

## Studying the Relationship of Creative thinking, Cultural intelligence with Academic Achievement of Shahr Babak Grade Three Female High school Students

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### ABSTRACT

Possessing of cultural intelligence is a vital and important need in such a world that crossing the borders is easy and facilitated. Teachers who understand the value of cultural intelligence and its differences and varieties, can suggest suitable educational guidelines for reaching to education and development organization. The purpose of current study is validating the concept of cultural intelligence and advancing its idea and relationship with students' creative thinking and its practical application for their academic achievement. This is applicative, descriptive and correlative study. The statistical society involves all 598 Sharbabak grade three female high school students and the sample size is considered 234 students by Morgan table. Research tools include cultural intelligence standard questionnaire of Ang & Van Dyne (2004) and creative thinking questionnaire of Abedi that their Cronbach alphas are 0.79 and 0.89, respectively. Students' average degree has been used as academic achievement index. Analyzing data has been done by descriptive statistic, independent T-test, Pearson and multi regression of correlative coefficient and SPSS 20 software. The results show there is no significant and positive relationship between cultural intelligence and academic achievement, but there is significant and positive relationship between creative thinking and academic achievement.

**KEY WORDS:** cultural intelligence, creative thinking, high school.

### INTRODUCTION

Nowadays organizations are faced to changes and any alteration needs flexible and adaptor managers and staffs. Meanwhile social interaction is suitable method for managers to direct organizational changes. If managers can interact effectively and influentially with their human resources, in future have more competitive advantage. Cultural intelligence has an important role in relationship with manager and organizational members who have different cultures and customs. Cultural intelligence is a new domain which has various relations with different work places. It permits people how to think and respond to behavioral models and decreases communicational obstacles and managing cultural variety. Basically managing such differences needs cognition and intelligence that is called Cultural intelligence. Cultural intelligence quad factors (ultra cognition, cognition, motivation and behavioral factors) have provided a model for measuring the amount of effective interaction in various cultural work places. (Peterson, 2004)

On the other hand, we are at the beginning of new century and it seems we cannot measure people achievement and intelligence as before. New intelligence and creativity theories are defined and gradually replaced older ones. We focus not only on students' logical ability but also their creativity, emotions and interpersonal tasks. Goleman (1995) believes intelligence quantity itself cannot show the degree of success. Emotional intelligence, social intelligence and chance have a great role on every person's success. Robinson (2006) states creativity and creative thinking are as important as literacy and must be considered, too. (Hematti, 1387) creative thinking applications is not limited to just science and art, but is useful in every field of people live. Most of people believe creativity transfigures just in art but it is not true completely. Creativity remains as a secret in different fields such as science, literature, music, painting, etc. Psychologies pay more attention to this field. So, creativity can be transfigured in every courses, fields and all educational degrees and even different ages, although its effect on university students and younger children is more important. (Rahnam & Maleki, 2009) Therefore the aim of current study is determining the relationship between cultural intelligence and creative thinking and academic achievement of third grade high school students.

#### Research theoretical framework

##### Intelligence

From Nasel point of view (2004) intelligence involves solving problem behavior, in corresponding way, which follows practical purposes in a way that increase personal corresponding. Corresponding behaviors decrease internal contrasts. The definition requests overcoming obstacles and saving problem to reach purposes. Some people believe that intelligence as inter personal characteristic is transferred from one generation to other and some other shows it is affected by environment. (Plomin & Spinath, 2004)

### **Cultural intelligence**

Concept of cultural intelligence has been introduced primarily by Early & Ang from London business school. They have defined cultural intelligence as the ability of learning new models in cultural interactions and providing correct behavioral respondent to those models. Then American, English and Asian consortium of professors have determined cultural intelligence as systematic evaluation of personal capability face to people from different cultures. Some know intelligence as multi dimensional qualification that includes cultural knowledge thoughtful action and a list of personal tasks. (Thomas & Inkson, 2005) Early & Ang have introduced cultural intelligence as independent structure from culture which is implicated in special circumstance. (Crown, 2008) such kind of intelligence improves the understanding of cultural interactions (Early, 2002). Regarding different definitions, it can be said cultural intelligence is the ability of person for doing his duty effectively in various cultural positions. (Mac nab, 2008), (Ang & Andrew, 2008)

### **Creative thinking**

Facioni (2006) knows creative thinking as a kind of thinking that leads to new approaches, attitudes, perspectives and new ways for understanding things and situations. Hennessey & Amabile (2010) show that creativity is concept of personal differences which tries to explain why some people have higher potentials to provide new solutions. Creativity guides us to change our thinking methods and act as driving power that directs culture. On other statement creative thinking has been introduced as a kind of thinking which its main characteristic is the ability of ignoring unnecessary hypothesis and providing genius thoughts. (Amir hosseini, 2009) As gaining correct habits are occurred in first years of education systems and manifest during different people life periods, Studying creative thinking in primary school becomes important. (Yosefi, Mokhayer, 2003)

### **Creative thinking phases**

To determine probable solutions for having creative thinking is the first step and next step will be emphasizing on hypotheses, exams and estimations. Torrens defines scientific discovery and make connection as the last phase of creative thinking. (Dhal, 2012)

Creative thinking determinants are:

**Being flowing:** the ability of producing too many thoughts at certain time

**Extension:** Considering the details of an idea and thought.

**Originality:** the ability of making innovative and new thought.

**Flexibility:** the ability of changing thoughts and variety of ideas. (Sharifi, 2012)

### **Academic achievement**

Khoynejad determines academic achievement as the amount of a student can reach to educational aims in especial course. Shelvery knows it as person institutional learning that can be measured by different exams such as mathematic and scientific tests. (Hanifi, 2010) Webster M explains academic achievement as quality and quantity of student's activity. (Sousa & Amor, 2010) Any achievement in different field of life such as sport, education, industry, occupation is important both for children and people around them. In formal education system, academic achievement is the main criterion for measuring education system in reaching to academic purposes. (Ademola et al, 2010) Studying influential factors on students' academic achievement is complicated matter as it is a multidimensional element and related to intelligence, motivation, personal characteristics, control position, family sentimental situation, family social- economical position, teaching method, class sentimental circumstance and success sense at exam. These factors and variables are such inter-related and have interactions that determining each role and share is problematic. (La'li, 2009) These factors may decrease academic achievement or increase it through intelligence ability, social and emotional maturity.

### **Research Back ground**

1. Studying the relationship between cultural intelligence and staff job results (emphasizing on leadership role) and studying the relationship between managers' cultural intelligence and their staff are the purpose of current survey. The sample size is 215 adult American employees in 57 team works (105 male and 110 female employees) who are worked in western America companies and have apparent cultural differences. The results show cultural intelligence has positive effect on employees' satisfaction and their function. It also indicates if the employees have more cultural intelligence then the managers are more satisfied. (Kim, 2009)

2. In general cultural intelligence causes managers to understand variety of emotional intelligence in different cultures and determine suitable emotional intelligence for each culture. They show two German and Netherland markets. Their analysis includes general information about cultures (values, job cognition, trade contracts) and special industrial factors (growth rate, competition level and government interventions). Considering cultural differences, Zakak et al states it is better American insurance companies follow local strategies, offer complicated products and employ local people, in this way they can provide suitable facilities.

3. The effect of emotional intelligence and cultural intelligence in success of leaders: imaging the effect of emotional intelligence and cultural intelligence in success of leaders, we have studied 50 managers from different Esfahan industrial and service fields and according to them Pearson correlative coefficient has been confirmed.

4. Niaz& Saud (2008) show there is positive and significant relationship between academic achievement and creativity.

5. Jim k. has studied 235 first grade students for surveying the correlation between emotional intelligence and academic achievement. The results show there is low correlation between emotional intelligence and academic achievement. (La’li, 2009)

6. After controlling intelligence abilities of Shanghai university students, Singh *et al* (2009) show emotional intelligence has effect on academic functions.

**Research hypotheses**

**Hypothesis 1:** there is a significant relationship between cultural intelligence and students’ academic achievement.

**Hypothesis 2:** there is a significant relationship between creative thinking and students’ academic achievement.

**Research method**

Current study is descriptive and correlative (predictive) study.

**Statistical society, sample size & method of sampling**

Involves all 598 Sharbabak grade three female high school students and the sample size is considered 234 students by Morgan table.

**Gathering data method**

Regarding theoretical framework, different resources such as books, magazines, and thesis are used. Gathering data have been done by standard questionnaire which distributed among statistical sample.

**Research Findings**

Examine first hypothesis, the first hypothesis indicates:

There is no significant relationship between cultural intelligence &students’ academic achievement.

**Table 1 – The results of correlation coefficient between cultural intelligence & academic achievement**

	1	2	3	4	5	6
1.Strategy	1					
2.Knowledge	0/50**	1				
3.motivation	0/34**	0/49**	1			
4. behavior	0/43**	0/43**	0/43**	1		
5. academic achievement	0/07	0/07	0/26**	-0/004	1	
6. total cultural intelligence	0/73**	0/82**	0/70**	0/77**	0/11	1

The results of correlation coefficient show there is no significant relationship between knowledge and academic achievement ( $r= 0.07$ ,  $p>0.05$ ), motivation and academic achievement ( $r= 0.07$ ,  $p> 0.05$ ), behavior and academic achievement ( $r= 0.004$ ,  $p>0.05$ )and total cultural intelligence and academic achievement ( $r= 0.11$ ,  $p> 0.05$ ). So the hypothesis is rejected and we can say there is no significant relationship between total cultural intelligence and academic achievement.

Also correlation coefficient results show there is a direct significant relationship between knowledge and academic achievement. ( $r= 0.26$ ,  $p< 0.001$ ) Hence as cultural intelligence increases, academic achievement will be increased, too and vice versa.

For measuring the relationship between cultural intelligence and academic achievement, stepwise regression has been used. In this method, the predicted variables are analyzed step by step and their effect on criterion variable is studied.

**Table 2 – correlation coefficient of criterion variables of academic achievement & predicting cultural intelligence**

Step	correlation coefficient	Square of correlation coefficient	Modified Square of correlation coefficient	Error of estimation criterion
first	0.26	0.06	0.06	1.59

Strategy of cultural intelligence variable has inserted into equation. The amount of multi correlation coefficient is 0.26 and determined coefficient is 0.06. On the other hand, 0.06 percent of variance of academic achievement can be determined by predicting variables.

**Table 3 – The results of regression analyzing of criterion variable of academic achievement & predicting emotional intelligence**

Step	Model	Sum of Squares	Degree of freedom	The average of Squares	F	The level of significance
1	Regression	28/86	1	28/86	11/30	0/001
	Remaining	1002/24	335	2/55		
	Total	1031/10	336			

$F_{1,154}$  equals to 11.30 at error level of 0.001 is significant. Therefore, Strategy of cultural intelligence variable has a significant role on academic achievement variable.

**Table 4- regression coefficients of criterion variable of academic achievement & predicting cultural intelligence**

Step	B correlation	Standard Error	Beta	T	The level of significance
1	Constant correlation	16/27	0/60	26/74	0/0001
	Social awareness	0/09	0/02	0/26	3/36

**Table 5- Variables removed from equation**

Variable	Beta in	t	The level of significance	Separated correlation
1.knowledge	-0/02	-0/26	0/79	-0/02
2. Motivation	-0/07	-0/81	0/41	-0/06
3.behavior	-0/14	-1/66	0/09	-0/13

**Examine second hypothesis**, the second hypothesis indicates:

There is significant relationship between creative thinking & students' academic achievement.

**Table 6- The results of correlation coefficient between creative thinking & academic achievement**

	1	2	3	4	5	6
academic achievement	1					
flowing	0/34**	1				
innovation	0/08	0/53**	1			
Flexibility	0/09	0/49**	0/54**	1		
extension	0/15	0/52**	0/66**	0/49**	1	
Creative thinking	0/21**	0/83**	0/85**	0/74**	0/80**	1

The results of correlation coefficient show there is no significant relationship between innovative and academic achievement ( $r = 0.08$ ,  $p > 0.05$ ), extension and academic achievement ( $r = 0.15$ ,  $p > 0.05$ ), flexibility and academic achievement ( $r = 0.09$ ,  $p > 0.05$ )

Also correlation coefficient results show there is a direct significant relationship between being flowing and academic achievement ( $r = 0.34$ ,  $p < 0.05$ ) and total score of creative thinking and academic achievement ( $r = 0.21$ ,  $p < 0.05$ ). Hence as creative thinking increase, students' academic achievement will be increased, too and vice versa.

For measuring the relationship between creative thinking and academic achievement, stepwise regression has been used. In this method, the predicted variables are analyzed step by step and their effect on criterion variable is studied.

**Table 7 - correlation coefficient, the criterion variable of academic achievement & predicting creative thinking**

step	correlation coefficient	Square of correlation coefficient	Modified Square of correlation coefficient	Error of estimation criterion
first	0.34	0.12	0.11	1.55

Being flowing variable has inserted into equation. The amount of multi correlation coefficient is 0.34 and determined coefficient is 0.11. On the other hand, 0.11 percent of variance of academic achievement can be determined by predicting variables.

**Table 8 - The results of Variable regression analyzing, the criterion of academic achievement & predicting creative thinking**

step	model	Sum of squares	Degree of freedom	The average of Squares	F	The level of significance
1	Regression	51/43	1	51/43	21/37	0/0001
	Remaining	804/67	335	2/40		
	Total	856/11	336			

$F_{1,154}$  equals to 21.37 at error level of 0.01 is significant. Therefore, being flowing variable has a significant role on academic achievement variable.

**Table 9 - regression coefficient, the criterion Variable of academic achievement & predicting cultural intelligence**

Step	B coefficient	Standard Error	Beta	T	The level of significance	
1	Constant correlation	13/60	1/01		13/35	0/0001
	Being flowing	0/09	0/02	0/34	4/62	0/001

Above table shows that being flowing variable can predict academic achievement. (Beta = 0.34, p= 0.001<0.01)

**Table 10- Variables removed from equation**

	Variable	Beta in	t	The level of significance	Separated correlation
First step	innovation	-0/14	-1/65	0/10	-0/13
	Flexibility	-0/11	-1/28	0/20	-0/10
	expansion	-0/09	-1/07	0/28	-0/08

**RESULTS & DISCUSSIONS**

Current study shows the relationship between cultural intelligence with academic achievement through creative thinking variable. These results are not homogenous to some other similar studies. It seems the extension of cultural intelligence is the main reason. In high school the cognition intelligence during bachelor term creativity and cognition intelligence and during master and PhD grade cultural intelligence and creativity have significant role on academic achievement. Perhaps, as other researchers are shown this situation can indicate the predictive abilities of academic achievement. Other reason regarding lack of coordination between resulted findings refers to inattention of experts to different approaches of cultural intelligence. Hence, considering which cultural intelligence approaches has been measured and surveyed, it can have various relationships with academic function.

Jabin& Ahmad Khan (2013) found there is no significant relationship between creativity and and academic achievement.

Zahabion and Ahmadi (1388) have declared there is no significant relationship with literacy level of parents, the amount of utilizing creative thinking, gender variables and academic achievement.

Based on experiments regarding secondary students, it becomes clear if the effect of intelligence has been omitted, there would be no significant relationship between creativity and academic achievement.. Regarding studies back ground and creative thinking field we can conclude creativity is teachable and children can learn it through creative tasks. However there is no unique agreement among experts which concepts and methods are suitable. Gilford suggests teaching thinking, Dobuno refers to developing thinking style by learning courses and Limpen believes we can develop creative thinking through teaching philosophic concepts. (Jabeen, et al, 2013).

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