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The Relationship Between Students' Creativity and Emotional Intelligence in Technical and Vocational Colleges

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Abstract: The Present Study is carried out in an attempt to investigate the relationship between students' creativity and their emotional intelligence in Islamic Azad University which is conducted on the basis of descriptive method, the correlation. The population is all the students in Technical and Vocational Sama Colleges of Islamic Azad University in regions 12 and 8 who comprise 16830 and the sample of the study are 375 participants who are selected according to the stratified random sampling on the basis of Morgan's Formula for determining sample size. The tools for gathering data are two questionnaires, Creativity questionnaire (Randsepp) and Emotional Intelligence questionnaire (petrides and Furnham). The obtained results indicates that with the correlation of 99%, there is a significant relationship between the students' creativity and their emotional intelligence in their understanding of their own and others' emotions, emotional control, social skills and their optimism.

Key words: Creativity % Emotional intelligence % Emotional understanding % Emotional control % Social skills % Optimism

INTRODUCTION

The human being all through his life has never been apart from thinking and always tried to decide with his correct power of thinking to solve the problems and achieve growth and eminency. Therefore, all human progress and successes depend on his fruitful, dynamic and effective mind. The most complicated and highest manifestation of human thought is in his creative thinking. Creativity means creating a new and appropriate design with high value. In other words, creativity is using the mental abilities to create a new idea or concept [1].

Santork (2004) defines creativity as the ability to think about the new and unusual ways to achieve unique solutions to the problems. Likewise, Lotanez (1992) considers creativity as creating an integration of individuals' or groups' innovative ideas and approaches in a new method [2].

Guilford (1982) brings up the most comprehensive theory of creativity and indicates that all the human's intellectual abilities cannot be summarized only in one aspect which may be called intelligence or something like that. He found that the human mental power can be divided in 150 separate factors each of which can be measured by itself. In his view, some of these features such as the flowing of the stream of consciousness, intellectual flexibility, originality of thoughts and decision making directly affect the emergence of creativity. According to him, thinking can be seen as a process of rearranging or changing the existing data acquired in the long-term memory and creativity is seen as one of the main aspects of thinking. These three features, according to Guilford, can define the divergent and convergent ways of thinking. Regarding the people who are thinking divergently, it can be seen that their way of thinking and actions are different from others; they go far away from the habits and customs and try to apply new and creative methods. Conversely, those with convergent way of thinking who don't have these characteristics follow and observe the customs and habits in their thoughts and actions. Thus, divergent thinking means being away from the common points of same traditions and social customs and convergent thinking is getting closer to the community customs and traditions [3].

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On the other hand, Creativity is also defined not only as a matter of ability but also it is seen as a "decision regarding" and "an attitude toward life" which can be enhanced by the following six interrelated resources:

- Intellectual abilities which means the ability to create new ideas, analyze them and sell them.
- Knowledge which refers to the knowledge base used in making decisions.
- Styles of thinking.
- Personality which contains the notions of self-efficacy, tolerance, taking risks and being willing to overcome the problems.
- Motivation which refers to the passion for work.
- Environment which should be supportive [4].

Guilford's view with respect to creativity is defined on the basis of divergent way of thinking. According to him, divergent way of thinking includes:

- Fluid or flowing: production of ideas in a specific given time, flexibility, creation of varied and unusual ideas and different solutions to a problem.
- Originality: applying new and unique ideas.
- Development: producing the details and specifying the implications and applications
- Composition: putting together disparate ideas.
- Analysis: breaking the symbolic structures into their elements, organizing and changing the designs, functions and applications.
- Complexity: having the ability to deal with a number of different and related ideas simultaneously [3].

The other variable in the present study is the emotional intelligence. This concept was introduced for the first time by Peter Solovey and John Mayer (1990) who believe that emotional intelligence is kind of emotional information processing that includes proper evaluation of emotions of oneself and others, the appropriate expression of emotions and adaptive regulation of emotions [5].

In other words, Mayer and Solovey [6] regard the emotional intelligence as a collection of abilities that are believed to contribute the individuals to know and understand their own and others' feelings and emotions and eventually be able to manage and control their emotions. They believe that emotional intelligence lead the individuals to think more creatively and let them use their emotions and excitement in solving the problems. Also, they view emotional intelligence as a kind of social intelligence which involves the ability to monitor one's own and others' emotions, distinguish them from each other and use the information to guide the thinking and personal actions.

Torkfar *et al*. [7], moreover, defines emotional intelligence as a kind of self-understanding which can be used in the process of making decisions for a good life, ability for controlling the mental pulsed host.

Furthermore, Bar-on [8] in his approach, describes emotional intelligence as a concept which has broader interpretation. His emotional intelligence is a kind of non-cognitive abilities, knowledge and competencies that can enable the person to adapt himself to various life circumstances successfully. Bar-on has specified five areas of competencies which can be equivalent to the capacities of emotional intelligence 1) Intrapersonal skills which includes emotional self-awareness, self-expression, self-regulation, self-actualization and independency 2) Interpersonal skills which comprises interpersonal relationships, responsibility, social commitment and empathy 3) adaptability which includes problem-solving, realism and flexibility 4) Stress management which contains the stress tolerance and the ability to control the impulses 5) General mood which includes happiness and optimism.

What is more is that Mayer [9] analyzed the emotional intelligence in gifted learners and they concluded that gifted learners with higher emotional intelligence have more abilities in recognizing their own and others' emotions and they simply use this recognition in controlling their behaviors and resisting peer pressure which in turn lead to higher social skills.

Finally, Golman (1995) appoints that emotional intelligence consists of abilities such as stimulating oneself, resisting in the face of frustration, controlling impulses and delaying the joys, setting the mood, empathizing and being hopeful. He also defines emotional intelligence as having the capacity to recognize one's and others' emotions, stimulating oneself and managing the emotions and excitements in different relationships with others properly [10, 11].

Reviewing the literature of empirical researches is not limited to the relationship between emotional intelligence and creativity in the world of education and it also pictures the great impact of emotional intelligence and creativity on each other in other fields. In the following paragraphs some of studies carried out in this regard are reviewed and then the studies with respect to the relationship between creativity and emotional intelligence will be discussed.

Firstly in a study [12], it was attempted to examine the relationship between emotional intelligence and locus of control. Also, the relationship between achievement motive and emotional intelligence was analyzed. The obtained results revealed that there is a meaningful relationship between locus of control and emotional intelligence among nurses. In other words, by decrease of emotional intelligence, their locus of control increases. However, in this research, no significant relationship was found between achievement motives and emotional intelligence.

The relationship between Emotional intelligence and different thinking styles is also emphasized in the world of SLA and applied linguistics. In a research conducted by Alavinia (2012), it was shown that there is a linkage between emotional intelligence and learners' mentalities. It was concluded that by manipulating the thinking styles in an appropriate manner can heighten the learners' level of emotional intelligence [13].

Moreover, Hassanzade *et al*. [14], in their study, emphasize the significant role of the emotional intelligence in predicting successful career and they analyzed the principals' emotional intelligence in different stages and with different experiences and with respect to their gender. It was shown that there is no difference in principals' emotional intelligence in different stages and with different experiences. However, there is a difference in principal's emotional intelligence regarding their gender. Also, it was suggested that improving and focusing on emotional intelligence would be wise enough which will lead to success both among workers and managers in their personal life and their workplace.

In addition, in another study the relationship between creative activities and expressing feelings was highlighted. In a study run by Mahmud *et al*., (2011), it was mentioned that most of the children of divorce suffer psychologically and socially and they need help to express their negative feelings which are hidden and are manifested in negative behaviors as "mistaken goals". It was revealed that creative interventions such as art therapy and play therapy can make children of divorce express their hidden emotions and rebuild their interaction skills with their peers. As the results are evident, creativity and creative activities can enhance expressing emotions and social skills [15].

Some studies also conducted to analyze the relationship between creativity and emotional intelligence in education as what will be discussed in the following paragraphs.

Hashemi [16] in her study analyzed the relationship between emotional intelligence, emotional creativity and creativity in students and the obtained results indicated that there was no significant relationship between emotional intelligence and their creativity among the students of different majors. However, with respect to emotional creativity, there was a significant difference among the students of art department, literature department and science department. The correlation analysis and results also revealed a weak correlation between emotional intelligence and emotional creativity and the lack of correlation between emotional intelligence and creativity. Moreover, there was a moderate correlation between emotional creativity and creativity.

In addition, Noferesti and Hosseinaee (2009) in their study indicated that despite all theoretical viewpoints, there is a weak correlation between emotional intelligence and creativity (r=0278). It seems the reason for this weak correlation is the kind of tools applied to measure emotional intelligence and creativity. The current standard scales of emotional intelligence measure this variable on the basis of convergent thinking which as a result correlates weakly with creativity that is a kind of divergent thinking. Therefore, it is concluded that in order to study the relationship between emotional intelligence and creativity, some scales are to be made that can determine this relationship on the basis of divergent thinking [17].

In another research, Zenasni and Lubert [18] studied the relationship between the emotional intelligence and creativity and they indicated that there is a negative relationship between the ability of emotion recognitions in face and image and the ability to create new ideas. Gustello and Hanson [19] and Schutte *et al*. [20], also, didn't observe any significant relationship between emotional intelligence and creativity.

However, in contrast to the studies above which shows a negative or no relationship between these two variables, Chan [21] analyzed the relationship between emotional intelligence and the amount of creativity and showed that there is a significant and positive relationship between perceived creativity in children and their emotional intelligence. Also, in this study, the participants' gender and age differences were studied and the results demonstrated that there wasn't any change in the creativity and emotional intelligence scores regarding the gender and age.

Rahnama and Abdolmaleki, (2007) also investigated the relationship between emotional intelligence and creativity among Shahed University students. The results

revealed that there is a positive and meaningful relationship between students' academic achievements (their average) and seven predicting variables which are fluidity, flexibility, expansion, innovation, spontaneous, self-awareness and self-control at the level of 0.01. The students' academic achievements (their average) are correlated with fluidity at the most (0.344) and with self-control at the least (0.105). However, there was not a meaningful relationship between academic achievements and social skills and empathy [22].

Mirkamali and Khorshidi (2009), in addition, in studying the effective factors in developing creativity among elementary students in Gilan Province revealed that 9 factors of Creativity and content education, culture and social relations, teachers, learning environment, student persistence, governance, human relations, encouraging students, parents and teaching methods are effective in fostering students' creativity [23].

As the literature shows, many studies are conducted theoretically and empirically with respect to the relationship between creativity and emotional intelligence and a few of which are mentioned here. The results are controversial as some of them reveal a positive relationship and some indicates a negative or no relationship between creativity and emotional intelligence. Also, all the relations and studies are conducted by using various samples. Subsequently, the results are hardly comparable and the need for more studies to determine the relationship between these two variables in different contexts with different samples is always felt. With this view, this study is conducted to determine the relationship between students' creativity and emotional intelligence in Technical and Vocational Colleges.

MATERIALS AND METHODS

This research is conducted to study the relationship between students' creativity and their emotional intelligence which is run on the basis of descriptive method, the correlation. The population is all the students in Sama Technical and Vocational Colleges of Islamic Azad University in regions 12 and 8 who comprise 16830 and the sample of the study are 375 participants who are selected according to the stratified random sampling on the basis of Morgan's Formula for determining sample size. The tools for gathering data are two questionnaires, Creativity questionnaire (Randsepp) and Emotional Intelligence questionnaire (Petrides and Furnham).

- Randsepp Creativity Questionnaire consists of 50 statements on the basis of Likert Scale and the respondents should express their comments in the range of 5 scales of " totally agree, agree, no idea, disagree, totally disagree" after reading the statements.

For the statements 1, 2, 3, 5, 8, 13, 14, 16, 17, 19, 21, 22, 23, 25, 26, 27, 28, 31, 32, 35, 36, 41, 42, 43, 44, 45.46, 49, the following scores for each scale are specified:

- Totally agree: -2
- Agree: -1
- No idea: 0
- Disagree: +1
- Totally disagree: +2

Also, for the statements 4, 6, 7, 9, 10, 11, 12, 15, 18, 20, 24, 29, 30, 33, 34, 37, 38, 39, 40, 47, 48, 50 the following scores for each scale are specified:

- Totally agree: +2
- Agree:+1
- No idea: 0
- Disagree: -1
- Totally disagree: -2

If the calculated score is from 80 to 100, the participant is very creative, if the score will be from 60 to 79, the participant's creativity is high moderate and if the score is from 40 to 59, the person's creativity is low moderate. Also, if the score is from 20 to 39, the participant's creativity is low and if it is lower than 20 or a negative score, the participant is considered as non-creative.

- The Emotional Intelligence Questionnaire, Petrides and Furnham (2002) contains four scales of understanding one's own and others' emotions (Questions 2, 8, 10, 17, 22, 30), controlling the emotions (Questions 1, 5, 7, 14, 15, 16, 18, 19, 25, 26), social skills (Questions 6, 11, 13, 21, 28, 29) and optimism (Questions 3, 4, 9, 12, 20, 23, 24, 27) which are all together 30 questions of five-choices according to Likert Scale. For analyzing the data, descriptive statistics is used which includes frequency, percentage, mean and standard deviation. Furthermore, to determine the relationship between students' creativity and their emotional intelligence, Pearson Correlation coefficients and their coefficients of determination are applied.

RESULTS AND DISCUSSION

The First Hypothesis: There is a significant relationship between the level of creativity and the students' ability to understand their own and others emotions in Islamic Azad University.

The results in Table (1) illustrates that the correlation coefficients between the two variables of creativity and students' emotional understanding - one aspect of emotional intelligence - is 0.626 which indicates that by increasing the students' level of creativity, their emotional understanding will also be enhanced and there is a significant relationship between these two variables with the 0.99 % of reliability (P=0/00< 0/001). Thus, it can be concluded that there is a positive and meaningful relationship between students' creativity and their emotional understanding. Moreover, the coefficient of determination (R^2) of creativity on emotional understanding is 0/39 which means that creativity explains 39 percent of the changes related to students' emotional understanding which is one aspect of emotional intelligence.

The Second Hypothesis: There is a significant relationship between the level of creativity and the students' ability to control their emotions in Islamic Azad University.

The results in Table (2) illustrates that the correlation coefficients between the two variables of creativity and students' controlling their emotions - one aspect of emotional intelligence - is 0/585 which indicates that by increasing the students' level of creativity, they can control their emotions better and there is a significant relationship between these two variables with the 0.99 % of reliability (P=0/00< 0/001). Thus, it can be concluded that there is a positive and meaningful relationship between students' creativity and controlling their emotions. Moreover, the coefficient of determination (R^2) of creativity on controlling emotions is 0/34 which means that creativity explains 34 % of the changes related to students' controlling their emotions which is one aspect of emotional intelligence.

The Third Hypothesis: There is a significant relationship between the level of creativity and the students' social skills in Islamic Azad University.

The results in Table (3) illustrates that the correlation coefficients between the two variables of creativity and students' social skills - one aspect of emotional intelligence - is 0/687 which indicates that by increasing the students' level of creativity, their social skills will also be enhanced and there is a significant relationship between these two variables with the 0.99 % of reliability (P=0/00< 0/001). Thus, it can be concluded that there is a positive and meaningful relationship between students' creativity and their social skills. Moreover, the coefficient of determination (R^2) of creativity on students' social skills is 0/47 which means that creativity explains 47 % of the changes related to students' social skill which is one aspect of emotional intelligence.

The Fourth Hypothesis: There is a significant relationship between the level of creativity and the students' Optimism in Islamic Azad University.

The results in Table (4) illustrates that the correlation coefficients between the two variables of creativity and students' optimism - one aspect of emotional intelligence - is 0/592 which indicates that by increasing the students' level of creativity, their optimism will also be enhanced and there is a significant relationship between these two variables with the 0.99 % of reliability (P=0/00< 0/001). Thus, it can be concluded that there is a positive and meaningful relationship between students' creativity and their optimism. Moreover, the coefficient of determination (R^2) of creativity on students' optimism is 0/35 which means that creativity explains 35 % of the changes related to students' optimism which is one aspect of emotional intelligence.

The Fifth Hypothesis: There is a significant relationship between all the emotional intelligence variables among the students in Islamic Azad University.

The results in Table (5) indicate the correlation matrix between variables of students' emotional intelligence. Also, the findings suggest a positive and significant relationship between students' level of creativity and their emotional intelligence. Furthermore, the results in Table (5) demonstrate that there is a meaningful and positive relationship between all the variables of emotional intelligence. In other words, it can be concluded that by increasing the students' understanding of the emotions, their social skills and optimism will be raised. Also, the students can control their emotions better. Moreover, by increasing the students' ability to control their emotions, their emotional understanding, social skills and optimism will be enhanced and by raising students' social skills, the students' understanding of emotions, optimism will be increased and they can control their emotions better and finally by increasing the students' optimism, their understanding of the emotions, social skills will be increased and they can control their emotions better.

Table 1: Results of Pearson Correlation Coefficient test regarding the relationship between Students' level of creativity and their emotional understanding

Variables		Number (N)	Correlation Coefficient (R)	Coefficient of Determination (R^2)	The Significance Level (P)
1.	Creativity	375	626/0	39/0	00/0
2.	Understanding The Emotions				

Table 2: Results of Pearson Correlation Coefficient test regarding the relationship between Students' level of creativity and controlling their emotions

Variables		Number (N)	Correlation Coefficient (R)	Coefficient of Determination (R^2)	The Significance Level (P)
1.	Creativity	375	585/0	34/0	00/0
2.	Controlling the Emotions				

Table 3: Results of Pearson Correlation Coefficient test regarding the relationship between Students' level of creativity and their social skills

Variables		Number (N)	Correlation Coefficient (R)	Coefficient of Determination (R^2)	The Significance Level (P)
1.	Creativity	375	592/0	35/0	00/0
2.	Optimism				

Table 4: Results of Pearson Correlation Coefficient test regarding the relationship between Students' level of creativity and their optimism

Variables	Creativity	Emotional Understanding	Controlling Emotions	Social Skills	Optimism
Creativity	1	626/0	585/0	687/0	592/0
Emotional Understanding	626/0	1	764/0	813/0	836/0
Controlling Emotions	585/0	764/0	1	762/0	702/0
Social Skills	687/0	813/0	762/0	1	810/0
Optimism	592/0	836/0	702/0	810/0	1

Table 5: Correlation Matrix between variables of students' emotional intelligence

Variables		Number (N)	Correlation Coefficient (R)	Coefficient of Determination (R^2)	The Significance Level (P)
1.	Creativity	375	687/0	47/0	00/0
2.	Social Skills				

DISCUSSION AND CONCLUSION

The findings in the present study demonstrate that there is a meaningful and positive relationship between students' level of creativity and their emotional intelligence in their understanding of their own and others' emotions, in controlling their emotions, in their social skills and their optimism. The obtained result goes on the same track with the previous studies such as Mayer, Caruso and Solovey, (2001) who revealed that learners with higher emotional intelligence have more abilities in knowing their own and others' emotions and using this recognition in managing their behaviors. Also, they have more abilities in resisting the peer pressure all of which will lead to social skills increasing. Chan, (2005), furthermore, in his investigation of the relationship between emotional intelligence and creativity showed that there is a significant and positive relationship between the perceived creativity by children and their emotional intelligence. Also, the results of the current study can go along with the results obtained by Rahnama and Abdolmaleki [22] and Mirkamali and Khorshidi [23] who tried to underline the relationship between creativity and emotional intelligence in their research.

This positive relationship between creativity and emotional intelligence is not only observed in the world of education but it is also seen in other fields. As studies conducted by Mahmud *et al*. [15] Alavinia [13] Hassanzade *et al*. [14] and Esfahani *et al*. [12] reveals, emotional intelligence plays a crucial role in workplaces and other contexts with other samples.

However, there is a contrast between the gained results in the present study and some studies conducted previously in this regard. For instance, Hashemi, (2009) in his study concluded that there isn't any meaningful difference among students from different majors of study in emotional intelligence, emotional creativity and their creativity. Moreover, Zenasni and Lubert, (2009) revealed a negative relationship between the ability of emotion

recognitions in face and image and the ability to create new ideas. Finally, Gustello and Hanson, (2004) and Schutte *et al*., (1998), however, didn't observe any significant relationship between emotional intelligence and creativity. Also, Noferesti and Hosseinaee [17] revealed that despite all the theoretical viewpoints, there is a weak relationship between creativity and emotional intelligence because of the measurement scales that are used to measure creativity and emotional intelligence, they believed that some scales on the basis of divergent thinking are to be created for measuring the emotional intelligence so that its relationship with creativity which is a kind of divergent thinking can be easily analyzed which can lead to results with higher reliabilities.

These contradictory results among various research highlights the necessity of conducting more studies in this regard which can clear the outlook of the relationship between these two variables more and may pave the way for improving the level of education, productivity and skills in different aspects of life among people.

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