

## **The Effect of Type of Cooperative Learning Grouping on ESL Learners' Reading Comprehension Performance**

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### **ABSTRACT**

Malaysia is a multi-cultural country and this is reflected in the diversity in the classroom population that requires teachers to constantly cater to these differing students' needs. It is believed that cooperative learning is able to fulfil the requirements of current language learning classrooms; for it is able to address students' diversity and promote achievement. However, recent research has shown that there is a disjuncture between principles of contemporary cooperative learning and Asian cultures. Therefore in this study, the researchers examined the effects of the type of cooperative learning grouping (heterogeneous and friendship) on learners' reading comprehension performance by employing a quasi-experimental design. This study involved 115 sixth semester local polytechnic students and data were collected using a reading comprehension performance test. Quantitative data were analyzed using descriptive statistics, ANOVA and t-test. The findings from the ANOVA and t-test showed significant main effects of friendship grouping in reading comprehension performance. Based on the research findings, friendship grouping in cooperative learning could be considered as a possible approach in encouraging tertiary students to be actively involved in their second language reading classroom.

*Keywords:* Cooperative learning, ESL reading, reading comprehension, friendship grouping, type of cooperative learning grouping

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### **INTRODUCTION**

While English is gaining its status in the education system of Malaysia, a gradual but significant shift has taken place; in terms of pedagogy, there is less focus on teachers and teaching and a greater emphasis is placed on learners and learning

(Clouston, 1997). In today's education system, it can be observed that traditional instruction in the classroom is slowly being replaced by modern alternatives that are perceived to be more effective and relevant. Cooperative learning (CL) is believed to be able to fulfil the requirements of current language learning classrooms for it addresses students' diversity, and at the same time, promotes achievement (Johnson, Johnson & Stanne, 2000). Furthermore, CL is perceived as an important social and political development strategy that serves as an alternative means of promoting social integration among various ethnic groups (Tengku Nor Rizan, 2002).

While there have been various studies on CL from the early days of this century, the amount and quality of the research on CL has accelerated tremendously in the early 1970s' and continue unabated until today (Johnson, Johnson & Stanne, 2000). Among these studies, only a few have focused on tertiary education such as colleges and universities. According to Johnson, Johnson and Smith (1998), a paradigm shift has taken place in college teaching, in which the students are expected to interact actively with classmates and lecturers. In this situation, students need to work together to accomplish shared learning goals to maximize their own and each other's learning.

In language learning, there are four main skills critical for students to master, namely, listening, speaking, reading and writing. Specifically, at the tertiary education level, learners are required to read, interpret and critically evaluate academic texts and

process information in written or spoken form. In addition, learners are expected to be able to comprehend lengthy texts by comparing and relating ideas to their existing schemata and reach a holistic understanding of the text (Shih, 1992, as cited in Nambiar, 2005). Since learners have been involved in reading since the elementary level, it is commonly assumed that tertiary learners are able to read and access knowledge from texts. Nonetheless, the reality is that many of the learners at tertiary institutions are ill-equipped with adequate reading ability (Pressley, Yokoi, van Meter, Van Etten & Freebern, 1997). As pointed out by Nambiar (2005), reading in the Malaysian English as a Second Language (ESL) classroom usually deals with reading a text for the purpose of answering comprehension questions and hence, it has become a rather undemanding task. Consequently, this eventually leads to attainment of minimal reading skills among tertiary level learners (Ramaiah, 1997).

CL is recognized as one of the most successful approach in educational history in terms of its effectiveness in promoting achievement through group interaction. In working cooperatively in groups, students are engaging themselves in meaningful idea-sharing sessions. Learning is made easier as the language used among peers is simplified and appears useful in discussing complex academic matters (Tengku Nor Rizan, 2002). However, recent research by Thanh-Pham and Gillies (2010) showed that there is a disjuncture between principles of CL and Asian cultures. Furthermore, it is claimed that several basic principles of

CL such as assessment methods, resource division, group size and group formation have also been found to be unsuitable for Asian classrooms. Consequently, many researchers have begun to address the mismatches between the principles of CL and Asian culture.

In general, two main grouping methods are applied in CL, namely, heterogeneous and tracking. In the former method, students are mixed to ensure that the group comprises members of differing abilities, whereas in the latter method of grouping, students are grouped according to their levels of capacity (Thanh-Pham & Gillies, 2010). Although both the methods are widely used as parts of the guidelines in CL, there are arguments that centre on these grouping methods. Thanh-Pham and Gillies (2010) pointed out that in Asian countries, special attention should be given to the personal relationship among group members as one of the factors that can ensure the success of the group. The main aim of this proposed study is thus to investigate the effects of the type of cooperative learning grouping (CLG) method on learners' reading comprehension performance among polytechnic students. The research question is as the following:

1. Is there a significant effect of the type of CLG on the ESL students' reading comprehension performance?

## **A REVIEW OF THE RELATED LITERATURE**

As pointed out by Johnson *et al.* (2000), CL learning is so pervasive in the field of education such that it is almost impossible

to find academic materials that do not mention or utilize this approach. According to Johnson *et al.* (2000, p. 2), in their meta-analysis of studies on CL, the success of CL is attributed to the fact that "CL is clearly based on theory, validated by research, and operationalized into clear procedures educators can use". These advantages of CL could well explain the large number of teachers who use CL around the world.

Johnson *et al.* (2000, p. 3) further added that over the past 100 years, "there may be no other instructional strategy that simultaneously achieves such diverse outcomes". Among this diversity of outcomes, the reading skill in both ESL and English as a Foreign Language (EFL) has dominated a large part of it. For instance, the paper written by Ghaith (2003) describes the effects of the Learning Together Cooperative Learning Model in improving EFL reading achievement and academic self-esteem, as well as in reducing the feelings of school alienation among 56 Lebanese high school learners. Though the results indicated no statistically significant differences between the control and experimental groups on the dependent variables of academic self-esteem and feelings of school alienation, it was discovered that there was a statistically significant difference in favour of the experimental group on the variable of EFL reading achievement.

Another research conducted in an EFL context is Shaaban's (2006) study on the effects of CL on reading comprehension, vocabulary acquisition, and motivation to read. The study involved 44 fifth grade

students using a post test-only control group experimental design. It was discovered that there was no statistically significant difference between the control and experimental group on the dependent variables of reading comprehension and vocabulary acquisition. Nonetheless, the results revealed a statistically significant difference in favour of the experimental group on the dependent variable of motivation to read and its dimensions, the value of reading, and reading self-concept.

Other than studies conducted in the EFL context, such studies were also being rigorously conducted in Malaysia. Among these studies, there were a few that reported positive results. Wan Azizah (1999) studied the effects of CL in enhancing reading among form four students. From the study, the teachers revealed that CL was only effective when the students were ready to work cooperatively.

In another study by Fazlin Shasha Abdullah (2002), the effect of CL on learning literature in ESL was investigated. The findings showed that in a literature class, about 46.2% of the students were uncertain whether they work best in a group or alone. About 38.5% of the students agreed that CL helps in learning literature while 15.4% had strongly agreed. The results provided evidence in support of the fact that the students did not have sufficient ideas or knowledge about CL and that they were still not ready to share and work in groups. For instance, the students did not know the main principles in the CL approach and more importantly, they still displayed a tendency

to be competitive rather than cooperative.

Based on the studies discussed above, it can be suggested that CL is an influential approach in the teaching of reading. However, as suggested by Johnson *et al.* (2000), not all practices of CL will be effective in maximizing achievement. Various aspects of CL should be taken into consideration before employing this approach in the language learning classroom. Among these various aspects, the group composition of CL is one of the most essential factors to be examined.

Type of CLG refers to the assignments of students into different groups. The mainstream CL composition is by two ability-based grouping methods, namely, the heterogeneous grouping (HG) and tracking grouping. In a HG, teachers systematically or randomly assign students to groups so that there is variety in terms of students' ability, gender, and race. In an educational context, HG in CL is strongly recommended for it produces optimal achievement (Johnson & Johnson, 1994). Tracking, on the other hand, involves the assignment of students into groups, in which all members have a similar level of ability.

Nonetheless, recent research shows that research in the past has overlooked the importance of students' immediate social relationships for successful group operation (Kutnick, Blatchford & Baines, 2005). Grouping in the CL method should reflect affect-based trust and social shared identity, as indicated in the recent research. Friendship grouping (FG), in which the students are allowed to choose their group

members, tends to produce more positive results as compared to random or ability groupings (Kutnick *et al.*, 2005; Shah & Jehn, 1993). Heilesen, Cudrio and Cheesman (2002) also found similar results, whereby the interaction among group members in an ability-based grouping was less strong compared to the members in the affinity-based grouping. This can be explained by Melles who argued that:

*Western models of random [grouping] put some pressure on the need to quickly develop relationship for the group process. Such spontaneous relationship forming may not come easily to all students [who] see this need of establishing relationship as essential to the successful communication and task completion (2004, p. 228).*

Melles (2004) based his argument on his study with Asian students at an Australian University, in which the findings revealed that the students preferred FG to random assignment. They considered social interaction and the development of positive relationships to be the main features of CL because random assignment alone cannot promote efficiency of the group. Hence, students' choice is deemed to be far more appropriate and effective.

In 2010, Thanh-Pham *et al.* conducted a study in Vietnam on 145 second year university students. These students were divided into two classes: Class 1, FG was applied while in Class 2, the students were

assigned to mixed-ability groups. Two instruments, a questionnaire and interview, were employed to collect data for the study. Both the instruments were used to investigate the students' perceptions about responsibilities and task sharing among group members. The findings showed that the students were unsatisfied with their mixed ability group as they preferred working with their friends, with whom they were more comfortable. Besides, in FG, since the students know well their group members' strengths and weaknesses, they could assign the tasks better according to their strong points. The researchers concluded that the Asian learners in the study tended to focus on affective factors more than on cognitive ones; the learners seemed to have emphasized on the importance of close relationships in group learning.

Phuong-Mai (2007) conducted a study in Vietnam to examine the grouping strategies that suit the Asian students. A total of 96 upper secondary school students were divided into an experimental and a control group. In the experimental group, affect-based trust groups were formed whereas the students in the control group were assigned according to their academic achievement. After four rounds of experiments, from 2005 to 2007, the data obtained from the questionnaire revealed that the students favoured working with classmates whom they personally know. Meanwhile, the students from the experimental group were more satisfied with their group formation and group learning ability. As a result, they chose to remain in the same group

for future group learning. Therefore in FG, the friendship identity functioned as a foundation to direct and motivate the group members.

Thus, this study investigated the effects of the type of CLG on students' reading comprehension performance. Two types of grouping, HG and FG, were examined in this study. As a means of controlling bias, a control group (individual non-CL) was included in the study.

**MATERIALS AND METHODS**

*Sample Participants*

In this study, the population comprised of students from the sixth semester who had registered for Malaysian University English Test (MUET) (N=270). The age of the subjects ranged between 22 and 25 years old and a total of 115 students were selected to be the subjects for the study. These subjects have three contact hours per week to attend the MUET Intensive course. Owing to the fact that the sampling is limited as only one public polytechnic is selected, the findings

obtained from this study are only applicable to this particular group of sixth-semester students at this particular polytechnic.

The study was also facilitated by an English language lecturer from the selected polytechnic to teach both the control and the experimental groups.

*Research Design*

The research is quantitative in design. It employed a quasi-experimental design to answer the research question, which is:

1. Is there any significant effect of the type of CLG on ESL reading comprehension performance?

The quasi-experimental research design is based on the *non-equivalent control group* design (Campell & Stanley, 1966), as illustrated in Fig.1.

*Data Collection and Analysis*

Before conducting the study, the researcher had sought written permissions from

A. Experimental				
Heterogeneous grouping	(n=39)	O <sub>1</sub>	X	O <sub>2</sub>
Friendship grouping	(n=36)	O <sub>3</sub>	X	O <sub>4</sub>
B. Control	(n=40)	O <sub>5</sub>		O <sub>6</sub>

- A : Experimental group (Friendship and heterogeneous grouping)
- B : Control group (Individual non CL grouping)
- O<sub>1/3/5</sub> : Pre-test
- O<sub>2/4/6</sub> : Post-test
- X : Treatment (Type of CLG)

Fig.1:Quasi-experimental design

the relevant authorities and in this case, the approval from the Head of English Department of the selected polytechnic. In addition, verbal consent from the English language instructor whom the researcher had contacted earlier was obtained to facilitate the data collection process. The researcher had explained the purpose of the study to the Head of English Department and lecturer so that they were clear about the purpose of the study.

After the subjects of the study had been identified, the study was initiated in early December 2011 and the data collection process was conducted over a period of eight weeks. Every week, the students had three contact hours with the selected instructor in the classroom and these students were exposed to different reading skills using the CL approach. In general, two main phases were involved in the data collection stage. The first phase was the pre-test of the reading comprehension, followed by the post-test of the reading comprehension. Both the pre-test and post-test for this study were administered during week 1 and week 6, respectively. A total of 30 questions, which vary in formats in the reading comprehension test, were constructed based

on Barrett's (1968) taxonomy of reading comprehension and its purpose is to assess the extent to which students improve their ESL reading comprehension performance when they were exposed to different types of CLG.

The quantitative data obtained from the reading test scores (pre test and post test) were analyzed statistically using descriptive and inferential statistics, specifically the Analysis of Variance (ANOVA) and t-test.

## RESULTS

This section presents the results of the descriptive analysis and inferential statistical analyses, in which the hypothesis developed for the study was tested with the Analysis of Variance (ANOVA) and t-test.

Table 1 shows mean score (M) and standard deviation (SD) of the pre-test and post-test for students from the experimental group (FG and HG) and the control group. The findings revealed that the three groups of students seemed to yield the same level of mean score for the pre-test [FG (M= 20.39); HG (M= 20.33); control group (M= 20.05) for the pre-test]. The preliminary pre-test results illustrated that both the control and experimental groups were equivalent

TABLE 1  
The mean score and standard deviation of the pre-test and post-test according to group of students

Variables	Group	N	Mean	Std. Deviation
Pre-test	Experiment-Friendship	36	20.39	5.788
	Experiment-Heterogeneous	39	20.33	5.440
	Control	40	20.05	4.591
Post-test	Experiment-Friendship	36	36.72	6.640
	Experiment-Heterogeneous	39	34.36	6.854
	Control	40	22.48	3.693

in terms of reading comprehension prior to the treatment for this study. Findings of the ANOVA analysis (Table 2) also showed that there is no difference of values yielded between the experimental group (HG and FG) and the control group in the pre-test ( $F = .046$  and  $sig. = .955 > .467$ ). This indicates that statistically, there is no significant difference in the mean scores between the groups in the pre-test. In other words, the students in both the experimental and control group had the same level of reading comprehension performance at the beginning of the study.

As for the post-test (see Table 1), the findings revealed that both the experimental groups (FG and HG) yielded higher M in comparison to the control group [M for FG = 36.72; HG = 34.36 and control group = 22.48 for the post-test]. The subjects in the experimental group showed improvement in the reading comprehension mean scores of the post-test. The results suggested that the increase of the mean scores for the experimental group, specifically the FG was due to the significant effect of the type of CLG treatment. On the other hand, the subjects in the control group showed minimal changes in the reading comprehension post-test mean scores.

When the treatment was completed, the focus was to determine if there was

any significant difference in the mean scores of the post-test scores between the experimental and control group. The following hypothesis was posited to test whether the experimental group performed better than the control group:

$H_0$ . There is no significant difference in ESL reading comprehension performance at post-test between the experimental (HG and FG) and control (individual non-CL) group.

Table 3 shows the results of the analysis difference of ANOVA between the students in the experimental group (FG and HG) and the control group in the post-test. The findings show that there is a significant difference of the post-test between the experimental group (FG) and the control group in the post-test (Mean Difference = 12.756 and  $sig. = .000 < .05$ ). The experimental group (FG) yielded a higher mean score than the control group (see Table 3).

A significant difference in the post-test was also found between the experimental group (HG) and the control group for post-passage 1 and post-passage 2. The statistic values yielded are Mean Difference = 10.674 and  $sig. = .000 < .05$  for post-passage 1 and Mean Difference = 14.247 and  $sig. = .000 < .05$  for the overall post-test. Thus, the overall conclusion of these findings is that

TABLE 2  
ANOVA - The difference in the pre-test scores between the experimental and control groups

		Sum of Squares	df	Mean Square	F	Sig.
Pre-test	Between Groups	2.565	2	1.282	.046	.955
	Within Groups	3119.122	112	27.849		
	Total	3121.687	114			

$P > .05$



both groups in the experimental group (FG and HG) yielded significantly higher post-test scores than the control group. These findings implied that the treatment applied for the experiment group student yielded significant effects to improve students' reading comprehension performance.

For a more thorough investigation of the differences between the pre-test and post-test scores in the experimental group (FG and HG), paired sample t-test was used. Table 4 shows the results of paired sample t-test between the overall score of the pre-test and the overall post-test of the experimental group (FG and HG). The results revealed that there is a significant difference between the overall pre-test and the overall post-test in the experimental group (FG), (Mean difference= 16.33,  $t=-16.36$  and  $.000<.05$ ). The mean score of

the overall pre-test increased to 36.72 from 20.39 in the post-test. This finding implied that the experimental group (FG) showed a very significant progress in the overall post-test. As for HG, there is also significant difference between the overall pre-test and the overall post-test (Mean difference= 14.026,  $t=-16.11$  and  $.000<.05$ ). The mean score of the overall pre-test is 20.33 and it increases to 34.36 in the post-test. Therefore, FG was found to display a more significant progress as compared to HG.

## DISCUSSION

In the earlier section, the analysis of the descriptive data showed that the subjects in both the experimental and control group generally had low proficiency in second language reading prior to the exposure of the treatment strategy. In addition, the

Table 3  
The difference between FG, HG and non-CL group in the post-test scores

Dependent Variable	(I) Group	(J) Group	Mean Difference		
			(I-J)	Std. Error	Sig.
Post-test	Friendship	Heterogeneous	2.363	1.357	.194
		Control	14.247*	1.349	.000
	Heterogeneous	Friendship	-2.363	1.357	.194
		Control	11.884*	1.321	.000
	Control	Friendship	-14.247*	1.349	.000
		Heterogeneous	-11.884*	1.321	.000

TABLE 4  
Paired sample t-test conducted to see the differences between the overall pre-test and post-test for the students in the experimental groups (FG and HG)

Group	Dependent Variable	Mean	Mean Difference	t	Sig.
Friendship	Overall Pretest	20.39	-16.333	-15.11	.000
	Overall Posttest	36.72			
Heterogeneous	Overall Pretest	20.33	-14.026	-16.112	.000
	Overall Posttest	34.36			

results also illustrated that both the control and experimental groups were equivalent in terms of reading comprehension prior to the treatment for this study.

After the treatment strategy, the subjects in the experimental group showed improvement in the reading comprehension mean scores of the post-test. The results suggested that the increase of the mean scores for the experimental group, specifically FG, were possibly due to the effects of the type of CLG treatment. On the other hand, the subjects in the control group showed minimal changes in the reading comprehension post-test mean scores. The results suggested that the effect from the non-CL approach is minimal. To summarize the descriptive statistics, it could be said that that the treatment strategy of the type of CLG appeared to have substantial and positive effects on the overall reading comprehension post-test scores for the experimental group.

As for the inferential statistics, ANOVA was used to analyze the differences between the experimental group (HG and FG) and the control group for pre- and post-test. Before that, test of homogeneity, which is the requirement of ANOVA analysis, had been investigated and the result of Levene's test showed that the samples among the groups obtained homogeneity of variances across dependent variables. Meanwhile, the findings of ANOVA showed that the students in both the experimental and control group had the same level of reading comprehension performance at the beginning of the study. In addition, the

result of the analysis difference of ANOVA between the students in the experimental group (FG and HG) and the control group also showed that those in the experimental group (FG and HG) yielded higher mean score than the students in the control group (non-CL) on the post-test.

For a deeper investigation of the differences between the pre-test and post-test scores in the experimental groups (FG and HG) and the control group (non-CL), paired sample t-test was used. The results show that there is a significant difference between the overall pre-test and the overall post-test in the experimental group (FG and HG). These findings implied that a very significant progress was attained by students in the experimental group (FG and HG) at the end of the treatment. As for the control group (non-CL), there was an increase in the mean score of the pre-test to post-test for the students in the control group (non-CL). However, the increase in the mean score was rather small. In other words, the progress made in the control group (non-CL) during the processes of teaching and learning was not as high as that of the experimental group (FG and HG).

Meanwhile, the findings from the previous section demonstrated that the students in the experimental group (FG and HG) improved significantly in the reading comprehension post-test score after the treatment. In order to examine the differences between the pre-test and post-test scores in the experimental group (FG and HG) and the control group (non-CL), the paired sample t-test was used. The results

showed that the mean score differences are more significant in FG (16.33) than in HG (14.026). This finding implied that FG had very significant progress in the overall post-test.

Based on the descriptive and inferential statistics, it can be concluded that FG has the most positive effect on students' reading comprehension performance, as measured by the reading comprehension test.

## CONCLUSION

In relation to insights from other studies, this study produced findings that are worth considering in the implementation of cooperative learning ESL classrooms. Findings from this study illustrate that FG has a positive effect on ESL reading comprehension performance of polytechnic students. The results obtained from this study did not concur with what has been widely found in many other studies, which strongly argue that HG is more preferable and is beneficial to students. The findings of this study shed doubts on the idea of HG, which is dominant in the practice of CL. In conclusion, the present study does not intend to ignore the potential of HG, but rather suggests an alternative of grouping strategy that allows students to select their own group members. Such practice will enable students to increase their achievement while improving intra-group relations of the learners as they work in groups with people they are familiar with.

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