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REVIEW ARTICLE

MOTIVATIONAL AND DISPOSTIONAL COMPONENT TO DEVELOP CRITICAL THINKING

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ABSTRACT

The present work reports the findings of a close relationship existing between the motivational and dispositional component to develop critical thinking in university students of two academical Programs of Unidad Central del Valle in Tuluá, Colombia. It is important to know if the interaction lying behind these components is equal or on the contrary, it can be assumed that one step over the other, or if their development is systematic and both of them contribute to the final task The results of the research work can help the university to enhance the inclusion of strategies to develop critical thinking effectively on the students Faculty of Sciences of Education.

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INTRODUCTION

The discouragement of the students (Rius, 2010), their lack of interest in learning, It´s been a continuous subject of debate and criticism among the educational community. Problems like these are constantly made by parents, teachers, educative administrators and students, who seek to blame or give some kind of responsibility to the other. The context of the present study sought to focus as an effective learning depends not only on the knowledge and skills of the student, but also of interest that these contents are dealt with at the University, and therefore of the will, attitude and motivation that displays to engage actively in the learning process. This is why, without belittling the complexity of the issue nor hide that there are many other influencing factors, such as family, social change, technology, or the always criticized media, interest, is to know what happens in classrooms for many students get bored and not consider useful the University lessons or the effort of learning. At the beginning of every learning process, in addition to the act of attending, it is necessary to want to learn, which implies a certain predisposition or initial motivation. Freedom of choice, fundamental basis of democratic life, established also, as the ability to think clearly (Brookfield, 1987), tells us that critical thinking is inherent to human nature; and therefore, every human being has the characteristic of thinking critically, which can develop in different grades in each individual. Questions that become of interest by looking at other variables of usage in the use of critical thinking, related topics such as motivation, cognitive, among others, and looking to make an approach to related questions in is explain, how can the errors of many reasoners who are influenced by their beliefs or the content of the problems be explained?, and even more so when we wonder what does it mean to think or what is meant by human thought? Believing that any well-educated citizen, needs the skills and dispositions driven through thinking, is to believe that any sensible person who studies in detail these competences, will agree to apply them. That is to say, the one who reflects on the importance of developing his critical thinking for academic and personal life, analyzes its conceptualization and basic skills that are comprised to apply it. To transform classrooms into communities of thinkers, you need to have a long-term vision, need to reflect widely and generally speaking, need to be systematic, committed and visionary; in fact, this task is a challenge, but is a challenge to which ignores risking the well-being of students and society. The main interest developed in this research project, was knowing how the mental activity that involves the internal handling of information is given, it means having the ability to build internal representations of the world. Also it is to study the provision of thought and its related to the state of consciousness and cognitive effort that a person has. To carry out this purpose, awareness and cognitive effort was taken into account. As a starting point, THE SCALE OF CONSCIOUSNESS OR AWARENESS, it is the State in which the individual realizes himself and the surrounding environment. He´s awake, with an intellectual emotional mental attitude enough to respond to internal and external stimuli which was analyzed from: Organization, planning activities and proper use of the time. On the other hand, the

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COGNITIVE EFFORT is analyzed from the ANTICIPATION, understood as the preference for developing complex situations; the resolution of problems, understood as the preference to do a deep analysis of the math situations; ACTIVATION is the enjoyment doing an analysis of complex situations, and the PERSONAL involvement, understood as the enjoyment to make comments critical of situations math solution. In order to publish the results found after a tour of data collection accomplished through the application of the HCTAES Test (Spanish version of the HCTAES-Test of Halpern) for the evaluation of the critical thinking through daily situations, during 2013 and 2014 with a study population taken from two programs of the Faculty of Sciences of Education, specifically the Bachelor degree in basic education and basic education with emphasis in foreign languages with emphasis on physical education, recreation and sport, seeks to deepen the motivational aspect and provisional view of critical thinking.

Regarding to this aspect, the interest to continue strengthening the critical thinking theme, and to deepen the arguments, contextualizing knowledge, but a broader perspective, specifically investigating the question, how do the Metacognitive and cognitive components serve as motivational and dispositional component activation to develop critical thinking, through everyday situations, in students of II and VIII semester of Bachelor's degree programs in Foreign languages and physical education? Critical thinking is that mode of thinking - about any subject, content or problem - in which the thinking improves the quality of his thought to the inherent structures of the Act of thinking and by subjecting them to intellectual standards (Paul; Elder; 2003). That in short, critical thinking is meant to be self-directed, auto-disciplined, self-regulated and auto-corrected. It is subject to rigorous standards of excellence and domain aware of its use. It involves effective communication and skills of problem solving and a commitment to overcome selfishness and partner natural centrism of man (Paul; Elder; 2003). With this in mind, the found data contains several variables that allow us to cross information and sustain some references that explain the question of interest in the investigation. However, it is important to generate deeper spaces to reflect on the subject, since the results are showing that reasoning critically involves taking a series of decisions that support the use of cognitive resources to execute the skills and develop them with procedures and rules to be applied correctly, and need to be more worked, especially to achieve a more frequent use, or why not, always. It would be interesting to identify the motivational processes that activate each of the skills which allow to obtain clues and thus intervene each of these and improve them.

Regarding the PHYSICAL EDUCATION bachelor program compared with FOREIGN LANGUAGE program it cannot be referred to significant percentages that show frequent or constant use of critical thinking, since the found data are below 70%. Although whether it is interesting and encouraging that between 50% and 60% is evidence that they use sometimes and some skills to think critically. I.e., the attitude, the approach of hypotheses and strategies for action that are made before a questionable situation and its verification, could be strengthened to achieve to develop the new arguments favoring the construction of learning, either by verification or calibration, more frequently. About the General data, it can be concluded that for the Faculty of Science of Education, master rationally the values and beliefs of students and especially the inferences that can be made, it will take time.

Theoretical Framework

Within the concept of critical thinking, the ideal is that the academic community learn to think for herself, to dominate their mental process of reasoning, which implies a commitment to analyze and evaluate beliefs taking as point of departure the reason and the evidence; It means questioning when reason says that we must question, believe when reason says that you should believe and settle when so why make it. Recognize the need to be honest in your thinking; be consistent in the intellectual standards that applies; undergo the same rigour of evidence and proof which requires of others; practice what you preach to others and accept with humility the inconsistencies of thinking and action in which one incurs, would be a good start to conceptualize, dominate and create tools to develop the intellectual characteristics of the thought critic.

CRITICAL THINKING: can students make use of critical thinking?

This is a complex question, since when reference is made to the teaching or learning, refers to a communication of knowledge, ideas, experiences that allow the student to nurture their knowledge to develop or enhance skills. Thinking is an ability which develops the human being in different ways, with different peculiarities, is a complex aspect of human reality. Therefore, it is very tangible to talk about learning to think when thinking is something intangible and immeasurable; humans acquire knowledge, they do not learn thinking, abilities and skills are not learned, are employed through different strategies that facilitate the development of these, but does not exist, a series of positions, ciphers, movements, that allow the learning of thought, since this develops in different ways in each person. Then, the answer to the question would be Yes, because thinking is an innate capacity of the human being, and from the first approaches with the world thinks, it´s for this reason, children begin to generate questions to understand the environment, and as it grows and they are nurturing their knowledge will enrich this thinking ability. As teachers and researchers of this topic, this reality, we are interested in as few or many is simply that teachers and students will be able to promote critical thinking only insofar as they themselves think critically. This could be the only and most important barrier for students attain the skills of critical thinking. Teachers should think thoroughly for auxiliary power to its students to think thoroughly. But also students and can help to develop intellectual humility. In short, knowing what interests are applied to critical thinking presupposes a clear conception of critical thinking in the mind of the student. Critical thinking requires a management of knowledge and the establishment, in addition, a systematic structure of thinking, of the organization of the process of human thinking according to standards or rules. Therefore, it is necessary to establish clearly and precisely what are the criteria or standards that form the basis of the good thinking.

As a result, this research took over as main purpose to provide the UCEVA, specifically the undergraduate programs of basic education with emphasis in foreign languages and the one in basic education with emphasis on physical education, Recreation and sport that belong to the Faculty of Sciences of

Education, the initial criteria for the use and development of critical thinking. What makes it significant for this research the subject of critical thinking.

MATERIALS AND METHODS

The study falls within the type of quantitative research. The one which is based on the results of the first phase where the cognitive component was characterized. The population is formed by the students of the second and eighth semester belonging to the Bachelor's degree program in basic education with emphasis in foreign languages and the one on physical education, recreation and sport. The sample was selected by probability sampling random stratified, with a simple fixation, indicating that each tier or category corresponds to equal number of items. The used instrument corresponds to the HCTAES test of Halpern that assesses five critical thinking skills: checking hypotheses, verbal reasoning, arguments, probability and uncertainty analysis, decision making and problem solving, through 25 everyday situations, five for each of the skills. Similarly, uses a dual-format question: first is an open question in which the subject must offer an argument or explanation or generate solutions to a problem or comment on something; After that, shows a question in which the subject must choose between a series of alternatives that best matches, it is mentioned that on the subject of critical thinking researchers have carried out two studies research upon the theme in the first applied the test of Halpern (2006) HCTAES, finding interesting aspects in the students of foreign languages, in the same way, it was conducted a second investigation where the thinking skills of critical thinking were characterized and determined which ones had the students of foreign languages and physical education, recreation and sport Bachelor degree programs.

How do provisions influence critical thinking?

According to record only until the 1990s psychometric test were used to assess only skills in critical thinking and the work performed by Glaser and Watson in 1984, Weir and Ennis in 1985, Millman and Ennis in 1985a, 1985b teorizaban Yes There were some good skills then some good provisions, possess all this until at an initial study made by Facione and Giancarlo in 1994, who used a sample probability of 193 students of secondary education, managed to find a positive correlation (r = 0.41) between total scores from two widely known tests, the first one is the California critical thinking (CCTST), and the second abilities Test of the inventory of provisions of the critical thinking of California (CCTDI) (Facione; Facione in 1992, this joint was appraised significantly (p <. 05). In subsequent research with a larger number of students the same authors found that who had high levels of skills also had the provisions and vice versa; These provisions studies evaluated by Merchan, N. Y. T. influence of provisions in the development of thinking... the provisions as intellectual attitudes; so, evaluate provisions such as the systematic, analysis, fairness, curiosity and the search for truth and trust in reason, but they do not evaluate the motivation to employ critical thinking; Halpern (2006) has developed a Test to help with this information: she has created an instrument for their evaluation "HCTAES – Test of Halpern to the evaluation of the thinking critic through situations everyday". Saiz studies in 2006, at the University of Salamanca (Spain) reflect that there is a positive relationship between motivation to use critical thinking and dexterity in its use. The basic concept behind the provisions is something like this: a large part of being smart means being able to think well; and people who think well have solid provisions of thought. Therefore a large part of being smart means having solid provisions of thought. This does not imply that all the good thinkers have the same provisions of thought, or that all the good thinkers have equally strong provisions of thought (Solomon, 1994). For this study that sought to address in motivational and dispositional field in relation to cognitive goal and cognitive components, is utilizo6 a questionnaire with 38 claims, which are part of the HCTAES test and which seeks to assess the aspects available critical thinking, so questionnaires are provided to participants. The so-called instrument: "Scale of consciousness" (coast; MC Rae, 1992) is one of the evaluation that is used with the Factor Theory of Personality, the students used seven elements that allowed them to make a description of his personality; in the same way the questionnaire was designed to assess a trend of the individual to "participate and enjoy their cognitive efforts" (Cacciopo; Petty; Feinstein; Jarvis, 1996) by which each scale has a meaning in the following manner:

1 = extremely inaccurate .2 = moderately inaccurate .3 = slightly inaccurate .4 = nor accurate, nor inaccurate.5 = slightly accurate .6 = moderately accurate.7 = extremely accurate.

For which each student chooses a number for each statement.

This study involved 76 students of Bachelor's degree programs in foreign languages and physical education of the Uceva. The test was given individually during a time of 60 minutes approximately. Next, was given a survey that allowed to manifest spontaneously students the concept of disposal, it´s importance in the process of formation and it´s related to the learning of the contents.

The data were analyzed from the following weighting:

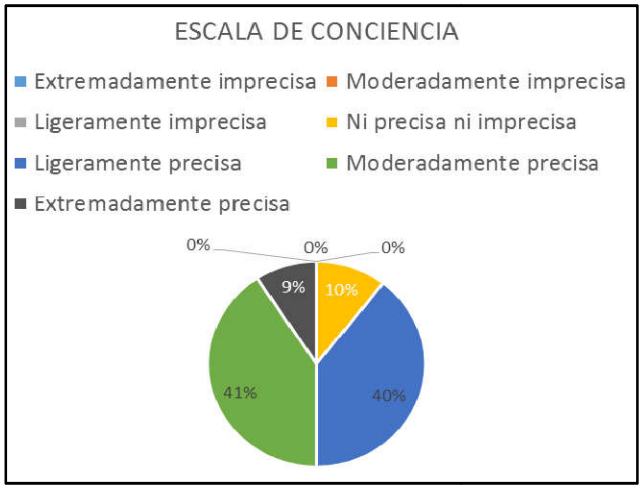
Thinking disposals		Range
Escale of consciousness and cognitive effort		
Evaluation	Level	Especific
1	Extremely inaccurate	0-19
2	Moderately inaccurate	20-38
3	Slightly inaccurate	39-57
4	Nor accurate nor inaccurate	58-76
5	Slightly accurate	77-95
6	Moderately accurate	96-114
7	Extremely accurate	115-133

ANALYSIS OF RESULTS

According to the results, it can be identified that the disposition of thinking, reflected in a 46% but not very significant, which this study population allows to process and to relaborate the information received. that has a cognitive base, bearing capacity of their own beliefs, enabling an activity

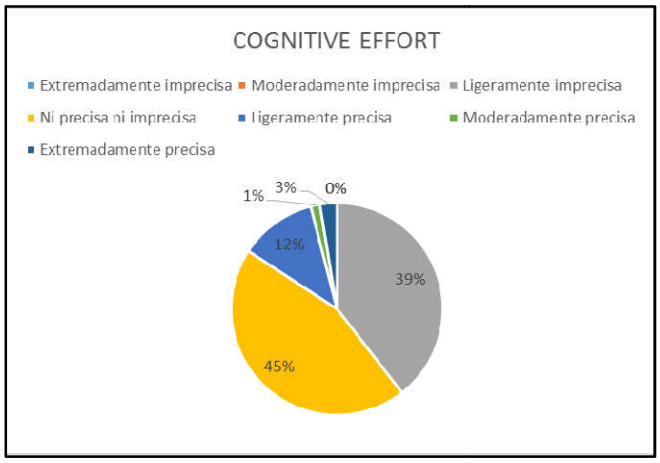
intellectually, to achieve objectives efficiently, not only in academic scenario but also in daily life; in this kind of thinking, while emphasizing, it is not very significant, using skills as: reasoning, problem solving, and decision making. On the other hand, the cognitive effort with a 47%, which is attributed to the success, or failure, it´s reflected from a negative attitude, not the cognitive activation utility. With this reference, it is important, broaden and deepen the Metacognition elements underpinning the awareness that a person has about its processes and cognitive states; Thus, what is meant to indicate is that consciousness has the person of processes for the capture of information may be subject to an attitude of positive or negative; referencing that this refers to knowledge that has a subject, of the processes involving it in the memory of the information, as to the information that is stored in the memory (memory contents), the consciousness of what is known and what is unknown, therefore the importance of the teaching role in the orientation of this cognitive effort towards a positive attitude of success or failure, and not a negative attitude towards success or failure.

Results level score - scale of consciousness



The first identified provision is consciousness, the intellectual and affective mental attitude sufficient to respond to internal and external stimuli that surround the person. According to the results, 40% of the study population is between a light or moderate positive attitude to organize, plan activities and to use the time. This point highlights the capacity of the psyche to concentrate on an object or activity, therefore, this state should be considered as a function of polarization on a target or focus.

Results level score: cognitive effort



In general, we have a mind not very flexible, unable to change endogenously or will of the subject. We can always ignore the error, be reluctant to make a mental effort or to cope with uncertainty, do not give the answer and have faith, not wanting to change, not knowing or not wanting to seek alternative hypotheses. fail to reason, to make decisions or to the change the intention. Therefore, the cognitive effort can be positive or negative. The found results justify that 45% non-obviousness attitude.

Conclusion

Learning in the academic and formal life is determined by cognitive-motivational variables, introduces squarely in the complex variety of processes and strategies involved in learning. Cognitive understandings certainly modify the behavior and influence the activation of reasons. But are you can reach the conclusion that a causal attribution scheme defines a motive as designated by Wiener Or that the reason for achievement is a system to evaluate the ego, as stated by Hechkausen. Maintain a positive attitude that facilitates overcoming the failure, and the negative attitude prevents to set performance objectives, if they are possible, are fixed on unrealistic goals, very high or very low, if they have to fix some; shy away from the assessment and attributed the success to luck and the failure to the lack of skill. They are so mired in a cycle of defensive conduct preventing them to do well and be satisfied with its performance. In the cognitive field: attention, perception and memory are located, as the main processes; attention is a basic condition for the operation of the other processes, in addition, involves neurological provision for the reception of stimuli. In the study of critical thinking, it has to be considered two main aspects: its focal or selective, character by means of which is configured, and the object that stands out among other stimuli and whether regulatory or sustained, as it is the attention, motivation, the memory among others. Critical thinking: allows process and relaborate the information received, it has a base of support in their own beliefs, enabling an activity intellectually, to achieve objectives effectively, not just in academic aspects but also in daily life; This kind of thinking, uses skills such as: reasoning, problem solving, and decision making. Metacognitive thinking: refers to the degree of awareness or knowledge which individuals possess about their way of thinking (cognitive events and processes). The works of Flavell (1981) that address the problems involved in generalization and transfer of lessons learned, served to confirm that human beings are capable of subduing study and analysis, processes used to meet, learn and solve problems; i.e., can you have knowledge about their own cognitive processes, and also control them and regulate them.

From the works of Flavell (1981), other authors have made their own definitions on Metacognition and its components, as well as for Chadwick (1985) Metacognition is awareness that a person has about its processes and cognitive states; for him, the Metacognition is divided into sub-processes, for example, meta-attention, referred to the consciousness that the person of the processes for the collection of information; meta-memory, which refers to knowledge that has a subject, of the processes that involve him in the memory of the information, as to the information that is stored in the memory (memory contents), the consciousness of what is known and unknown. For Acosta (2001), the Metacognitive capacity is an attribute of human thought, linked with the ability that a person has to: knowing what he knows; planning strategies for processing information;

being aware of his own thoughts during the act of solving problems; and to reflect and assess the productivity of their own intellectual functioning. Therefore, the term Metacognition refers to the knowledge about the own knowledge, also, affective, cognitive processes, and the ability to deliberate to regulate them. This knowledge and beliefs about the thinking and the factors that affect it, are the key to adjust the strategies of knowledge (Pressley, 1998); "it allows" reflect upon itself, to discover their own processes of thought as an object of examination. The term Metacognition refers to the knowledge about the own knowledge, processes, cognitive and affective, and States the ability to consciously and deliberately to monitor and regulate these states (Nelson and Narens, 1990; Mateos, 2001). These cognitive processes or thinking skills, finally, are the tools available to the student to process the contents and deepen the knowledge. It is also important to point out that the possibility of putting into practice the thinking skills, depends on much of the specific domain in which they are deployed. The recognition of each discipline-specific codes, enables the performance of certain skills. The importance of teaching skills in each of the disciplines of the school, is stressed which would have a better starting point for the transfer of skills (Halpern, 2003). Meeting the challenge of developing thinking skills, Beas (2000) says that you programs like the Harvard intelligence project (Feuerstein, 1988 ;) Feuerstein& Hoffman 1992; Prieto, 1989),do not complete the needs of development of thinking in school, since he split from the curriculum, remove you the character discipline contained school.

Recommendations

The Programs of the Faculty of education, must have an orientation that allows to include in their plans of study subjects to increase the logical reasoning, without leaving of side the inclusion of strategies into the curriculum in search of this aim, as the central axis to along the development of the program. This action will result in the improvement of the quality of programs both in effect that causes, i.e., teachers better trained join in the preceding level. It is recommended, to continue knowing the component of the logical reasoning in our students, develop new research, that will allow determine the evolution of thinking over the development of his career and look at what has been the incidence of the program, in its logical reasoning, which can lead us to design some type of intervention that help the achievement of vocational training more in line with the academic and social needs.

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