



## THE EFFECT OF COOPERATIVE LEARNING ON THE STUDENT'S ACADEMIC ACHIEVEMENT

**Khadijeh Hosseini<sup>1</sup>,**

**Jamil Navkhasi<sup>\*2i</sup>,**

**Hiva Shahsavari<sup>3</sup>**

<sup>1</sup>Department of Physical Education and Sport Sciences,  
Kurdistan Science and Research branch,  
Islamic Azad University, Sanandaj, Iran

<sup>2</sup>Department of Physical Education and Sport Sciences,  
Science and Research Branch,  
Islamic Azad University, Tehran, Iran

<sup>3</sup>Bachelor in Mathematics,  
Department of Education,  
Kurdistan Branch, Muchesh, Iran

### **Abstract:**

This study aimed to investigate the effects of cooperative learning on student academic achievement. A causal-comparative methodology was used. The population of the research consisted of students (n = 3450) studying in high school physical education in the school of Kurdistan Province year 2014-2015. According to the study, a quasi-experimental study, students were classified into two distinct groups, trained and untrained, consisting of 25 people. These students were selected by using stratified cluster random sampling. To collect the data, a number of 5 disciplines were considered (religious life, social studies, English, science, mathematics). Cooperative learning methods were used for 10 weeks. For analyzing the data in order to test the hypotheses, an independent t-test was used. All the statistical analysis and confidence was done by using SPSS software version 22 (error level 0.05). The results of the analysis of findings showed that the cooperative learning has a significant impact on student achievement. Some of main aspects were the constructive gathering, the interaction within class and the collaborating at unison for significant academic results. In conclusion, in order to

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<sup>1</sup> Correspondence: email [jamil.navkhasi@gmail.com](mailto:jamil.navkhasi@gmail.com)

increase the quality of students' academic achievement, considering the collaborative learning method is highly recommended.

**Keywords:** cooperative learning, academic achievement, students

## 1. Introduction

According to the importance of learners' academic achievement in every educational system, the involvement of multiple factors and the influence of this phenomenon, many studies were accomplished for compiling of efficient models, to clarify and predict academic achievement. It seems that one of the most effective factors in this field is the cooperative learning.

Cooperative learning occurs when students, in order to realize academic achievements, are organized in small groups and specific purposes determine the activity for each of them. When the results are achieved, all members of the group are able to share, comment and debate the various aspects of its educational content. If one or more people in the group obtain the answer and then share it with another member who was not implied on the process, or perform a mental task of the group and the others are only spectators; in this case, cooperative learning has not occurred (Slavin, 2004).

The method of cooperative learning can be used on a variety of educational and social activities. These methods lead to promote self-esteem (Lazarowitz, 1991) and increase academic achievement (Mirzabeigi and Kulaei, 1999). In fact, academic success is one of the main variables of the educational system and it can be referred as the main index to measure the quality of education that usually is evaluated based on final test results.

Different researchers have found that the traditional concepts are not being sufficient and students' activity needs to be more closely related. The students need to interact together for learning deep concepts (Boxt et al, 2000). Therefore, for achieving results of higher quality, it is necessary to allow students interact and communicate with each other (Saglam and Millar, 2006).

For a more effective teaching, teachers should have sufficient knowledge about learners, instruction issue and appropriate methods. The researchers introduced many methods that can lead to high academic achievement; these methods include direct instruction, cooperative learning, mastery learning and project-based learning (McMillan and Schumacher, 2014). Cooperative learning is working together to achieve common goals in cooperative situations; the people in such conditions, pursue results that bring benefit for themselves and for the group. In other words, in cooperative

learning, in addition of interaction as a teamwork and raise the academic achievement, students envelope skills of counseling, commanding and organizing. In this way, the teacher has a guiding role which assists on eliminating unknown elements by letting the students help each other in the learning process (Johnson and Johnson, 2011).

In confirmation of the above issues, Kagan (2001) believed that students with lower academic achievements perform better in cooperative group, because all members can benefit of group success and all students can develop their knowledge in better conditions by sharing opinions with the others members of the group.

However, long-desire of every society is the achievement and the excellence of its community as well as having educated and thoughtful citizens. Obviously any achievement in various areas including cultural, economic, social, political, requires having a thoughtful, creative and critical people that are able to take correct decisions and proper right planning, which depends on existence of dynamic and active educational system. So it can said that any achievement originated from an efficient and accurate system of education is benefic for the community and this depends on many factors including changes teaching methods and patterns and to use the new and active approach. In this context, much research has been done in the field of cooperative learning. Among these could be noted the investigation of Salvin (1990). The results showed that cooperative learning influences on interpersonal relationships, accepting of special needs school classmates, enhances the friendship between the students, increases self-esteem, augments interest on learning and on subjects being studied, increases attention to the task and bring efficiency to the time dedicated to homework and the ability to perform an effective work with others (Yazdanpour et al, 2007).

Therefore, the purpose of this study is to answer the question whether the cooperative learning has influence on students' academic achievement.

## **2. Research backgrounds**

Alkhateb and Jumaa (2002) examined effects of cooperative learning on academic performance of students in the eighth grade algebra. The results didn't show significant differences between the performance of students in the group cooperative learning and traditional.

Winston (2002) in a research titled '*Impact of cooperative learning on achievement and attitudes of fifth grade students in different cultures*', concluded that cooperative learning positive impact on students' attitudes then to the lessons of mathematics and academic achievement.

Nichols (2002) explains the effects on adopting a form of cooperative learning on academic achievement motivation of a geometry class 80 students. The results showed

that students, who were in the cooperative learning group, were more efficient and had a superior goal-oriented learning. Also, significantly greater educational achievements had been registered.

Ghaith (2003) examined the effect of cooperative learning on English reading skills progress and self-esteem of students and concluded that cooperative learning methods like lecturing dramatically increase the students' reading skills. Also, it increases, without being significant, the students' self-esteem.

Murphy et al (2007) in a research titled '*Academic motivation and achievement*' among urban adolescents in the study, eighth and ninth grade students were assessed. The results showed that self-efficacy and learning objectives helps and determine the students' academic progress. Bertucci et al (2010), with no prior experience, examined the effect of cooperative learning on academic achievement, social support and self-esteem of students. Students participated in a training unit for 90 minutes and 6 day during the week 6 in the process of research. The results of analysis of findings of this study showed that cooperative learning is contributing more than individual learning on improving the student academic achievement. The students also who were trained using cooperative instruction, had higher levels of social support and self-esteem.

Abbasi and Rezai (2009) in their study entitled, '*The role of the classmate study group in the academic achievement of middle students first*' concluded that the average scores of students increases with forming a study group and create a group competition.

Momeni, et al (2011) in his study on which instruction method is better, cooperative or lecturing, tested students divided into two experimental and control groups. The findings of their studies showed a significant difference between mean scores of students' satisfaction before and after the implementation of cooperative teaching methods. It also founded significant difference between pre-test and post-test scores in group cooperative teaching compared to the speech of the story. In fact, the study showed that the use of cooperative teaching methods can be useful for students, increase student satisfaction, and provide an opportunity to improve the quality of education.

Karami, Mohammad Zadeh and Afshari (2012) in their study entitled '*The impact on group-oriented cooperative teaching methods and academic achievement of high school students in Mashhad*' concluded that there are significant differences among the three groups, cooperative teaching and control for group-oriented variable. But there were not significantly different between the three groups in terms of academic achievement.

Sheikh, Zarei and Saadat Zadeh (2012) in a study examined the impact of cooperative teaching methods with an emphasis on courage learners' academic advancement students in their religion and life lessons and concluded that cooperative

teaching methods have a positive impact with emphasis on the model expressed assertive training, on the academic achievement of students.

Mujahid and Mohammad (2014) have investigated the effects of cooperative learning on students' self-esteem. The results of this study showed that an increase in collaborative learning cause an increase in self-esteem. In addition, it was found that cooperative learning increases social skills and responsibility of students.

Tran (2014) has investigated effects of cooperative learning on academic achievement and retention of knowledge. The population of this study consisted of 110 primary school students. These students participated in the research process in two groups of 55 people. The results showed that students, who trained with cooperative learning approach, gained better scores in academic achievement and retention of students.

### **3. Methodology**

#### **3.1 Research method**

This research is based on results, is functional and a quasi-experimental method was used. In quasi-experimental designs according to the requirements of flexibility, the researchers could accurately identify uncontrollable factors and control some of the factors in their research.

#### **3.2 Statistical population**

The study statistical population consisted of all students of physical education in Kurdistan Province that were studying in schools in the province within a period of 2014-2015. According to statistics obtained, in the province of Kurdistan, the number of students studying on physical education field was 3450.

#### **3.3 Statistical methods and sampling**

According to the quasi-experimental study, students were divided into two 25 persons distinct groups that make up the sample. As type of sampling, the stratified random cluster was considered.

#### **3.4 Data analysis method**

Statistical analysis performed in this research includes descriptive and inferential analysis. The descriptive was calculated statistics of mean, percentage, frequency, standard deviation and the cumulative percentage.

The statistics offered to summarize and classify descriptive data in the form of tables and diagrams. In the part of inferential statistics also was measured the normality

of the data distribution and with confirmed the default was used independent t-test. All data analysis was performed using SPSS 22 software.

#### 4. Results

**Table 1:** Normal state of the data after the implementation of cooperative learning methods

	Variable	Parameters normal		Statistic K-S	Sig
		Mean	Standard deviation		
<b>Group trained</b>	Academic achievement	17.220	2.239	0.721	0.675
<b>Group untrained</b>	Academic achievement	15.170	2.042	0.889	0.408

p>0.05

According to the result of Table 1, because of the rate of significance level for all elements greater than the rate of 5% error, these variables have normal distribution.

**Table 2:** Test results different students' academic achievement based on cooperative learning methods

Levin test			T-test						
	F	Sig	t	df	Sig	Mean difference	SD difference	significance level	
								Low limit	High limit
<b>The assumption of equality of variance</b>	0.365	0.549	3.719	48	0.001	1.920	0.516	0.881	2.958
<b>The assumption inequality variance</b>			3.719	47.50	0.001	1.920	0.516	0.881	2.958

The above table shows that in addition to confirming the assumption of equality of variance, the significance level was 0.001/0 that the level of the test error 0.05/0 =  $\alpha$  less. As well as the value of t was 3.301 that it is greater of critical value (1.96). So  $H_0$  hypothesis has been rejected and  $H_1$  (hypothesis research) hypothesis has been accepted. In other words, in the significance level (0.95), difference in academic achievement is significant using the method of cooperation learning between trained and untrained group. In fact, it can be said that cooperation learning has a significance impact on students' academic achievement.

## 5. Discussion and conclusions

The results showed that academic achievement was not different, before the implementation of cooperative learning methods between trained and untrained groups. Because the mean and standard deviation obtained for both groups were at the same level. The results also showed in the significance level (0.95), difference in academic achievement is significant using the method of cooperation learning between trained and untrained group. In fact, it can be said that cooperation learning has significant impact on students' academic achievement.

In the learning process, the student performance should be investigated and monitored. If such a thing is not known, it is not known what part of the objectives has been achieved. In which one of areas did better student learning? What are his problems and shortcomings? And other questions that related to other dimension and learning conditions.

The results of the analysis of hypothesis testing showed in the significance level (0.95), difference in academic achievement is significant using the method of cooperation learning between trained and untrained group. In fact, it can be said that cooperation learning has a significant impact on students' academic achievement. This result is consistent with other research results such as Yaryar et al (2008), Karami et al (2012); Sheikhi et al (2012); Winston (2002); Nichols (2002); Ghaith (2003); Bertucci et al (2010); Ghoraishi et al (2013), and Tran (2014).

Nowadays various studies have concluded that learning of diverse concepts and subjects have less efficiency if learnt in the traditional way. The students, in order to apprehend deep learning concepts, need to interact and to be engaged constructively in a study group. By using this method, in the first place, we allow students to communicate and in the second place, create the motivation to learn in themselves. Due to this process is likely to obtain academic achievement for students. Academic achievement is always one of the main concerns of parents, the education system and psychology. In fact, the optimal efficiency of the educational system is measured by the level of academic achievement of the implied people.

Typically, academic achievement has always considered issues such as, the average student, the units passed or failed, expelled or drop out, etc.. Although in the sources are used the criteria of average exam scores or some special courses in this field. Academic achievement is associated with several factors. Such these factors can point socio-economic status of the family, the intelligence, motivation and so on. But the results of this study found that cooperative learning methods may also impact significantly on the academic achievement of students.

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