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The Relationship between Motivation to Learn and Critical Thinking of High School Students

NEVILA QARDAKU
Ph.D. Candidate, University of Tirana
Albania

Abstract

Critical thinking and motivation are considered as very important elements that contribute to learning. Educators in the field of education are calling for a higher level of critical thinking and motivation for high school students. The research questions of this article are: Which is the theoretical overview of critical thinking? Which is the theoretical overview of the motivation for learning? How can we measure student's motivation level for critical thinking? Are there studies that prove the positive relationship between motivation of learning and critical thinking in students? Conclusions are: all the studies I have examined have proven positive relationships between motivation to learn and critical thinking. Also, motivation and critical thinking are important for the students of the 21st century. The conclusions of this study can help teachers, high school students and more, to foster the critical thinking and motivation of students.

Keywords: Critical thinking, motivation of learning, student, the skills of the 21st century.

INTRODUCTION

Critical thinking and motivation to learn are essential for today's students. Critical thinking involves a disciplined process of analyzing, synthesizing, and evaluating information gathered from a student's observation, experience, and reading.

According to Scott (2015, p. 2), globalization, new technologies, migration, international competition, changing markets, and

transnational environmental and political challenges all encourage students to acquire the skills and knowledge needed to survive and succeed in the twenty-first century.

But, despite significant efforts to equip students with the right research skills for the digital age, recent studies suggest that many high school and college students do not have the skills to navigate and select relevant sources from the surplus of information available (Windham, cited in McLoughlin and Lee, 2008). So this is a problem that requires our attention.

The purpose of this article is to present a theoretical view of critical thinking and motivation to learn. Another purpose is to present studies exploring the relationship between these two variables.

One of the influencing factors that increase the ability of critical thinking is motivation (Lai, 2011). In all age groups of students, but especially in high school students, it is essential for a solid formation and a more natural and successful transition of high school graduates to university. Motivation and critical thinking are important for the students of the 21st century emphasized by (Semerci, 2011). Even critical thinking is called one of the most important attributes of success in the 21st century (Hui, 1998 quoted by Fahim&Hajimaghsoodi, 2014). Harvard University's Change Leadership Group identified several competencies and skills that students should possess in their life, work, and being good citizens in the 21st century as follows:

1. Critical thinking and problem solving
2. Co-operation and leadership
3. Versatility and adaptability
4. Initiative and entrepreneurship
5. Effective oral and written communication
6. Use and analysis of information
7. Curiosity and imagination

As noted, information analysis, curiosity, and imagination related to motivation to learn and critical thinking are ranked among the most important competencies that 21st Century students should possess. In conclusion, the teachers should not only increase the appropriate feedback and responses so that the students gradually be able to think critically and be very motivated to learn.

METHODOLOGY

The methodology consists of reviewing the corresponding literature to create a theoretical overview of the answers to these research questions. This paper consists of four research questions:

1. Which is the theoretical overview of critical thinking?
2. Which is the theoretical overview of the motivation for learning?
3. How can we measure student's motivation level for critical thinking?
4. Are there studies that prove the positive relationship between motivation of learning and critical thinking in students?

Critical thinking

Critical thinking has to do with a disciplined intellectual process of conceptualism, implementing, analyzing, synthesizing, and evaluating the gathered information from observation or experience of the student (Dibra, Halluni, Taipi, 2013). Critical thinking is one of the most important components in forming a creative mind. It is also a type of systematic evaluation based on logic. Critical thinking is intentional, reasonable, and goal-oriented. It's the type of thinking used in problem-solving, forming conclusions, calculation of odds, and decision making (Halpern, 1999). Thus, critical thinking is one of the high-order thinking processes and, as such, is not automatic but requires self-determination, reflection, effort, self-control, and metacognition. In other words, it is a deliberate process that involves the interpretation and evaluation of information or experiences (Mertes, 1991 cited by Fahim&Hajimaghsoodi, 2014).

According to Musai (1999) learning to think critically means:

1. Learning how to ask
2. When to ask
3. What question to ask
4. Learning how to reason
5. When to use reasoning
6. What reasoning methods to use

Such elements when constantly used, help students train critical thinking and challenging other's ideas.

Whereas according to the founder of the critical thinking movement in North America, Robert Enis, critical thinking contains 12 skills

through which it can be expressed. People who have the critical thinking, when faced with a statement or proposal, ask:

1. Does it have meaning?
2. Is it clear?
3. Is it balanced? (or contradictory?)
4. Is it logical?
5. Is it correct? (Is it authentic)?
6. Does it follow a rule or a principle?
7. Is it believable?
8. Is it justified?
9. Is there any connection? (Is the problem distinguished)?
10. Is it essential? (Or is it an assumption?).
11. Is it well described?
12. Is it true? (same source, page. 171)

Harvard Education School scholars have synthesized from literary sources about the student who has critical thinking, suggesting a list of seven elements;

1. Availability that is wide and adventurous.
2. Availability of questions, problem-solving, and investigation.
3. Availability to build explanations and meanings.
4. Availability to make plans and to be strategic.
5. Availability to be intellectually cautious.
6. Availability to seek and evaluate the reasons.
7. Disposition to have metacognitive abilities. (Perkins et al., 1993 cited by Perkins & Ritchhart pg. 29)

Critical thinking, as described by Marzano et al., 2001, cited by Semerci, 2011, includes reflective thinking that focuses on understanding an issue, creating and weighing solutions, and making informed decisions.

Motivation and some of the general insights on it

Human motivation has been researched in various studies in many disciplines, including education, psychology, sociology, etc. The term "motivation" comes from the root of the motive word, which means - something that encourages someone to act. Using this root, we can determine motivation as something that drives and orients behavior toward a goal. Motivation is a goal-driven behavior, combined with efforts to work towards the goal.

Motivation is perceived to have several meanings. Motivation is conceptualised as an innate desire that drives individuals to participate in an activity because of the satisfaction derived from it (Theobald, 2006 cited by Johnson, 2017). A multi-dimensional definition comes from Lai, which underlines - motivation involves a constellation of closely related beliefs, perceptions, values, interests, and actions. As a result, different approaches to motivation can focus on cognitive behaviors (such as monitoring and using the strategy), and non-cognitive aspects (such as perceptions, beliefs, and attitudes), or both (Lai, 2011).

Motivation is explained in terms of different motivational theories such as behavior theories, humanist theories, psychoanalytic cognitive theories, etc. Theories that are more related to the context of learning are cognitive motivational theories, some of which are: theory of attribution theory, self-assessment theory, assessment theory, goal-achievement theory, self-efficacy theory, self-determination theory.

Internal motivation and external motivation to learn

Internal motivation is defined as motivation to engage in an activity with the main purpose of achieving real enjoyment. Internal motivation is the motivation that has mutual relationships with personal satisfaction and interest. Internal motivation some other scholars have defined as - a push, an internal force to engage, to carry out an action. Internal motivation to learn is stimulated by new and difficult tasks, important for personal interests, which provide personal choice and control - the American Psychological Association (APA, 1997). According to Deci et al. (2000) internal motivation energizes and supports activities through inevitable spontaneous pleasures from voluntary action.

How can we measure motivation to learn? We can measure motivation to learn through many relevant instruments. One of them is: MSLQ. The Motivated Strategies for Learning Questionnaire (MSLQ), an 81-item, self-report instrument consisting of 6 motivation subscales and 9 learning strategies scales. The MSLQ has proven to be a reliable and useful tool that can be adapted for a number of different purposes for researchers, instructors, and students. The MSLQ has been translated into multiple languages and has been used by hundreds of researchers and instructors throughout the world. (Dunchan, and Mckeachie, 2005, p.117).

Some of the sources that motivate students' internal motivation are; Intrinsic behavior that is undertaken to satisfy the psychological needs for competence and autonomy.

1. Students are motivated to learn when they are interested in a particular topic for them.
2. Pupils are motivated to learn when they are interested in acquiring certain knowledge.
3. Pupils who have internal motivation are involved in learning activities with their own desire and not that they are dependent on the grades and praise of the teachers. In this case the pursuit of the desire that comes from their interior is a source of inner motivation. They continue to learn reluctantly even when they receive unsatisfactory grades.
4. Students are motivated to learn when the context of learning is supportive.
5. Also, self-confidence provides the conditions for increasing internal motivation.
6. Motivating a pupil's inner self to learn grows when the action taken by a student is experienced by him as independent and not imposed from abroad.

Traditionally, educators consider internal motivation to be more desirable and related to better learning outcomes than external motivation (Deci et al., 1999 quoted by Lai 2011). In the same logical continuity is the APA - which emphasizes that students tend to enjoy learning and do it better when they are more motivated by internal motivation than by external motivation to achieve (APA, 1997).

Intrinsic goal orientation [Internal motivation to learn] concerns the degree to which the student perceives herself to be participating in a task for reasons such as challenge, curiosity, mastery. (Dunchan, 2015 and Mckeachie, p.10)

While external motivation means incentives that come from outside. External motivation refers to external learning stimuli if we refer to the behaviorist concept of learning. External motivation includes the ratings and penalties that come from the teacher.

Extrinsic goal orientation [external motivation to learn] complements intrinsic goal orientation, and concerns the degree to which the student perceives herself to be participating in a task for reasons such as grades, rewards, performance, evaluation by others, and competition.(Dunchan, 2015 and Mckeachie, p.11)

Conti (2015) underlines that teachers should use praise as a means to validate pupils' efforts but must ensure that they do not exceed the limit because in this case, it loses its motivating power; This can lead to complacency and even loss of motivation in the long run.

Critical thinking and motivation to learn

Many researchers accept the fact that the more a learner is critical, the more he/she is successful not only in his or her second or foreign language, cited by (Nikoopour, AminiFarsani and Maryam and Nasiri, 2011 p.101). While (Halonen 1995 cited from Fahim, & Hajimaghsood 2014), cited that motivation appears to be a supporting condition for critical thinking in that unmotivated individuals are unlikely to exhibit critical thinking. On the other hand, some motivation research has suggested that the causal link goes the other way. In particular, some motivation research suggests that difficult or challenging tasks, particularly those emphasizing higher-order thinking skills, may be more motivating to students than easy tasks that can be solved through the application of a pre-determined algorithm (Turner, 1995 cited from Fahim, & Hajimaghsood 2014). Also (Nikoopour, et al., 2011 p.103) quote, since a significant relationship was found between the critical thinking ability and using language learning strategies, we can conclude that utilization of language learning strategies can help students to enhance their way of thinking, in other words, to think more critically.

How can we measure the level of student motivation to think critically?

How high are high school students motivated to think critically? It is very important to know the true level of critical thinking of students so that if there is a low level of critical thinking, the necessary feedback is needed in order to increase their critical thinking level. Are there measuring instruments to measure critical thinking? Luckily, yes.

CTMS. CTMS - is one of the instruments that measure the degree of motivation that students possess, to think critically. The results of the CTMS study show that CTMS has: factor structure consistent with Eccles and Wigfield's motivational model, good performance levels, and a significant correlation with CT-MSLQ, quotes in their study Valenzuela, Nieto &Saiz (2011). The study also shows that CTMS has psychometric features that support it as a valid

and reliable test. It is also a tool for studying critical motivational factors that can be useful in pedagogical learning and intervention (Ibid, p. 824).

Studies on the positive relationship between student motivation and critical thinking

Although a significant number of researches have addressed critical motivation and thinking (CT), much research has been conducted in studying the relationship between student motivation and critical thinking.

Semerci (2010) emphasizes that the purpose of his research is to address the general relationship between achieving motivation and critical thinking. This study included a total of 772 students in Turkey. Two degrees achieved (AFM) developed by Semerci (2010) and the other is California's Critical Thinking Inventory: CCTDI: CCTDI was first developed by Facione et al. (1998), and adapted to the Turkish system by Kökdemir (2003). Of the 772 students participating in the study, 396 are male (51.3%) and 376 are female (48.7%). Most of the correlations between sub-scales of "motivation-focused achievement" and sub-scales of "critical thinking skills" were found to be positive.

Another study conducted at Karaj University with 100 college students investigates the link between critical thinking and the use of direct and indirect language learning strategies by students. To this end, two study instruments, the Language Learning Strategy Inventory (SILL), and a Critical Thinking Questionnaire, were administered among 100 college students, directed at English translation at Karaj University. (Nikoopour, AminiFarsani and Maryam Nasiri, 2011 p. 99). The findings reveal a statistically significant relationship between specific direct and indirect language learning strategies such as cognitive, metacognitive and social with critical thinking, (Nikoopour, et al., 2011 p.99). Also, the research reveals that individuals who have been taught to think critically in their education years will demonstrate more professionalism in the use of ideas, assumptions, inferences, and intellectual processes. They will indicate the ability to analyze related questions and issues clearly and precisely, organize and formulate information accurately, distinguish the relevant from irrelevant, recognize questionable assumptions, as well as demonstrate sensitive to important implications and consequences.(Nikoopour, et al., 2011 p. 103)

In another study realized in 1992 by Garcia, Teresa; Pintrich& Paul R. conclude and assert that: critical thinking has important implications for classical learning issues such as knowledge transfer and application of problem-solving skills in new situations. The purpose of this study was to identify some of the important critical thinking correlations in terms of motivation, use of cognitive learning strategies, and classroom experiences. Participants (N = 758) were college students attending three mid-Western institutions (a community college, a small private college, and a comprehensive university) during the 1987-88 school year. Twelve classes were selected, including three disciplines: biology (three classes, N = 219); English (three classes, N = 110); and social science (six classes, N = 429). Motivational Strategic Learning Questionnaires (MSLQ) were administered to students at the beginning and end of the winter school term of 1988. In summary, this study supported the positive relationship between motivation, the use of deep strategy, and critical thinking. (Garcia, Teresa, Pintrich& Paul R, 1992).

Another study was conducted at Yazd University of Science and Art to study the relationship between motivation and critical thinking (CT) for English language pre-mediation students (TEFL). For this purpose, a group of 101 male and female students, aged 18 and 34, have been selected to participate in the study. Relationships between the two variables have been studied using the Pearson correlation coefficient. The results of this study showed that there is a significant and positive student motivation relationship (EFL) and their critical thinking (CT) (r = 0.796, p <0.01).

DISCUSSION

For years, studies have been published that assess the role of motivation to learn in increasing the learning performance of high school students, but what is becoming more and more evident in recent years are studies that also assess the role of thinking critical. According to (Nikoopour et al., 2011); Nowadays, critical thinking is one of the major concepts under consideration in education.Also according to (Ananiadou and Claro, 2009; Gardner, 2008; P21, 2013; Redecker et al., 2011; Trilling and Fadel, 2009; Tucker and Codding, 1998 cited by Scoot, 2015); Critical thinking is considered fundamental to twenty-first-century learning.

CONCLUSIONS AND RECOMMENDATIONS

All the studies I have examined have proven positive relationships between motivation to learn and critical thinking.

Also, motivation and critical thinking are important for the students of the 21st century. The more students are molded with elements of critical thinking, the more their motivation to learn increases.

Since it has been proven through empirical studies that motivation and critical thinking play an important role in students 'school achievement then, it is suggested to the relevant authorities to take all appropriate measures to increase student's motivation and critical thinking.

REFERENCES

1. APA. (1997). *Learner-centered psychological principles: A framework for school reform and redesign.* Washington, DC: American Psychological Association.
2. Deci, E. L. and Ryan, R. M. (2000). *Intrinsic and extrinsic motivations: Classic definitions and new directions.* Contemporary Educational Psychology, 54-67.
3. Dibra, G. Taipi, M. &Halluni, E. (2013) *Teacher and teaching.* Tirane: Vllamasi.
4. Fahim, M., &Hajimaghsood, A. (2014) *The relationship between motivation and critical thinking ability of iranianefl learners.* International Journal of Language Learning and Applied Linguistics World Volume 5 (2), 605-619.
5. Dunchan, T. and Mckeachie, W. (2015). *Motivated Strategies for Learning Questionnaire Manual*, p.10,11).
6. Dunchan, T. and Mckeachie, W. (2005). *The Making of the Motivated Strategies for Learning Questionnaire.*Department of Psychology University of Michigan. EDUCATIONAL PSYCHOLOGIST, 40(2), 117–128. Lawrence Erlbaum Associates, Inc.
7. Garcia, Teresa; Pintrich& Paul R. (1992) *Critical Thinking and Its Relationship to Motivation, Learning Strategies, and Classroom Experience*. University of Michigan.
8. Johnson, D. (2017) *The Role of Teachers in Motivating Students To Learn*. BU Journal of Graduate Studies in Education, Volume 9, Issue 1.
9. McLoughlin, C. and Lee, M.J.W. 2008. The three p's of pedagogy for the networked society: personalization, participation, and productivity. International Journal of Teaching and Learning in Higher Education, Vol. 20, No. 1, pp. 10-27. http://files.eric.ed.gov/fulltext/EJ895221.pdf (Accessed 20 March 2014)
10. Musai, B. (1999) Psychology of education: development, learning, teaching; Tirana: Pegi.

11. Nikoopour, J. Amini M. Nasiri, F. and M., (2011*).On the Relationship Between Critical Thinking and Language Learning Strategies Among Iranian EFL Learners*. Journal of Technology & Education, Vol. 5, No.2.

12. Pantiwati (2013) *Authentic Assessment for Improving Cognitive Skill, Critical-Creative Thinking and Meta-Cognitive Awareness.* Journal of Education and Practice. Vol nr 4.

13. Perkins, D. &Ritchhart R. *When is goog thinking*? Project Zero, Harvard Graduate School of education; Published in David Yun Dai and Robert J. Sternberg (2004) Motivation, emotion, and cognition: Integrative perspectives on intellectual functioning and development. Maëah, NJ: Erlbaum, inpress.

14. Semerci, Ç. (2011). *The relationships between achievement focused motivation and critical thinking*, African Journal of Business Management Vol. 5(15), pp. 6180-6185.

15. Lai, R. (2011) .*Motivation: A Literature Review* . Pearson.

16. Halpern, D. F. 1999. *Teaching for critical thinking: Helping college students develop the skills and dispositions of critical thinker*. New directions for teaching and learning 80: 69-74.

17. Scott, C. L. (2014) THE FUTURES of LEARNING 2: What kind of learning for the 21st century? UNESCO Education Research and Foresight, Paris. [ERF Working Papers Series, No. 14].

18. UNESCO (2015*). Rethinking Education*: Towards a global common good?. Paris, UNESCO.

19. Valenzuela, J. Nieto, A. &Saiz, C. (2011). *Critical Thinking Motivational Scale: a contri- bution to the study of relationship between critical thinking and motivation*. Electronic Journal of Research in Educational Psychology, 9(2), 823-848.