The Effect of Cooperative Learning on Academic Achievement

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Abstract: The purpose of this study is to determine the effect of cooperative learning on academic performance of high school students in Microsoft office skills. A group of forty students has been chosen as respondents. They were divided into cooperative and individual learning groups. They were tested in three Microsoft office skills (word, excel and power point). According to the findings, posttest scores were significantly higher than pretest scores. The findings also revealed that cooperative learning strategy is more effective on academic achievement than individual learning strategy. Based on the findings; cooperative learning strategy should be introduced in our schools in Iran.
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Introduction

Cooperative learning is a new approach in educational practice. Cooperative learning is a relationship in a group of students that requires positive interdependence, individual accountability, interpersonal skills, face-to-face positive interaction, and processing (Lundgren, 1994). Cooperative learning is defined as the instructional use of small group so that student's work together to maximize their own learning (Gregory & Chapman, 2007) Many studies have documented the social benefits of cooperative learning (Johnson et al., 1985; 1978; Onwuegbuzie, 2001; Salvin, 1996).

Johnson and Johnson (2007) also acknowledged that there is persuasive evidence that cooperative learning teams achieve at higher levels of thought than students who work quietly as individuals (Johnson & Johnson, 1985). Cooperative learning is as an instructional strategy in which students working together use their skills for the success of each member of the group. (Johnson & Johnson, 1985). The goals of cooperative learning are to enhance students' learning and to develop students' social skills like decision-making, conflict management, and communication (Bonwell & Eison, 1991).

Similarly, studies have shown that cooperative learning has strong positive effects on race relations, self-esteem, and a willingness to cooperate in other settings (Salvin, 1983). Cooperative learning is a teaching strategy in which learners engages in communal learning in group context to ensure that group members engage in joint learning and achieve group outcomes at the end of the cooperative learning (Adams et al., 1990; Becker et al.,; Jacobs et al., 2004; Slavin, 1991).

Literature review

Cooperative learning is a special teaching strategy that students with different ability can use in their educational activities to improve their understanding of a subject. According researches students learn better when they are associated with each other in a classroom or other educational environments (Khodabandelou & Karimi, 2011). The main strength of cooperative learning is that it is student-centered. It promotes learner independence by encouraging students to learn from each other, not just from the teacher. Cooperative learning may be broadly defined as any classroom learning situation in which students of all levels of performance work together in structured groups toward a shared or common goal. According to Johnson, Johnson and Holubc, (1994) "Cooperative learning is the instructional use of small groups through which students work together to maximize their own and others learning. Most researchers have found that cooperative learning improves academic performance in areas such as, comprehension, use of critical thinking, time on task and test scores (Armstrong-Melser, 1999; Bandura, 1977; Johnson et al., 1978; Slavin, 1991). This studies also claim that working collaboratively increases learning (McManus & Gettinger, 1996; Singhanayok & Hooper, 1998).

According to Garfield (1993) "one way for teachers to incorporate active learning in their classes is to structure opportunities for students to learn together in small groups"(Khodabandelou & Karimi, 2011). Several researchers have reviewed studies and literature that support the positive impact cooperative learning has on student achievement (Slavin, 1994; Gabriele & Montecinos, 2001; Kewley, 1998; Onwuegbuzie, 2001; Persons, 1998; Phipps, Phipps,

Kask, & Higgins, 2001; Rama, 2003; Slavin, 1996). Johnson et al., (1978) found that students working cooperatively completed tasks more accurately and quickly than individuals working alone. Johnson et al., (1978) found that cooperative learning promoted increased motivation, feelings of personal importance and control, acceptance of heterogeneity and conflict in groups, and better attitudes toward the teacher.

According to Johnson et al. (1991, 1992) there are five essential elements necessary for cooperative groups to be effective:

• Positive interdependence: students need to understand that they are linked to the other members of their group such that they can only succeed if their group partners succeed, and vice versa.

• Individual Accountability/ Personal Responsibility: each group member must be responsible for their own contribution to the group.

• Face-to-face promotive interaction: By using face-to-face promotive interaction, learning becomes active rather than passive. Teams encourage discussion of ideas and oral summarization. Cooperative teams help students learn to value individual differences and promote more elaborate thinking.

• Interpersonal and collaborative skills: key social skills necessary for students to work together on a goal include clear and unambiguous communication, acceptance of everyone in the group, conflict resolution, and trustworthy behavior.

• Reflection/group processing of interaction: effective groups have a positive experience from their group work. This means that, as a group, they can evaluate, revise, and celebrate success (Johnson, et al., 1991, 1992).

Methods

The objective of the study was to investigate and compare the effect of cooperative and individual learning on Microsoft office skills (Word, Excel and Power Point) achievement of high school students. The hypothesis of this study was "The use of cooperative learning in Microsoft office skills will increase learning as measured by a pretest and a posttest". It is expected that the Microsoft office skills achievement of students who learned from cooperative learning strategy is higher than students who learned from individual learning strategy. Two instruments were used namely pre-test and post-test achievement to collect data. A sample of 40 students from a high school students participated in this study. The point values are as follows: disagree = -2, somewhat disagree = -1, neutral = 0, somewhat agree = 1 and agree = 2. Descriptive statistics and t-test were used to summarize the characteristics of the data. Each response was given a point value.

Result

The aims of the study was to investigate and compare the effect of cooperative and individual learning on Microsoft office skills including; Word, Excel, and Power point. The descriptive statistic of pretest of each skill in individual and cooperative learning groups has been indicated in Tables 1 and 2.

Table 1 : Descriptive analysis of pre-test in individual and cooperative learning groups

		M	*Std*
Word	Individual	8.8	2.1
	Cooperative	10.7	1.7
Excel	Individual	7.9	2.9
	Cooperative	11.1	1.6
Power point	Individual	8.8	2.1
	Cooperative	11.7	1.4

Table 2: Descriptive analysis of post-test in individual and cooperative learning groups

		M	*Std*
Word	Individual	2.9	2.0
	Cooperative	3.7	1.3
Excel	Individual	2.1	1.5
	Cooperative	3.1	1.1
Power point	Individual	3.1	2.6
	Cooperative	3.9	1.1

Table 3 indicated the result of t-test of pre test which has shown the knowledge of student in the Microsoft office skills (word, excel, and power point) t= .027, 1.36 and 0.28, p>0.05.

Table 3: t-test of pretest in the Microsoft office skills

Pretest		*t*	*sig*
Word	Group 1&	0.27	0.70
Excel	Group 2	1.36	0.52
Power point		0.28	0.57

Table 4 indicated the result of t-test of word. According to this result, the level of significantly is at p=0.04. Hence, the result has shown the positive effect of cooperative learning than the individual group in learning of word: t=2.21, p<0.05.

Table 4: t-test of word post test

Word post test	*M*	*Std*	*t*	*df*	*sig*
Groups(1 and 2)	1.25	2.35	2.21	28	0.04

Tables 5 indicated t-test of excel in posttest. The result conformed it's significantly at p=0.02. It means cooperative learning has a positive effect on academic achievement towards learning Microsoft office. Thus, the cooperative learning group were better than individual group in learning of excel skill (t=3.51 and p<0.05).

Table 5: t-test of excel post test

Excel post test	*M*	*Std*	*t*	*df*	*sig*
Groups(1 and 2)	2.22	2.21	3.51	36	0.02

Table 6 showed t-test of the power point post-test. It showed the level of it's significantly at the p=0.02. It means cooperative learning has positive effect on academic achievement in power point skill. In this approach the level of achievement in cooperative learning is higher than individual learning in power point skill (t=1.36 p<0.05).

Table 6: t-test of power point post-test

Power point post test	*M*	*Std*	*t*	*df*	*sig*
Groups(1 and 2)	1.6	3.9	1.36	31	0.02

According to the result of this study, the hypothesis was supported by the findings. Hence, the result showed the student learning in Microsoft office skills were increased when cooperative learning was used. Hence the findings of this study is consist with findings of Khodabandelou & Karimi (2011) since they also recommend the use of cooperative learning to achievement of information technology in Iranian educational system. In consist with this study most researchers also have found that cooperative learning improves academic performance other than individual learning approach. According to their studies working collaboratively increases academic learning (Armstrong-Melser, 1999; Bandura, 1977; Johnson et al., 1978; Lundgren, 1994; McManus & Gettinger, 1996; Rama, 2003; Singhanayok & Hooper, 1998; Slavin, 1991; Slavin, 1996).

Conclusions

The purpose of this study was to determine the influence of cooperative learning on academic performance. Cooperative learning is an important component for academic success. Based on the findings in this study, it is apparent that cooperative learning is a much needed teaching strategy for student's achievement. Students are learning through active participation in the classroom. Posttest scores were significantly higher than pretest scores. Both hypotheses were supported by the results of this study. Student learning increased when cooperative learning was used. In summarize using cooperative learning in social studies course will increase learning. Hence cooperative learning is as effective as traditional instruction in educational system. Considering all of the information gathered in this study, a diverse educational program that incorporates cooperative learning would by recommended.

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