UNIZIK ORIENT JOURNAL OF EDUCATION
Vol. 10 No. 1 June, 2023 ISSN: 0794-9525
www.journal.fedunau.org

EMOTIONAL CREATIVITY SKILLS AND CRITICAL THINKING SKILL AS CORRELATE OF SECONDARY SCHOOL STUDENTS' ACADEMIC ACHIEVEMENT IN MATHEMATICS IN ANAMBRA STATE

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Abstract

The impact of emotional creativity skills, and critical thinking on academic achievement has long been an important issue in developmental research. The study aimed to examine the students' emotional creativity skills, and critical thinking, as correlates of academic achievement in mathematics in Anambra State. Four research questions and four null hypotheses guided the study. The study adopted a correlational research design to provide answers to the research questions and testing of the hypothesis. The population comprised of 21204 SS II students from which a sample of 660 was drawn using multi-stage procedure. Two standardized research instruments namely; Emotional Creativity Questionnaire (ECQ), and Critical Thinking Questionnaire (CTQ), as well as scores from students' promotional examination were used for data collection. Cronbach's alpha was used to determine the reliability of the items in the instruments. A reliability index of 0.73 novelty, 0.69, for effectiveness, 0.71, for authenticity, 0.81, for preparedness, and 0.74, for critical thinking skill were obtained. The overall reliability coefficient was 0.74 was obtained which shows that the instruments were reliable and good for the study. The Pearson Product Moment Correlation was used to answer research questions 1 to 3 and as well as testing the hypotheses 1 to 3. The research question 4 and hypothesis 4 were answered and tested at 0.05 level of significance using multiple correlation. Findings showed that the four dimensions of students' emotional creativity skills recorded negative relationship with their academic achievement in mathematics. Findings also revealed that the multiple correlation of the study stated that the relationship among students' emotional creativity skill, critical thinking skill and their academic achievement in mathematics is significantly related with one another. Based on these findings, it was recommended that emotional creativity skills and critical thinking skill should be thought, facilitated and assessed in the educational system.

Keywords: Emotional creativity skills, Critical thinking skill, Academic achievement

Introduction

Emotional creativity skills and critical thinking skill are constructs that regulates one's thought, and behaviour. Though these emotional creativity skills differ from cognitive abilities such as literacy or numeracy because they are mainly concern with how people

manage their emotions, perceive themselves and engage with others rather than indicating their raw ability to process information (Averill, 2005). These emotional skills deal with experiencing a complex emotional life, which is becoming increasingly necessary in societies that demand innovation and constant changes. Averill (2009) defined emotional creativity skills as dispositional trait which depends largely on the social norms that give coherence to the experienced complex emotions. Averill noted that individuals with high emotional creativity skills possess the capacity of being more sensitive to the experienced emotions and devote time to recognize them, which would arouse the people's enthusiasm for emotional reactions.

On this note, Averill and Nunley (2010) further defined emotional creativity skills as the ability to experience and express original, appropriate, and authentic combination of emotions. Hence, a person with high emotional creativity skills will experience emotions that are more complex. According to this perspective, the processes of emotional regulation may favour an improvement of thought and enhance creative process (Gross, 2013). In another study, Averill (2013) classified emotional creativity skills into four dimensions such as; novelty, effectiveness, authenticity, and preparedness. Novelty represents the acquisition of new knowledge from former behaviour. Effectiveness deals with to be creative, which shows that a response has to be of potential use for the person or the group. Authenticity, represent a creative response that constitute a reflection of the world and an authentic expression of them, and not merely a copy of others expectations. Then, preparedness, implies that years of preparation are required before achieving creativity within a specific area.

Additionally, people that show high level of emotional creativity skills would be more likely to enjoy new emotional experiences and learning in addition to higher levels of flow during regular activities (Averill & Nunley, 2010). For example, Lopez-Gonzalaz and Oriol (2016) noted that the emotions experienced in the classroom affect the performance of students, as well as their interest, commitment and personality development which in turn, affects the social climate in the classrooms and educational institutions. In an attempt to support the above claim, D'Mello and Graessor (2012) indicated that when students experience positive emotions they generate academic activities that involve satisfaction, happiness, hope or pride. On the contrary, experiencing negative emotions may cause bad academic adaption that is, students can feel academic bored or develop a feeling of frustration that could lead to school failure. The question is would students' emotional creativity skills impact positively on their critical thinking skill during the academic activities in the classroom? It will be acceptable to state that one of the attributes of emotional creativity skills such as social skill could influence students' adjustment to manipulate their critical thinking skill in the learning situation in other to achieve meaningfully in their academic task. That is, the creation of a generation of young citizens

who can debate with tolerance and think critically, creatively and constructively during the learning period would be obtainable when the students jointly manipulate emotional creativity skills and critical thinking to create insightful learning strategy that could determine their academic achievement.

Critical thinking skill has been defined as being aware of one's own thought process and what one is trying to do or achieve (Andolina, 2002). It involves reflecting upon what has happened and considering how to improve (Halpern, 2013). Elder and Paul (2010) noted that in the process of going from an unreflective thinking to an accomplished thinking, a person moves from being unaware of their own thinking to being highly in tune with their thoughts and always seeking to refine and clarify them. Also, reflective thinking is one form of critical thinking skill and this has led to confusion among many. The expansion of knowledge on this construct has made Hajrezahi, Roshani and Shahalizade (2015) to define critical thinking skill as a purposeful self-supervised judgment process that reflects the thinking process of interpretation, reasoning, analysis and evaluation. Suffice it to say that the acquisition of a variety of skills such as; emotional creativity skills, critical thinking skill, problem-solving skills, communication skills and collaborating skills could impact positively on academic achievement. This is because the 21st century environment requires a generation of critical thinkers who can solve problems and participate actively in making decisions on local and global issues that emerged through a thought process (Ampuero, Miranda, Delgado, & Weaver, 2015).

The thinking process is an activity that involves the work of the brain, feelings and human mind which can be seen through learning that focuses on student academic activities. In the process of critical thinking skill, individuals make connections between objects that are the main problem with the parts of knowledge they already have. Norris and Ennis (1989) reveals a set of stages that includes the process of critical thinking skill. The first is to clarify the issue by asking questions, the second is gather information about the issue, the third is starting the reasoning through various side or different point of view, the fifth is gathering information and conduct further analysis. This is an indication that 21st century learning requires everyone to learn and think, focusing on developing intellectual abilities so that they can adapt to changes in the learning environment. The skills are the ability to synthesize information, work as a team, manage broadly and complex, and be responsible to the community and environment (Balasubramanian, Jaykumar, &Fukey, 2014). With the observations of many scholars on emotional creativity skill and critical thinking's impact in shaping students' learning behaviour and learning outcomes, examining the nature of interactions between the two variables, and how they will jointly relate to academic achievement is one of the aims of the present study.

Academic achievement has been defined as scores obtained from examining the extent to which a person has acquired certain information or mastering certain skills, in the process of learning within the classroom (Meherns& Lehman, 2016). These scores characterized the academic outcome obtained from achievement test designed to assess a person's performance in a course of study which he/she has undergone. These can be regular performance feedback obtained by means of standardized test scores as presented by the approved examination board. Suffice it to say that many studies have examined the relationship between critical thinking skill and academic achievement. Though no known study has empirically examined the relationship between emotional creativity skills and critical thinking skill as they jointly related with academic achievement. This one of the gaps in the study which the present study is sought to cover. For example, the study of Erwin and Muhsin (2020) revealed that there is a link between the students' critical thinking skill and their cognitive realm in English test. In the study of Nur'azizah, Utani, and Hastuti (2020), it was recorded that a positive and significant relationship existed between students' critical thinking skill and academic achievement. The study of Taghva, Rezaei, Ghaderiand and Taghva (2014) revealed a significant relationship between critical thinking skill and students' academic achievement. Also, the study of Lopez-Gonzalez, and Oriol (2016) recorded that emotional creativity skills related with the activation of hope to achieve in the classroom.

In an effort towards scientific and technological advancement, the need to examine the important role of emotional creativity skills and critical thinking skill as the variables that may jointly relate with academic achievement is needed in the Nigerian academic literature. On this note, students' achievement scores in mathematics was used to represent academic achievement as it was correlated with emotional creativity skills and critical thinking skill. This has helped to understand how the independent variables jointly related to the students' academic achievement in mathematics. Mostly, Nigeria needs nothing short of good performance in mathematics at all levels of schooling. Unfortunately, students' abysmal performance in mathematics tasks mostly at the secondary school education has not been improved. This is because, the study of Agbim, Oriarewo and Owocha (2013) observed that the level of mathematics achievement of Nigerian students at all levels of education is very abysmal. Therefore examining how students' would manipulate their emotional creativity skills and critical thinking skill in connection with the learning of mathematics is empirically needed in the Nigerian educational research. Against this backdrop, the researchers examined emotional creativity skills and critical thinking skill as correlate of secondary school students' academic achievement in mathematics in Anambra State.

Research Questions

1. What is the relationship between students' emotional creativity skills and their academic achievement in mathematics?

2. What is the relationship between students' critical thinking skill and their academic achievement in mathematics?
3. What is the relationship between students' emotional creativity skills and their critical thinking?
4. What is the relationship among students' emotional creativity skills, critical thinking skill and their academic achievement in mathematics?

Hypotheses

1. There is no significant relationship between students' emotional creativity skills and their academic achievement in mathematics.
2. There is no significant relationship between students' critical thinking skill and their academic achievement in mathematics.
3. There is no significant relationship between students' emotional creativity skills and their critical thinking skill.
4. The relationship among students' emotional creativity skill, critical thinking skill and their academic achievement in mathematics is not significant.

Method

The researchers used a correlational research design and questionnaires to collect data for the study. The population of the study consisted of 21204 being the total number of students in senior Anambra State. A sample size of 660 questionnaires were administered to respondents for data analysis. Out of the 660 questionnaires administered to the respondents, 604 of them were found useful during data analysis. While 56 questionnaires were wrongly attended to by the respondents and this 8.5% of the total sample size. Multi-stage sampling procedure was used to select the respondents. The procedures for the selection were as follows: In stage one, three education zones were selected from the six education zones in the state by simple random sampling. Then in stage two, from each sampled education zone, one local government area (L.G.A) was selected through simple random sampling given a total of three (3) L.G.As. In stage three, from each sampled L.G.A, 10 schools were randomly selected giving a total of 30 schools. Then, from each of the schools, 22 SSII students were selected for the study using a table of simple random sampling. This gave a total number of 660 students used in the study.

The study adapted two standardized research questionnaires namely, Bradbery and Greaves (2005) Emotional Creativity Questionnaire (ECQ), and Abedi (1993) Critical Thinking Questionnaire (CTQ). The students' achievement scores in Mathematics from the state wide senior secondary one (SS1) promotion examination were obtained from the schools before the administration of the instruments.

The methods used for validating the instruments were face and construct validity by the three experts from the Faculty of Education, Nnamdi Azikiwe University Awka.

Cronbach's alpha reliability method was used to determine the internal consistency of the items in the research questions. The reliability coefficients of the clusters were obtained such as 0.73, for novelty, 0.69, for effectiveness, 0.71, for authenticity, 0.81, for preparedness, and 0.76 for critical thinking. The overall reliability coefficient was 0.74 which shows that the instrument was reliable and good for the study. According to guide lines by Haradhan, (2017), a coefficient of 0.6 is considered to be poor, 0.7 is acceptable while over 0.8 is good.

The Pearson Product Moment Correlation Coefficient was used in answering research questions 1 to 3 and testing of hypotheses 1 to 3. Multiple correlation was used to answer research question 4 and to test hypothesis 4 at 0.05 level of significance. The decision rule for null hypotheses with P-value higher than 0.05 was not rejected, while the hypotheses with P-value lower than 0.05 was rejected. The guide for interpretation of correlation results was done in accordance with Okoye (2015). Rough guide for interpreting correlation coefficient values when a large number of pairs of scores have been correlated. The decision rules to interpret the research questions were presented as follows: r = .00, no relationship; r = ± 0.0 to ± 0.2, very low relationship; r = ± 0.2 to ± 0.4, low relationship; r = ± 0.4 to ± 0.6, medium relationship; r = ± 0.6 to ± 0.8, high relationship; and r = ± 0.8 to ± 1.0, very high relationship.

Presentation of Results

Research Question 1: What is the relationship between students' emotional creativity skill and their academic achievement in mathematics?

Table 1: Pearson Correlation for the Relationship between Students' Emotional Creativity Skills and their Academic Achievement in Mathematics
(N= 604)

Variables	Academic achievement (r)	Remarks
Novelty	-.84	high negative relationship
Effectiveness	-.054	low negative relationship
Authenticity	-.056	low negative relationship
Preparedness	-.076	low negative relationship

The results in table 1. reveals a high negative relationship between students' novelty and their academic achievement in mathematics. A low negative relationship was recorded between students' effectiveness and their academic achievement in mathematics. The students' authenticity and their academic achievement in mathematics recorded a low

negative relationship. Then a low negative relationship was recorded between students preparedness and their academic achievement in mathematics.

Research Question 2: What is the relationship between students' critical thinking skill and their academic achievement in mathematics?

Table 2: ***Pearson Correlation for the Relationship between Students' Critical Thinking Skill and their Academic Achievement in Mathematics.***
(N= 604)

Variables	Academic achievement (r)	Remarks
Critical thinking skill	-.13	low negative relationship

The results in table 2 reveals a very low negative relationship between students' critical thinking skill and their academic achievement in mathematics.

Research Question 3: What is the relationship between students' emotional creativity skill and their critical thinking skill?

Table 3: ***Pearson Correlation for the Relationship between Students' Emotional Creativity Skills and their Critical Skill*** (N= 604)

Variables	Critical thinking skill (r)	Remarks
Novelty	.101	very low positive relationship
Effectiveness	.025	very low positive relationship
Authenticity	0.51	medium positive relationship
Preparedness	.035	very low positive relationship

The results in table 3 reveals a very low positive relationship between students' novelty and their critical thinking skill. A very low positive relationship was recorded between students' effectiveness and their critical thinking skill. The students' authenticity and their critical thinking skill recorded a medium positive relationship. Then a very low positive relationship was recorded between students preparedness and their critical thinking skill.

Research Question 4: The relationship among students' emotional creativity skill, critical thinking skill and their academic achievement in mathematics**.**

Table 4: ***ThePearson Multiple Correlation among Students' Emotional Creativity Skills, Critical Skill and their Academic Achievement in Mathematics.*** (N= 604)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.180[a]	.033	.024	8.77165

Table 4. reveals that the relationship among students' emotional creativity skill, critical thinking skill, and academic achievement in mathematics is .180[a]. While the standard error of the estimate is 8.77165.

Hypothesis 1: There is no significant relationship between students' emotional creativity skill and their academic achievement in mathematics.

Table 5: ***The test for Pearson Correlation of Significant Relationship between students' Emotional Creativity Skills and their Academic Achievement in Mathematics.***

(N = 604)

Variable	Mathematics achievement (r)	P-value	Remark
Novelty	-.84	.038	NS
Effectiveness	-.054	.185	NS
Authenticity	.-.056	.167	NS
Preparedness	.-.076	.063	NS

NS-Non-Significant correlation at 0.05 level of significance.

The results in table 5 reveals that there is a non significant relationship between students' novelty and their academic achievement in mathematics (r = -.84 < 0.05). There is no significant relationship between students' effectiveness and their academic achievement in mathematics (r = -.054 < 0.05). There is no significant relationship between students' authenticity and their academic achievement in mathematics (r = -.056<0.05). There is also a no significant relationship between students' preparedness and their academic achievement in mathematics (r = -. 076<0.05).

Hypothesis 2: There is no significant relationship between students' critical thinking skill and their academic achievement in mathematics.

Table 6: ***The test for Pearson Correlation of Significant Relationship between students' Critical Skill and their Academic Achievement in Mathematics.***

(N = 604)

Variable	Mathematics achievement (r)	P-value	Remark
Critical thinking	-.129	.002	S

NS-Non-Significant correlation at 0.05 level of significance.

The results in table 6 reveals that there is a significant relationship between students' critical thinking skill and their academic achievement in mathematics (r = -.129 > 0.05).

Hypothesis 3: There is no significant relationship between students' emotional creativity skill and their critical thinking skill.

Table 7: ***The test for Pearson Correlation of Significant Relationship between Students' Emotional Creativity Skills and their Critical Skill.***
(N = 604)

Variable	Critical thinking (r)	P-value	Remark
Novelty	.101	.013	S
Effectiveness	.025	.535	NS
Authenticity	.051	.211	NS
Preparedness	.035	.389	NS

NS-Non-Significant correlation at 0.05 level of significance
The results in table 7 reveals that there is a significant relationship between students' novelty and their critical thinking skill (r = .105 >0.05). There is no significant relationship between students' effectiveness and their critical thinking skill (r = .025< 0.05). There is a significant relationship between students' authenticity and their critical thinking skill (r = .051< 0.05). There is also a no significant relationship between students' and their critical thinking skill (r = -. 035< 0.05).

Table 8: Relationship Among Students' Emotional Creativity, Critical Thinking and their Academic Achievement in Mathematics.
Table 8: The test for *Pearson Multiple Correlation among Students' Emotional Creativity Skills, Critical Skill and Academic Achievement in Mathematics.*
(N =604)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R. Square Change	F.Change	df1	df2	Sig.F Change

1	.180[a]	.033	.24	8.77165	.033	4.018	5	598	.001

The table 8 shows a multiple correlation run to examine the relationship among students' emotional creativity skills, critical thinking skill and academic achievement. The result in the table also reveals that the relationship among these variables is positively significant (r = .180 < .001). Therefore, the null hypothesis was rejected it was concluded that the relationship among students' emotional creativity skills, critical thinking and academic achievement is significantly related.

Discussion of Findings

Finding in table one reveals a high negative relationship between students' novelty and their academic achievement in mathematics. A medium negative relationship was recorded between students' effectiveness and their academic achievement in mathematics. The students' authenticity and their academic achievement in mathematics recorded a medium negative relationship. Then a medium negative relationship was recorded between students preparedness and their academic achievement in mathematics. Then, these findings does not significantly correlated academic achievement in mathematics. This does not support the study of Lopez-Gonzalez, and Oriol (2016) which recorded that emotional creativity skills related with the activation of hope to achieve in the classroom.

Finding in table two reveals a very low negative relationship between students' critical thinking skill and their academic achievement in mathematics. Also, there is a significant relationship between students' critical thinking skill and their academic achievement in mathematics. This supported the study of Erwin and Muhsin (2020) revealed that there is a link between the students' critical thinking skill and their cognitive realm in English test. This does not support the study of Nur'azizah, Utani, and Hastuti (2020), at the relationship aspect as this recorded that a positive relationship between critical thinking and academic achievement, it supported the study at hypothesis testing as the two studies recorded significant relationship between students' critical thinking and academic achievement. The present study support the study of Taghva, Rezaei, Ghaderiand and Taghva (2014) that revealed a significant relationship between critical thinking skill and students' academic achievement.

Finding in table three reveals three reveals a very low positive relationship between students' novelty and their critical thinking skill. A very low positive relationship was recorded between students' effectiveness and their critical thinking skill. The students' authenticity and their critical thinking skill recorded a medium positive relationship. Then a very low positive relationship was recorded between students preparedness and their critical thinking skill. Also, results in further recorded a significant relationship between students' novelty and their critical thinking skill. There is no significant relationship

between students' effectiveness and their critical thinking skill. There is a significant relationship between students' authenticity and their critical thinking skill. There is also a no significant relationship between students' and their critical thinking skill.

Finding in table four reveals three reveals a that the relationship among students' emotional creativity skill, critical thinking skill, and academic achievement is positively significant. Conclusively, the null hypothesis was rejected, then it was concluded that the relationship among students' emotional creativity skill, critical thinking skill and academic achievement in mathematics is significantly related.

Conclusion

The negative and non significant relationship that existed between variables of study in determining academic achievement is surprising. This indicates an anomaly in the secondary school curriculum and the method of instructional delivery. Such a situation negates the objective of the secondary school system which is expected to produce students that will eke out a living in a harsh national environment. Therefore, emotional creativity skill and critical thinking skill are required for academic achievement which the 21st century secondary schools system probably does not measure nor emphasis on.

Recommendations

Based on the findings, the following recommendations were made.

1 Due to the poor and significant results among the three variables in the study, it is recommended that emotional creativity skill should be taught, facilitated and assessed in the educational system.
2 Teachers have to be trained to know and adopt methods that foster the understanding of values of emotional creativity skill and critical thing skill by nurturing creativity-friendly school environment.
3 It is significant that the school authorities should manage the students and teachers in a way that encourages the culture of emotional creativity skill and critical thinking skill as these could have a link to improve academic achievement.
4 The education stakeholders should design new learning strategies in a way that will lead to the development of emotional creativity skill and critical thinking skill so as to produce students that will form a productive social learning network.
5 Emotional creativity skill literacy, which could lead to the development of critical thinking should be considered as one of the most important issues that need to be addressed in the classroom instructional delivery.

References

Ampuero, Miranda, C. E., Delgalo, I. E., Goyen, S. & Weaver, S. (2015). Empathy and critical thinking: Primary students are solving local environmental problems

through outdoor learning. *Journal of Adventure Education and Outdoor Learning, 15,* 64-78.

Andolian, M. (2002. *Practical guide to critical thinking.* Albany NY: Dclmar.

Averrill, J. R. & Nunley, E. (2010). Neurosis: The dark side of emotional creativity, in the Dark side of creativity. In D. Cropley, A., Cropley, J. Kaufman & M. Runco, 255-296. New York: Cambridge University Press.

Averrill, J. R. (2005). Emotions as mediators and predictors of creativity. *In creativity across Domain:* Faces of the Muse, in E. J. Kaufman, & J. Baer. (eds.). Mahwah, NJ: Erlbaum, 225-243.

Averrill, J. R. (2009). Emotional creativity: Toward spiritualizing the passions, in Oxford *Handbook of positive psychology,* in S.J. Lopez, & C. R. Snyder (eds.). New York,: Oxford University Press.

Averrill, J. R. (2013). Individual differences in emotional creativity: Structure and correlates. *Journal of Personality Psychology, 67,* 331-371.

Balasubramanian, K. Jaykumar, V., &Fukey, L.N (2014). A study on student performance towards the use of Edmondo as a learning platform to create responsible learning environment. *Procedia Social and Behavioural Sciences, 144,* 416-422.

Bradbery, T. & Greaves, J. (2005). Emotional creativity questionnaire. Qazvin Literacy Publication. In Persian.

D'Mello, S. & Grasser, A. (2012). Dynamics of affective states during complex learning. *Learning Instruction, 22,* 145-157.

Elder, L., & Paul, R. (2010). Critical thinking development: A stage theory.

Erwin, H. & Muhsin, M. A. (2020). Critical thinking in cognitive domain: Exploring assessment of English teaching at pandemic period of covid-19. *Journal of English Education Society, 5,* 2 1-4.

Gross, J. J. (3013). Emotional regulation: Taking stock and moving forward. *Emotion, 13*, 359.

Hajerzayi, B., Roshani, A. H., &Shahalizade, M. (2015). Effectiveness of blended learning on critical thinking skills of nursing students. *Nurse Education, 4* (1), 49-59.

Halpern, D. (2013). *Thought and knowledge: An introduction to critical thinking*. New York: Psychology Press.

Haradhan, M. (2017). Two criteria for good measurements in research: Validity and reliability. *Annals of Spiru Haret University, 17*(3), 58-82.

Lopez-Gonzalez, L., & Oriol, X. (2016). The relationship between emotional competence, classroom climate and school achievement in high school students. *Journal of Cultural Education, 28,* 130-156.

Mehrens, W. A., & Lehmann, I. J. (2016). *Measurement and evaluation in education and psychology.* New York Holt, Rinhart and Winston.

Norris, S. E., & Ennis, R. R. (1989). *Evaluating critical thinking and others* (ed.)

Nuriazizali, R., Utami, B, &Hastuti, B. (2020). The relationship between critical thinking skills and students' learning motivation with students' achievement about buffer solution in eleventh grade science program. *Journal of Physics* : Conference Series.

Okoye, R. (2015). *Educational and psychological measurement and evaluation (second edition):*Awka, Erudition Publisher.

Peng, M.C., Wang, G.C., Cheng, J.L., Cheng, M.H., Bai, H.H., Li, S.G., Li, G.P., Cai, Y., Wang, J.Q., & Yin, L. (2004). Reliability and validity test of critical thinking ability measurement table. *Chinese Journal of Nursing,39*(9), 644-647.

Taghva, F., Rezaei, N., Ghaderi, J., &Taghva, R. (2014). Studying the relationship between critical thinking skills and students' educational achievement: Eghlid University as case study. *International Letters of Social and Humanities Sciences, 25,* 18-25.