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THE EFFECT OF COOPERATIVE LEARNING TECHNIQUES ON PRE-SERVICE TEACHERS' SELF-ESTEEM, ACHIEVEMENT AND ABSENCES

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Abstract

Cooperative learning has been used effectively at the elementary and secondary levels, but it has only recently found its way to the college level. Therefore, in colleges, universities and work places throughout the world, tremendous efforts are underway to move from a lecture-based approach to more active, cooperative learning activities. This study investigates the effect of cooperative learning techniques on pre-service teachers' cooperative learning usage, cooperative learning attitude, self-esteem, class and discussion group (case) grades, class and discussion group attendance. The effect of cooperative learning was examined via instructional techniques. Classes were divided into experimental and control groups. The groups were taught with either traditional lecture-based format (control) or cooperative learning techniques (experimental) during a 16-week semester. Independent *t-tests* were run to compare some of the variables in pre-test scores and to test whether the groups were equivalent at the beginning of the study. Multivariate ANOVA was then utilized to test the group differences on the seven dependent variables. Surprisingly, the results revealed that cooperative learning techniques did have a positive effect on all of the seven dependent variables. Cooperative learning group and traditionally taught group had significantly differed from each other. It appears that cooperative learning has many academic, social and personal benefits for those who participate in it.

Key words: Cooperative Learning and Self Esteem, Measurement of Cooperative Learning, Use of Cooperative Learning, Attitude of Cooperative Learning, Experimental Design with Cooperative Learning[1]

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INTRODUCTION

Educational researchers have argued that when students do not perform well academically, they develop low self-esteem. For example, Tanksley (1994) mentioned that in a typical classroom, students who are reluctant to express their opinions in any given situation miss the opportunity to develop a sense of belonging. When the students seem to feel that they have nothing to offer to the group, they withdraw from other class activities.

Cooperative learning activities create a sense of community that encourage students to help each other; eventually leading students to become more involved with academics (Gail, 1997). Students who suffer from low self-esteem display a high level of absenteeism and adjustment problems, antisocial and aggressive behavior, and low academic achievement in college settings (Taylor, Davis-Kean & Malanchuk, 2007). On the other hand, cooperative learning creates a sense of community that makes students feels safe (Jenkins, Antil, Wayne & Vadasy, 2003), perceive the classroom in a positive light (Summers, Beretavas, Svinicki, & Gorin, 2005), with an increased level of involvement with their friends and in classrooms (Gail, 1997).

Studies have revealed that students who receive an intervention program to improve self-esteem showed significant academic growth (Hall, 1994). Many researchers suggest that cooperative-oriented workshops, teaching techniques and other kinds of intervention programs using cooperative learning techniques can be employed to improve students' self esteem. Such students, beside feeling good, also demonstrated a high levels of academic self-esteem (Johnson & Johnson, 1992; Peterson & Miller, 2004).

Crockrell, Caplow and Donalsdon (2000) reviewed several teaching methods and concluded that cooperative learning is the most promising of teaching tools. A vast amount of literature has been written about the benefits of cooperative learning. The benefits listed include violence prevention (Walker, 2006); increased trust level; feeling relaxed; low level of anxiety among students (Morgan, 2003); increased academic engagement time (Quinn, 2002); improved feelings of self esteem (Peterson & Miller 2004) and increased academic achievement (Morgan, 2003; Boling & Robinson, 1999). Moreover, it produced more positive interactions (Buchs, Butera, & Mugny, 2004); better classroom success rates and products (Jenkins, Antil, Wayne & Vadasy 2003); development of critical and interpersonal skills (Koppenhaver & Shrader, 2003); and increase in concept retention (Koppenhaver, 2006). Cooperative learning, especially, in the last decade, has attracted interest in teaching and research at college level education (Brewer & Klein, 2006). Therefore, it appears that cooperative learning is an instrumental method that colleges and universities can utilize in order to promote academic and personal development of the students.

Statement of the Problem

In a teachers' survey, Agris (1994) found that most students lacked positive self-image. He reiterated that today's students are not receiving enough positive and nurturing attention from schools. Similarly, Wild, Flisher, Bhana & Lombard (2004) emphasized the need for enhancing self-esteem in the school context to prevent multiple risk behaviors. Thus, it seemed that building high self-esteem for students has become a major concern of today's educators (Cabrera, Crissman, Bernal, Nora, Trenzini & Pascarella, 2002).

In a meta-analytic study Johnson & Johnson (1992) consistently found a positive correlation between cooperative learning, achievement and self esteem. Other researchers have also indicated that the level of self-esteem must first be increased prior to any noticeable increase in academic achievement (Lindblod, 1994). In fact, all of these educational goals overlap each other and are interrelated. Any change in one goal directly affects the other goals (Johnson & Johnson, 1992).

Cooperative learning has been accepted and is being recommended as a solution for most educational problems (Johnson & Johnson, 2002). Cooperative learning proposes an approach that fosters acceptance and belongingness; it also teaches effective communication, positive interactions, internal locus of control and personal responsibility in learning (Buchs, Butera & Mugny, 2004; Gillies, 2006; Read, Barros, Barcena & Pancorbo, 2006). Likewise, Jenkins, Antil, Wayne & Vadasy (2003) and Cabrera, Crissman, Bernal, Nora, Trenzini and Pascarella (2002) agreed that cooperative learning is one of the most effective tools in a teacher's repertoire for enhancing self-esteem and achievement in school settings.

Additionally, Kopphenhaver (2006) argued that class absenteeism is one of the most important problems which adversely affects student's academic performance at the university level. Likewise, Rich (2004) also believed that absence from class causes a drop in grades in universities while Chan, Shum & Wright (1997) mentioned that attendance has a significant effect on student's achievement scores. Furthermore, Chan, Shum & Wright (1997) found that students in cooperative learning classes had more favorable attitudes toward the group than lecture classes.

Many researchers have reported that in colleges and universities, classes are taught typically in a traditional lecture-based format which is characterized as individualistic, competitive and teacher centered. In such structured class settings, students lose the opportunity to interact with and help each other to learn, to participate in class discussion and to experience social as well as personal growth (Morgan, 2003). Cooperative learning has been used effectively at the elementary and secondary school levels, but it has only recently found its way to the college level. Therefore, throughout the world, in colleges, universities and work places, there is a tremendous efforts to move from a lecture-based approach to more active and student centered cooperative learning methods (Matthew, 1994; Bruffee, 2000). Therefore, the purpose of this study was to determine the effect of cooperative techniques on college students' self-esteem, level of classroom-absenteeism and academic achievement.

Statement of Hypothesis

Thus, specifically, the intention of this study was to establish a relationship between instructional design and student self-esteem, achievement and attendance rates in pre-service teachers training programs. In order to test this relationship, the following five hypotheses were formulated:

1) Students who participate in cooperative learning classes and discussion groups (case) will get better grades than those in traditionally taught classes.

2) Students in the cooperative learning group will score higher on self-esteem measurements than do students who have been in traditional lecture techniques.

3) Cooperative learning activities will have a positive effect on the student's class and discussion group attendance rates. (Students in the cooperative learning group will attend more class and discussion groups than do students in traditional classes).

4) Students who have used cooperative learning techniques in their classes will have a more positive attitude toward cooperative learning than those who are not exposed to cooperative learning.

5) Students who are exposed to cooperative learning will perceive cooperative learning to be more useful than those who are not exposed to cooperative learning.

Definition of the Terms

"Self-esteem" is the evaluation of one's self and can be either positive or negative. It is defined as one's verdict about one's own self-worth. One's own competence is based on a process of perceiving and gathering information about oneself and one's experiences (Rekurt, 1994).

"Cooperative learning" as defined by Slavin (1989), is a set of alternative and complementary techniques to traditional instructional systems, or more concretely, the techniques in which students work in heterogeneous groups of four to six members and earn recognition, rewards and sometimes group approval based on the academic performance of the whole group. According to Slavin, feelings of being well liked and feelings of doing well academically are the most important components of a student's self-esteem.

Literature review

Historically, educators have identified academic, vocational, social and personal development as important educational goals (Silvernail, 1985). Throughout the years, however, some of these goals have taken precedence over others. For example, during the 1980's, self-esteem was considered an important issue in educational and

civil administration. For example, in 1986, the then California governor established a task force for increasing self-esteem for all of the residents. It was assumed that enhancing self-esteem would eventually be rewarded by reducing welfare dependency, teen pregnancy, school failure, school underachievement, crime and drug addiction (Baumeister, Campbell, Krueger & Vohs, 2003). Numerous researchers have shown the link between low self-esteem and personal and social problems. For instance, Wild, Flisher, Bhana and Lombard (2004) found a relationship with low self esteem and suicide tendencies, victims of bullying, alcohol usage and risky sexual behaviors (Gordon & Caltabiano, 1996), substance abuse (Carvajal, Wiatrek, Evans, Knee & Nash, 2000), smoking and prejudice (Baumeister, Campbell, Krueger & Vohs, 2003), emotional instability, lack of physical attractiveness, school achievement and low internal locus of control (Smith & Betz, 2002), depression (Leary, 1999), psychological difficulties and problems, loneliness, academic failure, and criminal behaviors (Donnellan, Trezesniewski, Robins, Moffitt & Caspi, 2005) and delinquency and antisocial and externalizing behaviors. Low self esteem is not only a negativistic evaluation of one's self, but also a negative attitude toward many events, circumstances, people and other realities that students face (Baumeister, Campbell, Krueger & Vohs, 2003).

Furthermore; Baumiester, Campbell, Krueger and Vohs (2000) summarized the characteristics of students with low self-esteem as follows: uncertain and confused about themselves, avoiding risk, modest, emotionally labile, submitting readily to other people's influence, lack of self confidence, having depressive and anxious feelings. Miller and Moran (2005) added to the list features such as, shy, withdrawn, being quite, negativistic outlook, lack of motivation, tendency to give up easily and difficulties in communication. According to Taylor, Davis-Kean and Malanchuk (2007), low self esteem can easily be observed in student's interpersonal skills and academic domains in schools and that it is the educator's responsibility to carefully observe and help the students who need to feel a sense of worth.

On the other hand, high self-esteem is positively correlated with proactive cooping (Lo, 2002); active cooping (Leary, 1999), lower level of aggression (Taylor, Davis-Kean & Malanchuk, 2007); increased academic and job performance, adaptive and self-regulatory strategies, increased persistence and better interpersonal relations (Baumeister, Campbell, Krueger & Vohs, 2003).

Research suggests that positive self-concept is closely related to positive self esteem: people who believe that they are good at a lot of things tend to feel better about themselves (Taylor, Davis-Kean & Malanchuk, 2007). Researchers repeatedly reported that self-esteem can protect people from being overwhelmed by diurnal challenges and therefore reduce failures and misbehaviors. It seems that self-esteem has a profound effect in every aspect of our lives and low self-esteem lies at the core of individual and social problems. Thus, improving self esteem in specific domains with academic intervention may help the students' social adjustments and academic successes.

In recent times, educational research has shifted towards studying the development of self-esteem, social skills and socio-cultural factors in educational context (Cabrera, Crissman, Bernal, Nora, Trenzini & Pascarella, 2002). Many researchers who have focused on self-esteem and its antecedents, suggest that if teachers are to improve students' self-esteem, they must first understand what self-esteem is and how it can be developed and enhanced in students (Miller & Moran, 2005). People are not born with a sense of self, but as they grow older, they formulate ideas about their self-worth. For some students, self-esteem becomes more positive during the years of school while for others it becomes more negative (Silvernail, 1985). However, the trend is to acquire more negative self-images with each additional year of school. Eventually, negative developments lead to doubts about individual self-worth and about the worth of others and raise concerns about interpersonal relationships. These problems lead to increasing absenteeism, higher drop out rates, low achievement and other negative consequences (Koppenhaver, 2006).

As solutions to these problems, other researchers also recommend intervention programs for increasing self-esteem. Leary (1999) wrote that self-esteem is a remedy for most psychological and social problems, interventions for enhancing self-esteem lead to positive psychological changes with a feeling of being of value to society. Such intervention programs became very successful because they help the student develop social skills, interpersonal problem solving, improve physical appearance and increase self control. Additionally, Wild, Flisher, Bhana and Lombard (2004) argued how such intervention programs, by enhancing self esteem, prove to be effective and cost-efficient methods of controlling risky behaviors.

Similar to high school students, college students have to cope with many problems in their educational journey. The transition from high school to college often leaves the new student inexperienced with institutional practices and policies (Townsend, 1993). Colleges and universities now use liberal and open-admission policies, but students are frequently unprepared for academic work, resulting in high rates of withdrawal in the first year (Swell, 1992). In addition, most students perceive the university's academic standards to be higher or more difficult than those in high school. One reason for this difference in perception is that in high school the emphasis is on the student's social and personal development, whereas, at the university the emphasis is on academic success. Another difference is faculty attitudes and the nature of interaction with students. From the faculty member's point of view, it is the student's responsibility to correct any deficiencies in academic preparation.

College student retention studies frequently concentrate on how students integrate themselves into the university's social and academic systems. The competitive nature of the academic world makes students reluctant to help one another in academic domains. In classroom settings, students may be reluctant to express their opinions and thereby miss the opportunity to feel a sense of belonging. When students feel that they have nothing of value to offer the group, they tend to withdraw from other class activities (Tanksley, 1994).

Fisher and Sartorelli (1992) have suggested that college students have common developmental issues and a self-image that is reinforced by their peers. Avent (2004) and Hancock (2004) reported that cooperative learning techniques enhance self-esteem, promote academic achievement, increase the motivation to learn and improve both social and collaborative skills. Therefore, it appears that student interaction, both in and outside the classroom, is most effective when it builds on feelings of self-confidence and self-esteem. Self-esteem is influenced by interaction with other people (Johnson & Johnson, 1989; Maslow, 1968) therefore it is important for students to interact with each other in psychologically safe cooperative learning environments.

Many people have assumed that self-esteem is a relatively stable attribute of a person and that schools can do very little to change it. But some educators and psychologists have argued that self-esteem can be raised dramatically. Maslow (1968), for example, believed that self-esteem was relatively stable but could be changed by positive experiences over a period of time. Furthermore, Silvernail (1985) and O'Brien (1989) speculated that self-concept was learned in an ongoing, dynamically organized and constantly changing manner. Coopersmith (1967) argued that self-esteem is being formed during the entire life process while Robins and Trzesnieski (2005) reported that self-esteem develops across the individual's life span and can change or fluctuate during the course of life.

Most researchers believe that self-esteem is an acquired attitude and, as such, college students are able to change or enhance their self-esteem under appropriate conditions. At the same time, several researchers working on cooperative learning techniques have reported that team learning can improve a student's self-esteem (Peterson & Miller 2004; Jenkins, Antil, Wayne & Vadasy, 2003). Students in cooperative learning settings report more positive feelings and attitudes toward themselves and others (Hancock, 2004). Similarly, Fisher and Sartorelli (1992) also emphasized that educators should consider cooperative learning as a vehicle to improve self-esteem. Successful, positive relationships with peers and with significant others enhance one's self-concept and increase one's good feelings about being close and intimate with others. In a carefully designed workshop of intervention programs, students can learn skills, attitudes and facts that will help them increase their satisfaction levels with peers and their own self-esteem as well (Widra & Amidion, 1987). Furthermore, some authors have argued that activities enhancing self-esteem can bring about long-term success in students' achievements. Overall, this research sheds much light on college students' self-esteem issues.

Brennan (1985) demonstrated that if a person enters group activities with at least a moderate level of self-esteem and if he/she has positive experiences, self-esteem tends to increase. Consequently, he concluded that increased student participation leads to increased self-esteem. Swell (1992) conducted an experimental program with freshman students and reported significant differences in the self-concept of freshmen who participated in the program.

Why have researchers and educators paid so much attention to the self-esteem issue? One reason is that much of the research has established the relationship between academic achievement and self-esteem. Some have argued that a change in self-esteem brings about direct changes in academic achievement (Beane, 1992; Silvernail, 1985). If students do not feel good about themselves and others they will lack the motivation to improve performance; thus, it is important to enhance students' general self-esteem. Also, researchers have suggested that cooperative learning activities have the capacity to implement and reinforce self-esteem (e.g. Johnson & Johnson, 1985). Similarly, a semester-long study revealed that although the students in a cooperative learning group achieved a higher grade than the students in traditional lecture-based instruction, there was no difference in social development between the control and experimental groups (Anoush, 1994). Slavin (1983), a major contributor to the co-operative learning literature, has cautioned that the relationship between self-esteem and cooperative learning and achievement is complex. He noted that cooperative learning will lead to increased self-esteem only when accompanied by improved achievement and improved peer relationships.

Overall, there is very strong evidence that cooperative learning activities improve students' self-esteem and consequently their academic achievement. However, very little research deals with building college students' self-esteem; and there is less research on how cooperative learning techniques directly impact the self-esteem of college students. Generally, in the literature, self-esteem is typically mentioned in the conclusion section as a byproduct of any given study.

Therefore, the objectives of the study are to explore the issues related to teaching methods' effects of pre-service teacher on students' achievement, self-esteem and class attendance rates.

METHODOLOGY

Subjects

Participants were 92 undergraduate students (66 females, 26 males) from different social sciences subject areas enrolled in a required course in educational psychology department in a state university. The age range differed between 18 and 25 years. The students were enrolled in 3413 Child and Adolescent Development class at a public university. It was ensured that participants were similar in their high school and university GPA grades, academic achievement and social experiences in higher education.

Procedure

Child and Adolescent Development was an undergraduate course offered in two different sections. Both of the classes were taught by male instructors who were

similar in age and had very similar educational backgrounds. Participation in the study was voluntary and there were two students who preferred not to participate. There were a total of 40 students in the traditionally taught, lecture-based class (referred to here as the control group) and 52 students in the cooperative learning classrooms (referred to as the experimental group).

While the experimental group received a semester-long (16 weeks, but met 20 times) cooperative learning instruction for their class and discussion groups (it is called case which was also 16 weeks, but 10 met times), the control groups were taught in the traditional lecture format.

In cooperative learning conditions, classes started with instructors presenting the course material and providing the basic outline for that day. The class was divided into five or six student groups in which they continued to work during the whole semester. Each group had chosen a speaker and a secretary. They had 45-50 minutes to study together, discuss or do a written assignment together. The instructor walked around the groups and participated in group discussion, answered their questions and observed the groups work in progress. At the end of each class period, the spokesperson presented what they had studied with a 10-15 minute presentation.

On the other hand, students in traditional lecture classes, received the traditional lecture which was given by an instructor. In this group, students usually sat alone in their chairs, did not interact with each other and mostly listened to what instructor was teaching for 75 minutes. The same method was used in the lab section of the class (it is called case here) for a 45 minute period in which students followed a guide book and discussed the material individually or in a group. Both classes and case sections were instructed using the same textbook, case analysis book, study guides, slides and other handout materials. Both sections took the same tests and final exams. Two tests and a final exam were given for class assessment.

Independent Variables: (Manipulation and Treatment Variables)

The learning methods of cooperative learning and traditional learning (lecture format) were used as the independent variable. In class teachings and lab section, there were some warm-up exercises in which students worked together in groups or pairs. Every class included some kinds of class activities in which students used cooperative learning methods. Students were strongly encouraged to have a buddy system, exchange phone numbers and study together.

In the control group, the traditional lecture-based teaching method was used. In this group, the emphasis was on individual work and the instructor used the class time for instructions and lectures. In lab sections, students were instructed to work on their own, avoid interaction with other students, work hard on the task, complete tasks to the best of their ability and work quietly so that other students would not be disturbed or interrupted. Students were to ask only the teacher for help and check their performance only with the teacher. The teacher, in turn, would praise or reward only competitive and successful students.

Dependent Variables

As an outcome of the semester, a set of seven measures were utilized to detect the effectiveness of cooperative learning techniques. The seven measures were: self-esteem, cooperative learning usage and cooperative learning attitude scores, class attendance, case attendance, class achievement grade and case achievement.

Instruments

The Coppersmith Self-Esteem Inventory (SEI) Adult Form was used in this study to measure evaluative attitudes toward the self in social, academic, family and personal areas. In relation to the SEI, the term "self-esteem" refers to the evaluation a person makes and customarily maintains, of him or herself; that is, overall self-esteem is an expression of approval or disapproval, indicating the extent to which a person believes him or herself competent, successful, significant and worthy (Coopersmith, 1987).

Cooperative Learning Usage Survey

The Cooperative Learning Usage Survey (CLUS) used in this research was originally developed by the researcher for another study (Bulut, 1998). It included 15 items that ask about the participants' usage of cooperative learning methods in their college classrooms. It is a Likert-type, five point scale in which scores range from a minimum of 15 to a maximum of 75. The Reliability coefficient was 0.80 in the early study and for this study reliability was tested again with pre-test scores. The Cronbach alpha for the CLUS scale was 0.77 for the lecture groups and 0.81 for the cooperative groups. Since the first question was a yes or no question, it was not included in the data analysis, but the results were reported independently.

Cooperative Learning Attitude Survey

The Cooperative Learning Attitude Survey (CLAS) was developed and used by the author as a part of an earlier study (Bulut, 1998). This was also a Likert-type instrument with 15 items. Scores ranged from 1 (never) to 5 (always) for a total range of 15 to 75. The Cronbach alpha reliability coefficient was 0.70 in the original study and it was calculated again with pre-test scores and found to be 0.75 for the lecture groups and 0.88 for the cooperative learning groups.

Class Achievement and Grades (Lab Grades)

The students' final grades, which were a combination of 3 tests, were also used as one of the dependant variables. For this purpose, a test bank was employed for

selection of test items. Students had to take 3 tests, each with 50 questions and covering 5 chapters.

Class Attendance

There were 20 class meetings designated for main class lectures and class work. Student attendance was recorded at the beginning of each class period.

Group Discussions (Case Analysis) and Grades

The discussions sessions (labs) used a casebook that was parallel to the course textbook. Students were divided into 5 to 6 groups, each consisting of 5 or 6 members, who discussed and processed the material together during the semester. They summarized the stories, discussed their understanding, reflected on their readings and did critiques and case presentations in class. In addition, they were involved in group case-written projects. This was done only in the cooperative learning group. The instructor walked around and listened to the students, gave feedbacks and participated in their discussions.

Discussion Groups (Case Attendance)

Students were also required to participate in the discussion section of the class. This was also called case analysis or labs. There were again 10 possible case periods that students could attend. Student attendance at each session was recorded for comparison reasons.

RESULTS

Before any statistical computation was made, the two groups were compared on five dimensions by using a *priori t tests* on the pre self-esteem, pre-usage, pre-attitude, high school GPA and undergraduate GPA scores. Levene's test of equality of variances showed that dependent variables were equal across groups before any manipulation was made. In order to avoid type I experimental error, the significance level 0.05 was divided by 5, which is the number of comparison made. (0.05/5 = 0.01). An alpha level of 0.01 was set, a priori, to detect any significant differences. The results of these 5 comparisons revealed no significant results. Thus, it is observed that at the beginning of the experiment, the students in cooperative learning groups and in traditionally taught groups were very similar and roughly equivalent before any teaching and learning manipulation was made on them. This is shown in table 1.

Table 1. Independent *t tests* for Pre-test Scores of Cooperative and Traditional Learning Groups

Variables	N	X	S.D.	d.f.	t	P
High school GPA						
Cooperative Learning	52	3.96	0.34	90	0.455	0.650
Traditional Learning	40	3.72	0.36			
Undergraduate GPA						
Cooperative Learning	52	3.23	0.49	90	1.560	0.121
Traditional Learning	40	3.39				
Pre Self Esteem						
Cooperative Learning	52	75.73	15.82	90	0.655	0.514
Traditional Learning	40	78.02	17.72			
Usage Before						
Cooperative Learning	52	50.32	6.60	90	0.400	0.690
Traditional Learning	40	50.85	5.67			
Attitude Before						
Cooperative Learning	52	46.12	88.69	90	0.583	0.561
Traditional Learning	40	45.19	5.87			

Significance level was set 0.01 levels. Of the five corporations none of them was significant.

First, *Hotellings* T^2 was calculated [*Hotellings* T^2 =4.609, F (7,84) = 55.311, $p < 0.01$]. This calculation revealed a significant result, which means these two groups differed. Then, the two groups were compared on the seven dependent variables via Multivariate Analysis or Manova. All of the seven comparisons were found significant. That means the cooperative learning group and traditionally taught groups were significantly different on the seven variables that emerged due to the implementation of cooperative learning.

Table 2. Multivariate ANOVA for Cooperative and Traditional Groups

Source	Sum of Squares	d.f	Mean Square	F	Sig.	Eta Square
Post Class Attendance	438.47	1	438.47	141.30	0.000***	0.611
Post Case Attendance	123.83	1	123.83	67.94	0.000***	0.430
Post Class Achievement	870.15	1	870.15	9.14	0.003***	0.092
Post Case Achievement	764.36	1	746.36	30.18	0.000***	0.251
Post Self-Esteem	1763.08	1	1763.08	10.85	0.001***	0.108
Post CL Usage	1152.08	1	1152.08	41.50	0.000***	0.316
Post CL Attitude	2713.69	1	2713.69	63.81	0.000***	0.415

*** Significant at the 0.05 level. All of the seven comparisons were significant.

Table 3. Descriptive Statistics for Post-test Scores for Cooperative and Traditional Groups

Variables	N	Min.	Max.	X	S.D.
Post Class Attendance					
Cooperative Learning	52	14	20	17.65	1.51
Traditional Learning	40	7	19	5.53	1.48
Post Case Attendance					
Cooperative Learning	52	5	10	7.87	1.24
Traditional Learning	40	3	8	13.25	2.05
Post Class Achievement					
Cooperative Learning	52	21	98	87.40	10.63
Traditional Learning	40	58	97	81.20	8.47
Post Case Achievement					
Cooperative Learning	52	88	100	97.51	2.74
Traditional Learning	40	68	100	91.70	6.97
Post Self-Esteem					
Cooperative Learning	52	60	100	85.73	9.78
Traditional Learning	40	40	100	76.90	15.80
Post CL Usage					
Cooperative Learning	52	49	69	57.53	4.62
Traditional Learning	40	38	66	50.40	6.01
Post CL Attitude					
Cooperative Learning	52	46	67	57.48	4.73
Traditional Learning	40	28	59	46.52	8.29

Hypothesis 1 was well confirmed. In terms of the proposed hypothesis, the cooperative leaning group did perform better than the traditional group in the class and case achievement scores. Their means were (87.40 > 81.20), and (97.51 > 91.70) respectively. The students in the experimental groups did score better than the traditional groups and this difference was statistically meaningful.

Hypothesis 2 was also confirmed. Student scores in cooperative and traditional groups did differ significantly from each other in the self-esteem variable. As such, the cooperative learning groups scored higher than the traditional group. Their means were (85.73 > 76.90).

As for hypothesis 3, the students in the cooperative group participated in more classes than the traditional, with means of (18 > 13 times). In the case attendance situation, students in the cooperative learning groups preferred to attend more than the traditional groups (8 > 5 times). Furthermore, the groups did differ in the CL attitude and CL usage variables. Therefore, hypothesis 4 and 5 were also confirmed. In both of the scales, the cooperative learning students scored higher than the traditionally taught groups in CL attitude (57.48 > 46.52) and CL usage scales, (57.53 > 50.40). As a result, seven of the measured depended variables significantly differed

between the two groups. That means the experimental manipulation variable, cooperative learning, caused such differences.

DISCUSSION

The current study provided strong support for the benefits and effectiveness of cooperative learning on the pre-service teachers' educational experiences. First, the students in this study who experienced the cooperative learning groups reported that they found it very useful and beneficial as an instructional method. Students' attitudes towards cooperative learning as measured with a scale revealed that they developed more positive attitude for group work during the semester. This study shows similar results to that of Brewer and Klein (2006) in which they found positive attitude towards cooperative leaning for students who worked in groups. It was also qualitatively observed that students in cooperative groups had more favorable attitudes towards the learning material and other students.

The present study showed results similar to those of earlier studies. Thompson and Chapman (2004) found that students working in groups reported more satisfaction and enjoyment. Summers, Beretvas, Svinicki and Gorin (2005) argued that cooperative activities provide positive academic classroom community and campus connectedness for students. At the end of the semester of this study, there was a strong sense of community and connection among the students. This provided involvement in cooperative learning and consequently, involvement with other students that made an overwhelming difference in student's retention and success.

Likewise, Huss (2006) reported that cooperative work increases the students' retention and academic achievements. Additionally, in the present study, students in the cooperative learning section enthusiastically attended classes and case meetings. It was also found that students' case and class attendance records were better for cooperative groups. When their attendance records were compared, it was observed that participation in cooperative activities and group works naturally encouraged the students to regularly come to the classes. This was also observed in other studies showing that participation in cooperative groups increases students' achievement scores (Boling & Robinson, 1999; Ghazi, 2003). Jenkins, Antil, Wayne and Vadasy (2003) mentioned better classroom success rates and product as a result of cooperative groups. Similarly, Nembhard and Edmondson (2006) also reported improved quality in products and services for students who had participated in cooperative learning.

The present study was consistent with the other studies in the sense that, the case and class achievement scores were higher for cooperative groups then traditionally taught classes. It seems that cooperative learning provides more interactions and involvement among students and with instructors which eventually contributes to the success of students. Students in cooperative groups develop a higher level

of reasoning, easy generation of new ideas and solutions, increased creativity and more transfer of what they learned from one subject to another (Huss, 2006). Cooperative group works not only causes an increase in grades, it also improves the quality and variety of the products. Thus, it has many more by-products than originally thought.

Finally, one of the important results of this study is that participation in group works was shown to have a positive effect on students' self-esteem. Similar results were also reported by other researchers (Huss, 2006). However, in a previous study, Ghazi (2003) reported that cooperative learning did not contribute to the students' academic self esteem and alienation from school. On the other hand, Donellan, Trezesniewski, Robins, Moffitt and Caspi (2005) found a correlation between low self-esteem and aggression, antisocial behavior and delinquency. Taylor, Davis-Kean and Malanchuk (2006) reported a correlation between low self-esteem and school violence in young adults. Therefore, improving self esteem in specific domains, such as social self-esteem or academic self-esteem, can potentially reduce school violence and boost students' sense of worth.

In fact, the relationship between self esteem and academic success is a complex issue and it is not a unidimensional phenomenon. As Quanwu (1994) reported, cooperative learning causes a positive change in students interpersonal relations and a higher self esteem which leads to more positive attitudes towards life, causes less depressive feelings and anxiety and finally contributes to higher academic achievement. Thus, it appears that self esteem, academic achievement, retention and attitudes toward school are deeply connected elements where a change in one area affects the others, or one positive result causes desirable results in other areas.

As Vygotsky (1978) argued, learning is a social process that happens through interpersonal interaction within a cooperative environment. Therefore, it is imperative that we should understand the full benefits of cooperative learning and use it in all levels of education. In summation, research must continue to test the limits of cooperative learning in order to broaden our understanding of why and how cooperative learning leads to such effective and positive results.

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UTJECAJ SURADNIČKIH TEHNIKA UČENJA NA SAMOPOŠTOVANJE PREDAVAČA: POSTIGNUĆA I NEDOSTACI

Sažetak

Suradničko učenje je tehnika koja je uspješno primjenjivana u osnovnim i srednjim školama, ali je tek nedavno našla svoje mjesto na sveučilišnoj razini. Na fakultetima, sveučilištima i radnim mjestima diljem svijeta prelazi se s pristupa utemeljenog na predavanjima na aktivno, suradničko učenje. U ovom radu istraživane su posljedice tehnika suradničkog učenja na predavače i njihovu primjenu tih tehnika, stav prema njima, samopoštovanje, uspjeh na razini razreda i grupe te prisutnost na nastavi u razredu i grupi. Rezultati suradničkog učenja istraživani su instruktivnim tehnikama. Razredi su podijeljeni na eksperimentalne i kontrolne skupine, koje su poučavane tradicionalnim predavanjima (kontrolna skupina) ili suradničkim tehnikama učenja (eksperimentalna skupina) tijekom 16-tjednog semestra. Varijable dobivene iz pre-test rezultata uspoređene su nezavisnim t-testom, kojim se utvrdila ekvivalentnost skupina u početku istraživanja. Razlike među skupinama provjerene su multivarijatnom analizom varijance na sedam zavisnih varijabli. Iznenađujuće, rezultati su pokazali pozitivan utjecaj suradničkih tehnika učenja na svih sedam zavisnih varijabli. Skupine u kojima se provodilo suradničko učenje te skupine poučavane na tradicionalan način značajno su se razlikovale. Čini se da suradničko učenje ima brojne akademske, društvene i osobne koristi za sudionike.

Ključne riječi: suradničko učenje i samopoštovanje, mjerenje suradničkog učenja, primjena suradničkog učenja, stav prema suradničkom učenju, eksperimentalni dizajn sa suradničkim učenjem

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