Study of Cooperative Learning Effects on Self-Efficacy and Academic Achievement in English Lesson of High School Students

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ABSTRACT

Present study, investigated the effects of cooperative learning on self-efficacy and academic achievement in English lesson ofhigh school students. An experimental study with pretest - posttest control group design was carried out in tow groups. Using random assignment method, 6o middle school students selected and were divided into two control and experimental groups. For data analysis, Multivariate analysis of covariance (MANCOVA) is used. Results of study indicate in both variables (self-efficacy and academic achievement in English lesson), differences were in favor of experimental group. In the end of article, findings are discussed and practical recommendations are presented.
Keywords: cooperative learning, self-efficacy, academic achievement in English lesson

INTRODUCTION

Cooperative learning is a successful teaching approach in which small teams, each with students of different levels of ability, use a variety of learning accomplishments to increase their understanding of a matter. Each member of a team is responsible not only for learning what is taught but also for helping coworkers learn, thus creating aclimate of learning. Students work through the task until all group members successfully understand and complete it. Cooperative learning is a set of instruction procedures that enable students working together in groups, usually with the goal of completing a specific task. These methods can help students develop the ability to work with others as a team. Cooperative learning has five basic elements that promote its functions. The first element is positive interdependence.Positive interdependence is successfully achieved when group members recognize that they are related with each other in a way that one cannot succeed unless everyone succeeds.The second element is promoting interaction, preferably face-to-face.The third element is individual and group accountability. Both the group and member must be accountable for achieving goals and achievement. The forth element is interpersonal and small group skills. Leadership, decision-making, trust-building, communication, and conflict-management skills enable students to work successfully. The last element is group processing. Group processing exists when group members deliberate how well they are achieving their goals and continuing effective working interactions [1]

Numerous studies have shown that cooperative learning has positive effects on cognitive and affective outputs [2, 3, 4, and 5]. For example, carpenter [6] studied effects of cooperative learning strategy on the academic achievement in chemistry and concluded that cooperative learning improved students' academic performance. In other study, Jolliffe [7], studied effects of student team achievement division strategy that initially developed by slavin[8] on the academic achievement and social skills and concluded STAD strategy can increase both variables. Gomleksz [9] examined the effects of Jigsaw II method on English as foreign language learning and concluded that cooperative learning increases in students' learning of vocabulary and use of active and passive voice in English. Further result of this study is students' positive attitude towards learning English. Based on results of previous studies, this study was conducted to answer this question whether cooperative learning improves the self-efficacy and academic achievement in English lessonof Iranian high school students.

MATERIALS AND METHODS

The present research is an experimental study that effects of cooperative learning on the self-efficacy and academic achievement in English lesson of high school students, has been studied. Using pair-wise matching, 6o male high school students selected and were divided into two experimental and control groups. In order to measure self – efficacy, themotivational strategies learning questionnaire (MSLQ) of Pintrich and Smith [10] is used. Coutinho and Newman [11] used Cronbach's alpha method to study the questionnaire reliability and the

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reliability coefficient was estimated equivalent to 0.90. In the present study, in order to study the factorial structure of the motivational learning strategies' questionnaire, the statistical method of the confirmatory factor analysis was used and its factorial structure was confirmed. For measuring the academic achievement in English of students, average of scores in achievement test made by researchers has been calculated. In the section of descriptive statistics, the data's average and standard deviation were calculated and in the inferential statistics section, multivariate analysis of covariance (MANCOVA) was used for testing the difference existing between the two groups.

Design of study

The study was a pretest-posttest control group design. The experimental group received training based on student team achievement division (STAD) method that lasted for four weeks. Instructional materials were two lessons of English lessons in high school. Both self-efficacy inventory and achievement test was conducted before and after the training in both gropes.

RESULTS

For analysis of data, SPSS software, 18 versions is used. The descriptive statistics for dependent variables are presented in table 1.

Table 1. Descriptive Statistics of dependent variables o in pretest- posttest

	Variables	Group	Mean	SD	N
Pretest	Academic achievement	Experimental	12.6	2.37	30
		Control	13.23	2.51	30
	Self- efficacy	Experimental	71.66	10.56	30
		Control	71.79	9.85	30
Posttest	Academic achievement	Experimental	22.96	2.63	30
		Control	18.83	4.09	30
	Self- efficacy	Experimental	77.3	9.25	30
		Control	71.73	10.47	30

Preliminary analysis was first conducted to identify outliers and missing cases and the assumptions for MANCOVA and ANOVA were tested and no violations observed. Then a MANCOVA test is conducted to assess the overall effect of cooperative learning on two dependent variables: academic achievement in English and self-efficacy. The analysis revealed statistically significant group differences as a result of cooperative learning (Wilks' Lambda=0.44, $F_{(2, 57)}$ =21.63, p=.001). Results of analysis are presented in table 2.

Table 2. Multivariate Tests: Groups

	Effect	Value	F	Hypothesis df	Error df	Sig.
Group	Pillai's Trace	0.541	21.63	2.000	57.000	.001
	Wilks' Lambda	0.443	21.63	2.000	57.000	.001
	Hotelling's Trace	1.021	21.63	2.000	57.000	.001
	Roy's Largest Root	1.076	21.63	2.000	57.000	.001

Follow up ANOVA analysis, indicated that there is significant differences between groups in both dependent variables. Based on this analysis, F value for academic achievement in English calculated equal with 24.75 which was significant at the 0.001 level, $(F1, 58 = 3.45, p < .001)$, and F value for self-efficacy calculated equal with 53.36 which was significant at the 0.001 level too, $(F1, 58 = 53.36, p < .001)$. Results of analysis are presented in table 3 and table 4.

Table 3.ANOVAcooperative learning on academic achievement in English lesson

Source	Sum of squares	Df	Mean of squares	F	significance level
Between group	1612. 01	1	1612.01	24.75	0. 001
Within Groups	3804.56	58	65.69		
Total	76487	59			

Table 4.ANOVAcooperative learning on self-efficacy

Source	Sum of squares	Df	Mean of squares	F	significance level
Between group	1848.15	1	1848.15	53.36	0. 001
Within Groups	2008.833	58	34.635		
Total	67297	59			

DISCUSSION

This study aims to investigate the effects of cooperative learning on academic achievement in English lesson and self-efficacy, which in both, differences were in favor of experimental group. These findings are in accordance with the results of the previous researches. Many research findings show that the cooperative learning improve academic achievement and self-efficacy [12, 13 and 14]. Four sources of self-efficacy are direct experience, vicarious experiences, verbal persuasion and physiological symptoms [15]. Cooperative learning can prepare both direct experience and vicarious experiences to all of group members. In cooperative situation, even the weakstudentshave the opportunity for learning and achievement. On other hand, observing successful students can increase self-efficacy of weakstudents. Generally, based on present study findings, teachers must more pay attention to practical approaches such as cooperative learning and apply these methods in classrooms to improve cognitive and affective outputs of students.

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