Looking at CIRC through Quantitative Lenses: Can it Improve the Reading Comprehension of Filipino ESL Learners?

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Abstract

Several pressing issues in reading instruction have prompted educators world-wide to conduct researches on how to best improve reading comprehension skills. Although there is a wealth of reading comprehension researches done with EFL learners and native English speakers, there seems to be limited published studies conducted in the Philippine ESL context, particularly one that focuses on the sub-skills of reading comprehension. The researchers attempted to address the aforementioned by assessing the effectiveness of Cooperative Integrated Reading and Composition (CIRC) in improving the reading comprehension of 127 Grade 8 Filipino ESL learners particularly in recalling details, summarizing, identifying the main idea, making inferences, and determining fact vs. opinion within three sessions in a span of two weeks. Adopting a quantitative quasi-experimental research design, the researchers discovered that, despite the insignificance of the posttest scores between the lecture and CIRC groups, there were notable internal improvements for both groups in particular sub-skills. This short-term study provides an important direction to ESL teachers in, but not limited to, the Philippine classroom. Other pedagogical implications are further discussed in this study.

Keywords: Cooperative Integrated Reading and Composition *(CIRC);* ESL; quantitative; reading comprehension; sub-skills

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Introduction

Reading is considered fundamental to language learning. Many assert that it is the most important skill to master (Anderson, et al., 1983). In light of this, educators world-wide have been prompted to research on best practices to teach reading, which includes reading comprehension.

Reading Comprehension

Reading comprehension, as defined by Snow and Sweet (2003), is the process of extracting and constructing meaning simultaneously. According to Roldan (1993), it is when one comprehends a text when he or she understands the printed symbols in terms that have meaning for the individual. It was once regarded as the result of decoding and oral language; now, it is viewed as a much more complex process that involves inferential and evaluative thinking and not just the literal reproduction of the author's words (Fielding & Pearson, 1994). Based on Roldan's (1993) study, the three levels of comprehension can be summarized as follows: (1) *reading the lines*, where the reader derives meaning from the sequence of words and their relation to other words and sentences; (2) *reading between the lines*, where the reader must identify the main idea, interpret clues, and make inferences, and (3) *reading beyond the lines*, where critical and creative techniques are involved while the reader recognizes implications, draws conclusions, distinguishes fact from opinion, analyzes, and synthesizes the author's thoughts.

Day and Park's (2005) taxonomy included six types of comprehension, namely: literal comprehension, reorganization, inference, prediction, evaluation, and personal response. For the purposes of this study, the researchers focused on (1) *literal comprehension*, which involves basic recall of ideas that are explicitly stated in the text; (2) *reorganization*, which requires the learners to analyze, synthesize, summarize, and organize information found in the text, (3) *inferential comprehension*, which pertains to the use of one's experience and intuition in order to relate and

connect their learning to what they have read, and (4) *evaluation*, where external and internal judgment by comparison is the key to comprehension – to determine whether the reader has full understanding of the text (Lestyarini, n.d.). For the purposes of this study, the researchers would like to give particular emphasis to the following sub-skills: (a) recalling details, (b) summarizing, (c) identifying the main idea, (d) making inferences, and (e) determining fact versus opinion.

Cooperative Learning

One of the most prominent and established strategies in English Language Teaching (ELT) is Cooperative Learning (CL), a classroom activity that is based on Wittrock's *Theory of Cognitive Elaboration*, Vygotsky's *Zone of Proximal Development Theory*, and Deutsch's *Theory of Goal Structures* (Kluge, 1999). Olsen and Kagan (1992) described CL as a "group learning activity organized so that learning is dependent on the socially structured exchange of information between learners in groups and in which each learner is held accountable for his or her own learning and is motivated to increase the learning of others" (p. 8). In other words, CL is an instructional method where students in small groups work together to maximize the learning of one another to achieve mutual goals (Johnson, Johnson, & Smith, 1998).

Like any other approach, CL does not come in a single flavor— it comes in many methods and structures. Kluge (1999) categorized these into five models: (1) *The Structural Approach* (Kagan, 1985); (2) *Group Investigation* (Sharan & Sharan, 1992); (3) *Student Team Investigation* (Aronson, Blaney, Sikes, Stephan, & Snapp, 1978; Slavin, Cooperative learning theory, research and practice, 1995); (4) *Curriculum Packages* (Slavin, Leavey, & Madden, 1986), and (5) *Learning Together* (Johnson, Johnson, & Holubec, 1994). In spite of the fact that these models have differences in terms of the degree of individualistic learning and intra-group cooperation and competition, they have certain elements in common such as individual accountability, positive interdependence, group processing, and face-to-face interaction among students in a supportive learning environment (Kluge, 1999;

Ghaith & Bouzeineddine, 2003) (See Figure 1). Because of this, several researchers support CL with regard to its effectiveness and superiority to other forms of instruction in improving learner outcomes, and in some, reading comprehension (Bossert, 1988; Johnson, Johnson, & Maruyama, 1984; Slavin, 1995; Jalilifar, 2010; Bolukbas, Keskin, & Polat, 2011; Zarei & Keshavarz, 2011; Marzban & Alinejad, 2014; Pan & Wu, 2013).

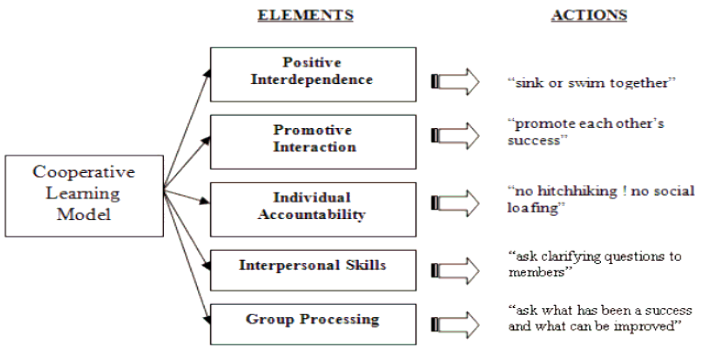


Figure 1. Johnson, Johnson & Smith (1998)'s *Five Elements of Cooperative Learning* (Neo, et al., 2012)

Numerous strategies and techniques under cooperative learning have been utilized and found effective in ELT. A few of these strategies include *Student Teams-Achievement Divisions* (STAD), which recognizes the division of the students into mixed groups where they are supposed to cooperate with each other to help make individual learning a success; *Team-Games-Tournament* (TGT), where groups compete with other groups in the class to earn additional points and credit for their respective teams; *Team Assisted Individualization* (TAI), a combination of cooperative learning and individualized instruction where students are allowed to choose and work depending on their own pacing; *Cooperative Integrated Reading and Composition* (CIRC), where students are grouped with four members each and they work their way through different group assignments, and *Peer-Assisted Learning Strategies* (PALS), a well-known program where pairs tutor each other (Nneji, 2011; Wyk, 2013; Institute of Education Sciences, 2012).

Cooperative Integrated Reading and Composition (CIRC)

Numerous strategies and techniques under CL have been utilized and found effective in ELT. One of them is *Cooperative Integrated Reading and Composition* (CIRC), where students are grouped with four members each and they work their way through different group assignments. The researchers selected CIRC as the focus of this study because of the importance of classroom instruction in the development of reading comprehension, as stressed by Snow and Sweet (2003). Research on reading comprehension is clearly supportive of teaching adolescents strategies to interpret and comprehend the text and not as an end in themselves (RAND Reading Study Group, 2002). CIRC clearly advocates this affirmation. Moreover, one of the reasons why the researchers chose the aforementioned strategy is due to its positive implications in enhancing reading comprehension, which is discussed in the latter part of this study.

CIRC is a CL strategy developed by Stevens, Madden, Slavin and Farnish (1987) in the late 1980's to address the problems in reading and writing instruction. Basically, it was an attempt to utilize CL as a vehicle to introduce state-of-the-art curricular practices from basic research into the practical teaching of writing and reading (Stevens, Madden, Slavin, & Farnish, 1987). It is a technique where learners worked in heterogeneous groups in all activities. It has three main elements namely "story-related activities, direct instruction in reading comprehension, and integrated language arts/writing" (Institute of Education Sciences, 2012, p. 1). In addition, CIRC has a structure that does not only present opportunities for the direct teaching of reading and writing because students themselves also try to teach and help each other in the improvement of their own reading and writing skills in the form of reciprocal teaching (Durukan, 2011). The major components of this technique can be summarized into the following based on Stevens, Madden, Slavin, & Farnish (1987):

(1) *Cycle of instruction.* All activities under the CIRC program are confined to a certain cycle. It begins with the presentation of the lesson or introduction of the story

to the different reading groups. This will be followed by a teacher-mediated or teacher guided instruction where students are expected to participate in the discussion and answer queries. The teacher's job, on the other hand, is to check on the students' understanding, provide feedback, and focus on the parts of the lesson that the students failed to understand and reteach it. Upon successful transfer of new knowledge or skills that should be exhibited by the students, each student should go to his or her team and engage in team practice and assessment by working on the selection-based tasks and allowing his or her work to be checked and evaluated by a peer in the team. The individual exam scores of the members of the group will then serve as the basis for team recognition.

(2) *Reading groups.* Students are grouped depending on their present reading level, which will be determined by the teacher through a researcher-made pretest.

(3) *Teams.* Each team must be composed of two students from the high performing level and another two from the low performing level.

(4) *Basal-related activities.* In this process, the teacher will start introducing the most basic ideas or skills and further advance to the more complex ones after a matter of time. These may include spelling and read-aloud for younger learners and recalling details, identifying the main idea of the passage, and then making predictions for older learners. The reading groups will then be given follow-up activities to work on in order to enhance understanding.

(5) *Partner checking.* After a student completes his or her task, his or her partner would be asked to assess if the student was able to complete and achieve the criteria or goals that were set by the teacher that day.

(6) *Tests.* After class, students will be evaluated based on a reading comprehension exam. For example, they will be asked to identify the main idea, make predictions, etc. Students will not be allowed to help each other in the exam.

(7) *Direct Instruction in Reading Comprehension Skills.* The students will receive direct instruction on specific reading comprehension skills like recalling details, making

inferences, and determining between fact and opinion. They will be taught strategies on how to deal with the selection.

(8) *Integrated Language Arts and Writing.* Students work together to edit and revise each other's writing. They discuss and give each other feedback on how to improve their writing.

From the components of CIRC, one can see the drawbacks and benefits of the strategy. Drawbacks of the strategy include the length of preparation as well as its limitations to small and average size classes. However, despite the aforementioned disadvantages, the benefits of the strategy seem to outweigh the drawbacks. The benefits of CIRC include those of CL such as the development of general communication abilities, empathy, and peer personal relationship skills (Walmley & Muniz, 2003; Bower & Richards, 2006).

Effectiveness in Reading Comprehension of Elementary Level Learners (Grades 1-7)

In addition, several researches have shown positive effects of the CIRC approach on reading comprehension, the focus of the study, though most of them focus more on the elementary level. (Stevens, Madden, Slavin, & Farnish, 1987; Stevens, Slavin, & Farnish, 1991; Stevens & Durkin, 1992; Zarei & Keshavarz, 2011; Durukan, 2011; Gupta & Ahuja, 2014). According to the Institute of Education Sciences (2012), CIRC is effective in the literacy development of students in the upper elementary level. In a study by Gupta and Ahuja (2014), 70 Indian ESL learners in the seventh grade who are exposed to the CIRC technique for eight weeks have significantly higher reading comprehension scores than those in the control group, who were instructed using the conventional method of teaching. Furthermore, the studies of Bramlett (1994), Durukan (2011), and Zarei and Keshavarz (2011) are all common in terms of the significant improvement in the reading comprehension and writing scores of upper elementary EFL learners, specifically students in the third to seventh grade, who were taught using the CIRC technique.

Effectiveness in Reading Comprehension of Secondary Level Learners (Grades 8-12)

Stevens, Madden, Slavin, and Farnish (1987) stated that CIRC is a comprehensive program for teaching writing and reading not only in the upper elementary, but also in the middle grades. Pedersen and Digby (1995) further expounded on the effectiveness of the CIRC technique in the secondary level English classes – particularly for learners who have poorer reading skills. However, it seems that there are limited or no published researches at all that focus on the secondary level, particularly Grades 8-12. Although not much has been said about the effect of CIRC in the secondary level, the researchers believe that this technique can also be used to improve the reading comprehension of secondary level learners since they are expected to be more cognitively mature and developed compared to upper elementary learners.

Research Gap

There are limited or no published studies on CL-based CIRC in the Philippine context. Also, most of the studies about CL and CIRC in the review of related literature focus on EFL rather than ESL. Furthermore, there are limited studies that focus on main idea identification, summarization, inferring, detail noting, and fact and opinion discrimination as a whole. Some of the studies, such as that of Stevens et. al. (1991), focus on the effect of CIRC on the individual reading comprehension sub-skill of main idea identification; while others tested the effectiveness of CIRC on general reading comprehension through a standardized assessment, but none focused on more than one skill. This could possibly be due to time constraint as well as the convenience of focusing on only one sub-skill. However, the researchers decided to focus on five because they believe that the aforementioned skills are all crucial in reading comprehension. More importantly, the researchers hope to include five sub-skills since the intervention is intended for

secondary learners who are assumed to have been introduced to all the five sub-skills before finishing elementary.

Due to the limited availability of published literature on CIRC in the Philippine secondary school setting, the researchers hope to contribute to the existing body of literature by attempting to conduct a study that aims to improve the reading comprehension skills of Filipino Grade 8 ESL learners particularly in (a) recalling details, (b) summarizing, (c) identifying the main idea, (d) making inferences, and (e) determining fact versus opinion through the CL-CIRC technique.

In other words, the researchers aim to answer the following questions:

1. Is there a significant difference between the pretest and post test reading comprehension scores of the control and experimental groups in literal comprehension, particularly in *recalling details* and *summarizing*?

2. Is there a significant difference between the pretest and post test reading comprehension scores of the control and experimental groups in inferential comprehension, particularly in *identifying the main idea* and *making inferences?*

3. Is there a significant difference between the pretest and post test reading comprehension scores of the control and experimental groups in evaluative comprehension, particularly in *determining fact vs. opinion*?

Methodology

Research Participants

127 Grade 8 students of a private school in Manila, chosen through purposive sampling, constitute the respondents of this study. To be more specific, 67 of them are male (52.75%), while 60 of them are female (47.25%) — their ages ranging between 12-15 years old. The respondents have their English classes for 50 minutes a day, which focus on language and African-Asian literature. Moreover, they are all Filipinos and have resided in the Philippines for at least 5 years.

Research Design

For the study, a quantitative quasi-experimental research design was adopted. More specifically, the *nonequivalent control group design with pretest and posttest*, described as "one of the most commonly used quasi-experimental designs in educational research" (Cohen, Manion, & Morrison, 2007, p. 283) was used for this study. This design is most commonly used in educational research because the learners are naturally organized in groups according to their common and shared characteristics, which is a step to ensuring that the respondents are homogenous in nature (Cohen, Manion, & Morrison, 2007). It can be illustrated as follows where NR represents the non-randomization of respondents, a feature of the design, O_1 represents the pretest, X, the intervention, and O_2 represents the posttest (Cohen, Manion, & Morrison, 2007):

Experimental Group: NR O_1 X O_2

Control Group: NR O_1 O_2

Research Instruments

In order to fulfill the objectives of the study, the researchers utilized *researcher-made multiple choice reading comprehension pretests and posttests*, which are used to assess the learners' reading comprehension skills, more specifically, (a) recalling details, (b) summarizing, (c) identifying the main idea, (d) making inferences, and (e) determining fact versus opinion. Two tests were administered to the students—one test is for *The Leopard,* while the other one is for *The Pheasant's Bell.* Basically, the pretest and posttest for each selection only differs in the time the tests were administered. The items were not changed to preserve the reliability and the validity of the tests. Each set of pretests and posttests comprise of 15 items each. The pretests and posttests were administered at the beginning and the end of each module, respectively (see Figure 2). The pretests for each selection have three functions. First, it aims to ensure that there are no significant differences between the control and experimental group that may affect the validity of the study. Second, the pretest scores also function as the basis for the clustering of the learners in the experimental group by comprehension level, the process of which will be further discussed in the latter parts. Third, the pretests serve as a reference to see if there are improvements after the intervention. The posttests, on the other hand, are used to assess the achievement of the learners after the lesson.

Based on the pilot testing, both tests for each selection had average difficulty and very good discrimination power. Moreover, the tests were also found to possess Cronbach's Alpha reliability coefficients of 0.739 (acceptable) and 0.764 (acceptable) for *The Leopard* and *The Pheasant's Bell*, respectively (George & Mallery, 2003). In terms of validity, three professional teachers deemed the tests valid.

Research Procedure

The flowchart below shows the schematic presentation of the flow of the research process:

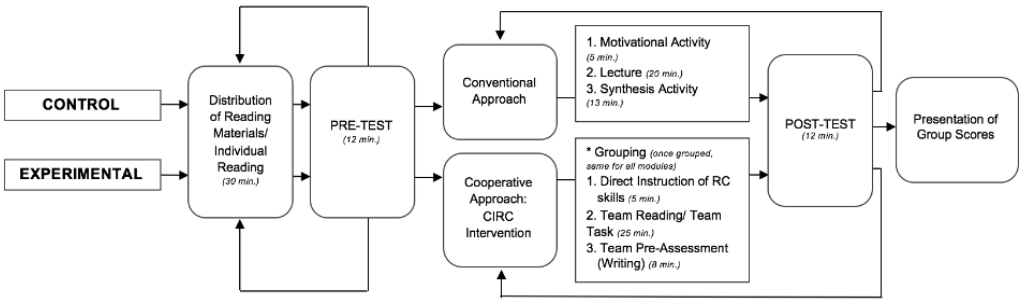


Figure 2. Solution Strategy Flowchart

1. The researcher utilized the revised 15-item reading comprehension pretest and posttest.
2. On the first formal meeting, the researchers instructed the students of both the control and experimental group to read the first selection–*The Leopard*. The researchers provided and distributed the reading materials for the module. Thirty minutes were given for the distribution of reading materials and individual silent reading. After 30 minutes, the researchers collected the reading materials.
3. The researchers administered the 15-item *researcher-made reading comprehension pretest* for *The Leopard* focused on the five aforementioned sub-skills. The researchers allotted only 12 minutes for the pretest due to time constraints.
4. The researchers repeated the aforementioned steps, but this time for the selection *The Pheasant's Bell.*
5. The researchers computed the pretest scores of the students. Based on these pretest scores, the researchers determined the composition of the control and experimental groups. The researchers ranked the four sections from highest to lowest based on the average scores in the pretest. The section, which got the highest average score, was paired with the section, which got the lowest

score. This became the experimental group. The section, which got the second highest score, was paired with the section, which got the second to the lowest score. This became the control group.

6. The researchers made use of the results of the pretest in determining the homogeneity of the reading comprehension level of the learners. A change of research design would have been done if the learners of both groups were not homogenous. Since the learners both the control and experimental group are homogenous (see *Results*), the researchers proceeded with the study.
7. For the students under the experimental group, the same pretest scores were used to cluster them into teams. Each team comprised of two learners that are "low performing" and two that are "high performing". A learner is classified as "low performing" if his or her score is below the median, in other words, the lower half; otherwise, the learner is classified as "high performing". In the case where the number of students is odd, the remaining students are distributed to other teams. It should be noted that the scores of absent students in the pretests and all other instruments were not considered in the interpretation and analysis.

   For the experimental group, which used the CIRC method, the researchers assigned the learners to their respective teams. Approximately nine to ten teams with four members each (two "high performing, two "low performing") were formed for each of the two classes under the experimental group. No such teams were assigned for the control group.
8. On their next meeting with the control and experimental groups, the researchers proceeded with the implementation of two different approaches on their classes. During the implementation, the researchers also made observation notes. The classes in the control group were conducted by utilizing the conventional approach, where the teacher facilitated interactive discussions regarding *The Pheasant's Bell*. Apart from that, the lecture was accompanied by a motivational activity before the lecture and a synthesis activity after.

The classes of the experimental group, on the other hand, were conducted using the CL approach—particularly the CIRC technique. The researchers directly taught the specific reading comprehension sub-skills for five minutes (See Figure 2). Then, the researchers distributed the reading selection for *The Pheasant's Bell* as well as the worksheets. There are two kinds of worksheets per module. One is the individual worksheet, while the other is the group worksheet. The researchers gave four unique individual worksheets and one group worksheet per team. Both of these worksheets cover the five sub-skills as well as composition, as mandated by the CIRC strategy. The answers for the group worksheet are based on the answers of the individual worksheets. The researchers allotted twenty-five minutes for team reading and the team tasks indicated the group worksheet. As for the composition component, eight minutes was allotted for a team pre-assessment that focused on writing composition. The assessment took the form of a short essay that is integrated in the individual and group worksheets. It synthesizes what the group has understood about the *The Pheasant's Bell*. The essays were assessed by the researchers using a rubric they formulated; however, the results of the essay were not included since it is not the primary focus of the researchers. Before the posttest, the teacher encouraged the students to review as a team because the scores will be added up to form team scores.

9. After the respective treatments in the control and experimental group, the researchers administered a 15-item *researcher-made reading comprehension posttest* for *The Pheasant's Bell* that ran for 12 minutes, just like the pretest.
10. On their next meeting with the students, the researchers showed the initial team scores based on the posttest administered.
11. The researchers repeated steps 6-7 in the next meeting; however, this time, *The Leopard* was used (See Appendix 2a). The researchers distributed the next set of reading materials, and so on (See Figure 2).
12. For the last meeting, the teacher presented the team scores to the experimental group.

Analytical Procedure/Method of Analysis

Several tools were used to address the research questions of the study. The researchers analyzed the collected data utilizing Microsoft Excel 2011 for Macintosh as well as SPSS Version 22.

In order to address the research questions and report the difference between the pretest and posttest reading comprehension scores, descriptive statistics, particularly identifying the mean scores and standard deviation (SD), was first employed. The aforementioned are summarized through a table and bar chart. As for the mean, the pretest and posttest reading comprehension scores for the two selections were combined or averaged first before they represent the mean pretest or posttest scores of the control and experimental group. Moreover, *Levene's test for equality of variances* was utilized to ensure the more or less equal distribution of the scores after which an *independent samples t-test* was conducted to determine whether significant group differences existed. *Levene's test* and the *t-test* were conducted for a total of four times: (1) between the pretest scores of the control and experimental groups, (2) between the pretest and posttest scores of the control group, (3) between the pretest and posttest scores of the experimental group, and (4) between the posttest scores of the control and experimental groups.

Results

Control group (pretest) vs. experimental group (pretest)

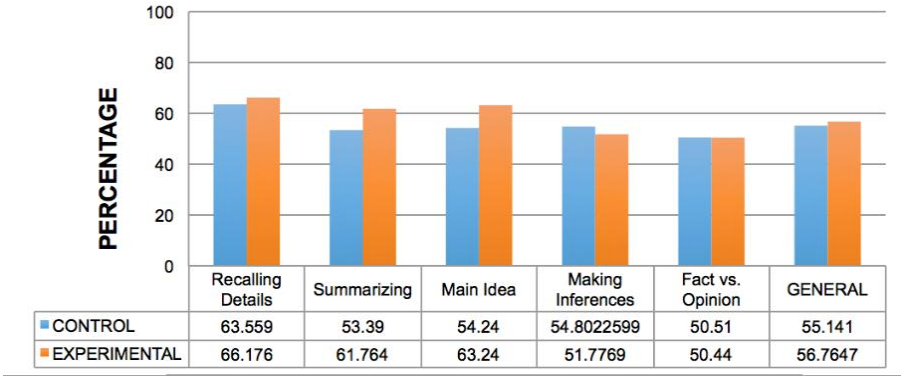


Figure 3A. The mean scores of the pretest of the control and experimental groups.

Table 1

Levene's Test and t-test results of the pretest of the control and experimental groups.

Reading Comprehension Subskills	Levene's Test	Control and Experimental Group Pretest Means t-test					
	F	Sig.	t	df	sig (2-tailed)	Mean Diff.	SE Diff.
Recalling Details	1.764	0.187	-0.774	125	0.44	-2.6171	3.3798
Summarizing	1.004	0.318	-1.224	125	0.223	-8.375	6.843
Main Idea	0.171	0.68	-1.739	125	0.085	-8.998	5.176
Making Inferences	0.164	0.686	0.731	125	0.466	3.025299	4.12778
Fact vs. Opinion	2.807	0.096	0.017	125	0.987	0.067	4.014
OVERALL	**0.587**	**0.445**	**-0.539**	**125**	**0.591**	**-1.623463**	**3.01218**

* Signficant at the p=0.05 level

Figure 3A shows the mean scores of the pretest of the control and experimental groups. Comparatively, it indicates that the experimental group has higher means compared to the control group in all sub-skills except m*aking inferences* and *determining fact vs. opinion,* despite the means being approximately in the 50th percentile.

Table 1 shows how the significant differences were computed. Based on Levene's test, there is no significant difference for all sub-skills in terms of variance (p=0.445). In addition, based on the t-test, there is also no significant difference in the pretest means for all the sub-skills; t(125)=-0.539, p=0.591. Since the mean pretest scores are both approximately in the 50th percentile and the differences in the pretest

scores between the control and experimental group are not significant, the two groups are, thus, homogenous in terms of their reading comprehension across the five sub-skills. Furthermore, results indicate that the skills of the two groups would most likely not have significant bearing on other results of this study.

Control group (pretest) vs. control group (posttest)

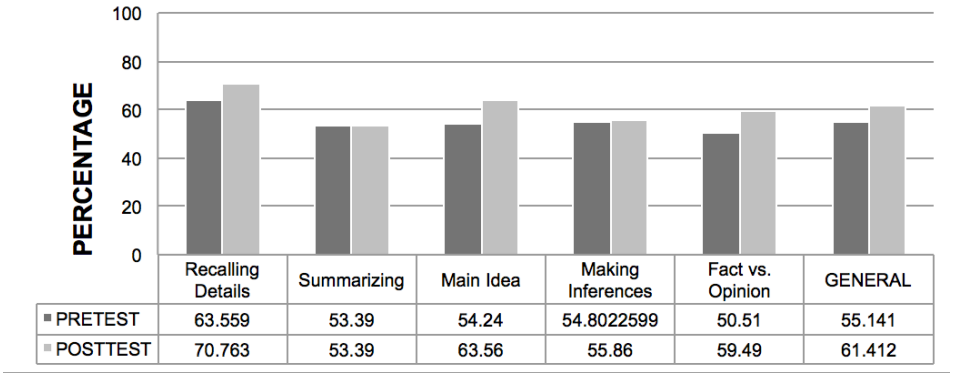


Figure 3B. Mean scores of the pretest and posttest of the control group.

Table 2

Levene's Test and t-test results of the pretest and posttest of the control group.

Reading Comprehension Subskills	Levene's Test		Control Group Pretest and Posttest Means t-test				
	F	Sig.	t	df	sig (2-tailed)	Mean Diff.	SE Diff.
Recalling Details	0.774	0.381	-2.052	116	0.042*	-7.2034	3.5098
Summarizing	0.136	0.713	0	116	1	0	6.915
Main Idea	0.34	0.561	-1.775	116	0.078	-9.322	5.251
Making Inferences	0.172	0.679	-0.249	116	0.804	-1.05932	4.24977
Fact vs. Opinion	0.219	0.641	-2.254	116	0.026*	-8.983	3.986
OVERALL	**0.527**	**0.469**	**-2.05**	**116**	**0.043***	**-6.271**	**3.0596**

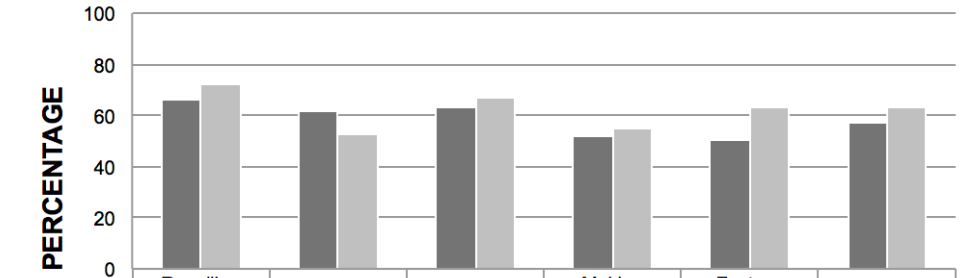
* Signficant at the p=0.05 level

Figure 3B summarizes the mean scores of the pretests and posttests for the control group. Comparatively, it indicates that the sub-skill *recalling details* has the highest mean for both the pretest and the posttest. It also shows that the lowest

mean for the pretest is *determining fact vs. opinion* and the lowest for the posttest is *summarizing*. Moreover, results from the aforementioned figure show that the posttest mean of the control group across all sub-skills are apparently higher than the pretest mean.

Table 2 indicates that the pretest and posttest scores have insignificant difference with regard to variance (p=0.469) across the five sub-skills, making the data eligible for t-test. According to t-test results, a statistically significant difference is observed between the pretest and posttest means of the control group; t(116)=-2.05, p=0.043. Specifically, out of the five sub-skills, a significant improvement in recalling details and determining fact vs. opinion is evident. Since there is a significant positive difference in the means and t-test results, it can be said that the students of the control group have generally improved in their reading comprehension skills, especially in *recalling details* and *determining fact vs. opinion*, even without the intervention. Moreover, the results suggest the positive effect of the traditional lecture and discussion method of teaching literature on reading comprehension.

Experimental group (pretest) vs. experimental group (posttest)



	Recalling Details	Summarizing	Main Idea	Making Inferences	Fact vs. Opinion	GENERAL
PRETEST	66.176	61.764	63.24	51.7769	50.44	56.7647
POSTTEST	72.426	52.94	66.54	54.9632	62.94	63.0882353

Figure 3C. Mean scores of the pretest and posttest of the experimental group.

Table 3

Levene's Test and t-test results of the pretest and posttest of the experimental group.

Reading Comprehension Subskills	Levene's Test	Experimental Group Pretest and Posttest Means t-test					
	F	Sig.	t	df	sig (2-tailed)	Mean Diff.	SE Diff.
Recalling Details	0.033	0.857	-1.827	134	0.07	-6.25	3.4209
Summarizing	2.761	0.099	1.366	134	0.174	8.824	6.458
Main Idea	1.151	0.285	-0.697	134	0.487	-3.309	4.746
Making Inferences	3.129	0.079	-0.846	134	0.399	-3.18627	-10.633995
Fact vs. Opinion	0.047	0.828	-2.948	134	0.004*	-12.5	4.24
OVERALL	**0.334**	**0.564**	**-2.03**	**134**	**0.044***	**-6.32352**	**3.11572**

* Signficant at the p=0.05 level

Figure 3C summarizes the mean scores of the pretest and posttest of the experimental group. Graphically, it shows that the mean scores in the posttest are all higher than the pretest except for the sub-skill *summarizing,* which is apparently lower. The mean of most of the sub-skills are at or above 60%. It also highlights *recalling details* as the sub-skill with the highest mean in both the pretest and posttest. Moreover, it shows that the lowest mean for the pretest is *determining fact vs. opinion* while the lowest for the posttest is *summarizing*

Table 3 shows the computations of the results of the pretest and posttest for the experimental group using Levene's test and t-test. According to Levene's test, there is no statistically significant difference between the pretest and posttest means of the experimental group in terms of variance across the different sub-skills (p=0.564); thus, making the data eligible for t-test treatment. Based on the t-test, there is a generally significant difference between the pretest and posttest scores of the experimental group; t(134)=-2.03, p=0.044. Specifically, there is very strong evidence that the students' scores in the evaluative level, particularly *determining fact vs. opinion* (p=0.004) improved significantly.

Since the mean of most of the sub-skills in the experimental group posttest are at or above 60% and the difference between the pretest and posttest scores of the same group is significant, it can be said that learners who were exposed under CIRC

are most likely to improve on their reading comprehension, particularly in the evaluative skill *determining fact vs. opinion*.

Control group (posttest) vs. experimental group (posttest)

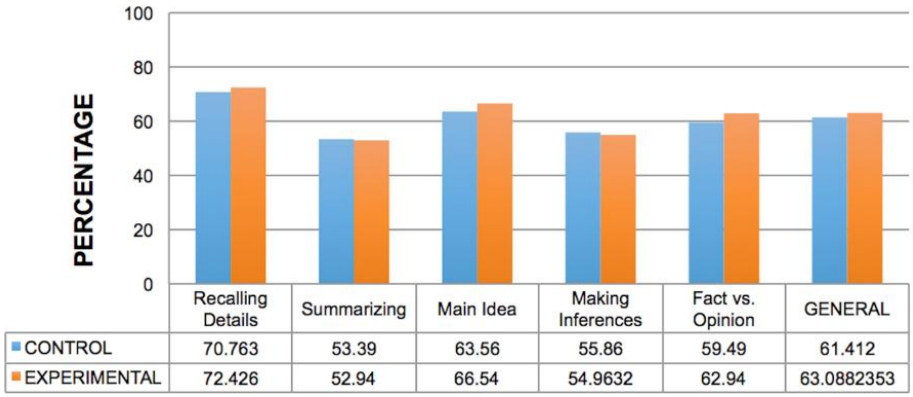


Figure 3D. The mean scores of the posttest of the control and experimental groups.

Table 4

Levene's Test and t-test results of the posttest of the control and experimental groups.

Reading Comprehension Subskills	Levene's Test	Control and Experimental Group Posttest Means t-test					
	F	Sig.	t	df	sig (2-tailed)	Mean Diff.	SE Diff.
Recalling Details	0.263	0.609	-0.466	125	0.642	-1.6638	3.5713
Summarizing	0.033	0.856	0.069	125	0.945	0.449	6.537
Main Idea	0.86	0.356	-0.621	125	0.536	-2.985	4.805
Making Inferences	0.529	0.468	0.233	125	0.816	0.89834	3.8930886
Fact vs. Opinion	1.717	0.192	-0.812	125	0.418	-3.45	4.249
OVERALL	**0.396**	**0.53**	**-0.524**	**125**	**0.601**	**-1.675806**	**3.19991543**

* Signficant at the p=0.05 level

The last figure for this section, Figure 3D, compares the posttest means for the control and experimental groups in the five comprehension sub-skills. It shows that the sub-skill *recalling details* has the highest mean for both the control and experimental groups, while the lowest mean for both is *summarizing*. The aforementioned figure also indicates that the experimental group has higher means

compared to the control group in all sub-skills except *summarizing* and m*aking inferences*. Nevertheless, this does not show the significance of the results. Levene's test and t-test were utilized to measure the degree of significance.

Table 4 summarizes the results of the aforementioned tests in the posttests of the control and experimental groups. Based on Levene's test, the difference in variance between the two groups is not significant (p=0.53), which makes the data collected eligible for t-test. Despite the slightly higher posttest means of the experimental group in almost all the sub-skills, the t-test results show that there is no significant difference in the posttest reading comprehension scores between the control and experimental groups across sub-skills t(125)=-0.524, p=0.601. Since there is no significant difference, one can assume that the CIRC intervention is not more superior to the lecture/discussion method in improving the reading comprehension scores of the students, and vice versa. The results suggest that using either CIRC or the traditional lecture/discussion method are both equally good strategies in improving the reading comprehension skills, particularly the five mentioned in the paper.

Discussion

The research questions, which looked into whether there was a significant difference between the pretests and posttests of the control and experimental groups across the five reading comprehension sub-skills, were answered by the results of the researcher-made reading comprehension pretests and posttests. Broadly, it was discovered that both the lecture method and CIRC significantly improved reading comprehension. This is supported by Estacio (2013), who discovered that there is no single approach or strategy that affects reading comprehension. This is contrary to the researchers' expectations that the lecture method would not have a significant improvement on the reading comprehension scores on the control group. Nevertheless, the researchers' expectations were fulfilled after looking into the results of the CIRC experimental group, which also showed improvement generally, as well. Similar results in the use of CIRC in the upper elementary level were observed in several studies, although they are not focused on the five sub-skills on

comprehension but in reading comprehension as a whole (Institute of Education Sciences, 2012; Gupta & Ahuja, 2014; Durukan, 2011; Zarei & Keshavarz, 2011; Bramlett, 1994). In light of this, the researchers would like to discuss highlights of the study with regard to specific sub-skills.

Although there was no significant difference in the posttest scores between the CIRC experimental group and the lecture control group, based on the results, it was evident that there were notable internal improvements in the control and experimental groups for the specific sub-skills under the literal level of comprehension. For the control group, a distinct improvement can be observed in the *recalling details* sub-skill most probably because of its low level of difficulty. Reed and Vaughn (2012) affirm the aforementioned claim by pointing out that learners retell information more frequently in the literal level as opposed to the inferential level. Harris, Mandias, Terwogt, and Tjintjelaar (1980) strengthened this claim through their study, which revealed that eighth and tenth grade students tend to have easier comprehension of a narrative when the facts are explicitly stated. The similar trend in the researchers' study and other studies should come as no surprise because after all, the sub-skill *recalling details* falls under Bloom's Taxonomy's first level of cognition – the most fundamental one.

On the other hand, for the experimental group, a significant increase in the *determining fact vs. opinion* evaluative sub-skill is evident. One possible explanation for this finding would be the in-depth processing of the learners through the interactive exchange of ideas during the CIRC peer-led discussions. Several studies show that students can have better reading comprehension in the evaluative level if the activities done deviate from the conventional lecture. One of the noteworthy studies include Hogan, Bridges, Justice, and Cain's (2011), which mentioned that educators can promote higher order thinking skills by having activities that go beyond simple decoding, such as interpersonal discussions. Pan and Wu (2013) further support this claim by stating that group discussions provide avenues for (1) explanation, (2) logical inference, (3) debates to elaborate student understanding of reading materials, and (4) making ideas concrete and are, thus, crucial for reading

comprehension beyond the text. Galton, Hargreaves, and Pell (2002)'s study provided concrete evidence of this when it revealed that learners taught in collaborative small discussion groups for English were significantly better in the subject in contrast to those exposed to whole class instruction.

More importantly, Clark (2009) contributed to proof of a possible connection between the group dynamics in peer-led discussion groups and evaluative reading comprehension. An analytical 9-week study done with peer-led discussed groups, like the one CIRC mandated in the study, revealed that a majority of the groups' discourse involved the evaluation strategy (26.96%) and questioning strategy (27.69%). Some of the discourse were focused on the interpreting strategy (15.3%), and the rest were focused on prior knowledge, context, etc. These findings were instrumental in supporting the results of this research because it aided in establishing a possible relationship between interactive nature of group activities and the improvement in evaluative reading comprehension – higher frequencies of evaluative strategies during peer-led group discourse may result to higher evaluative reading comprehension. The potential positive relationship could explain why the CIRC experimental group improved the most in evaluative reading comprehension as opposed to the literal and inferential comprehension when exposed to CIRC-based peer-led group discussions. Thus, in this light, it could be said that the significant improvement in evaluative comprehension, particularly *determining fact vs. opinion,* could most likely be attributed to the interactional features of peer-led group discussions in the CIRC intervention.

The same may be said about the sub-skill *summarizing*. Aside from the very insignificant improvement of the learners in *summarizing*, results of the researchers' study showed that it is the sub-skill with the lowest scores in both the posttests of the control and experimental group. For the experimental group, there is a possible reason that would explain the low scores in *summarizing* as well as the insignificant improvement in the sub-skill. If Clark's (2009) study is representative for all peer-led group discussions, learners in peer-led group discussions tend to not focus on summarizing when discussing. According to Clark's (2009) study, it is one of the

least used strategies in peer-led discourse. This may explain why there was a slight deterioration, in the apparently low scores for the sub-skill *summarizing* compared to the other sub-skills. Another possible explanation for the lack of improvement in *summarizing* for both the control and experimental group would be the complexity of the skill and its acquisition. Brown and Day (1983) affirm this claim by saying that *summarizing* is a difficult skill to master for all levels. This applies even for university students and adults (Boch & Piolat, 2005; Rose, 2001; Karbalaei & Rajyashree, 2010). If this is true, it would explain why the respondents of this study, all Grade 8 students, had a hard time summarizing. Anderson and Hidi (1988) further support this explanation by stating that younger learners may have more difficulty identifying which information to include in their summaries and may focus on unusual ideas rather than essential ones in contrast to older learners. From the aforementioned literature, it can be inferred that the summarization sub-skill cannot be learned in one sitting, especially for younger learners. It is a complex process that requires a more mature and critical level of thinking as well as more time to acquire and master.

As for the inferential level of comprehension, it was gathered from the results that there were no significant differences between the posttest scores of the control and experimental groups in both *identifying the main idea* and *making inferences*. There were also no notable internal improvements in the aforementioned sub-skills from the pretest to the posttest for the control and experimental groups, respectively. One possible explanation would be the learners' questionable inferential skills even before the intervention because according to Kispal (2008), the ability to make inferences predetermines reading skills. This could be true, because after all, inferential skills are more complex than literal comprehension skills. A study by Padilla (2005), which showed that young Filipino learners around the same age range found it easier to restate and combine facts than interpret the content in their own words, supports this claim. Another possible explanation as to why there is no significant improvement would be the duration of the intervention. A similar study done by Green and Roth (2013) explored the inferential reading comprehension skill but had limitations in time, which they claimed have affected their study. Likewise,

the insignificant improvement in inferential comprehension for both groups in this study is indicative of the length of time that is required for the students to use strategies such as *identifying the main idea* and *making inferences* effectively. The researchers agree with Green and Roth (2013) when they mentioned that while the goal of strategy instruction is for the students to manifest automaticity in comprehension skills, the process of acquiring and then exhibiting the skill automatically takes time. From the aforementioned, it can be said that the possibly questionable prior inferential skills of the learners as well as the duration of the CIRC intervention could be a factor of the insignificant improvement in *identifying the main idea* and *making inferences* for both the control and experimental groups.

Conclusion

Summary

In light of the problems identified such as the problem in reading comprehension in the literal, inferential, and evaluative level, the researchers implemented the CIRC technique in a span of two weeks totaling three sessions to the learners with the hope that their reading comprehension skills, particularly (a) recalling details, (b) summarizing, (c) identifying the main idea, (d) making inferences, and (e) determining fact versus opinion, would improve significantly.

Adopting the quantitative quasi-experimental research design, the researchers discovered that, although there were no significant differences between the posttest reading comprehension scores of the control and experimental group, there were notable internal improvements for both groups in particular sub-skills. The control group, which was exposed to the lecture method, improved substantially in the literal *recalling details* sub-skill while the experimental group, which was exposed to the CIRC technique, has shown more significant improvement in the evaluative *determining fact vs. opinion* sub-skill compared to the control group. The researchers identified no significant internal improvement in the *summarizing, identifying the main idea,* and *making inferences* sub-skill for both groups.

Recommendations and Implications to the ESL classroom

Although the researchers initially identified problem such as the lack of time for implementation, the researchers see the potential of the CIRC technique in other ESL classrooms in the Philippines. This positive indication was achieved despite testing the method for only two class meetings for two weeks.

With regard to the preparation of materials for CIRC, the researchers highly encourage the collaboration among teachers so that they could share resources with one another and lessen the burden of preparing worksheets and activities. ESL educators who wish to utilize the CIRC method may modify the worksheets in this study or use it as a guide depending on the context. Furthermore, they could refer to and modify CIRC worksheets and activities available through the efforts of teaching professionals available through the Internet.

To address the problem of approach suitability, the researchers recommend that CIRC method be a complement to the lecture method since both methods have their strengths. The lecture method would provide a substantial foundation for literal comprehension while the CIRC method could provide the processing, analysis, and sharing of opinions and ideas under the evaluative level. The researchers also suggest that a synthesis activity be done after each CIRC activity to improve the retention and reading comprehension of the students.

With regard to the study, more significant and reliable results would have been seen if not for the time concerns. Since the pretests and posttest, like the ones used in the study, were not really necessary components of CIRC, these could be dispensed with; thus, more time can be allotted for the team reading and team task. Another aspect that can help address the time concern issue would be for the teacher to constantly remind the learners about the duration of each activity so that the learners would be aware of their time allotment, which could make them manage their tasks more efficiently during group work.

Future researchers who hope to expand, if not replicate, the research could opt to increase the number of participants and intervention sessions. Since time limitations made this research short term, they may also consider doing a longitudinal study in different settings with a wider variety of learners.

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