Asian Social Science; Vol. 11, No. 22; 2015
ISSN 1911-2017 E-ISSN 1911-2025
Published by Canadian Center of Science and Education

Studying Psychological Aspects of New Methods of Teaching Effectiveness on Higher Education of Iran

Maryam Rahimi Mand[1] & Abbas Abbaspour[2]

[1] Educational psychology, Farhangiyan University, Iran

[2] Faculty of psychology, Allameh Tabataba'i University, Tehran, Iran

Correspondence: Maryam Rahimi Mand, Educational psychology, Farhangiyan University, Iran. E-mail: rahimi.maryam55@gmail.com

Received: June 10, 2015 Accepted: August 2, 2015 Online Published: August 18, 2015

doi:10.5539/ass.v11n22p208 URL: http://dx.doi.org/10.5539/ass.v11n22p208

Abstract

Making changes and innovation in teaching methods at higher education centers is a routine matter; in such a way that at the present time in many higher educational centers and universities of all over the world these changes can be seen. Meanwhile building motivation for achievement is among issues that researchers are giving more attention to. The present research was conducted with purpose of studying effect of the four teaching methods namely, group discussion, question and answer, demonstration, and lecture on creativity, achievement motivation and academic progress among university students. This research was a Quasi-experimental one. Statistical sample included 270 students of Alborz Farhangian University who were selected by using stratified random sampling method. Assessment tools included Hermense Achievement Motivation Inventory, Abedi Creativity Inventory and academic progress test which were developed by the authors. In order to analyze the data, multivariate analysis of variance (MANOVA), one-way variance analysis (ANOVA) and Turkey post hoc tests were used. Results of analyses showed that the students in discussion group had higher achievement motivation, creativity and academic progress than other groups. On this basis methods of result, question and answer and lecture methods were respectively effective on students' achievement motivation, creativity and academic progress, But not as much as discussion group.

Keywords: teaching methods, psychological aspects, achievement motivation, creativity

1. Introduction

Nowadays due to dynamic nature of education, many higher education centers and universities of all over the world have started to introduce and execute innovations in their educational styles, considering the wide range of changes around them. Directing education changes and innovations especially at university and higher education centers' level is one of the most influential bases enabling us to shorten our distance with worldwide developments and changes. One of the obligations of educational system is raising individuals with achievement motivation especially in the field of developing knowledge, scientific abilities, and critical and creative thinking and also the abilities who can solve problems and dilemmas. In this way, university professors are required to utilize teaching methods which may be very different with methods they were themselves educated with; in other words they must engage students actively and mindfully in learning process (Eslamian et al., 2003). Achievement motivation is one of the variables that can be improved by changing the teaching styles. Achievement motivation is one of the most important adventitious motivations of an individual which was first proposed by Murray (Jozani & Poor, 2013). Achievement motivation refers to the individual's tendency to pass barriers, attempt to achieve the best types and maintain high level criteria. Individuals with high achievement motivation want to become complete in the works and improve their function (Atkinson, 1978). Nourishing and strengthening achievement motivation produces energy and properly directs behavior, interests and requirements of persons toward valuable and determined purposes (Winner, 1989).

Creativity is a combination of initiative, flexibility and sensitivity against theories enabling the learner to reflect upon different and productive results instead of irrational reflections, the consequence of which is personal satisfaction (Magami, 2004). One of the effective factors on creativity, achievement motivation and academic progress of students is the effectiveness of education and learning at universities and higher education centers, and efficiency of education methods is considered as one of the important criteria of every educational system

(Eslamian et al., 2003). To date, many education methods have been introduced.

Traditional method is lecturing method which is teacher-oriented and the in classroom the students are only the listeners of teacher's speech; the students very rarely participate in teaching and learning process (Shabani, 2005). On the other hand Question and answer method is a teaching method in which teaching-learning activities of teacher- students is done through questions of teacher and answers of students (Miller, 2001). Demonstration method is a method in which the teacher besides demonstrating application of something to the students also explains about it (Safavi, 2003). Besides these methods, group discussion method can also be mentioned. Joyce (2009) and Scat (1988) believe that in group feelings of attachment and social connection increase achievement motivation. Membership in a group and cognitive engagement with group increases competition and attempt for learning and also affects achievement motivation and academic progress. On the other hand, findings of studies show that there is a relation between comprehensive progress and increase of communication skills and achievement motivation (Bahrami, 2001; Tini, 2012). In addition, findings of studies confirm the relation between achievement motivation and success in learning (for example Sumita, 2012). Briefly, the studies showed that education methods which are novel and active and using discussion and participation groups, improve academic progress of learners (Afandi & Zanatun, 2007; Alexander, 2012; Fischer & Shachar, 2004; Gokkurt, 2010; Karami, ZadeGasr, & Afshari, 2012; Yang, 2005; YarYari, Kadivar, & Khani, 2009; Yazdanpur, Yusefi, & Haggani, 2010), and besides that it increases achievement motivation (Alexander & Venook, 2012; Fischer & Shachar, 2004; Ostovar, Azad, & Abadi, 2012; Nichels, 2002; Winston, 2002). For instance Mary Lena and Philip (2007) studied the relation between education method of teachers in math class and motivation and success of students in math course. Their research findings showed that there is a positive correlation between new education methods and motivation and academic progress of students in math. Gardner and Robert (2009) based on a study conducted on students believe that there is a significant relation between the teacher's usage of new teaching methods and increasing students' achievement motivation in second language learning. Smith (2001), Jacques (2001) and Madrid (2002) were among the researchers who obtained the similar findings in their studies. Maleki and colleagues (2014) in a study compared effectiveness of participatory teaching methods and brain storming on social competence. Research findings were indicative of higher effectiveness of new teaching methods on social competence of learners. Shoja Noori & Shokri (2013) compared the effectiveness of three methods of education-oriented, research-oriented and education-research-oriented on skills of Hawza Girl students concluded that, education-research-oriented method acts better in strengthening individual social and educational skills. Moreover Amin Khandaghi and Rajai (2013) in a research investigated the teaching style preferred by the students in educational Sciences course of Mashhad Ferdowsi University and concluded that students were more in favor of the active style. Moreover Momeni and Jalali (2014) studied the effect of cooperative teaching method on motivation and academic progress of grade-three male students of primary school in social studies course and concluded that cooperative teaching method affects positively the academic motivation and progress. In other study Karashki and colleagues (2014) concluded that teachers' knowledge of new methods of teachings is effective on students' academic progress. Diburachi states that learning through small groups (five members) is affected by ideological, educational and motivational principles (Diburachi, 2001) Richardson and David Car (Richardson et al., 2001). On the other hand, findings of studies conducted on traditional method, showed that in comparison with other methods, traditional method was less effective (Beck, 2008; Eslamian, Rezvani, & Fatehi, 2013; Hall & Adnel, 1996; Jozani & Poor, 2013; Li & Nelson, 2005; Ostovar, Azad, & Abadi, 2012).

Academic progress is an issue that all countries of the world are giving attention to, especially at the present time. This variable is not influenced by one factor but many factors affect it (Rahnama & Abdol-Maleki, 2009). Academic progress is not only considered a purpose by itself, but also arises motivation in learners. Moreover this motivation leads to achieving many other psychological goals and features (Gralnick et al., 2007). Creativity is one of the important educational variables besides academic achievement. Creativity is a factor which has a close relation with learning. Creativity is a topic that its nourishment is mainly affected by two factors: one is an internal factor which is related to personal characteristics of individuals and the second one is an external factor which is related to environmental and cultural factors and is influenced by conditions, places and tools (Parker, 2008). By utilizing appropriate tools and methods of education, it is possible to foster power of creativity and innovation of learners. This is because it is the education system that as an effective factor in human growth must provide the opportunity for developing potential abilities of individuals (Musavi & Magami, 2012). A review of studies done in the field of creativity shows that creativity (fluency, flexibility and innovation) has increased the innovation ability has increased significantly (Agayi, 2011; Khaefi et al., 2009). Bugner and Ibrakoich (2009) showed that using creative techniques and other factors such as teaching time span, teaching methods, the earlier experiences of the students in creative activities, and the creative attitude of the teachers affect fostering

students' creativity.

Different results can be expected from the different teaching patterns and teaching methods. The aim of this study was to evaluate the impact of these methods on motivation, creativity and academic achievement of students.

2. Research Methodology

The present research is a quasi-experimental one. Statistical population included all university students of Teache Education Centers of Alborz County; from among the population, 270 students were selected as research samples by using stratified random sampling. The sample of students were first classified under four groups of teaching methods (traditional, oral question, demonstration, discussion and group participation) and using the relevant teaching method (the method based on which they are placed in the group) they were taught a common course (educational psychology) for one semester with specialized teaching methods. The tools used included Abedi Creativity Standard Test (Abedi, 1993). This test has 60 items and according to test-retest method has reliability coefficient equal to 0.83. The questions of this test are three alternative multiple-choice questions and the choices randomly and irregularly assess three levels of high, average and low creativity for four subscales of fluency, originality, elaboration and flexibility.

In addition, the Hermense Achievement Motivation Inventory was used which is one of the most popular pen and paper inventories to assess achievement motivation. This questionnaire was designed by Hermnese (year) and its final edition has 29 items which are in form of incomplete statements and each item has four choices. In order to obtain validity of the tool, Hermense (year) used construct validity and discriminate validity methods (as cited in Abniki Fard and Namdar, 2003). In the present research its Cronbach's alpha was 0.84. Furthermore, to measure academic progress, a test which was used by teachers and professors in a coordinated way was used and in this way each student's score was considered as his/her academic progress.

Statistical methods used to analyze the data in this research included descriptive and referential methods (ANOVA, MANOVA and Turkey post hoc test).

3. Research Findings

In order to test research hypotheses, MANOVA, ANOVA and Turkey post hoc test were used.

Table 1. Result of equality of covariance matrices test (box)

Box M	Chi Square Value	Degrees of Freedom	Significance
184/68	180/79	18	0/071

As can be seen in Table 1, significance of Box test is equal to .07. This value is greaterthan .05, therefore it is concluded that covariance-variances' matrices were equal. (whşch chi square is this (goodness of fit or independence?) why chi square was used?

Table 2. Results of investigating congruity assumption of variances

Variable	Mean Square of Effect	Mean Square of Error	F Ration	P-Value
Achievement Motivation Test	1/780	0/089	19/928	0/06
Creativity Test	0/076	12/786	0/049	0/621
Academic Progress Test	0/101	2/099	6/967	14/625

Table 3. Results of multivariate variance analysis

Tests	Values	F	Degree of Freedom of Effect	Degree of Freedom of Effor	P-value	Size of Effect
Wilk's Lambda	0/09	1339/29	2	265	0/001**	0/340
Pillai's Trace	0/91	1339/29	2	265	0/001**	0/329
Hotelling's Trace	10/11	1339/29	2	265	0/001**	0/350
Roy's Largest Root	10/11	1339/29	2	265	0/001**	0/449

Note. p<.01**

According to the results given in Table 2, the congruity of variances of the four groups in three tests of academic progress, achievement motivation and creativity is not significant with confidence level of 95 percent and therefore this assumption is confirmed.

Results of Table 3 shows that linear combination of three dependent variables, creativity post-test, achievement motivation and learning (academic progress) are affected by independent variable (traditional, oral question demonstration and group discussion teaching methods).

Table 4. One-way variance analysis test for achievement motivation variable

Effects	Sum of Square	Degree of Freedom	Mean Square	F Ratio	p-Value	Size of Effect
y-intercept	53405/10	1	53405/10	3784/37	0/000	0/006
Group	440/29	3	146/76	10/40	0/001	0/243
Error	3793/79	266	14/11			

In Table 4 results of one-way variance analysis test for achievement motivation variable are given. As can be seen one-variable test result for achievement motivation variable with confidence level of 99 percent ($\alpha = 0.01$) is significant (η^2= 0/243 slight, P= 0/001, $F_{(3\ \&\ 266)}$= 10/40). Therefore it is concluded that by exerting independent variable, a significant difference is observed between achievement motivation of the four groups. Of course the Chi Eta value (0/243) shows the intensity of relation between experimental factor and independent variable which is a very high value and is some way 24 per-cent of dependent variable changes (achievement motivation), assuming its initialrate is constant, returns to experiment (type of teaching method).

Table 5. Turkey post hoc test in order to determine best teaching methods in increasing achievement motivation of students

Teaching methods	Number	Best methods in = α0/01 level		
		First	Second	Third
Discussion and group participation	60	120/19	-	-
Demonstration	60	-	111/27	-
Oral question	60	-	107/77	-
Lecture (traditional)	60	-	-	97/13

According to results of the above table, achievement motivation of students with discussion and group participation has increased more than other methods. On this basis demonstration and oral question methods affect students'.

Table 6. Comparing students' self-confidence according to teaching methods (ANOVA test)

Source of changes	Sum of Squares	Degree of freedom	Mean square	F	P
Intergroup	1305/052	3	435/017		
Inside-group	4094/522	266	15/393	28/261	0/000
Total	5399/574	269			

According to data results and results of ANOVA test given in Table 6, with 99 per-cent of confidence level (α=0/01) it can be claimed that according to teaching methods, self-confidence of students differs.

Table 7. Turkey post hoc test in order to determine best teaching methods in increasing students' self confidence

Teaching methods	Number	Best methods in =α0/01 level		
		First	Second	Third
Discussion and group participation	60	36/63	-	-
Demonstration	60	-	34/80	-
Oral question	60	-	33/67	-
Lecture (traditional)	60	-	-	30/88

Results of Table 7 shows that students' self-confidence has increased more by using discussion and group participation method. On this basis demonstration and oral question methods affect students' self-confidence respectively in second and third positions and traditional method (lecture) in final position.

Table 8. Comparing perseverance of students according to teaching methods (ANOVA test)

Source of changes	Sum of Squares	Degree of freedom	Mean square	F	P
Intergroup	1544/68	3	514/893		
Inside-group	6398/983	266	24/056	21/404	0/000
Total	7943/663	269			

According to data results and results of ANOVA test given in Table 8, with 99 per-cent of confidence level (α=0/01) it can be claimed that according to teaching methods, perseverance of students differs.

Table 9. Turkey post hoc test in order to determine best teaching methods in increasing students' perseverance

Teaching methods	Number	Best methods in =α0/01 level		
		First	Second	Third
Discussion and group participation	60	27/55	-	-
Demonstration	60	-	24/90	-
Oral question	60	-	24/17	-
Lecture (traditional)	90	-	-	21/13

Results of Table 9 shows that students' perseverance has increased more by using discussion and group participation method. On this basis demonstration and oral question methods affect students' perseverance respectively in second and third positions and traditional method (lecture) in final position.

Table 10. Comparing prudence of students according to teaching methods (ANOVA test)

Source of changes	Sum of Squares	Degree of freedom	Mean square	F	P
Intergroup	1343/629	3	447/876		
Inside-group	4463/294	266	16/779	26/692	0/000
Total	5806/923	269	-		

According to data results and results of ANOVA test given in Table 10, with 99 per-cent of confidence level (α=0/01) it can be claimed that according to teaching methods, prudence of students differs.

Table 11. Turkey post hoc test in order to determine best teaching methods in increasing students' prudence

Teaching methods	Number	Best methods in =α0/01 level		
		First	Second	Third
Discussion and group participation	60	33/26	-	-
Demonstration	60	-	30/74	-
Oral question	60	-	29/93	-
Lecture (traditional)	90	-	-	27/26

Results of Table 11 shows that students' prudence has increased more by using discussion and group participation method. On this basis demonstration and oral question methods affect students' perseverance respectively in second and third positions and traditional method (lecture) in final position.

Table 12. Comparing hardworking of students according to teaching methods (ANOVA test)

Source of changes	Sum of Squares	Degree of freedom	Mean square	F	P
Intergroup	905/329	3	301/776		
Inside-group	2662/026	266	10/008	30/155	0/000
Total	3567/355	269	-		

According to data results and results of ANOVA test given in Table 12, with 99 per-cent of confidence level (α=0/01) it can be claimed that according to teaching methods, hardworking of students differs, because (P=0 =α<0/01).

Table 13. Turkey post hoc test in order to determine best teaching methods in increasing students' hardworking

Teaching methods	Number	Best methods in =α0/01 level		
		First	Second	Third
Discussion and group participation	60	22/75	-	-
Demonstration	60	-	20/83	-
Oral question	60	-	20/01	-
Lecture (traditional)	90	-	-	17/86

Results of Table 13 shows that students' hard working has increased more by using discussion and group participation method. On this basis demonstration and oral question methods affect students' perseverance respectively in second and third positions and traditional method (lecture) in final position.

Table 14. One-way variance analysis test for academic progress variable

Effects	Sum of Square	Degree of Freedom	Mean Square	F Ratio	p-Value	Size of Effect
y-intercept	1933/69	1	1933/69	7838/56	0/000	0/001
Group	14/70	3	4/90	19/86	0/022	0/201
Error	65/62	266	0/25			

* P<0/05

As can be seen in Table 14, one-variable test result for academic progress variable with confidence level of 99 percent is significant (η^2 = 0/201 slight, P= 0/022, $F_{(3 \& 266)}$= 19/86). Therefore it is concluded that by exerting independent variable, a significant difference is observed between academic progresses of the four groups.

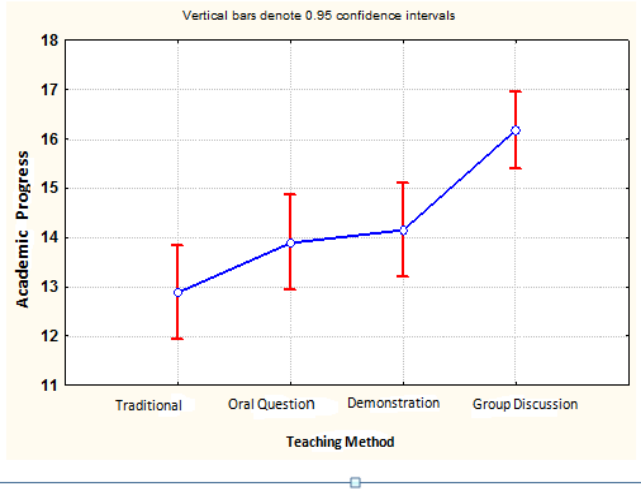

Figure 1. Comparing effectiveness of different teaching methods on increasing academic progress

According to Figure 1, there is a significant difference between group discussion method and other groups (due to lack of overlap of confidence levels), but no significant difference is observed between other methods, because with confidence distances of 95 percent are overlapped.

Table 15. Results of one-way variance analysis test for creativity variable

Effects	Sum of Square	Degree of Freedom	Mean Square	F Ratio	p-Value	Size of Effect
y-intercept	1700/19	1	1700/19	13797/92	0/001	0/283
Group	5/04	3	1/68	13/63	0/036	0/179
Error	32/78	266	0/12			

* P<0/05

In Table 15 results of one-way variance analysis test for creativity variable are given. Therefore it is concluded that by exerting independent variable, a significant difference is observed between creativity of the four groups. Of course the Chi Eta value (0/18) shows the intensity of relation between experimental factor and independent variable which is a very high value and is some way 18 per-cent of dependent variable changes (creativity), assuming its initial rate is constant, returns to experiment (type of teaching method).

Table 16. Turkey post hoc test in order to determine best teaching methods in increasing students' creativity

Teaching methods	Number	Best methods in =α0/01 level			
		First	Second	Third	Fourth
Discussion and group participation	60	97/65	-	-	-
Demonstration	60	-	92/48	-	-
Oral question	60	-	-	88/08	-
Lecture (traditional)	90	-	-	-	49/39

Results of Table 16 shows that students' creativity has increased more by using discussion and group participation method. On this basis demonstration, oral question and traditional method (lecture), respectively have been effective on students' creativity.

Table 17. Comparing fluency of students according to teaching methods (ANOVA test)

Source of changes	Sum of Squares	Degree of freedom	Mean square	F	P
Intergroup	6820/819	3	2273/606		
Inside-group	750/5	266	2/821	805/835	0/000
Total	7571/319	269	-		

According to data results and results of ANOVA test given in Table 17, it can be claimed that according to teaching methods, fluency capability of students differs. Therefore according to teaching methods (lecture, oral question, demonstration and discussion and group participation) fluency capability of students differs. In this regard Turkey post hoc test will demonstrate that which teaching methods increase more the fluency of students.

Table 18. Turkey post hoc test in order to determine best teaching methods in increasing students' fluency

Teaching methods	Number	Best methods in =α0/01 level			
		First	Second	Third	Fourth
Discussion and group participation	60	28/67	-	-	-
Demonstration	60	-	26/62	-	-
Oral question	60	-	-	25/58	-
Lecture (traditional)	90	-	-	-	16/33

Results of Table 18 shows that students' fluency has increased more by using discussion and group participation method. On this basis demonstration, oral question and traditional method (lecture), respectively have been effective on students' creativity.

Table 19 .Comparing elaboration of students according to teaching methods (ANOVA test)

Source of changes	Sum of Squares	Degree of freedom	Mean square	F	P
Intergroup	7496/307	3	2498/769		
Inside-group	460/789	266	1/732	1442/467	0/000
Total	7957/096	269	-		

Results of Table 19 shows that according to teaching methods (lecture, oral question, demonstration and discussion and group participation), elaboration of students differs. In this regard Turkey post hoc test will demonstrate that which teaching methods increase elaboration of students more.

Table 20. Turkey post hoc test in order to determine best teaching methods in increasing students' elaboration

Teaching methods	Number	Best methods in =α0/01 level			
		First	Second	Third	Fourth
Discussion and group participation	60	20/83	-	-	-
Demonstration	60	-	19/12	-	-
Oral question	60	-	-	18/15	-
Lecture (traditional)	90	-	-	-	8/36

Results of Table 20 shows that students' elaboration has increased more by using discussion and group participation method. On this basis demonstration, oral question and traditional method (lecture) respectively have been effective on students' elaboration.

Table 21. Comparing originality of students according to teaching methods (ANOVA test)

Source of changes	Sum of Squares	Degree of freedom	Mean square	F	P
Intergroup	7330/819	3	2443/523		
Inside-group	537/583	266	2/021	1209/072	0/000
Total	7868/152	269	-		

Results of Table 21 shows that according to teaching methods (lecture, oral question, demonstration and discussion and group participation), originality of students differs. In this regard Turkey post hoc test will demonstrate that which teaching methods increase originality of students more.

Table 22. Turkey post hoc test in order to determine best teaching methods in increasing students' originality

Teaching methods	Number	Best methods in =α0/01 level			
		First	Second	Third	Fourth
Discussion and group participation	60	28/18	-	-	-
Demonstration	60	-	27/50	-	-
Oral question	60	-	-	26/20	-
Lecture (traditional)	90	-	-	-	16/33

Results of Table 22 shows that students' originality has increased more by using discussion and group participation method. On this basis demonstration, oral question and traditional method (lecture) respectively have been effective on students' elaboration.

Table 23. Comparing flexibility of students according to teaching methods (ANOVA test)

Source of changes	Sum of Squares	Degree of freedom	Mean square	F	P
Intergroup	7261/485	3	2420/495		
Inside-group	469/733	266	1/766	1370/675	0/000
Total	7731/219	269	-		

Results of Table 23 shows that according to teaching methods (lecture, oral question, demonstration and discussion and group participation), flexibility of students differs.

Table 24. Turkey post hoc test in order to determine best teaching methods in increasing students' flexibility

Teaching methods	Number	Best methods in =α0/01 level			
		First	Second	Third	Fourth
Discussion and group participation	60	20/37	-	-	-
Demonstration	60	-	19/25	-	-
Oral question	60	-	-	18/15	-
Lecture (traditional)	90	-	-	-	8/37

Results of Table 24 shows that students' flexibility has increased more by using discussion and group participation method. On this basis demonstration, oral question and traditional method (lecture) respectively have been effective on students' flexibility.

4. Discussion and Conclusion

Findings of this research showed that teaching method of discussion and group participation, compared with other teaching methods of question & answer, demonstration and lecture, has had a significant relation with achievement motivation of students; this research finding is in accordance with findings of Ostovar and et al. (2012); Alexander, Van Wouk (2012); Fischer, Sachar (2004); Servet, Kubra, Isra (2913); Zahara, Anuvar (2010); Nichles (2002) and Winston (2002). Moreover, teaching methods of question & answer and demonstration in comparison with traditional method of lecturing, in second grade has had a significant relation with students' achievement motivation. Therefore in regard of achievement motivation, method of discussion and group participation and in second grade methods of question & answer and demonstration showed their relation with achievement motivation. According to the given descriptions, it seems that teaching methods based on discussion and group participation provide the required background for appearance of tendencies and achievement motivation among students in the best possible way.

Findings of the present research are in accordance with findings of following studies: Soleimani Mogaddam (2001); Gelikman (1991), Hemi leski, Trawer, Kalsher (2003); Ebrahim Abadi (2008), Mischel Cook (2007); Mohammadi (2006); Alborz (2001); Seif (2007) and Leonardi (1998). Findings of the mentioned studies are indicative of effectiveness of new and active teaching methods on achievement motivation of learners. Findings of this research showed that there was a significant difference in creativity of students educated with four teaching methods (lecture, oral question, demonstration, discussion and group participation). In other words it became clear that by changing and using the method of discussion and group participation in teaching for students of teacher training centers, it can be expected that they perform creative acts and this research findings is in accordance with Heso Chanki (2006); Bugner & Ibrakoich (2009); Dano Gaspar (2011); Hongi & Chengio (2009), Coleo Dalivira (2006); Shaktervetom & Zeif Kin (2006); Mir Mel (2003); Scank and et al. (2011); Beriant (2010); Torness (2008); Amiri and Nowruzi (2011); Ahmadi (2012); Jabali Ade and Sobhani (2012); Afshar Kohan (2010); Sharifi and Davari (2009), Hamidi (2011); Fathi Azar and Heidari Farfar (2011); Mirzaian (2003); Darestani Farahani (2000); Sakhtemanian (1994); Furughi and Moshkelani (2005) and Karami and et al. (2012). The hypothesis that there is a significant difference in students' academic progress according to four teaching methods of lecture, demonstration, oral question, discussion and group participation, was confirmed. In other words it became clear that by changing teaching method the academic progress of students also changes. Based on this finding it became clear that not only the method of discussion and group participation but the two methods of oral question and demonstration, in comparison with lecture method, significantly affect students' academic progress. This research finding is in accordance with findings of Alexander and Van Cook (2012); Fischer and Sachar (2004); Servert, Kubra and Isra (2013); Zahara and Anovar (2010); Yang and Lio (2005); Jilis

(2003); Yazdan Poor and et al. (2010); Yaryari and et al. (2010); Karami and et al. (2012) and Afandi and Zanatun (2007). In traditional method of lecturing because teaching-learning process is done in one direction, i.e. form teacher to students, therefore critical thinking process does not happen among students. In this method the required ground for participation and group work among students and also between student and teacher is not created. It seems that teaching method of lecturing does not have the required capacity to compete with methods of discussion & group participation, demonstration and oral question.

References

Abedi, J. (1993). Creativity and new ways to measure it. *Psychological research, 2*(1/2), 54-46.

Ade, P. J., & Sobhani, A. (2012). *Effect of Using Creative Teaching Methods on Creativity of Primary Grade-Four Students of Golestan County in Studying Year of 2011-2012*. MA Thesis of Educational Sciences. Islamic Azad University, Faculty of Tehran Junub.

Alexander, G., & Van Wyk, M. (2012). Exploring the value of cooperative learning in province. *Journal of Procedia Social and Behavioral Science, 47*, 1945-1949. http://dx.doi.org/10.1016/j.sbspro.2012.06.928

Asadi, N. (2010). *Recognition and Education of Creativity at Schools (Tomorrow is Late)* (4th ed.). Tehran: Abed.

Atkinson, J. W., & Birch, D. C. (1978). *An introduction to motivation*. New York: D. Van.

Bahrami, F. (2001). *Comparing Effect of Group Discussion Teaching Method and Lecture Method on Academic Progress and Communication Skills of Students*. Isfahan University.

Beck, E. C. (2008). Understanding Educational Changer: A System Model Approach. *Second North American Conference on the Learning Paradigm* (p. 109).

Bogner, B., & Ibraković, V. (2009). CreativityinTeaching Plant Production. *Educational Journal of Living Theories, 2*(2), 232-256.

Bryant, C. (2010). Creativity and Technology. *Evaluative Art ducation, 63*(2), 43-48.

Dörnyei, Z., & Csizér, K. (1998). Ten Commandments for motivating language learners: An empirical study. *Language Teaching Research, 2*, 203-229. http://dx.doi.org/10.1177/136216889800200303

Dubunu, A. (2008). *Practice of Creativity* (2nd ed.). Tehran: DaneshPajuhaneJavan.

ECoelho de Oliveira, L. M. (2006). *Child Education and Creativity: The Perspective of The teachers.* Thesis of doctorate, psychology department, Campains University, Sao Paulo, Brazil.

Effandi, Z., & Zanaton, I. (2007).Promoting Cooperative Learning in Science and Mathematics Education: A Malaysian perspective. *Eurasia Journal of Mathematics, Science & Technology Education, 3*(1), 35-39.

Eslamian, H., SaidiRezvani, M., & Fatehi, Y. (2013). *Comparing Effect of Group Discussion and Lecturing Education Methods on Students' Learning*.

Fatemi, A. (2014). The Relation between Social Psychological Atmosphere of Classroom and Utilizing Active Teaching Methods and Academic Progress. *The First National Conference of Educational Sciences and Psychology*.

Fischer, S., & Shachar, H. (2004). Cooperative Learning and the achievement of motivation & Perceptions of student in 11th grade chemistry classes. *Journal of Learning and Instruction, 14*(2), 69-87.

Furughi, A., & Moshkelani, P. (2004). Effect of Group Discussion Teaching Method on Creativity of Guidance School Second-Grade Students of District 3 of Isfahan in Social Sciences Course. *Knowledge and Research in Educational Sciences,* (5&6).

Gardner, R. C. (2009). Teachers motivation, classroom strategy use. *Students motivation and second language achievement,* 31-34.

Gillies, R. M. (2003). The Effect of Cooperative Learning on Junior High School Student during Small Group. *Journal of Learning and Instruction, 14*, 197-213. http://dx.doi.org/10.1016/S0959-4752(03)00068-9

Gokkurt, B., Dundatr, S., Soylu, Y., & Akgun, L. (2012). The effects of Learning together Technique which is based on cooperative Learning on students achievement in mathematics class. *Journal of Procedia Social and Behavioral Sciences, 46*, 3431-3434. http://dx.doi.org/10.1016/j.sbspro.2012.06.079

Grolnick, W. S., Farkas, M. S., Sohmer, R., Michaels, J., & Valsiner, J. (2007). Facilitating motivation in young adolescents: Effects of an After-School Program. *Journal of Applied Developmental Psychology, 28*,

332-334. http://dx.doi.org/10.1016/j.appdev.2007.04.004

Hall, R. H., & O'Donnell, A. M. (1996). Cognitive and Affective Outcomes of Learning from Knowledge Maps. *Contemporary Psychologist, 21*, 94-101. http://dx.doi.org/10.1006/ceps.1996.0008

Hsu-chan, K. (2006). *The Development of Taiwan Creative Education Indicator (TCEI) and the Evaluation of The Creative Education Practice.* Master's Thesis. Education Department, National Sun Yat-Sen University, Taiwan.

Hungies, S. K., & Changeiywo, J. M. (2009). Influence of Creativity Teaching Strategy on Student's Performance and Motivation in The Topic "Energy" in Secondary School Physics in Nakuru District, Kenya. *Journal of Technology and Education in Nigeria, 14*(1-2).

Husseini, A. (2007). Investigating Effect of Teachers' Creativity Training Program on Creativity of Academic Progress and Self-Concept of Students. *Journal of Educational Innovations*.

Jacques, S. R. (2001). Preferences for instructional activities and motivation: A comparison of student and teacher perspectives. In Z. Dörnyei, & R. Schmidt (Eds.), *Motivation and second language acquisition*. Honolulu: University of Hawaii Second Language Teaching and Curriculum Center.

Jozani, K., & Poor, A. S. (2013). *Studying Effect of Active and Traditional Education Methods on Motivation of High School Grade-Two Students in English Course*.

Karami, M., ZadeGasr, A. A., & Afshari, M. (2012). *Effect of Interactive Learning on Academic Progress of High School Students of Mashhad*.

Kareshki, H., Momeni, H., & AziziFard, T. (2014). Role of Teachers' Recognition of Novel Teaching Methods and Achievement Motivation on Students' Academic Progress. *The First Conference of Sustainable Development in Educational Sciences and Psychology.*

Khandaghi, A., & Maliha, M. R. (2014). The impact on students' learning styles and their preferred teaching style. *Educational Psychology, 9*(28), 15-40.

Madrid, D. (2002). The Power of the FL Teacher's Motivational Strategies. *Cauce, 25*.

Maleki, H., Karami, A., & Moradi, A. B. (2014). Comparing Effectiveness of Participatory Teaching Methods and Brainstorm on Social Competence. *Journal of Educational Psychology*.

Marilena, P. (2007). *Students motivation and achievement and teachers practices in the methods on high school students motivation.*

Miller, D. (2001). *A Guidance for Teaching at University*. Translation: Miri, Vida. Tehran: SAMT Publication.

Momeni, H., & Jalali, S. (2014). *Effect of Cooperative Teaching Method on Motivation and Academic progress of Primary Third-Grade Boy Students in Social Studies Course*. The First Conference of Sustainable Development in Educational Sciences and Psychology.

Musavi, M., & Magami, H. (2012). Comparing Effectiveness of the Two Old and New Methods of Educational Evaluation on Attitude toward Creativity and Academic progress of Primary School Students. *Innovation and Creativity in Human Sciences,* (2).

Myrmel, M. K. (2003). Effects of Using Creative Problem Solving in Eighth Grade Technology Education Class at Hopkins North Junior High School Master's Thesis of Science Degree. *Industrial Technology Education*. University Of Wisconsin-Stout.

Nanthini, V. (2012). *Success prediction of students by integrating communication skills with achievement motivation and personality,* 1754-1759.

Nichols, J. D. (2002). *The Effect of Cooperative Learning on Student Achievement and Motivation In a High School Geometry Class Contemporary Educational Psychology, 21*, 467-476.

Ostovar, N., Azad, S. G., & MesrAbadi, J. (2012). *Effect of Classified Education on Cognition, Meta-cognition and Skills of Learning Math Lessons.*

Parado, S. H. (2002). Effects of a teacher training works shop or creativity, cognitional school achievement. *High ability studies, 13*(1).

Parker, J. (2008). *The Impact of Visual Instruction on Student Creativity*. Unpublished Doctoral Dissertation, Walden University.

Pedró, F., Lloret, T., Carrasco, S., Plandiura, R., Mominó J. M., & Meneses, J. (2008). *Elprofessorat de*

Catalunya. Barcelona: Fundació Jaume Bofill.

PirKhaefi, A., Borjali, A., Delavar, A., & ESkandari, H. (2009). Effect of Creativity Training on Meta-Cognitive Components of Students' Creative Thinking. *Journal of Leadership and Educational Management*.

Poor, N. Y., Yusefi, A., & Haggani, F. (2010). Effect of Education through Interaction on Academic Progress of Grade-Three Girl Students of FuladShahr City Studying Biology. *Journal of Knowledge and Research,* (22).

Rahnama, A., & Abdol-Maleki, J. (2009). Investigating the Relation between Emotional Intelligence and Creativity with Academic Progress among Students of Shahed University. *Journal of Novel Educational Ideas,* (5).

Richardson, D. (2006). *Developed Teaching Methods*. Tehran: SAMT Publication.

Safavi, A. (2003). *Methods, Techniques and Patterns of Teaching.* Tehran: SAMT Publication.

Schacter, J., Thum, Y., & Zifkin, D. (2006). How Much Does Creative Teaching Enhance? *Elementary School Student's Achievement Journal of Creative Behavior, 40*(1), 47-72. http://dx.doi.org/10.1002/j.2162-6057.2006.tb01266.x

Schwonke, R., Renkl, A., Salden, R. J. C. M., & Aleven, V. (2011). Effects of different ratios of worked solution steps and problem solving opportunities on cognitive load and learning outcomes. *Computers in Human Behavior, 27*, 58-62. http://dx.doi.org/10.1016/j.chb.2010.03.037

Sckotte, H. (1988). Education and will: Aspects of personal capability. *American Journal of Education, 96*, 195-214. Second language acquisition. Honolulu: University of Hawaii Second Language Teaching. http://dx.doi.org/10.1086/443893

Servet, C., Kubra, A., & Esra, B. (2013). Implementing cooperative Learning in the Language Classroom: opinions of Turkish teachers of English. *Journal of Procedia Social and Behavioral Sciences, 70*, 1852-1859. http://dx.doi.org/10.1016/j.sbspro.2013.01.263

Shabani, H. (2005). *Educational Skills*. Tehran: SAMT Publication.

ShojaNoori, F., & Shokri, F. (2013). Comparing Effect of Research-Oriented, Education-Oriented and Education-Research-Oriented Education on Skills of Hawza Girl Students. *Journal of Educational psychology,* (30).

Silver, J. (2001). *Curriculum for Better Teaching and Learning*. Astane GhodsRazavi Publication.

StekDibora, J. (2001). *Motivation for Learning*.

Sumita, R. (2012). *Construction of achievement motivation scale*. Christ College of education banglor-29.

Tamannayi, F. M., & Gandomi, Z. (2011). The Relation between Achievement Motivation and Academic Progress among Students. *Journal of Education Strategies,* (4).

Weiner, B. (1989). *Theory of motivation and emotion*. New York: Springer-Verlag.

Winston, V. (2002). Effect of Cooperative Learning on Achievement and Attitude among Student of Color. *Journal of Educational Research, 95*, 220-229.

Yang, S. C., & Liu, S. F. (2005). The study of interactions and attitudes of third-grade students Learning information technology via a cooperative approach. *Computers in Human Behavior, 21*, 45-72. http://dx.doi.org/10.1016/j.chb.2004.02.002

Yaryari, F., Kadivar, P., & Khani, M. M. (2009). Effect of Interactive Teaching Methods on Self-Confidence and Social Skills of High School Students. *Psychology Journal of Tabriz University,* (10).

Zahara, A., & Anowar, H. (2010). A comparison of cooperative Learning and conventional teaching on students' achievement in secondary mathematics. *Journal of Procedia Social and Behavioral Sciences, 9*, 53-62. http://dx.doi.org/10.1016/j.sbspro.2010.12.115