language teachers in Malaysia should consider integrating online forums into their language teaching to develop students' writing and communication skills. (Kaur, 2011)

Finally, Mary M. Christopher, Assistant professor in Educational Studies at the Hardin-Simmons University mentions that online activities allow students to have time to be more thoughtful with discussion forum interactions as compared to the time-constrained interactions in a face-to-face setting. (Christopher, 2003)

All the studies mentioned above have a connection with this study since they consider the use of technology thorough Virtual Learning Environments and foster the development of high order thinking skills.

### **HIGH ORDER THINKING SKILLS**

What are high order thinking skills? In order to understand what they are it is necessary to meet the educational psychologist Dr. Benjamin Bloom. He made contributions to the classification of educational objectives and the theory of mastery learning. In 1956, Bloom edited the first volume of *Taxonomy of education objectives* known as Bloom's Taxonomy and remains a foundational and essential element within the educational

community (Wikipedia, 2017). However, this study considered the revised version published in 2001 by Lorin Anderson and his collaborators. In the revised taxonomy, evaluation is no longer the highest level of the pyramid. A new category, creating, claims the peak.

High order thinking skills are the last three stages in Bloom's taxonomy, at these levels students are expected to be critical, logical, reflective, and creative. All these skills are activated when learners face unfamiliar problems, uncertainties, questions, or dilemmas. Successful presentations of the skills result in explanations, decisions, performances, and products that are valid within the context of available knowledge and experience and that encourage continued growth in these and other intellectual skills. Higher order thinking skills are placed on top of lower skills such as discriminations, simple application and analysis, and cognitive strategies and are linked to prior knowledge of subject matter content. The ability of students to develop high order thinking skills is the result of appropriate teaching strategies and learning environments, which facilitate students' growth as do persistence, self-monitoring, and open-minded, flexible attitudes (FJ King).

In sum, high order thinking skills are those, which involve mental effort. High order thinking takes thinking to higher levels than restating the facts and requires students to do something with the facts – understand them, infer from them, connect them to other facts and concepts, categorize them, manipulate them, put them together in new ways and apply them. According to the revised Bloom's taxonomy the three higher levels, which were changed from nouns to verbs, are analyze, evaluate, and create.

### **CREATING SKILLS**

Bloom's taxonomy has an order of thinking skills, which has acquired a status in the educational field. Beside, this taxonomy has become a useful

tool for teaching learning process and also it has been used in educational programs in order to evaluate teaching performance.

The hierarchy in Bloom's taxonomy is divided into different levels with keywords which are focused on critical thinking levels such as: Creating, Evaluating, Analyzing, Applying, Understanding and Remembering as the graphic shows:



**GRAPH 1: Revised Bloom's Taxonomy**

Source: Images Google

Creating refers to a new pattern with the purpose of forming something coherent and functional and where it is required that learners who use it organize the parts and information together in a different way in order to obtain a new and whole product.

Proponents of collaborative learning claim that the active exchange of ideas within small groups not only increases interest among the participants but also promotes critical thinking. According to Johnson and Johnson (1986), it means that students can be persuaded to work in an environment of cooperative teams since it helps them achieve high levels of thoughts, engage on discussions, and also emphasizes learning responsibilities, which allow students to become critical thinkers.

Besides, one of the main characteristics of critical thinking is that it can be used in the classroom to develop all levels of thinking within the cognitive

domain. Furthermore, it is associated with some action verbs such as discussing which ends up in the improvement of creating skills.

Thinking skills enable students to turn their experience into learning. The learning process needs to focus on 'knowing how', rather than 'knowing what': learning how to learn. They are the foundation of personal development as well as making an important contribution to social and economic development by helping to develop students who have the capacity to think and act creatively, to meet challenges positively and effectively, and show initiative and enterprise in how they think and learn. Robert Fisher (1998)

There is persuasive evidence that cooperative teams achieve at higher levels of thought and retain information longer than students who work quietly as individuals. The shared learning gives students an opportunity to engage in discussion, take responsibility for their own learning, and thus become critical thinkers (Totten, Sills, Digby, & Russ, 1991).

**ONLINE DISCUSSION FORUMS**

Discuss is the act of talking or writing about something with another person or group of people; a speech or piece of writing that gives information, ideas, opinions, etc. Therefore, it is important to mention that despite the benefits of developing the ability of students to discuss issues of importance and interest in English, many teachers quickly abandon planned discussion. This usually happens when students display a lack of interest in developing discussion topics. For that reason for this proposal, the use of discussion forums in a VLE (Virtual Learning Environment) was considered. In each Unit students have to participate in at least one forum, this activity is developed in class with the teacher's guide since it is considered the production stage. Then, to evaluate their participation a rubric is applied.

According to Levine (2007), discussion forums have become a central element in education. Students not only react to topics, they acquired some other skills like teach each other, share personal experiences, learn by analyzing and understanding, experiment new things, enable flexible and independent learning and knowledge construction. Discussion forums are also a great tool to encourage students in learning autonomously being very flexible in time and space. Students can also practice what they learnt in class and get familiar with new topics.

Discussion forums are also one of the best key ways of promoting interaction and provide many benefits in learning (Cavanaugh, 2008):

- Students have the freedom to continue dialogues about the topics that interested in.
- Encouragement of higher order thinking skills: to respond to a forum topic requires organized thought, understand the content and interact each other.
- Students have the flexibility to read the responses of others and reflect on their own thoughts. Students can also comment about their partners' answers.
- Increase vocabulary: this is the opportunity to acquired new words and practice what they already known about the topic. Students can use some online sources to understand and acquire the unknown words.
- Increase interaction time: regular discussion forums require a lot of time to be discussed, more than what the teacher considers necessary.
- Time to provide opinions and responses. There is no time limit when students want to write their responses about any topic. Some choose to write their responses immediately while others prefer to consider the responses of others first. Students also

have the opportunity to revisit past topics during the course, as their opinions and comments changed.

- No matter the type of learner: discussions forums can reach different types of learners.
- Students can interact with one another all the time, sharing, debating and offering ideas, suggestions and opinions.
- Extended opportunities: e-content can reinforce and extend classroom-based learning.

#### CHALLENGES OF A DISCUSSION FORUM

Even though, there are various advantages of using online discussion forums, both teachers and students can face some challenges, such as:

- Students can cheat easily.
- A lot of time is required for reading, responding and evaluating.
- Students can get bored easily if they do not have the interest in learning new things.
- Students can access to the same contents. This can result difficult for those who do not like to share with others.
- Some students may feel shy about opening in discussion. Others may feel intimidated about their partners' reaction when posting. This can end up in students lack of motivation to participate in the discussion forums.

Discussion forums are an asynchronous collaboration tool and a key element in learning management systems. By applying this tool, students are able to interact with the course content, the teacher and other students. In this space, the teacher posts a topic or thread for discussion, and the student replies to the

instructor and responds to other student postings. The posts are archived in the Virtual Classroom, which allows the teacher to track participation and quality of the students' contribution.

One of the most relevant advantages of this tool is that students reluctant to speak up in face-to-face discussion can find their voice in online discussion because they have more time to get prepared and anxiety level decreases. Through observation it has been noticed that even though students understand grammar structures in English and have a good number of vocabulary storage in their brain, they still do not feel confident to speak or express their opinion in the L2.

In order to achieve the discussion forums objectives, the teacher has to set clear guidelines, specifically for quality and quantity, including online discussion participation as a percentage of the overall grade (Topliff, 2017). Below there are some guidelines teachers can provide students:

- Do the appropriate preparation. Students have to read and complete the lesson or unit activities before join the discussion.
- Keep the messages short and brief, one or two paragraphs is adequate. The students' posts must be free of misspellings and grammatical errors.
- Take time to organize your thoughts before posting. Students should only provide the most essential information, if the other students need further details, they will ask.
- Do not participate in the discussion with only "I agree". The discussion posting should be a contribution and foster exploration of the topic.
- Respect others ideas and opinions. The discussion forums are a space to reflect on own thoughts and students can feel free to

disagree but express their disagreement in a respectful manner.

- Do not wait until the last minute to post your opinion. Students have a specific deadline to participate in the discussion forums; they do not have to wait until the last minute to do it. The frequency is also considered a parameter for the final assessment.

When implementing discussion forums in the English classroom teachers must be organized and plan all the activities in advanced, besides considering topics which could be well-understood and interesting for the students. For this research, the topics were the following: Do you think your country meets its educational goals? Is the United States up to the philosophical ideals mentioned above? To what extent can a country live with its educational ideals? Give examples to support your opinions. For this first discussion forum, students had to read an article entitled "United States Values in Education."

In the second post students had to express their opinion about the question Do you think online discussion forums are better than class group discussions? Give reasons for your answers.

The next discussion forum was What do you regret about the decisions you have taken about your education? Do you agree with the four biggest regrets listed above? Why? Why not? Prior participating in the discussion students had to read a magazine article named "Career Addict".

The fourth discussion forum topic was Do you consider Media in Ecuador are fair? Why? Why not? Give examples. In order to participate in this forum, students had to read an article which was posted in the Virtual Classroom about Media.

Finally, the last discussion forum was about Social Responsibility, students had to consider the following question How the community can get young and old people involved in solving



issues that affect the quality of living? Why are people not involved?

The students' participation in the online discussion forums was evaluating by applying the rubric which is attached in annex 1.

## **VIRTUAL LEARNING ENVIRONMENTS**

For centuries, the focus of teaching in universities has been through face-to-face interaction between the teacher and the students. Therefore, this type of monotonous learning has forbidden students to analyze and improve in some aspects like high order thinking skills, increase vocabulary and among others. Since Virtual Learning Environments (VLEs) have been implemented in education, the focus of learning has changed allowing students learning to be organized and dynamic. VLEs commonly allow:

- Content management: teachers can choose or create resources according students' needs and interests.
- Free access: students are not limited to access to the VLE. Students have the opportunity to choose the time to work.
- Cooperative learning: some students can support each another and work together to achieve common learning goals. In the ideal VLE, all students would learn how to work cooperatively with others. (Wikipedia The Free ENcyclopedia, 2018)

For all these reasons, a Virtual Classroom was created as part of the research proposal by using the Moodle Platform, which is a free online learning platform implemented in many fields like blended learning, distance education and other e-learning process in schools, universities and other places. Its main characteristic is to create online courses to develop activities as an enhancement of face-to-face courses. This platform offers a wide range of innovative

resources, which can be configured to determine what activities students can develop during the process or not. See annex 1.

There is an accelerated use of open- source technologies in all sectors especially in the Escuela Superior Politécnica de Chimborazo where Moodle 2.6 has been used by teachers and students and whose main objective is to enhance existing learning environments. Moodle is also a modern and easy platform designed to be responsive and accessible. One of the best advantages is students can work and learn together in discussion forums, wikis, glossaries, database activities, and much more. (Moodlenet, 2006)

Moodle is divided in four different sections. In section one general aspects are discussed like a quick guide to use Moodle, edit profile, settings, among others. In section two there are many tools related to different aspects like scores, students' activities, group works, backup copies, content import and many others. The third block is about the main tools for contents creation. Finally, in section four there are the most important activities, which have been designed in three types: communication, evaluation and teamwork (GATE Gabinete de Tele-Educadores, 2013).

The Moodle Platform discussion forums became an innovative and interactive tool which highly contributed to this research objectives achievement.

## **ASYNCHRONOUS COMMUNICATION**

Online Learning Environments have become more frequent in teaching and learning than ever before (Bonk and Zhang, 2006). In and asynchronous learning environment students are able to actively participate in their own learning process and interact with peers, provide feedback, and reflect on the status of their personal learning goals and outcomes. According

to Simonson 2012, the learning activities in the virtual learning environments require students to create, by synthesizing, explaining, and applying the content or skills being taught. Furthermore, asynchronous technologies support learning and allow more time for students' reflection, collaboration, and student-to-student interactions (Higley, 2013). As mentioned by Meloni (2010) asynchronous communication and learning is a very popular learning type because the majority of the tools are free, require minimal hardware, and are used at the students' pace. Some of the benefits of this kind of communication are that the learning process takes place in a collaborative environment where students can work at their own pace and the focus is in individual needs.

Regarding asynchronous collaboration, studies have shown that collaboration increases in online learning environments, since a sense of community is necessary to sustain the educational experience over time. As individualized pacing, asynchronous learning technologies have been defined as personalized learning tools (Lorenzo and Ittlelson 2005). With these tools the teacher is able to access students' creativity and facilitate a higher level and more in-depth understanding of the content. These online learning environments create and opportunity for online students to become highly self-reflective (Bonk and Zhang, 2006). (Higley, 2013).

Then, asynchronous communication represents an effective way to encourage students to actively participate in online discussion forums and improve their ability to think creatively.

## **METHODOLOGY**

The design of this research was quasi-experimental since the researcher manipulated the independent variable to find out its effects in the dependent variable. It was also considered quasi-experimental because the groups were not chosen randomly; the groups were already

assigned before the experiment: they were unimpaired groups (the way they are formed is independent or alienated to the experiment) (Hernández & Fernández, 2003). The quasi-experimental method was the most appropriate because the research was developed in natural educative scenarios. The population were Level Fourth students who belonged to the English Center at Escuela Superior Politécnica de Chimborazo and the sample consisted of 30 students.

The design refers to non-equivalent groups. There were two groups, the experimental group, which was manipulated by the researcher and the control group, which did not receive any kind of intervention. The students in the experimental group worked in a Virtual Classroom created specifically for the research, in this environment students participated actively in discussion forums.

In addition, the qualitative approach was applied to observe the experimental group behavior during the discussion forums activities, their level of acceptance, motivation, and commitment in the learning process. At the same time a rubric was used to rate students' participation qualitatively, this instrument considered four parameters: quality of post, frequency, relevance of post, and content contribution.

The methods applied for this study were; the scientific method to identify the problem in the English Center at Escuela Superior Politécnica de Chimborazo, the descriptive method to establish a logical process which started with the facts and phenomena description about the formulated problem. Then, the results obtained through the surveys, pre-test and posttest applied to Level Fourth students were analyzed.

## **RESULTS**

The analysis of results was developed in three stages. The first one was the students' answers

in the initial and satisfaction surveys. The second one considered the results of the discussion forum rubrics, and the third one the pre-test and post-test final scores.

One of the most relevant questions in the initial survey was the one regarding the number of hours students dedicated to work in the Virtual Classrooms. The results showed that 77% of the students only dedicated 1 or 2 hours per week to online activities regarding English learning; , 14% worked from 3 to 4 hours, and only 9% of students dedicate more than 5 hours to work on a VLE. After the intervention, 90% of students indicated that they participated actively in discussion forums and dedicated from 3 to 4 hours per week for these activities and only 10% still dedicated only two hours for the Virtual Learning activities.

Another survey question was how motivated students felt to work in online discussion forums. At the beginning 80% of students said that they have not had the opportunity to participate in this kind of activities in the English classroom, this changed at the end since 90% of students stated that they felt more confident to discuss online than in a regular class setting.

During the intervention, students participated in five different discussion forums; the results were analyzed by considering the sample, 30 students, which gave 150 participations. For the rubric, the scales were excellent, good, acceptable and unacceptable.

The first parameter of the discussion forums was quality of post and the results showed that 91 participations had a good quality of post. The second was frequency, for this parameter the highest score was 57 participations, that means that 38% of students participated in the online discussion forums more than twice. In the third parameter, relevance of post, 70 participations were excellent, which means that 47% of students' posts were related to discussion topic

and prompted further discussions of topic. Finally, 60 participations demonstrated an excellent content contribution, 40% of students posts contained truthful, reflective, and substantive information.

The last stage was the pre-test and post-test results analysis. The tests had three different sections and the third one was focus exclusively to online discussion forums. The exams were taken in the Virtual classroom and the students had one hour to work on it. The results were analyzed by comparing the control group and experimental group and the behavior of the experimental group at the beginning and at the end of the intervention.

The average of the pre-test for the control group was 1, 48/10 whereas the experimental group average was 1, 00/10. In the post-test the average for the control was 2, 68/10 and the experimental group average was 7, 00/10. This means that in general the performance of the experimental group increased noticeable.

## DISCUSSION

This research results have similar results to the research mentioned in the introduction since D. McLoughlin in the University of Tokyo, Japan conclude that online discussion forums have the potential to encourage high-order thinking processes (McLoughlin, 2009). Manprit Kaur in his article entitled Using Online Forums in Language Learning and Education, states that online forums may provide a way for teachers to improve the quality of their students' language learning skills. Thus, language teachers in Malaysia should consider integrating online forums into their language teaching to develop students' writing and communication skills (Kaur, 2011). Finally, Mary M. Christopher, Assistant professor in Educational Studies at the Hardin-Simmons University mentions that online activities allow students to have time to be more thoughtful with discussion forum interactions as

compared to the time-constrained interactions in a face-to-face setting. (Christopher, 2003)

It is a fact that in the 21<sup>st</sup> Century students prefer VLEs to traditional ones; therefore, the interaction in the online discussion forums motivated students to use the language and think creatively. This was the first time students got exposed to this kind of activities as part of the English classroom; nevertheless, the challenges were overcome and the results showed students were able to actually use the language in a more comfortable and less stressed environment where they could interact with the teacher and their peers in a dynamic way. Besides, through discussion forums, students developed their thinking abilities, especially the highest one in the Bloom's taxonomy "creating" and felt motivated to participate in the forums.

Furthermore, this study opens the possibility for further researchers regarding the use of Virtual Learning Environments to foster high order thinking skills development, especially because not only students but also teachers must be trained to use Virtual Learning Environments effectively and be able to combine it with face-to-face instruction. Moreover, it is well-known that web tools and technological devices are boom and should be exploited for educational purposes.

## CONCLUSIONS

The conclusion of the study about the implementation of online discussion forums to develop creating skills in students of Level Fourth at Escuela Superior Politécnica de Chimborazo are the following:

The online discussion forums motivated students to think and interact at their own pace with enough space and time.

The participation of the students was more regular and they could do it in a more thoughtful manner than when they participate in face-to-

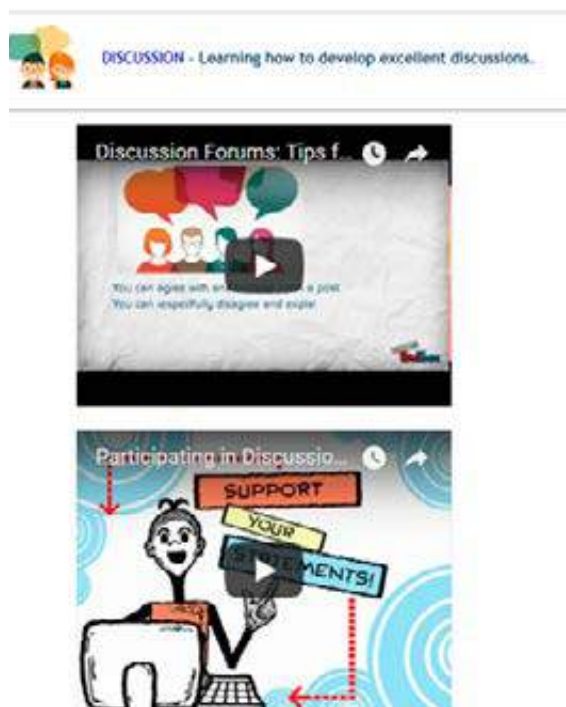
face instructional settings, especially in large-enrollment classes, which was the case of the sample.

By participating in online discussion forums students enhanced in the class community and had a greater sense on the contribution to the class.

Through this interactive activity, the teacher could easily create small discussion groups within the large class, this was helpful to achieve and preserve the course discussions.

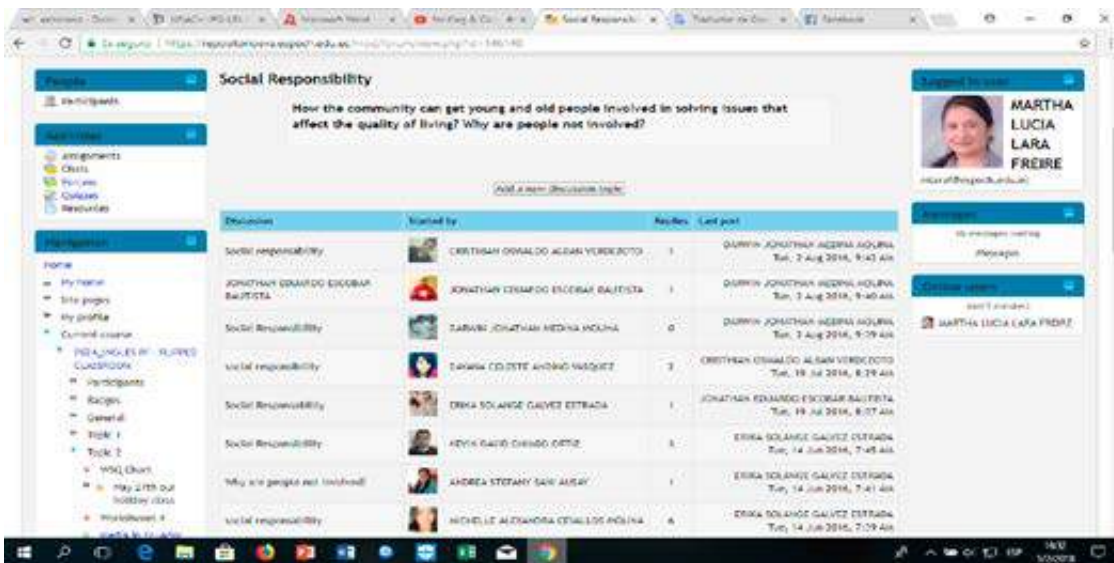
The main objective of this research improving high order thinking skills development, specifically "creating" by using online discussion forums was reached.

## GRAPH 2: Virtual Classroom image



Source: Virtual Classroom, Flipped teaching classroom. Lara

GRAPH 2: Online discussion forums sample



Source: Virtual Classroom, Flipped teaching classroom. Lara

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## ANNEXES

### Annex 1: Discussion Forums Rubric

Criteria	Unacceptable	Acceptable	Good	Excellent
Quality of post	No posting	Responds with the minimum effort	Appropriate comments, contributes with valuable information with minor mechanic errors.	Thoughtful, reflective, and clear comments formatted in an easy to read style that is free of grammatical or spelling errors.
Frequency	Does not participate.	Participates ones.	Participates twice.	Participates more than twice.
Relevance of post	No posting	Posts topics, which do not relate to the discussion content; makes short or irrelevant remarks.	Posts topic that are related to the discussion content.	Posts topics related to discussion topic; prompts further discussions of topic.
C o n t e n t contribution	Posts information that is off-topic, incorrect, or irrelevant to discussion.	Repeats but does not add substantive information to discussion.	Posts information that is truthful; lacks full development of concepts or thought.	Posts, truthful, reflective, and substantive information.

Source: "Think". Flipped teaching classroom guide. Lara