STRATEGIES TO ENCOURAGE CRITICAL THINKING IN A VIRTUAL COURSE FOR ONLINE TUTORS

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Abstract

Critical thinking is now thought to be a skill needed to effectively solve most of the everyday problems that people face, to maintain and to get a job, and even though to sustain the economy of a country.

In this project, it was analyzed if the module number two form four called "didactic strategies to foment the critical thinking in the virtual education" which belong to the course "didactic strategies for the virtual tutoring", promotes critical thinking. The course was carried out in a virtual way through the Moodle platform. The participants were ten virtual teachers, with one year of experience as virtual tutor.

The course’s tutor (teacher) generated reflection and discussion through questions of different types such as Socratic ones, ordinary and inquiry, encouraged individuals to ask questions or, to solve problematics in groups, encouraged them to read and discuss with the other participants. The tutor was the student's guide in the analysis to be carried out, as well as in the organizational field (to set delivery dates, dynamics to be done) and as the support for group conclusions. The instructional models used in this module were dialogic thinking (Paul, 1975 at López, 2012) [1] and research communication (Lipman, 1998 at Lopez 2012) [1].

In the discussion forums, it was observed that the tutor and the participants, did an individually and group feedback, which impacted positively the critical thinking development in those involved (López, 2012) [1].

The guiding function was basically done by the course tutor, the didactic strategies proposed by Piette (1998) [2] during the course were: to exercise the skills of critical thinking, direct teaching and their transfer.

At the analysis of each session, it was observed that the dimensions with the highest frequency were those of evaluation of the results obtained, development of inferences, analysis and discussion to find out the solution.

The less frequently presented dimensions were: recognition of limitations and learning abilities, establishment of learning goals and approach to the problematic situation or topic to be clarified or to be solved.

The debates were characterized by analysis and discussion to find the solution. It should be noted that the participants were the ones who found the solutions to various problems presented, with the guiding intervention of the tutor, but the solution was found by the participants.

In the forums, the participants were the ones who had the greatest participation, while the tutor only did generating questions and gave feedback to the participants.

Educational activities and strategies will be described and exemplified throughout the work. It is recommended that for future sessions, the tutor encourage a greater goal setting by the participants, as well as that the participants pose problematic situations according to the themes carried out.

Keywords: Virtual tutor, critical thinking, didactic strategies, virtual classroom activities.

1 INTRODUCTION

It is transcendental that the teacher encourages critical thinking in its students because, at present, virtual education has ceased to be a complementary education and has become a form of professional education. Already exist professionals trained in virtual environments.
The virtual tutor should encourage critical thinking through activities, to avoid tiredness and boredom in their students by simply memorizing or transcribing the information obtained by students in external sources, as well as that provided in the course, without a reflection or analysis of information.

In the present investigation, critical thinking is defined, based on the definition given by Scriven (2008) [3] as "the way of thinking about any subject, content, or problem in which the thinker improves the quality of his thinking by the ability to analyze, evaluate and rebuild it ... It involves effective communication and problem-solving skills."

The main purpose of the implementation of the virtual tutoring program is to promote students' critical thinking, through the knowledge of their abilities and their person, in order to increase terminal efficiency and diminish the rates of failure, of dropout (Márquez, 2003 at Cruz, Cuevas, García, Vales, 2012) [4].

La Cruz (2002 in Cruz et al., 2012) [4], comments that the tutor should favor the performance of students, considering them as processors of their own knowledge and to act more as a facilitator of learning than as a provider of knowledge. The tutor should be flexible and not an authoritarian tutor, to get students to work together with their peers their own learning. The tutor will simply have to guide the students according to the curricular contents. He/She will also have to feed each student to reduce the probability of dropping out, since in this modality students usually feel lonely due to the lack of personal interaction with peers and teachers. Likewise, the tutor should show interest in the contributions of the students to socialize the knowledge, as well as a sense of belonging and security. The tutor should encourage the participation of the students and feed them in a positive way, because all the contributions are valuable in the social construction of knowledge to reduce the sense of shame in expressing their ideas. Since, all ideas are reflected in the virtual environment for a longer time, compared to the face-to-face environment.

The interaction between tutored and tutor aims to encourage active, critical and autonomous participation of students in the teaching-learning process, as well as to promote the development of strategies for study and reflection both individual and at group (Prado and Garcia, 2009).

The virtual tutor should take advantage of virtual forums to generate debates, activities or dynamics in which students get involved and express their ideas. As mentioned above, the tutor should create a feeling of belonging and will have to create an environment in which the student can develop in such a way that he/she feels motivated and free to express his/her opinions and in this way will generate by analysis and discussions about the approaches, collaborative learning.

In the present research, it is analyzed the registered information of the activities that had the discussion forums of the course "Didactic Strategies for Virtual Tutoring", of Module 2 entitled "Didactic strategies to promote critical thinking in virtual education", of the Autonomous University of the State of Morelos (Universidad Autónoma del Estado de Morelos), developed on Moodle.

This course was mainly aimed at teachers with one year of experience as virtual tutor and with interest on virtual tutorials. The modality of this course was virtual. It consisted of four sessions, held for four weeks.

2 METHODOLOGY

The data were collected through the access allowed to the online course, in which participants were informed that the course would be monitored and followed for improvement. The analysis of the data was qualitative. To keep the anonymity of the participants the names of each of them was replaced by "TEACHER 1", "TEACHER 2", "TEACHER 3". This substitution was made through the order of the participations of those involved during the first forum.

It was taken into account the totality of the participants, the sample is census type, there are 10 professors of bachelor of different areas, with minimum experience of one year in virtual tutorials, 5 women and 5 men. 8 of the participants are residents of Mexico (Cuernavaca); two more are residents from El Salvador. In terms of academic training, two of the professors have undergraduate studies, seven with a master's degree and one with a PhD degree.

To analyze the data collected, categories were used. Each category was validated by three experts in the area of education and critical thinking. The definitions and theories of critical thinking were broken down into 98 phrases, which were grouped into 6 categories, each of which is characterized by
subcategories. The categories validated and used for the analysis of the collected data are the following:

1. Recognition of limitations and learning capabilities.
2. Establishment of learning goals.
3. Approach of the problematic situation or subject to clarify or to solve.
4. Analysis and discussion to find the solution sought or raised.
5. Development of inferences, deductions and conclusions.

3 RESULTS

In this study, we analyzed the presence of critical thinking under the definition of the way of thinking about any topic, content, or problem in which the thinker improves the quality of his thinking by the ability to analyze, evaluate and reconstruct it, involves communication, effective and problem-solving skills (Scriven and Paul, 2008) [3]. It was observed that during the module, participants are invited to present their points of view, as well as to analyze the points of view of others, to evaluate them and to feed them if necessary, to reconstruct it or to create a new thought.

The results obtained by the analysis of the course "Didactic Strategies for Virtual Tutoring", the most frequently presented dimensions within module 2 were: 1.- Evaluation of the results obtained. 2.- Development of inferences, deductions and conclusions. 3.- Analysis and discussion to find the solution. This results reflect that in the module, existed analysis of the information provided by the tutor, analysis and evaluation of the information or contributions proposed by the fellow students, mentions about the similarities, differences, strengths and weaknesses of the fellow contributions, debate and discussion of the contents, as well as the evaluation of the obtained results.

According to Cabero (2004) [6], virtual tutors must perform five functions: technical, academic, organizational, guiding and social. That is, they must have extensive knowledge in these areas in order to be able to achieve the student's learning objectives. At the beginning of the module, the tutor supports the students in the technical area, due to some inconveniences with the platform, as well, with questions of external tools, like programs to perform some type of work in specific.

The guiding function during the course, the tutor carried out it through participation in the forums, by suggesting information to the students.

The social function was carried out to a lesser extent, this function can be observed mainly in session number 1, which deals with personal issues such as favorite books and movies, family, and so on.

At the academic area, the role played by the virtual tutor was of moderator or guide of the discussions by requests to justify, to argue the ideas presented and to raise new questions (Gunawardena, Nolla, Wilson, Lopez-Islas, Ramirez-Angel, & Megchun-Alpizar, 2001) [7].

According to the classification of Paez (2008) [8], in the forums of this course the social and argumentative dialogue was carried out. The social forums were characterized by an informal and open dialogue, as a casual discussion, each of them expressed their ideas, experiences, etc., without following a structure. In the content forums, they maintained a reasoned dialogue with specific content contributions, expressed in a formal way, with arguments.

The activities that reflected a greater analysis of the content as well as the points of view of the members were the activities related to the debates and discussions which favored the exercise of the abilities of the critical thinking, since, the participants had to analyze the discourses of their fellow colleagues in order to contradict or support them as the case may be (Piette, 1998). Within the discussions carried out in the course, the participants provided the basis for their contributions with the help of external material.

The tutor motivated the students to inquire about the contents, this facilitated the debate, since each of the participants was informed individually and discussed about the additional information obtained, which generated group conclusions. Inquiry plays a key role in the development of critical thinking, since it requires participants to reflect on the information proposed by the tutor in order to introduce new information (López, 2012) [1].
Teamwork and group projects favored the development of critical thinking through analysis, discussion of ideas and knowledge building. Collaborative work is essential in online education, since it allows the exchange of ideas between the group, interaction and teamwork (Díaz, Mateo, 2014) [9]. This can be observed especially in session number 4, in which the participants were asked to form teams and each one of them to design an activity so that the rest of the teams will participate in the critical analysis of the selected texts.

Below is a fragment of the discussion forum of the team number 1, where it can be observed how participants exchange ideas about what would be more appropriate to provide their fellow students and accomplish in a successful manner teamwork commissioned by the tutor.

Re: (Is there still room?)
of TEACHER 2 - Monday, April 16, 2012, 23:20

Hello TEACHER 1! welcome to the team, personally I have a topic of interest, about the politics of globalization and the role of education in it. I have a pdf that seems to me to explain the circumstances that are generated in the globalized countries (about the economy, politics, culture, education and values) is a 24-page document (not if it seems appropriate) and complement it With a part of the video "the big sale" (we have to edit the video to select only a small part) I do not know if you have seen it, attach the document and wait for your comments, and of course if you want to propose another topic with pleasure I will participate.

(Follow-up) References for topic development proposed by TEACHER 2
Of TEACHER 1- Wednesday, April 18, 2012, 05:20

Dear Team,

Good day. TEACHER 2, Thank you for your initiative and contribution.

Considering that we have to process the inputs of the other two teams, although the material you propose makes an in-depth approach to the subject in question, it may be somewhat dense by the concepts it addresses and the extension exceeds the average for a fast processing activity.

In this sense, I propose a relatively smaller text (6 pages of main content), supplemented by two other types of media (audio and video), among which you can select (for that, it's better to over and over than Miss)

I attach my "texts" proposals related to the subject proposed by TEACHER 2. I need to take as a "text" not only a written document, but videos (which, as we have seen among the materials of this course, are valid).

I try to make some comments in each case:

NOTICE: The following references do not explicitly address the globalization-education binomial. Rather, they serve as "base" inputs, so that the readers of the texts, themselves link themselves.

Text (written document)
Extension: 8 pages (without considering bibliography and abstract in English, 6)


The reading is not current, true ... however the approach and the topics yes. It focuses the issue of globalization on information systems, involving technologies and social adaptations. The management, processing and consumption of information in a globalized context; Considerations and suggestions,

Audio

A very brief and concise introduction to the relevance of the topic of globalization in our current context.

**Videos**


Briefly and generally, it raises the present and technological advances within the context of globalization. It presents a projection of the possible scenarios to the 2030 and leaves "on the table" the approach that the way to follow (of well-being or apocalyptic) depends only on us.


Presented previously in this same course as complementary reference during the development of a forum. The pedagogue presents a proposal for a paradigm shift in education, starting from the current situation where one of the pillars of training is based on the economy and the globalized world.

They are my resource proposals. In a near delivery comes the activity proposal for the analysis of the texts. Greetings. TEACHER 1

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**Re: (Follow up) References for topic development by TEACHER 2**

**Of TEACHER 9 - Thursday, April 19, 2012, 01:18**

TEACHER 1, I have reviewed the resources and proposals of text, audio and videos in relation to the paradigm of globalization-virtual education, to be reviewed by the other two teams of the course. I agree with the proposal and it would be necessary to socialize with the teachers TEACHER 2 and TEACHER 3 for their acceptance and give notice to the TUTOR to be able to continue.

Another activity that generated analysis, reflecting a critical thinking was "fragment of film". Participants should analyze the fragment of the film at platform, they were given a format that should describe what were the main ideas of the film, as well as their opinions on the issue addressed. After, they should share their analysis in the discussion forum so that they can be fed back by their peers. Discussions carried out within the discussion forums reflect critical thinking by allowing the exercise of critical thinking skills (Piette, 1998). It should be noted that a tool that allows tutors to generate such discussions in the virtual environment, are forums.

The activities discussed above involve an analysis of the problematic situation and / or audio-visual material, as well as the discussion of the points of view of their fellow students. According to Bloom (1956) these activities, involving analysis, synthesis, knowledge, understanding, application and evaluation, encourage critical thinking in the participants.

In the discussion forums the virtual tutor asked questions that allowed group development to promote critical thinking, by means of small interventions in which they formulated questions of different types, including Socratic questions (Responding to the participants’ questions through other questions), through which the fundamental logic or structure of the thought produced is attempted, which allows for reasonable judgments (Paul, 1993 in Lopez, 2012). Ordinary and inquiry questions. The tutor used ordinary questions to obtain any kind of information on the subject, under the assumption that those involved knew the answer. Through inquiry questions, tutor generated a greater inquiry in the participants (Splitter and Sharp 1995).

Below is a fragment of session number 3 entitled the mirror has two faces and session 4 entitled "brainstorming", where it can be read the questions realized.

**Session 3**

**Re: “The mirror has two faces”**

**of TUTOR - Thursday, April 12, 2012, 01:51**
Your contributions have been very interesting, which lead me to ask your help to answer some questions:

1. How do you maintain motivation and attention at your virtual classes? 2. How do you compete against technology in the classes you teach, whether in virtual or hybrid mode? 3. How do you manage to "connect" with the group in these modalities?

In this fragment is observed how the tutor uses ordinary questions since it generates them exclusively to obtain any information on the subject, under the assumption that those involved know the answers, or they can answer them.

Session 4

Re: Brainstorm. My general Critical Thinking Form

Of TEACHER 5 – Monday, April 16, 2012, 22:26

Hi everyone, good afternoon, I have played very little in face-to-face teaching. I have ventured more as an online advisor. In the latter I have no impact on the instructional part, rather than on contributions as part of the curriculum restructuring process.

In spite of the above, in the groups that I have had within the Degree in Citizen Security of UdeG I have tried that in most of their deliveries they always include a CRITICAL JUDGMENT of the subject that is being developed in which they detail the requested in the activity and in the end, in half a page I ask them to specify what they rescue from the subject and the materials, what they did not understand, what leaves them the activity and the way in which they can apply them to their work areas or immediate context. As they study security issues and most of them work in dependencies within the field of public security, it is very easy to be taken to the application. I have a course called Project I. This course is divided into stages, in the first stage is carried out the whole theoretical part [security; violence; Dimensions (spatial, social, police, criminal, conflict); Models (police, criminal decision, citizen security) conflict; among others]. The second stage is carried out as a forum and through INDIVIDUALIZED TUTORING, is that individually and with support from the tutor, the student identifies a conflict and locate the dimensions, models and everything seen in the theoretical part, it is upon each conflict, that is the way the tutor suggests the methodology of work. What I have done is to try to locate a real case in their immediate context to have easy access to the information, this with the objective that the content is significant, starting from this I put each one to make a general search of the conflict. Through the greatest number of means they are able to get, I ask them to locate their dimensions and models, as the dynamics of work in this stage runs on my own, I put them to go directly to the place of conflict, to inquire with neighbors, I ask them to interview, so, after all the analysis they would be able to propose lines of action. In any case, I ask my students to go and deliver the results with their proposals after they finish the activity. I have followed up and at least three out of ten proposals have taken effect after students in the Bachelor of Citizen Security did their study. Carrying out the entire process of searching and analyzing a specific case, has helped students to replicate the methodology to direct cases of their work, this was corroborated through a session of experiences shared by students. I believe that the exercise helped them to be more analytical, more critical to the situation and more reflective of the direct impact they had. Greetings.

Re: Brainstorm. My general Critical Thinking Form

Of TUTOR – Tuesday, April 17, 2012, 14:18

Interesting aspects! Context, diagnosis, applications, reflection on how to solve the problems detected apply the alternatives! How do you verify that they are now more analytical, reflective and critical?

End of the form.

In the previous example you can read how the tutor asks a question of ordinary type and Socratic at the same time, as it makes the student think, based on the assumption that the student knows the answer.

In addition, the tutor generated inquiry questions, which is demonstrated in the following passage, corresponding to another session:

Re: (Team 3) Discussion Tread

Of TUTOR – Friday, April 20, 2012, 04:40
What arguments are there for or against what the rapporteur contends? With respect to reality: does it reflect the policy set out the curriculum that is currently taking place? What alternative would you propose?

Within the discussion forums of the whole module, it is observed how the tutor provides individual and group feedback to the course participants, which positively impacts the development of critical thinking in those involved (López, 2012). It should be noted that the participants also fed their peers.

One strategy that the tutor used was to convert the individual questions to group ones, that is, from the individual doubts of each of the participants, generated group questions, so that the other participants will be actively involved in the resolution of these approaches (Perera and Peré (S / D)) [10]

Re: (Team 2) Delivery Critical Thinking Map
of TEACHER 4 - Friday, April 13, 2012, 18:49
Greetings, TUTOR!

This aspect of the educational process, evaluation (which is ultimately what we are talking about), is particularly sensitive to all involved. Without too much extension, we are the teachers (usually) the most reluctant to evaluate (or others evaluate) our performance, without considering that it is a procedure to ensure that we are on the right path or not, to achieve our objectives, to return the course, to correct actions or even to give a rudder. Without forgetting the essential contextualization of our actions, I consider that some instruments already designed may be useful, depending on what, when and how I want to measure (or evaluate, to be more precise) some performance or change of attitude. I do not think we can talk about general instruments for all subjects, or all levels, or all groups, so even an already proven tool will have to be adapted to each particular case. In this sense, I have noticed that the repeated attention of the same course allows the teacher to establish a series of general evaluation criteria that, given the time, can adapt to the group in question

... In no way I do think that this is applicable in all circumstances, but it can adapt to most cases and, why not?, in the virtual environment. An apology for the length of the comment, because I understand that the aspect of the evaluation will be dealt with at another time, but I wanted to express my opinion on it. Thanks for the feedback... TEACHER 4 (Agora team)

Re: (Team 2) Delivery Critical Thinking Map
of TUTOR - Friday, April 13, 2012, 03:21

Dear TEACHER 4, you have focused on a very important point for all, in what way do I prove that it Critical Thinking exists? I invite all of you to talk to us a little more about your search, what referents you have found is it necessary to find an instrument already designed? Or can we create and contextualize our instruments?

To achieve the application of knowledge, it was requested to transfer the skills of critical thinking to real situations and not just academic ones (Piette, 1998 [2]; Sáiz and Rivas, 2008 [11]). The teachers participants were asked to create a program in which they apply the knowledge acquired with their own students.

In the module analyzed, there were found two of the instructional models collected by López, 2012: Model of dialogical thinking (Paul, 1975 [1]) and research communication model (Lipman,1998 [1]). The participants eliminated the unique points of view, took into account the contributions of their other colleagues and feedback them without destroying the contributions, while highlighting the strengths and weaknesses of their fellow’s contributions. They also analyzed the texts and / or materials proposed by the tutor to discuss their points of view.

It is important to note that the tutor of this module was carried out by a student recently graduated from the Psychology degree with the support of a teacher with a doctorate and another student of masters.
4 CONCLUSIONS

From the six dimensions: 1.- Recognition of limitations and learning capabilities, 2.- Establishment of learning goals, 3.- Approach of the problematic situation or subject to clarify or to solve, 4.- Analysis and discussion to find the solution sought or raised, 5.- Development of inferences, deductions and conclusions, 6.- Evaluation of results obtained, the ones less frequently were: 1. -Recognition of learning limitations and capabilities. 2. - Establishment of learning goals. 3.- Approach of the problematic situation or subject to clarify or to solve. This could be because the tutor established the objectives of each of the activities that were carried out, as well as the activities, the problems to be solved, the instructions on the way of working and the problems to be dealt with in each one of the sessions.

The dimensions most frequent were 4.- Analysis and discussion to find the solution sought or raised, 5.- Development of inferences, deductions and conclusions, 6. -Evaluation of results obtained.

Participating teachers were the ones who participated most in the forums, while the tutor only made interventions to promote generating questions and to encourage participants to debate; Feedback to the participants with new questions in the analyzes and debates. The interventions of the tutor were changed, based on the group needs, began with guidance to technical questions, later questions were intercalated academic and guidance issues, i.e. to give instructions on how to work.

The instructional models employed within this module were dialogic thinking and research community models. The educational strategies that were presented in this module were: 1. To favor the debate; 2. Direct teaching of critical thinking skills, as participants were provided with direct information on the skills of critical thinking; 3. Transferring the skills of critical thinking, in applying these skills, i.e. transferring the acquired knowledge to real situations.

Based on the results obtained, it is possible to say that the course "Didactic strategies for virtual tutoring" fosters a critical thinking, whose main characteristics are the various activities and educational strategies used by the tutor, which encouraged the analysis and the discussion of the contents of the course by the participating teachers. It is advisable that, to the extent possible, the tutor encourages a greater goal setting by the participants, that the participants pose problematic situations according to the theme carried out.

Because the population is small the results obtained can not be generalized, however can be taken as a basis to improve the interventions of the virtual tutor and proposed activities in future courses. A relevant point was that the activities that generated a greater analysis of the information provided are related to audiovisual material, design of conceptual maps and forums oriented by the tutor towards the analysis and discussion of ideas.

REFERENCES


