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Studying the Effects of Cooperative Learning and Social Skills on the Students' Academic Achievement (Case Study: 6th Grade Elementary School Students in Marvdasht)

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Abstract

This paper aims at studying the effects of cooperative learning and social skills on the students' academic achievement, which, today, most experts in education have paid attention to it. This paper designed a quasi-experimental research by which we may study the effects of cooperative learning through learning together on the students' academic achievement. The population consists of 70 elementary students, 6th grade, in Marvdasht, who were selected using random sampling method. To collect data, we used development and social skills test (designed by the researchers) and the academic achievement test (designed by the teacher). The population divided into two groups: sample and control. Cooperative learning method was applied to the samples, and the control group were taught traditionally. The data was analyzed using variance analysis method and MATLAB 2013 software. The results showed that the cooperative learning method was more effective on learning than the traditional method on the students' academic achievement.

Introduction

Different factors cause declining the popularity of some curriculum planning. Preventing such unpopularity, the components of the curriculums should be evaluated regularly, the threatening factors should be recognized and the planning should be modified (Maleki, 2003).

In elementary education, all the objectives, teaching methods and evaluation methods should be studied in order to characterize the problems and deficiencies and modify them. Although academic achievement is influenced by some factors such as intelligence, motive, evaluation method, and family, the students' learning and teaching methods are of great importance as well.

Therefore, such issues as active teaching methods, active learning, and active learner found particular positions in education (Aliasgari, 2005).

Undesirability of traditional methods are so high that most educational scholars believe that lack of thinking among the students resulted from traditional methods ruling in schools (Good lad and Sirotnik, 1983, translated by Sha'bani, 2003).

Cooperative leaning

Among all various teaching and learning methods suggested by experts, the cooperative learning method, introduced last three decades, seems more influential, and is supported by different researches. The cooperative learning method is a way to strengthen the intellectual skills and improve the learning level and the relationships of students of different race, and prepare them to play roles in group works (Johnson and Johnson, 2002). Communicating each other, the students learn to discuss about different issues, share their ideas, identify their differences, and make a newer understanding (Jacobs and Gorge, 2003). Moreover, the students can be involved more in group discussions, listen to others carefully and make a logical discussion through cooperation (Gillies, 2006).

Learning cooperatively, the students can have interpersonal dependence, face to face interaction, and responsibilities (Tajrobekar, 2001). Cooperative learning requires communication skills among the students; it improves these skills. Furthermore, the success of the group depends on effects of such interactions among the members (Aghazade, 2005).

Cooperative learning method improves the relationship of the students from different races. It can increase the students' self-esteem as well as other positive emotional features (Seif, 2001).

Oludipe and Awokoy (2010) concluded, in their research on the effect of cooperative learning method on decreasing anxiety, that the anxiety level in students who took the exams cooperatively was significantly low. Gokce and Derin (2007) concluded, in their research on writing anxiety, that the students who learned cooperatively were significantly lower level of writing anxiety than the students learning in teacher-based method.

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In this technique, each student has to cooperate actively and feels responsibility for what they learned rather than dependent passively to the teacher as a central human source (Barren, 2009). In this method that is in contrary with the individual learning method, the learners are divided into subgroups and help each other to learn (Seif, 2001).

However, it is essential to design a proper way of cooperating in order to make this learning method more effective (Kohen, 1994; Lou et al., 2001). Active cooperation of each student is vital so that the students can learn individually. Group performance should be more than individual performance (Hans and Berger, 2007).

Methodology

The methodology used in this paper is quasi-experimental. The independent variable is cooperative learning method, and the dependent variables are social skills and the students' academic achievement. Unlike random method to select the students, the sample group members and those in control group who had similar conditions were considered as real subjects of the research. Hence, matching (hamtasazi) as one of the main factors of quasi-experimental research was observed. The population consisted of 70 elementary school students, 6th grade. The subjects are the male and female elementary school students, 6th grade, in the academic year 2013. The sampling was randomly done in several stages. First, 10 elementary schools among the elementary schools in Marvdasht were randomly selected. Then, the schools were divided into two male and female schools, and then, 7 students were randomly selected from each school. The samples were 5 classes in the sample group and 5 classes in the control group. The sample group consists of 2 classes of female students and 3 classes of male students, and the control group includes 2 classes of female students and 3 classes of male students. The main tools of the research include: 1. the test of measuring the developments of social skills designed by the researchers, by which we may measure the developments of the students' social skills before and after the cooperative learning method. Its validity coefficient was 91.5% after applying to a group consisting of 35 people, 2. the academic achievement test designed by the teacher, which was written based on the mathematics textbook of the 6th grade. Its validity coefficient was 86%. The variance analysis was used to analyze the data. The acceptable reliability for accepting or rejecting the hypotheses was predicted as 98% and the error possibility as 2%.

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Results

This study that is constraint to the elementary school students of the 6th grade studies the effects of cooperative learning method on developing social skills and the students' academic achievement in mathematics. Therefore, the main hypotheses are:

1. The students who learn mathematics through cooperative learning method develop their social skills more than the students who are taught traditionally.
2. The students who learn mathematics through cooperative learning method achieve more academic achievements than the students who are taught traditionally.

Table 1. The students' scores in social skills in pre-test and post-test

Variable	Group	No. of Sample	mean	Standard deviation
Pre-test score	Sample	35	15.3417	1.7931
	Control	35	14.8239	1.8459
Post-test score	Sample	35	16.7206	1.4893
	Control	35	15.1058	2.1396
Difference	sample	35	1.3789	1.1581
	Control	35	0.2819	1.1159

Table 1 shows that the scores of the sample group in post-test of development of social skill test increased 1.3789 while the scores of the control group increased 0.2819. Therefore, it can be said that the achievement was significant, and it was made through cooperative learning method.

Table 2. The students' scores of academic achievement in pre-test and post-test

Variable	Group	No. of Sample	mean	Standard deviation
Pre-test score	Sample	35	4.1147	1.7405
	Control	35	4.5106	1.7138

Post-test score	Sample	35	16.7952	2.9552
	Control	35	13.9376	3.8420
Difference	sample	35	12.6805	2.0051
	Control	35	9.4270	2.8906

As Table 2 shows, the scores of the students in the sample group in post-test of academic achievement has increased as 12.6805 while the scores of the students in the control group increased as 9.4270. Therefore, it can be said that the achievement was significant, made by cooperative learning method.

Table 3. Summary of variance analysis of studying the effect of gender and the method, and gender interaction and the method on development of social skills

Source	freedom degree	Variance	F	Significance possibility
Gender	1	1.46	0.793	0.219
The method	1	98.7258	64.2617	000
Interaction between gender and the method	1	3.019	0.013	0.981

Table 3 shows that there is no significant effect by gender on development of social skills. The effect of testing action (cooperative learning method) on development of social skill is significant, but the effect of interaction between gender and the testing action on development of social skills is not significant. In other words, the cooperative learning affect the development of social skills, and is equal in both genders.

Table 4. Summary of variance analysis of studying the effect of gender and method, and gender interaction and the method on the students' academic achievement

Source	freedom degree	Variance	F	Significance

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				possibility
Gender	1	94.615	12.372	000
The method	1	196.217	24.805	000
Interaction between gender and the method	1	17.545	3.476	0.174

Table 4 shows that the effects of gender and the testing action on the students' mathematics academic achievement were significant, but the effect of interaction between gender and testing action was not significant. In other words, the cooperative learning method has an equal effect on both genders, and this effect was more on the females.

Discussion and Conclusion

The results show that although the research was conducted in a short period of time, the teachers and students were influenced by the traditional teaching methods, and the educational system was restricted to some limitations due to its centralization, the teachers in the sample group could institutionalize the cooperative learning method in classes, whose main factors are effective cooperation by the teachers, managers and local official as well as exact and detailed planning of educational content of teachers and parents. We can be hopeful that this method can be so effective in schools over the country if the above-mentioned limitations are removed.

As the results show, the mean scores of the students in the sample group were the same ones for the students of the control group before conducting the research, but after applying the cooperative learning method, the mean scores of the students in the sample group increased significantly, while the increase in the mean scores for the students in the control group was not considerable. Therefore, in can be concluded that the cooperative learning method based on the suggested way was influential in developing the 6^{th} grade elementary school students in Marvdasht. This result conforms to Elizabeth Cohen (1994), Ronald (1997), and Farl's (199) points of view, and confirms the results by Venman et al. (2002), Harid (2000), and Faghihi (1992). Among all these researches, the results by Venman should be considered; he concluded that the cooperative learning without any reward is more effective on developing the social skills. This result conforms to our results in this paper.

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As the results show, the mean of mathematics academic achievement score in the sample group and the control group was almost the same before conducting the research. But, after applying the method, it had a significant increase for the students in the sample group. As a result, the cooperative learning method was effective on the 6th grade elementary school students' mathematics academic achievement.

Suggestions

According to the results, it is suggested that the writers of the textbooks should know about the theoretical and experimental basics of the cooperative learning method, and then write the textbook in a way that are teachable by this method. There should held some conferences, seminars and educational courses by which teachers, managers and other instructors could be able to informed of new procedures in cooperative learning method.

As applying the cooperative learning method is considered as a new experience for teachers, it is suggested that there should be some cooperative groups consisting of the teachers as well as cooperative groups of students in order to share ideas and experiences at school. In this context, the teachers can do some researches on this issue and hence, the program can be improved.

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