LEARNING CELL TECHNIQUE TOWARD READING COMPREHENSION OF NARRATIVE TEXT

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Abstract

The purposes of this study are to identify the differences of reading comprehension in control and experimental group of senior high school students and to find out the effectiveness of Learning Cell as the technique in teaching reading comprehension of narrative text. The quantitative method was conducted in this study and the researcher used Nonequivalent Control Group Design which the observation is done twice, before and after treatment. The subject of this research was two groups, which consist of 34 students in each group. Then reading comprehension test was used as research instrument. The result of the t-test computation showed that $t_{observed}$ was higher than $t_{table}$ (6.184>2.036), with the degree of freedom 32 and the level of significance 0.05 and the probability (Asymp.Sig.2 tailed) was lower than the level of significance (0.000<0.05). It can be concluded that the null hypothesis of no difference was rejected. In other words, teaching reading comprehension by using learning cell technique is effective than teaching reading comprehension by using conventional way.

Keywords: Learning cell, reading comprehension, narrative text

1. INTRODUCTION

Over the years, English has become one of our principal assets in getting a global leadership. English is a means not only for international commerce; it has become increasingly essential for interstate commerce and communication. People must make the best use of English to develop their students culturally and materially so that they can compete with the best in the world of mind and matter. English language is our window to the world. People can make use of English to promote their worldview, culture heritage, educational experience, etc throughout the globe. One of the important skills in English is reading. In education sector, effective learning process is through reading. People who like reading gain new knowledge and insights that will further improve intelligence so that they are more able to answer the challenges of life in the future. Learning to read is an important educational goal. For both children and adults, the ability to read opens up new
worlds and opportunities. It enables us to gain new knowledge, enjoy literature, and do everyday things that are part of modern life, such as, reading the newspapers, job listings, instruction manuals, maps and so on. Besides that, the ability to read is a requirement of the reality of everyday human life. The importance of reading skills in today's society is enormous; with the advent of the Internet, people do not just rely on newspapers and postal correspondence. E-mail, texting, e-books and even reading the news on cell phone is part of everyday life. Whether you are reading the fine print on a contract, escaping into a good book or posting on someone's facebook page, you are using needed reading and comprehension skills.

However, people read for many reasons, but understanding is always a part of their purpose, in other words reading comprehension is necessary. Reading comprehension is necessary because without it reading is nothing more than tracking symbols on a page with your eyes and sounding them out. It also provides the reader with any information. According to Gough & Tunmer (in Pang, 2003) comprehension is an active process during which the reader constructs meaning from text; it has also been defined as the product of decoding and listening comprehension. With the ability to comprehend what they read, people are able not only to live safely and productively, but also to continue to develop socially, emotionally and intellectually. The researcher sees that the level of reading comprehension of students at SMA Muhammadiyah 3 Yogyakarta is still low. They are difficult in finding main idea or topic of the text. Some students are also less motivated in learning reading. They do not show their interest in reading English text. They are also do not have enough vocabulary, so they are difficult in guessing and deriving meaning of word and sentence. The students’ prior knowledge is still low, so they have difficulty in comprehending the text. However, many students become confused, or even bored with demands of their reading assign. These problems are caused by first; the students do not know the importance of reading. Second, audiovisual media which is used is not interested. Third, the students’ vocabulary mastery is still low. Fourth, their English teacher still uses ineffective
technique in teaching reading comprehension.

Even in the middle grades and high school, teachers need to continue to help their students develop reading comprehension techniques. As their reading materials become more diverse and challenging, students need to learn new tools for comprehending these texts. Content area materials such as textbooks and newspaper, magazine and journal articles pose different reading comprehension challenges for students and thus require reading comprehension techniques. The development of reading comprehension is a lifelong process that changes based on the depth and breadth of texts the person is reading.

There are so many techniques that can be used by the teacher to teach reading comprehension for the students, one of them is collaborative learning technique. Collaborative learning occurs when students and faculty work together to create knowledge. In practice, collaborative learning has come to mean students working in pairs or small groups to achieved and shared learning goals. It is a pedagogy that has at its center the assumption that people make meaning together and that the process enriches and enlarges them, Matthews (in Barkley, 2005).

The researcher is interested in using Learning Cell technique in teaching reading comprehension especially for English text. Learning Cell as collaborative technique are used by the researcher to train students’ reading comprehension. In this case, Learning cell is an active learning technique for training the students to generate thought-provoking questions enhances learning, King Pressley et al (in Barkley, 2005).

Learning cell or student dyad refers to a cooperative form of learning in pairs, in which alternate asking and answering questions on commonly read materials (Goldschmid, 1976). In this technique, the students develop questions individually, then quiz each other based on these questions. A facilitator can compile all questions for future use as practice quizzes/exams. It encourages students to create quiz questions based on notes, books, and other resources and encourage a variety of questions (based on Bloom’s taxonomy) for deeper understanding. This research is also intended to promote active learning among students. Active learning is a type of instruction method, where the learners
will actively participate in the learning activities rather than passively listening to a teacher or a lecture and this approach is supported by learning cell. Active learning occurs when learners or students are given the opportunity or called upon to do any course-related activities rather than passively watch, listen and taking notes, Felder and Brent (in Janette, 2007).

In reading In order to understand a text, readers need to know the meanings of individual words. They construct an understanding of the text by assembling and making sense of the words in context. Vocabulary knowledge is difficult to measure. It is, however, very important in learning to read and in future reading development. Words that are recognized in print have to match a reader’s oral vocabulary in order to be understood. Nagy, Herman & Anderson (in Pang, 2003). In addition, Crawley and Mountain (in Farida, 2007) state that reading is a process undertaken to reduce uncertainty about meanings a text conveys. The process results from a negotiation of meaning between the text and its reader. Moreover, reading refers to the skills needed to recognize words, decode words and sentences, and make meaning out of sentences and passages such that information can be understood and used. Basically, the main goal of reading is comprehension of what is being read. The comprehension is an interactive process. This statement is also supported by (Janette, 2007) who say that reading comprehension is a complex, diverse process. This opinion is in the line with Anderson (1999) says that reading comprehension is a process that involves meaningful construction of an author’s message by the use of prior knowledge, especially the knowledge of language. It means that reading comprehension as a process of negotiating, understanding between the reader and the writer. In most of cases, especially in academic setting, a reader expects a text to make sense.

Furthermore, the readers who have good reading comprehension can grasp the meaning and the organization of the writer’s idea. The readers bring their previous knowledge and experience into relation with their present reading; compare the facts and arguments presented by the authors. To support this idea, Harris (in Irvine, 2002) explains reading comprehension can be gained from several skills. They are:
If the students have a large amount of vocabulary; if the students have skill in identifying unfamiliar words; if the students have a good eye-movement habits; if the students have proper habits of posture, holding books, etc; if the students have speed and fluency in silent reading; if the students can develop oral reading skill; phrasing, expression, pitch.

Many of the reading comprehension strategies that have been associated with the highest effect sizes for students with learning disabilities are those that teach students strategies that prompt them to monitor and reflect before, during, and after reading. These strategies ask students to (1) consider their background knowledge on the topic they are reading, (2) summarize key ideas, and (3) self-question while they read, e.g., Gersten et al. (in Janette, 2007).

Related to reading strategy, the reader should have effective reading strategies to gain the better reading comprehension. Reading strategies can be defined as “plans for solving problems encountered in constructing meaning”. Duffy (in Richard & Renandya, 2002). It means that the strategy is a tool to achieve the reading goal. In other words, the goal of teaching reading strategies is to create students become strategic readers. Being strategic reader is not easy; it takes time and needs a lot of practices. Despite views of reading as an interactive, reflective process, however, reading comprehension measures generally focus on recall as the primary indicator of students’ understanding, Applegate, Quinn (in Janette, 2007).

Traditionally, the purpose of learning to read in a language has been to have access to the literature written in that language. In language instruction, reading materials have traditionally been chosen from literary texts that represent "higher" forms of culture. This approach assumes that students learn to read a language by studying its vocabulary, grammar, and sentence structure, not by actually reading it. In this approach, lower level learners read only sentences and paragraphs generated by textbook writers and instructors. The reading of authentic materials is limited to the works of great authors and reserved for upper level students who have developed the language skills needed to read them. The communicative approach to language teaching has given instructors a different understanding of the role of reading in the language classroom and the types of
texts that can be used in instruction. When the goal of instruction is communicative competence, everyday materials such as train schedules, newspaper articles, and travel and tourism Web sites become appropriate classroom materials, because reading them is one way communicative competence is developed. Instruction in reading and reading practice thus become essential parts of language teaching at every level (Berry, 2004).

Lacey (2000) defines narrative as “the representation of an event or a series of events”. Something has to happen; description and counting are not narrative. Nor is the real story, which happens over a length of time, and has an order of events, the narrative: narrative plays with that and is malleable. Therefore, it is important for teachers to create a context for students that facilitates comprehension by identifying key concepts, ideas, and words and then to pre-teach them, especially when reading text (Berger, 1997). This introduction to the text provides enough background for many students to prepare them for reading and learning from what they read.

A narrative text relates a sequence of events. In a seminal article, ‘Narrative as a primary act of mind’, Barbara Hardy (in Gamble, 2002) argues that narrative is not an aesthetic invention but the basic way in which we make sense of our experiences. She explains that we use ‘inner’ (in our heads) and ‘outer’ (to others) storytelling to shape our lives; for instance, recalling our dreams and talking about the things that happen to us as though they were stories.

The Learning cell or student dyad refers to a cooperative form of learning in pairs, in which alternate asking and answering questions on commonly read materials (Goldschmid, 1976). Students in the learning cell option performed significantly better on an unannounced examination and rated their ongoing learning experience significantly higher on a “morale barometer”. A final comprehensive course evaluation also indicated the superiority of the learning cell method over the other three options. A more extensive “field test” was subsequently conducted to evaluate the usefulness of the learning cell in a number of other disciplines at the school or university (Goldschmid: 1976). Learning cell or learning pairs refers to a
form of cooperative learning in the form of pairs, where the students ask and answer questions in turn based on the readings of the same material. Learning cell is one of the few best system to help pair learners learn more effectively, where the students ask and answer questions in turn based on the readings of the same material. so in this lesson students are trained to develop skills and understanding of the concept of the material being studied. so that the reading text activities are expected to be more fun and students can grasp the concepts being taught. In Learning Cells, students individually develop questions about a reading assignment or other learning activity and then work with a partner, alternating asking and answering each other’s questions. The purpose of this CoLT (Collaborative Learning Techniques) is to engage students actively in thinking about content, to encourage students to generate thought-provoking questions, and to teach students how to check their understanding. Creating questions about an assignment requires students to think about the content in a way that is different from simply taking notes on it. It provides an opportunity for students to think analytically, to elaborate as they put material into their own words, and to begin to use the language of the discipline. Responding to the questions of peers provides a platform for discussion based on student levels of understanding. Exchanging questions and answers with a peer can motivate students and challenge them to pursue deeper levels of thought. Therefore, as students gain information in a conceptual theme, their questioning improves and expands to reach higher levels, Alexander, Kuliko-wich, & Jetton ( in John, 2004).

Prepare students by teaching them how to write good questions. This CoLT will work best when you have spent some time teaching students how to write good questions and answers. Consider preparing a handout with guidelines and sample questions and responses that model the level of complexity and depth you expect. Provide them with sample analysis question stems, such as, Explain why (or How)_____?. What are the strengths and weakness, pros and cons, costs and benefits, and so forth of_____?, Why is_____ happening?, How does_____affect_____, Why is ____important?, Why do you think causes____and why?, form pairs and
have the students answer the questions which their partner created.

Students who tutor other students profit not only on a cognitive level (become more expert in the subject they are teaching), but also on an interpersonal, affective one; their self-esteem increase and their attitude towards the course and the school or teaching and learning in general becomes more positive, Morgan and Toy (in Goldschmid, 1976). That those who are being tutored benefit from this form of individualized instruction is to be expected. Here, too, one may talk about a cognitive and an affective gain. With respect to more cognitive variables, students may be more willing to attempt difficult tasks when placed in pairs then when alone and be more creative, Torrance (in Goldschmid, 1976). A possible negative result of cooperation could be an increase in problem solving time.

2. RESEARCH METHODS

In this research, the researcher uses Nonequivalent Control Group Design (almost same with pre-test-post-test control group design). In this design, observation is done twice, i.e. before and after treatment. First observation done before treatment ($O_1$) is called pre-test and second observation done after treatment ($O_2$) is called post-test.

The participant of this research were two groups of XI IPA 1 as the experimental group and XI IPA 2 as the control group, in each group consist of 34 students, which were selected by used convenience sampling of non probability sampling technique, because they are willing and available to studied. However, the sample can provide useful information for answering questions and hypotheses. In this research, the researcher uses test as the instrument for collecting data. It is used to measure the students’ reading comprehension. The writer conducts the test before and after giving the treatment named pre-test and post-test. The students do the test individually so the writer can know the students’ reading comprehension progress before and after the treatment given. Pre-test is given before the researcher applies the method (using LC technique) in teaching learning process in the research which is held in the second grade students of SMA Muhammadiyah 3 Yogyakarta. This test is to know how far the students’ achievement before
treatment. The pre-test of the research was given to both of experimental and control group. At the end of the research, the post-test was given to the both of experimental and control group to look at the students' improvement after receiving the treatment and to investigate the effectiveness of Learning Cell as the technique in the teaching of reading comprehension. Descriptive analysis is a technique uses by a researcher to describe the difference between before and after a treatment by using a simple descriptive statistics (Sugiyono, 2010). The analysis was by mean, standard deviation, minimum and maximum score of both experimental and control class. Inferential analysis is used to analysis two samples whose result of test represent the sample. There are two kinds of inferential analysis, parametric and nonparametric statistics. Parametric is used if the data are normal, while nonparametric is used if the data are not normal (Sugiyono, 2010).

To analyze the normality distribution of the scores, the researcher used Kolmogorov-Smirnov formula in SPSS in 16.0 for windows. Homogeneity is a testing to determine whether the samples are homogenous or not. The researcher calculated homogeneity (F) by dividing variance (s) samples. To analyze the homogeneity of the scores, the researcher used One-Way Anova formula in SPSS in 16.0 for windows. There are two kinds of data collected from the procedure of data collection. They are the scores of pre-test and the scores of post-test of the English Reading Comprehension. The researcher uses Independent Samples T-test formula in SPSS 16.0 for windows to know whether there are significance different between students who taught by using Learning Cell technique and those taught without using Learning Cell technique.

3. FINDINGS AND DISCUSSION

In this research, the total numbers of the students who belong to the control group is 34. In the Pre-test the highest score in control group was 73.3 and the lowest score was 50. The mean score for control group was 60.15 and the standard deviation was 7.31. While in Post-test the highest score for control group was 80 and the lowest score was 53.3. The mean score for control group was 64.19 and the standard deviation was 8.13.

The total numbers of the students who belong to the experimental group is
34. The highest score for experimental group was 76.6 and the lowest score was 53.3. The mean score for experimental group was 64.66 and the standard deviation was 7.65. And in the Post-test the highest score for experimental group was 90 and the lowest score was 63.3. The mean score for experimental group was 76.73 and the standard deviation was 8.58.

Normality Testing

The normality test result of the pre-test in the control and experimental had been calculated by using Liliefors (Kolmogorov-smirnov) formula in SPSS 16.0 for windows, the researcher found that the probability (Asymp.Sig.) of the experimental group was 0.725 which was higher than the level of significance (0.05). However, since the probability (p) is lower than the level of significance (0.05), the null hypothesis is accepted. While if the probability (p) is higher than the alpha, so the null hypothesis is rejected. Based on the description above, it can be concluded the students’ pretest scores in experimental group were normally distributed. And for control group, the probability (Asymp.Sig.) was 0.371 which was higher than the level of significance (0.05). It means that the null hypothesis is rejected in other word the students’ pretest scores in control group were normally distributed.

The normality test result of the post-test in the experimental and control group had been calculated by using Liliefors (Kolmogorov-smirnov) formula in SPSS 16.0 for windows, the researcher found that the probability (Asymp.Sig.) of the experimental group was 0.607 which was higher than the level of significance (0.05). However, since the probability (p) is lower than the level of significance (0.05), the null hypothesis is accepted. While if the probability (p) is higher than the alpha, so the null hypothesis is rejected. Based on the description above, it can be concluded the students’ posttest scores in experimental group were normally distributed. And for control group, the probability (Asymp.Sig.) was 0.537 which was higher than the level of significance (0.05). It means that the null hypothesis is rejected in other word the students’ posttest scores in control group were normally distributed.

Homogeneity Testing

The homogeneity test is used to find out whether the sample has the same variance or not. The researcher used the
One-Way Anova formula in SPSS 16.0 for windows to test the homogeneity of the variance.

Table 1 The result of homogeneity test of students’ reading comprehension in the pre-test

<table>
<thead>
<tr>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.218</td>
<td>1</td>
<td>66</td>
<td>0.642</td>
</tr>
</tbody>
</table>

After the computation by using One-Way Anova (formula in SPSS 16.0 for windows), the result showed that the probability (Asymp.Sig) of two classes was 0.642 which was higher than the level of significance (0.05). Since the probability (p) is lower than the level of significance (0.05), the null hypothesis is accepted. While if the probability (p) is higher than the alpha, so the null hypothesis is rejected. Based on the description above, it can be concluded that the null hypothesis is rejected in other word the variance of two classes in the pre-test is homogenous and the sample has the same variance. So, the data meet the requirement for a research analysis.

Table 2 The result of homogeneity test of students’ reading comprehension in the post-test

<table>
<thead>
<tr>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.168</td>
<td>1</td>
<td>66</td>
<td>0.683</td>
</tr>
</tbody>
</table>

After the computation by using One-Way Anova (formula in SPSS 16.0 for windows), the result showed that the probability (Asymp.Sig) of two classes was 0.683 which was higher than the level of significance (0.05). Since the probability (p) is lower than the level of significance (0.05), the null hypothesis is accepted. While if the probability (p) is higher than the alpha, so the null hypothesis is rejected. Based on the description above, it can be concluded that the null hypothesis is rejected in other word the variance of two classes in the pre-test is homogenous and the sample has the same variance. So, the data meet the requirement for a research analysis.

Hypothesis Testing

To compare the result of the post-test between experimental and control class, the researcher used Independent Sample T-test in SPSS 16.0 for windows. The t-test is applied to test whether there are significance different between students who taught by using Learning Cell technique and those taught without using Learning Cell technique The result of the t-test is described in the table below:
Table 3 Post-test of experimental and control class

<table>
<thead>
<tr>
<th></th>
<th>t&lt;sub&gt;obs&lt;/sub&gt;</th>
<th>t&lt;sub&gt;table&lt;/sub&gt;</th>
<th>Significant Different</th>
</tr>
</thead>
<tbody>
<tr>
<td>Df</td>
<td>2.036</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td>P(Sig.)</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

According to the table above, it shows that t<sub>observed</sub> was higher than the t<sub>table</sub> (6.184>2.036), with degree of freedom 32 and level of significance 0.05 (can be seen in appendix). In other word, the probability (Asymp.Sig. 2 tailed) was lower than the level of significance (0.000 < 0.05). Because t<sub>count</sub> > t<sub>table</sub> and p < 0.05, it can be concluded that the null hypothesis of no difference was rejected. This result indicated that after the treatment was given to the experimental class, the obtained of posttest scores were significantly different with posttest scores of control class. In the other words, that teaching reading comprehension by using Learning Cell technique is effective than teaching reading comprehension by using conventional way.

In the control group or the group that used conventional way, there was not significant improvement of the mean score of the students’ reading comprehension skill. The students in the control group do not master the technique in reading, they usually used silent reading in class so that is why they felt difficult in answer the questions and comprehend the text. In experimental group, the computation result of reading comprehension scores of SMA Muhammadiyah 3 Yogyakarta taught by using Learning Cell technique is higher than the score before Learning Cell was used. Before the treatment, the mean score of experimental group was 64.66 and after treatment the mean score of experimental group was changed to 76.73. The minimal score of the experimental group was 53.30 and the maximum score of the experimental group was 83.30. After the treatment, there was no student who got 53.30 and the maximum score was 90. And the test scores of experimental class indicated that the distribution were normal.

The result of the research shows that the mean score of experimental group was 76.73 and the mean score of control group was 64.19. It means that Learning Cell technique in teaching reading comprehension to the second grade students of SMA Muhammadiyah 3 Yogyakarta can help the students to achieve better result in reading. The students’ posttest scores of experimental group were higher than the students’ posttest scores of control group. It shows
that there was significant difference on their scores after and before the treatment.

According the result of computation, it shows that there was reading improvement after the students received reading treatment using Learning Cell technique. It means that the Learning Cell technique is effective in teaching students’ the reading comprehension. In addition the result of t-test computation indicated that the probability was less than the level of significance (0.000 < 0.05). Since the probability was less than the level of significance, the null hypothesis of no difference was rejected. It indicated that there were significant difference between posttest scores of experimental and control group.

This study result was in line with Goldschmid (1976) who considers that Learning Cell technique can help the students become better readers because in this technique, the students learn to create some questions based on the text and answer their pair’s questions. This technique helps the students to develop their ability of comprehension in reading; predicting, summarizing, clarifying, and questioning. And it makes students learn to relate to their pair as they work together in small group, this can be especially helpful for students who have difficulty with social skill.

Learning Cell is effective technique in teaching reading comprehension. It can be proved from the result of the experimental study, which showed that there is significantly different in reading comprehension skill between the students who were taught by using Learning Cell technique and those who were taught without using Learning Cell. It can be seen from the result of t-test showing that the value of p is lower than the level of significant (0.000 < 0.05) or $t_{\text{observed}}$ must be higher than $t_{\text{table}}$ (6.184 > 2.036). It is clear that teaching reading comprehension by using Learning Cell technique to the second grade students of SMA Muhammadiyah 3 Yogyakarta is more effective than teaching reading comprehension without using Learning Cell technique (using conventional way).

Moreover, the result of the research proved that the Learning Cell technique is effective to be used as a technique in teaching the students’ reading comprehension. This finding is in line with Barkley et al (2005) who find that Learning Cell technique as an effective strategy for engage students actively in
thinking about content of the text that they read and encourage the students to generate thought provoking questions. From the result of the research, it can be concluded that learning cell gives advantages to the students. Learning Cell technique helps the students learn how to produce their own questions, improve them, and strategize on how to use them. When students know how to generate their own questions, they take greater ownership of their learning, deepen comprehension, and make new connections and discoveries on their own.

Asking students to create their own questions about a reading passage encourages them to read more actively and helps them to focus their attention on key ideas. Learning cell technique motivated the students both practice and giving feedback about misconceptions to their peer because it makes their practice sessions conducive to improvement. And in different kind of comparison, Berry (2004) found that the learning cell was more effective than individual study for extrovert, provides their partners were also extroverts; introverts did well in both conditions and mixed pairs of extroverts and introverts were least successful. In learning cell, generate some questions can motivated the learner to pay more attention in the reading materials, so it can improve their comprehension in reading.

4. CONCLUSION

The students’ reading comprehension in the control group, the mean score of pre-test was 60.15 and in the experimental group the mean score of pre-test was 64.66. Then, in control group the highest score of post-test was 80 and the lowest score was 53.3. The mean score for control group was 64.19 with the standard deviation was 8.13. And in the experimental group the highest score of post-test was 90 and the lowest score was 63.3. The mean score of post-test in experimental group was 76.73 with standard deviation was 8.58. Teaching reading comprehension by using Learning Cell technique is more effective than teaching reading comprehension without using Learning Cell technique (using conventional way). The hypothesis testing showed that there is significantly different in reading comprehension skill between the students who were taught by using Learning Cell technique and those who were taught without using Learning Cell. It can be seen from the result of t-
test showing that the value of p is lower than the level of significant (0.000 < 0.05) or $t_{observed}$ must be higher than $t_{table}$ (6.184>2.036). Based on the explanation above, it can be concluded that teaching reading comprehension by using Learning Cell is more effective than teaching reading comprehension without using Learning Cell (conventional way).

5. REFERENCES


