

A STUDY OF THE EFFECTS OF COOPERATIVE LEARNING ON STUDENTS' ACHIEVEMENT IN GRADE NINE ECONOMICS

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Abstract

The major purpose of this study is to investigate the effects of cooperative learning on students' achievement in grade nine economics. This study was conducted using quantitative research method. Quantitatively, an experimental study was used to compare the students' economics achievement between the control group and the experimental group. The posttest only control group design was used in this study. In this experimental study, the subjects were Grade Nine students (economics combination) who were selected and tested from two schools; No. (1) Basic Education High School, Mayangone and No.(4) Basic Education High School, Insein from Yangon Region. The subjects, (64) Grade Nine student were chosen from each school. The students from each school were randomly divided into two groups: experimental group and control group. The subjects from the experimental group were taught by using cooperative learning method and those from the control group were taught by using formal instruction. After that, a posttest was administered to two groups. Independent samples *t*-test was used to analyze whether there were significant differences between two groups. The results showed that the students who received a treatment by using cooperative learning method were significantly higher than those who received formal instruction. Examination of the mean and *t*-test at No. (1) Basic Education High School, Mayangone was ($t = 6.26, df = 62, MD = 3.00, p < .001$) and No. (4) Basic Education High School, Insein was ($t = 5.08, df = 62, MD = 2.56, p < .001$). The result indicated that there was a significant difference between the two groups. Therefore, research findings proved that cooperative learning method has positive contribution to the economics teaching and learning at the high school level.

Keywords: Cooperative Learning, Economics, Achievement

Introduction

It is widely accepted that of all the subjects children study in school. Social studies is a very important and compulsory subject which has the most responsibility for preparing them to be good citizens. The social studies is an integration of experience and knowledge concerning human relations for the purpose of citizenship education. The basic purpose of the social studies is to develop reflective, competent, and concerned citizens (Martorella, 1985). Hugo believed that education is crucial to the improvement of the economic and social situation for all people (Skeel, 1979). Economics is a social science, which is the study of human beings as they exist, and make reasonable thinking in their ordinary business of life.

In cooperative learning, it encourages learners to work together for both the common and individual goal. Slavin (1995) considers the cooperative learning as a tool for promoting individual skills, improving relationship among students and preparing them to play roles in group activities. Each member will have an equal opportunity to learn, to converse with peers, present and defend ideas, exchange diverse believes, question other conceptual frameworks and are actively engaged. By working together in small groups, students may discuss and explore problem solving techniques. Students also develop problem solving skills, practice meaningful tasks, thinking skills and social skills.

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Purposes of the Study

The main purpose of the study is to study the effects of the cooperative learning on grade nine students' achievement in economics. The specific objectives are as follows:

- To compare the economic achievement between the students who receive instruction through cooperative learning and those who do not receive it,
- To give suggestions based on the data obtained from the study to improve in teaching economics.

Research Hypotheses

1. There is a significant difference in economics achievement between Grade Nine students who receive instruction through cooperative learning and those who do not receive it.
2. There is a significant difference in performing knowledge level questions between Grade Nine students who receive instruction through cooperative learning and those who do not receive it.
3. There is a significant difference in performing comprehension level questions between Grade Nine students who receive instruction through cooperative learning and those who do not receive it.
4. There is a significant difference in performing application level questions between Grade Nine students who receive instruction through cooperative learning and those who do not receive it.

Scope of the Study

The following points indicate the scope of the study.

- This study is geographically restricted to Yangon Region.
- Two Basic Education High Schools (No.1, BEHS Mayangone and No. 4, BEHS Insein) are selected for this study. Participants in this study are Grade Nine students (economics combination) from selected schools in (2017-2018) Academic Year. In each selected school, only 64 students are included in this study.
- This study is to find out the effects of cooperative learning on Grade Nine students' economics achievement.
- This study is limited to the content area of chapter (10) "Trade, Finance, Transport, and Communication Sectors of Myanmar" from Grade Nine Economics textbook prescribed by the Basic Education Curriculum and Syllabus and Textbook Committee, 2017-2018.

Definition of Key Terms

- **Cooperative Learning:** Cooperative learning is the instructional use of small groups so that the students work together to maximize their own and each other's learning (Zubair, 2012).
- **Economics:** Economics is the study of human efforts to satisfy what appear to be unlimited and competing wants through the careful use of relatively scarce resources (Clayton, 1995).
- **Achievement:** Achievement is the ability to demonstrate accomplishment of some outcome for which learning experiences were designed (Özdemir, 2016).

Review of Related Literature

Vygotsky's Sociocultural Cognitive Theory

Cognitive development has its origins in interaction among people in a culture before the psychological process representing those ideas, events, attitudes, and strategies become possible within children. All personal psychological processes begin as social processes, shared among people, often among adults and children. According to Vygotsky, cognitive development should be enhanced when children work cooperatively or collaboratively with adults and other children.

Vygotsky (1978, cited in Gage & Berliner, 1992) stated cooperative learning enhances children's intellectual growth by working in within one another's proximal zones of development. Zone of proximal development is the zone between what a student can achieve independently and what a student can accomplish while working with an instructor or more capable peers (Johnson & Johnson, 2007). Cooperative learning provides modeling, coaching, and scaffolding for the students; therefore, students learn from each other (Slavin, 1995). Vygotsky (1978, cited in Gage & Berliner, 1992) declared that teachers should minimize the time for students to work alone.

Importance of Learning Economics

The use of learning economics can be seen from three dimensions: (i) personal satisfaction; (ii) social benefits and (iii) an intellectual exploration (Srinivasan, 2005).

Personal Satisfaction

Most of the activities carried out in a family are economics in nature. The advantage students of economics have is that they learn a lot about real life economic activities in a systematic way in schools. This enable them in understanding various economic activities taking place in their surroundings compared to those who do not study economics. It introduces students to the concept of satisfaction or benefit that a consumer derives when units of a commodity are consumed along with how much the consumer needs to pay for the good.

Social Benefits

The study of economics widens the understanding about and adds value to democracy and good citizenship. Students of economics get the opportunity to learn about various economic issues faced by the nation. A large variety of economics curricular activities help them to critically analyze economic issues and make suggestions based on economic principles that are studied over the years. Economic theories train students to think like a scientist- to put it rightly- as an economist-logically and rationally.

Intellectual Exploration

Learning economics is an exciting intellectual adventure. Economics students also get excited when they master many facets of the economic system. Peterson (n.d, cited in Srinivasan, 2005) stated that economics offers a pleasing blend of the purely intellectual and the artistic, for pure economics analysis has the rigour and symmetry of science and mathematics, whereas the policy partakes more the uncertain character of an art than a science.

Cooperative Learning

Cooperative learning is the instructional use of small groups so that students work together to maximize their own and each other's learning (Johnson, Johnson, 2007). Cooperative

learning occurs when students work in small groups to help each other learn. Cooperative learning groups vary in size, although four is a typical number of students. When students are assigned to work in a cooperative group, the group usually stays together for weeks or months, but cooperative groups usually occupy only a portion of the student's school day or year (Sherman, 2001, cited in Santrock, 2006). In a cooperative learning group, each student typically learns a part of a larger unit and then teaches that part to the group. When students teach something to others, they tend to learn it more deeply (Santrock, 2008).

The Purpose of Cooperative Learning

There are basically four main reasons why cooperative learning is to be recommended: (Santrock, 2006).

1. More children actively learning

Cooperative learning helps to actively engage more children in learning than do teacher-centered or lecture-oriented methodologies. By using more cooperative methodologies in which students work together in groups, all students are actively engaged on a learning task. Students become more active participants in their own learning, as opposed to passive recipients of knowledge who only listen, observe and take notes.

2. Children learn to help one another

Cooperative learning encourages students to support their classmates in a group rather than to compete against one another. In this way, students can combine their talents and help one another.

3. Children-to-child learning support

Cooperative learning provides the opportunity for higher-achieving students to help students who are slower learners. These higher-achieving students can probably communicate more easily with peers than can the teacher. The help of these students also increases the amount of explanation that occurs in the classroom overall.

4. Improved motivation through success

Cooperative learning helps to improve the motivation of many students by offering the opportunity to more students to experience the joy of winning and academic success. In classrooms where students are only allowed to complete individually, only the few high achieving students will likely have this experience.

In classrooms where the students are divided into cooperative teams, each with its high and low-achieving students, the opportunity to succeed is more evenly distributed.

Cooperative Learning Methods

In cooperative learning instructional methods, students work together in small groups to help each other learn. There are various forms of cooperative learning and each has a set of best procedures to follow (Chruickshank, Bainer & Metcalf, 1999).

Student Team Achievement Divisions (STAD): Student Teams Achievement Divisions (STAD) was developed by Robert Slavin and his colleagues at John Hopkins University and is perhaps the simplest and most straightforward of the cooperative learning approaches (Slavin,

1994, 1995 cited in Arends, 2007). According to Slavin (1995), the instructional technique, STAD typically involves five steps:

1. **Presentation.** New material is typically presented to class using conventional approaches like lectures, discussions.
2. **Teamwork.** Groups are given material to study and worksheets to complete. They can work on these individually, in pairs, or in larger groups. They are encouraged to help each other and to make sure that everybody understands and knows the material, the emphasis being on the performance of the team.
3. **Quizzes.** At the end of the study period, which typically lasts a week, students write quizzes based on that week's material- individually, and without helping each other.
4. **Individual improvement scores.** Team scores are then calculated. And although recognition is given to teams that obtain the highest total scores, winning teams are those whose individuals improved the most. In that way, lower-achieving students can contribute as much to the team's total score as more able students.
5. **Team recognition.** Teams are then rewarded, perhaps with certificates, tokens, prizes, and praise. Team scores may also be used as a factor in determining individual grades.

In STAD, when delivering a good presentation, the teacher should get students' attention, tell them what they will learn and what they should be able to do after learning; relate the new information to ideas learners already know; present information in a step-by-step manner; don't overwhelm or underwhelm; emphasize the most important points students need to remember or use; use examples and illustrations to increase clarity; use variety to maintain attention; and make sure learners understand by asking them questions.

Two Stay Two Stray: Two Stay Two Stray (TSTS)

The TSTS procedure is based on Spencer Kagan (1992, cited in Maonde et al., 2015):

1. The teacher introduces the lesson.
2. The teacher divides the students into groups of four.
3. The students work together in a group of four.
4. Two members from each group stray to two other groups.
5. Two members stayed have job to share their work and information to those who come to their group.
6. The two strayed members get back to their own group and the groups discuss in their own group.
7. Finally, the teacher asks what the students have learned.

The advantages of using Two Stay Two Stray technique are:

1. This technique can be applied to all of lesson materials.
2. Every group can share information with other students.
3. Students can train social relation to other student.
4. This technique can train students' respect in a problem.
5. That can improve good relation among the students.
6. That can increase students' critical thinking on a problem.

Among many cooperative learning methods, the researcher used two cooperative learning methods (STAD and TSTS) in this study.

Research Methodology

Research Design and Procedure

The design adopted in this study was one of the true experimental designs, viz., the posttest only control group design.

Table 1: Experimental Design

Group	Assignment	No. of Students		Treatment	Posttest
		BEHS(1) (Mayangone)	BEHS(4) (Insein)		
Experimental	Random	32	32	Cooperative Learning	EA
Control	Random	32	32	Formal Instruction	EA

Note: EA = Economics Achievement

According to Gay (2003), true experimental research allows researchers to make cause-effect statements about their research studies. True experimental researchers control the selection of participants for the study, divide the selected participants into two or more groups that have similar characteristics at the start of the research experiment, and then apply different treatments to the selected groups. The prerequisite test was administered to all selected students before the treatment was provided. According to the scores of the prerequisite test, the students were randomly divided into two groups: control group and experimental group.

Finally, the achievement of experimental group and control group were compared by using the independent sample *t*-test.

Instrumentation

The instruments used for this study were a prerequisite test and a posttest (Achievement test).

(i) Prerequisite Test

The researcher developed a prerequisite test to measure the basic economics knowledge of the selected samples. There are (25) true or false items in this test and the total score of the test was (25) marks.

(ii) Posttest

A posttest was constructed to measure the economics achievement of Grade Nine students. The students had to answer all questions and there was no choice. The test was constructed based on Grade Nine Economics Textbook with the advice and guidance of the supervisor. In the question used for posttest, 5 items were true or false items, 5 items were completion items, 5 items were multiple choices items, 5 items were short questions.

Population and Sample size

Two High Schools were selected from Yangon Region by using simple random sampling method. These sample schools were No. (1) BEHS, Mayangone and No. (4) BEHS, Insein. No. (1) BEHS, Mayangone was selected from Western area and No. (4) BEHS, Insein was selected

from Northern area in Yangon Region. At No. (1) BEHS, Mayangone, only (64) students were selected by random sampling method from a total population of (437) Grade Nine students (economics combination) in the academic year 2017-2018. In the same way, only (64) students were selected from a total population of (317) Grade Nine students (economics combination) at No. (4), BEHS, Insein (see Table 2)

Table 2 Population and Sample Size

Name of School	No. of Total Population	No. of Selected Student
BEHS (1)	437	64
BEHS (2)	317	64

BEHS (1) = No. (1) Basic Education High School, Mayangone

BEHS (2) = No. (4) Basic Education High School, Insein

Data Analysis

The data were analyzed by using a descriptive statistics (means, standard deviation) and independent samples *t*-test. The independent samples *t*-test was used to compare the achievement of students who receive instruction through cooperative learning method and those who receive instruction through traditional method at knowledge, comprehension, and application level. In order to determine the significant differences, the independent samples *t*-test was used with the Statistical Package for Social Science (SPSS) 22.0.

Findings

This chapter is concerned with the research findings from the quantitative study. Quantitative study deals with the analysis of the data, findings and interpretations of the experimental study. The independent samples *t*-test was used to compare the differences between the control and experimental groups.

The data obtained from the posttest were recorded systematically. And then, these data were analyzed by using the independent samples *t*-test to compare the differences between the experimental and control group. The *t*-test for independent samples was used to compare whether the students in one group did better or worse than the students in other group.

Table 3 *t* Values for Posttest Economics Achievement Scores

School	Group	N	M	SD	MD	<i>t</i>	<i>df</i>	Sig. (2-tailed)
BEHS (1)	Experimental	32	16.75	2.048	3.00	6.258	62	.000***
	Control	32	13.75	1.778				
BEHS (2)	Experimental	32	16.19	2.250	2.56	5.080	62	.000***
	Control	32	13.63	1.755				

Note: *** $p < .001$

BEHS (1) = No. (1) Basic Education High School, Mayangone

BEHS (2) = No. (4) Basic Education High School, Insein

Table (3) shows for posttest economics achievement scores. Moreover, it describes standard deviation, mean difference, *t*-value, degree of freedom, and Sig (2 tailed). The mean scores of the experimental groups were significantly higher than that of the control groups in two sample schools (see Table 3). It showed that there was a significant difference between the experimental group and the control group for scores on the overall economics achievement in each school.

Table 4 *t* Values for Scores on Knowledge Level Questions

School	Group	N	M	SD	MD	<i>t</i>	<i>df</i>	Sig. (2-tailed)
BEHS (1)	Experimental	32	8.38	1.699	0.41	0.927	62	0.357(ns)
	Control	32	7.97	1.805				
BEHS (2)	Experimental	32	8.16	1.273	0.28	0.790	62	0.433(ns)
	Control	32	7.88	1.561				

Note: ns = not significant

BEHS (1) = No. (1) Basic Education High School, Mayangone

BEHS (2) = No. (4) Basic Education High School, Insein

Results of knowledge level questions showed that the mean scores of the experimental groups were not significantly higher than that of the control groups in each school (see Table 3). It showed that there was no significant difference between the experimental group and control group for the scores on knowledge level questions in each selected school.

Table 5 *t* Values for Scores on Comprehension Level Questions

School	Group	N	M	SD	MD	<i>t</i>	<i>df</i>	Sig. (2-tailed)
BEHS (1)	Experimental	32	6.25	1.320	1.53	4.860	62	.000***
	Control	32	4.72	1.198				
BEHS (2)	Experimental	32	5.81	1.091	1.41	5.428	62	.000***
	Control	32	4.41	0.979				

Note: *** $p < .001$

BEHS (1) = No. (1) Basic Education High School, Mayangone

BEHS (2) = No. (4) Basic Education High School, Insein

According to the scores on the comprehension level questions, the mean scores of the experimental groups were significantly higher than that of the control groups in each selected schools (see Table 5). It showed that there was a significance difference between the experimental group and control group for the scores on comprehension level questions in each selected schools.

Table 6 *t* Values for Scores on Application Level Questions

School	Group	N	M	SD	MD	<i>t</i>	<i>df</i>	Sig. (2-tailed)
BEHS (1)	Experimental	32	2.13	0.907	1.06	4.581	62	.000***
	Control	32	1.06	0.948				
BEHS (2)	Experimental	32	2.22	0.941	0.88	3.950	62	.000***
	Control	32	1.34	0.827				

Note: *** $p < .001$

BEHS (1) = No. (1) Basic Education High School, Mayangone

BEHS (2) = No. (4) Basic Education High School, Insein

As regards the scores on the application level questions, the mean scores of the experimental groups were significantly higher than that of the control groups in both selected schools (see Table 6). It showed that there was a significant difference between the control group and experimental group for the scores on application level questions in each selected schools.

Summary of Quantitative Findings

The results of research findings from two selected schools were as follows:

- (1) There was a significant difference between the control groups and experimental groups on the scores of economics achievement in two selected schools. It can be interpreted that the use of cooperative learning method has a significant effect on the overall economics achievement of the students.
- (2) There was no significant difference between the control groups and experimental groups on the scores of knowledge level questions in each selected school. It can be interpreted that formal instruction can also bring about the improvement of students' ability to remember previously learned materials as cooperative learning method.
- (3) There was a significant difference between the control groups and experimental groups on the scores of comprehension level questions in each selected school. It can be interpreted that cooperative learning method can encourage the improvement of students' conceptual understanding.
- (4) There was a significant difference between the control groups and experimental groups on the scores of application level questions in each selected school. It can be interpreted that cooperative learning method can bring about the improvement of students' ability to apply economics concepts in new situation.

Discussion

The main purpose of this study is to find out the effects of cooperative learning on students' achievement in grade nine economics. The results show that the posttest mean score of the experimental group was significantly higher than that of the control group in each school. So, the first hypothesis is accepted.

The results also show that there was no significant difference between the economics achievement of two groups, experimental group and control group, in answering knowledge level questions in each school. So, the second hypothesis is rejected.

The results also show that there was a significant difference between the economics achievement of two groups, experimental group and control group, in answering comprehension level questions in each school. So, the third hypothesis is accepted.

The results also show that there was a significant difference between the economics achievement of two groups, experimental group and control group, in answering application level questions in each school. So, the fourth hypothesis is accepted by the results of the study.

Suggestion

This research will contribute to improvement of economics teaching at the high school level in Myanmar. Cooperative learning consists of five basic elements: positive interdependence, individual accountability, interpersonal and small group skills, face-to-face promotive interaction and group processing. Learning situations are not cooperative if students are arranged into groups without the prescribed five basic elements. Therefore, when implementing cooperative learning, teachers need to create learning environments which include the above five essential elements. Each teacher needs to know how to prepare and plan his/her lessons and create their tasks. Grouping of students can be a difficult process and must be decided with care. Groups should contain three to five members. If the group is too small, one member can dominate the others. If it is too large, the group will ignore the contributions of one or more members. The group should be heterogeneous. Therefore, teachers should organize students into heterogeneous groups with respect to sex, and ability/learning styles when implementing cooperative learning. The present study used two cooperative learning methods (Student Teams Achievement Divisions and Two Stay Two Stray). The effectiveness of other methods of cooperative learning can also be studied. Moreover, further research of this kind with respect to different subjects and at all levels should be carried out in education.

Conclusion

Cooperative learning comprises instructional methods in which teachers organize students into small groups, which then work together to help one another learn academic content (Slavin, 2011, cited in Tran, 2013). In this research, cooperative learning was found to be more effective than formal instruction with respect to students' achievement. In the cooperative learning environment, students learn to analyze, synthesize, and critically analyze others' ideas, which contribute much to the improvement of critical thinking.

The results indicated that STAD and TSTS cooperative learning methods compared to traditional method showed better achievements and motivated students to learn in economics. The effective use of cooperative learning method has significant effect on the overall economics achievement of the students. Therefore, cooperative learning method surely has positive contribution to the economics teaching at the high school level.

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