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THE USE OF PARTICIPATORY LEARNING METHOD IN TRAINING HIGHER LEVELS OF LEARNING IN E-LEARNING SYSTEM

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ABSTRACT

In the present study, we are going to investigate the effect of collaborative learning method on training higher levels of learning in the system based on e-learning. Methodology was Quasi-experimental pre-test and post test research method. Population included B.A and M.A female and male students in Hadith science of virtual university in Shar-Rey in Academic Year 92-93. Sample consisted of 40 people in undergraduate female and male students in the course of Hadith references which have been selected by use of availability or non-probability sampling method. After conducting the pre-test, the seven-session curriculum using traditional and participatory teaching methods provided to the experimental and the control groups. The reliability calculated based on Cronbach's alpha coefficient was 95% and relevant experts confirmed its validity. One-way ANCOVA was used and interpreted for every item. Statistical findings indicated that participatory teaching method was effective in higher level of learning (understanding, analysis, and application) for virtual universities students. Access to an effective and deep e-learning experience require to have knowledge about the participatory elements, the level of learning in this learning style and the use of online technology to gain the efficiency in high level of learning.

KEYWORDS: Bloom Learning Level, E-Learning, Participatory Learning, Virtual Learning Environment

INTRODUCTION

The advent of widespread informational networks such as the Internet, along with tools and advanced training technologies, result in changing in training methods and it is possible that a range of learners in different locations and distances come together under one teaching network coverage, and to implement academic and professional training in some methods different from traditional one (Ebadi, 2002). E-learning has two significant features for effective learning: 1) e-learning stresses on self learning and providing its developmental facilities attractively; 2) and in the form of virtual classes and group negotiation environment, providing necessary opportunity for interaction, negotiation and collaborative learning for students (look wook, Guoli).

In recent decade, many researchers and authors focused on fostering learning competences and on developing thinking skills amongst and in the highest level, specially, in virtual learning environment. Collaborative learning needs students to be active and involve in debate and to be responsible in learning. To do so, they will be critical thinkers. (Khoshneshin, 2013).

Ceezinc, Komanovich and web (2000) defined group learning or collaborative learning via web as: this type of learning involve group work together and express their ideas by means of it and collaborate with each other to solve

problems and do their job. (Janson & Janson 1975; Slovin, 1987; Alavi, 1994; Murjavich, et. al 1995; Ceezinc, Komanovich 1996; Houn 1999).

Vygotsky (1978) stressed on learning. His theory stressed on socio-cultural context of learning and the impact of this context on learning. Vygotsky's cognitive development theory is called social constructionism, because, he stressed on the interaction of individuals, learners and teachers on learning (Madux, Johnson & Wilson 1997).

According to Johnson and Johnson's theory (1986), there are several evidences suggesting that progress in the high level thinking within the groups is wider than individual learning. In collaborative learning, students or audience necessarily participate during discussions and take responsibility toward learning which make them critical thinkers.

Olivares (2005) contrast the impact of critical thinking process with individual learning. Based on his findings collective learning accelerate the cognitive skill in two ways: Some believe that the performance of certain cognitive skills such as problem solving or decision-making is optimized via collective learning (better than individual learning) and some believe that collective learning helps to improve cognitive skill.

Olivares (2001) studied about collective learning (collaborative) and compared it with learning in web environment. The base of his research was optimization of critical thinking skill in web. The basic categories of his research were:

- The effect of group on students' learning
- The effect of group guidance on collaborative learning
- The use of special model to improve the critical thinking of students

He concluded that we need to incorporate a series of incentives such as meaningful feedback, reactions to students' activities, and participation in process of explanation and optimizations of problem solving. Critical research during collective interaction in learning based on web result in leading learners to help each other, specifying the complexity of communicational activities and opening a windows of understanding and improving of learning optimization in this environment (Khoshneshin 2010).

According to materials presented, this study aimed to investigate following hypotheses:

- The model of collaborative learning affect on the students' capability in analyzing;
- The model of collaborative learning affect on the students' capability of functioning;
- The model of collaborative learning affect on the students' capability of judging;

METHODOLOGY

Methodology of this research was quasi-experimental of pre-test and post-test with control group. Population consisted of 4000 female and male students in B.A and M. A. from Quran and Hadis virtual university in Shahr Rey. Sampling in convenient. After determining the control and experimental groups, we conducted pre-test of both groups. Then the courses specified and offered to the teachers. Teaching lasted in seven sessions. Achievement test was conducted with the same questions as a post-test. Data collection tool was pre and post test with the same questeions which provided from the content of Quran and Hadis references and their validity confirmed by relative professors.

FINDINGS

- Study of demographic characteristics and clinical assessment of groups

Table 1: Showed Mean, the Standard Deviations of Age, Education and the Frequency of Sex of the Groups

Table 1: Mean, Standard Deviation of Age and Education and the Sex Frequencies of Groups

Variable		Mean	Standard Deviation	Sex			
Age	Control group	21.6	0.99	Experimental group		Control group	
	Experimental group	22.05	0.60	Male	Female	Male	female
Education	Control group	15.65	0.87	7	13	8	12
	Experimental group	14.35	3.99				

Table 1 showed the mean, standard deviation of the age and education participated in this research by control and experimental group. AVNOVA was used to test the significance of age and education.

Table 2 shows the results of variance analysis of age and education of group to test the assumption of equal or unequal.

Table 2: The Results of ANOVA Related to Age and Education

Variable		Square Sum	Df	Square Mean	F	SS
Age	Between group	2.02	1	2.02	2.98	0.092
	Within group	25.75	38	0.67		
Education	Between group	16.90	1	16.90	2.02	0.163
	Within group	317.10	38	8.34		

According to table 2, there is no significant difference between two groups by age [$F_{(1, 38)}$-2.98, P>0.092] and education [$F_{(1, 38)}$-2.02, P>0.163]

Investigating the research hypotheses by means of Descriptive and inferential tests

The First Hypothesis: The model of collaborative learning affect on the students' capability in analyzing:

Table 3: The Mean and Standard Deviation (SD) of the Group's Performance in Pre and Post Test of Analysis

Variable		Mean	SD
Pre test	Experimental group	2.05	2.05
	Control group	1.90	1.90
Post test	Experimental group	3.85	3.85
	Control group	3.00	3.00

Table 4: Levin Test to Investigate the Equality of Variances

Variable (post-test)	F	Df1	Df2	Sig
	0.179	1	38	0.675

Table 4 shows the Levin test investigate the equality of variances hypothesis. Findings show that there is no significant equality for variances error and more one factor covariance analysis can be used.

Table 5: The Results of One Variable Covariance the Scores of Post Test Analysis amongst the Groups in Research

Variable	Square Sum	Degrees of Freedom	Square Mean	F	Sig. Level	ATA Square (η 2)
Modified Model	9.21	2	4.64	3.86	0.030	0.17

Table 5: Contd.,

Interaction	44.62	1	44.62	37.11**	0.001	0.17
Stochastic Model	2.06	1	2.06	1.71	0.198	0.044
Group Effect	6.44	1	6.44	5.36*	0.026	0.12
Error	44.48	37	1.20			

As the results of table 5 shows, the effect of associative variable in pre test analysis scores on the groups performance in post test [$F_{(1, 37)}$-1/71, P>0.198; ATA square=0.044] was not significant.

After controlling the associative variable of pretest score of analysis, groups' performance in post test with high effect [$F_{(1, 37)}$-5.36, P>0.05; ATA square=0.12] was significant. Indeed, adjusted scores shows that collaborative learning affected on the improvement of analysis by students.

Second Hypothesis: Collaborative learning effects on improvement of students' justice

Table 6: Mean and Standard Deviation of the Group's Performance in Pre and Post Test of Justice and Assessment

Variable		Mean	Standard Deviation
Pre test	Experimental group	1.70	0.65
	Control group	1.87	0.87
Post test	Experimental group	2.60	0.75
	Control group	2.00	0.64

Table 6 shows Mean and standard deviation of the groups' performance in pre and post test of justice and assessment. One variable covariance analysis has been used to investigate the second hypothesis that its results can be seen in table 7.

Table 7: Levin Test to Investigate the Hypothesis of Equality of Variances of the Scores of Justice and Assessment

Variable (post-test)	F	df1	df2	Sig
	2.58	1	38	0.116

Table 7 shows the Levin test to investigate the hypothesis of equality of variances of the scores of justice and assessment. As you see, the hypothesis of equality of variances error [F(1, 38)-2.58, P>0.116] was not significant and one factor covariance analysis can be used as in table 8.

Table 8: The Result of One Variable Post Test Covariance in Justice and Assessment Scores among the Groups in Study

Variable	Square Sum	Degrees of Freedom	Square Mean	F	Sig. Level	ATA Square (η 2)
Modified Model	3.89	2	1.94	3.89	0.029	0.17
Interaction	26.90	1	26.90	53.79**	0.001	0.59
Stochastic Model	0.29	1	0.29	0.44	0.198	0.016
Group Effect	3.77	1	3.77	7.54*	0.009	0.16
Error	18.50	37	0.50			

The results, in Table 8, using an ANCOVA variables between the groups, indicating that the effect of associative pretest variable of justice and assessment scores on groups performance in post test [F(1, 37)-0.44, P>0.198was not significant. After controlling associative post test variable of justice and assessment

[F(1, 37)-7.54, P<0/0001; ATA Square=0.16] groups' performance in post test by high effect was significant. So, it can be said that adjusted scores shows that collaborative learning affects on improvement of students' justice and assessment.

The model of collaborative learning affects on the progress of students' data application.

Table 9: Mean and Standard Deviation of Group's Performance in Pre and Post Test for Data Application

Variable		Mean	Standard Deviation
Pre test	Experimental group	1.15	0.58
	Control group	0.95	0.51
Post test	Experimental group	1.85	0.58
	Control group	6.50	1.27

Table 9 shows the mean and standard deviation for group performance in pre and post test of data application. In present study, one factor covariance analysis used to investigate the third hypothesis and the findings showed in table 10.

Table 10: Levin Test to Survey Variances Equality for the Scores of Data Application

Variable (post-test)	F	df1	df2	Sig
	1.67	1	38	0.563

According to table 10, Levin's test used to survey the variances of equality hypothesis for the scores of data application shows that the hypothesis [$F_{(1,\ 38)}$-1.67, P>0.563] of variances error was not significant and one factor covariance analysis can be used.

Table 11: Findings Provided Form One Factor Covariance Analysis of Post Test for Data Application Scores among the Groups under Research

Variable	Square Sum	Degrees of Freedom	Square Mean	F	Sig. Level	ATA Square (η 2)
Modified Model	216.98	2	109.100	109.100	0.001	0.85
Interaction	126.20	1	126.20	126.91**	0.001	0.77
Stochatstic Model	0.75	1	0.75	0.76	0.383	0.020
Group Effect	213.59	1	213.59	214.79**	0.001	0.85
Error	36/79	37	0.99			

According to table 11, findings of the one variable covariance analysis among groups shows that the effect of data application scores in pre test associative variable on groups' performance in post test [F(1, 37)-0.76, P>0.383, ATA square=0.020] was not significant. After controlling stochastic variable of pre test score of data application, the groups' performance in post test by high effect [F(1, 37)-214.79, P<0.001; ATA square=0.85] was significant. So, it can be said that the model of collaborative learning affects on the progress of students' data application.

CONCLUSIONS

Findings of this research showed that the use of collaborative teaching methods were effective in improving the high levels of learning lessons Hadith sources. There is no research in literature that is exactly the same as the present study, but there are several cases related to this topic, the effect of collaborative method in teaching, learning and academic progress, which is consistent with current research. As such, the researches of Ebrahimzade (2010), Quidu et al (2003), Saeed et al (2010) which directly implies the effect of collaboration in the learning progress. Also, Keser, H., & Karahoca,

D. (2009), Hwang, et al. (2008) know the effective use of participatory methods in educational attainment. Along with the increasing demand for higher education in the country and due to the limited capacity of universities, E-learning is a perfect solution. However, it should be noted that any new program requires careful planning, management and evaluation in all aspects.

To achieve a deep and effective E-learning experience requires enough knowledge of participatory elements, the level of participation in this type of learning and use of appropriate online technology for learners.

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