CHAPTER IV

FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter deals with describing and discussing the research findings from the statistical computation in SPSS 16 for windows, and questionnaire. It consists of two main parts, namely findings and discussion. The findings are divided into four parts, which are the pilot test score analysis, the pre-test score analysis, the post-test score analysis, and the research findings of questionnaire. Those findings are then analyzed and interpreted in the discussion part.

4.2 Research Findings

4.2.1 The Pilot-test Score Analysis

The pilot-test was administered to make sure that the instrument used is appropriate in this study. To maintain the data from the pilot test, several tests such as validity, level of difficulty, discrimination and reliability tests were then conducted.

4.2.1.1 The Validity Test

The data obtained from pilot-test were analyzed using Pearson product moment correlation. This test was intended to investigate the validity of the test items. The result of statistical computation of pilot-test can be seen in the following table.

Table 4.1

Test of Validity Instrument

Item Number	Raw Score	Interpretation
4, 17, 18, 20, 25, 27, 29,	0.000 – 0.200	Very Low
2, 5, 6, 8, 10, 11, 12, 13, 19, 26,	0.200 – 0.400	Low
1, 3, 9, 14, 15, 16, 21, 22, 23, 24, 28, 30	0.400 – 0.600	Moderate
7,	0.600 – 0.800	High
—	0.800 – 1.000	Very High

Table 4.1 shows that 23 from 30 questions were appropriate to be used for research instrument. Seven items (4, 17, 18, 20, 25, 27, and 29) were invalid, so they could not be used for the instrument.

4.2.1.2 The Difficulty Test

Table 4.2

The Result of Difficulty Test

	Interpretation	**Item Number**
Index of Difficulty	Acceptable	1, 6, 7, 11, 12, 15, 16, 17, 18, 19, 20, 21, 23, 25, 26, 28, 29, 30
	Non-acceptable	2, 4, 5, 8, 9, 10, 13, 14, 22, 24, 27

Table 4.2 shows that 18 from 30 items were appropriate to be used for research instrument. Eleven items (2, 4, 5, 8, 9, 10, 13, 14, 22, 24, and 27) were non-acceptable, so they could not be used for the instrument because according to Henning (1987 c.f Fulcher and Davidson, 2007) the item with facility values around 0.5 were therefore considered to be ideal, with an acceptable range being from around 0.3 to 0.7.

4.2.1.3 Discrimination

Table 4.3

The Result of Discrimination Test

	Interpretation	**Item Number**
Index of Discrimination	Acceptable	1, 3, 7, 8, 9, 12, 14, 15, 16, 17, 18, 19, 21, 22, 23, 24, 26, 28, 29, 30
	Non-acceptable	2, 4, 5, 6, 10, 11, 13, 20, 25, 27

Table 4.3 shows that 20 from 30 items were acceptable to be used for research instrument. Ten items (2, 4, 5, 6, 10, 11, 13, 20, 25, and 27) were unacceptable, so they could not be used for the instrument.

According to the test results above, some changes were made in writing the appropriate instrument because the items with r_{pbi} of 0.25 or greater are considered acceptable, while those with a lower value need to be rewritten or excluded from the test. Moreover, ten items (2, 4, 5, 6, 10, 11, 13, 20, 25, and 27) were excluded from the arrangement of the instrument. However five new items were added in the instrument to fill the item.

4.2.1.4 The Reliability Test

Cronbach's Alpha in SPSS 16 for windows was used to check the instrument reliability.

Table 4.4

Test of Reliability Items

Cronbach's Alpha	N of Items
.72	30

Table 4.4 shows that the reliability of the instrument (Cronbach's Alpha) was 0.72. According to Vaus (2002, p.20) an alpha obtained is interpreted as a reliable set of item. Accordingly, the instrument was used as an instrument in this study.

4.2.2 The Pre-test Score Analysis

Table 4.5 shows the mean and standard deviation of the student's scores from the experimental and the control groups in the pretest.

Table 4.5

The Pretest Scores

Group	N	Mean	Std. Deviation
Experimental	40	47.8	9.49
Control Group	40	48.5	9.29

The table shows that the mean for the experimental group is 47.8, while the mean for the control group is 48.5. From the table, it can be seen that the mean scores from both experimental and control group pre-tests are not too far. However, it can not be assumed that the difference between experimental and control group score was significantly different. To investigate whether the difference between the scores of pretest from experimental group and control group were significantly different, the data from experimental and control group pretest must be normal and homogeneous. Moreover, to see whether the distribution of the pretest was normal, the calculation of normally distribution was conducted.

4.2.2.1 The Normal Distribution Test

Kolmogrov Smirnov test was used to calculate the normal distribution of pretest score. The test statistics for the Kolmogrov Smirnov test is denoted by *D*. The

percentage on SPSS 16 for windows obtained that D (40) = .133, p > .05 and D (40) = .129, p > .05, were both normal. The numbers in bracket are the degrees of freedom (*df*) from the table. The table of the normal distribution test result can be seen at the appendix F.

4.2.2.2 The Homogeneity of Variance Test

Levene Statistics in SPSS 16 for windows was used to calculate the variance homogeneity of the experimental and the control group pretest score. Levene's test can be denoted by the letter *F* and there are two different degrees of freedom. From the calculation of Levene test, it can be seen that the variances are equal, $F(1, 78) = .032$. The value of *F* is higher than the level of significance (0.858 > 0.05). In other words, the null hypothesis of the pretest score is accepted because the variances of pretest scores in both groups are equal. The table of the homogeneity of variance test result can be seen at the appendix F.

4.2.2.3 The Independent *t*-test

The independent *t*-test was conducted to see whether there is significant difference between the experimental and control groups' scores on pretest. The result of the independent *t*-test on pretest score indicated that on average, control group students had a better reading score ($M = 48.5$, $SE = 1.468$) than the experimental students ($M =$

47.8, *SE* = 1.501). However this difference was not significant because *t* (78) = -3.33, *p* > .05. In addition, two-tailed value of *p* is 0.74, which is greater that 0.05. Therefore it can be concluded that there is no significant difference between the mean for the experimental and the control group. The table of the independent test on pretest score result is provided at the appendix F.

4.2.3 The Post-test Score Analysis

The following data were obtained from the posttest that was held after conducting several sessions of treatment.

Table 4.6

The Posttest Scores

Group	N	Mean	Std. Deviation
Experimental	40	76.0	7.07
Control Group	40	60.5	8.31

The table shows that the mean for the experimental group is 76.0, while the mean for the control group is 60.5. From the table, it can be seen that the means from both experimental and control groups pretest is rather different. However, to prove

that the means of both groups were significantly different, several tests were calculated. The following explanation was the result of several tests on posttest score.

4.2.3.1 The Normal Distribution Test

Kolmogrov Smirnov test was also used to calculate the normal distribution of posttest score. The calculation of the experimental and control groups' posttest score on SPSS 16 for windows obtained that D (40) =0.125, p > .05 and D (40) = 0.126, p > .05. it can be concluded that the distribution was normal. The numbers in bracket are the degrees of freedom (*df*) from the table. The table of the normal distribution test result can be seen at the appendix F.

4.2.3.2 The Homogeneity of Variance Test

Levene Statistics in SPSS 16 for windows was used to calculate the variance homogeneity of the experimental and the control group posttest score. Levene's test can be denoted by the letter *F* and there are two different degrees of freedom. From the table at the appendix, it can be seen that the variances are equal, $F(1, 78) = 0.415$. The value of F is higher than the level of significance (0.476> 0.05). In other words, the null hypothesis of the pretest score was accepted because the variances of pretest score in both groups are equal. The table of the homogeneity of variance test result can be seen at the appendix F.

4.2.3.3 The Independent *t*-test

After the normality and homogeneity of variances were analyzed then the data from posttest scores were analyzed by using *t*-test formula to check whether or not the mean between experimental and control groups' scores was significantly different.

The result on the independent *t*-test showed that on average, the experimental groups students had a bigger reading score (M = 76.0, SE = 1.11) than control group students (M = 60.5, SE = 1.31). This difference is highly significant t (78) = 8.982, $p < 0.05$. In addition, the two-tailed value of p is 0.000, which is less then 0.05. Therefore, it can be concluded that there is a significant difference between the mean for the experimental and control group posttest scores and the null hypothesis of this research is rejected. The table of the independent test result on posttest scores can be seen at the appendix F.

4.2.3.4 The Calculation of Effect Size

In order to find out the effect of the independent variable influence upon the dependent variable the calculation of effect size was conducted. It was conducted to see how well the treatments work. The following calculation is the calculation of the effect size

$$r = \sqrt{\frac{t^2}{t + df}}$$

r = effect size

t = t_{obt} or t value from the calculation of independent *t*-test

df = $N_1 + N_2 - 2$

The result represented effect size with the value of *r* = 0.74. According to Coolidge (2000, p.151) the *r* obtained represents a large effect size, because a large effect size is more than 0.371. It means that very large effect size was observed in implementing Spelling Bee game, in other words there was a major effect of Spelling Bee game in improving students' understanding on narrative text.

4.2.3.5 The Dependent *t*-test

The dependent *t*-test was administered to analyze whether or not there is a significant difference between experimental group's pretest score with their posttest score. The result of dependent *t*-test on experimental scores showed that on average, the experimental groups students have a bigger reading score on the posttest (*M* = 76.0, *SE* = 1.11) than their score on the pretest (*M* = 47.8, *SE* = 1.50). This difference is highly significant *t* (39) = 15.148, $p < 0.05$. In addition, the two-tailed value of *p* is 0.000, which is less then 0.05. In other word, this finding does not support the hypothesis of no significance difference in terms of students reading comprehension on narrative text in experimental group. The means of experimental group pretest and

posttest scores show a higher improvement from 47.8 (pretest) to 76.0 (posttest), therefore several sessions of spelling bee game in teaching narrative text improve students' reading comprehension on narrative text. The table of the dependent *t*-test on experimental group's score can be seen at the appendix F.

4.2.3.6 The Calculation of Effect Size

The following calculation is the calculation of the effect size

$$r = \sqrt{\frac{t^2}{t + df}}$$

r = effect size

t = t_{obt} or t value from the calculation of independent *t*-test

df = $N_1 + N_2 - 2$

The result represented effect size with the value of *r* = 0.86. The result of the effect size above shows that the *r* value represents a large effect size. It means that there is a large effect in the experimental group. In other words, there is a significant effect on experimental group students in improving their reading comprehension on narrative text.

4.2.4 The Findings from the Questionnaire

The questionnaire was given to the experimental group after receiving the treatment in order to find out the obstacles the students faced during learning about narrative text using Spelling Bee game, also the advantages and the disadvantages of using Spelling Bee game in learning narrative text. The students' answers on the questionnaire are depicted on the following table.

Chart 4.1

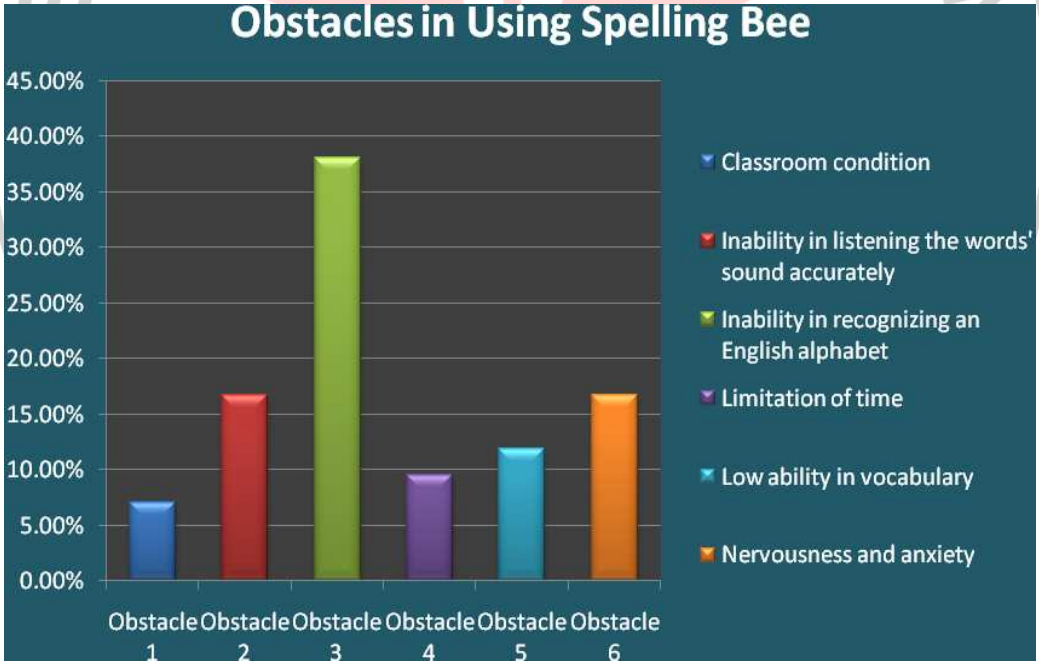
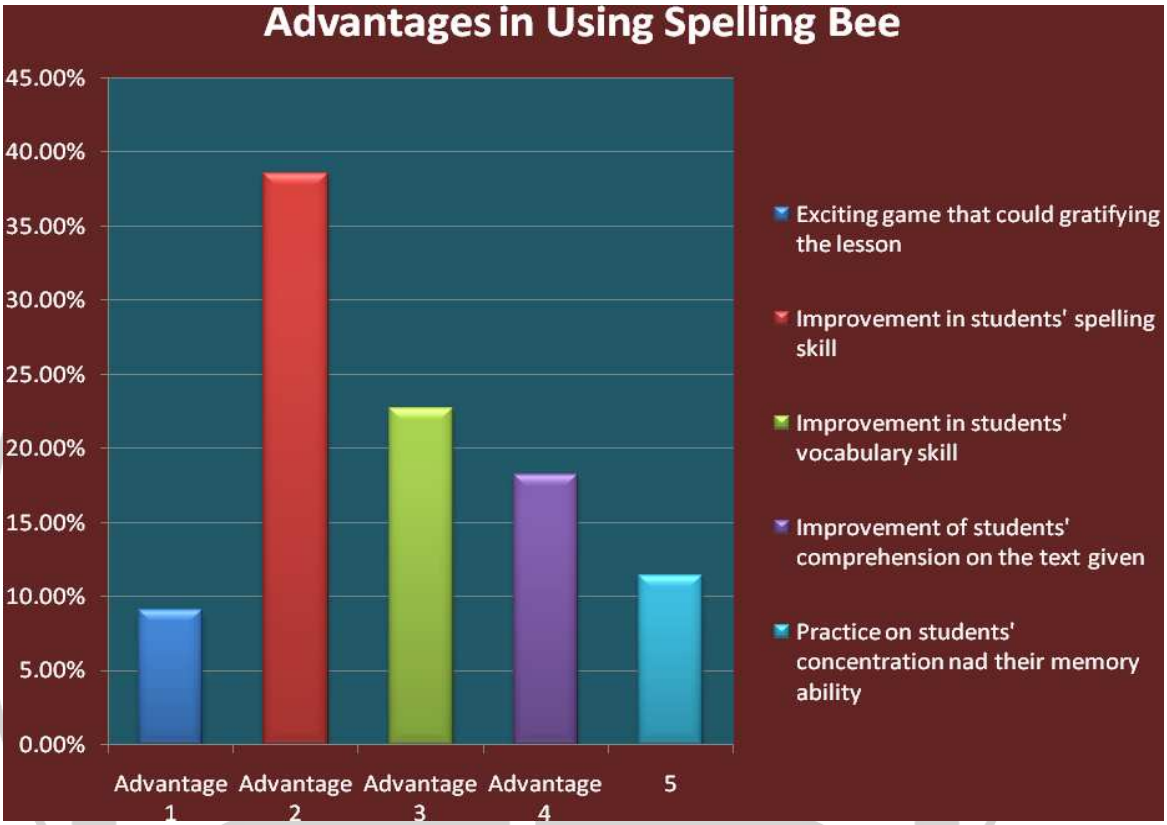
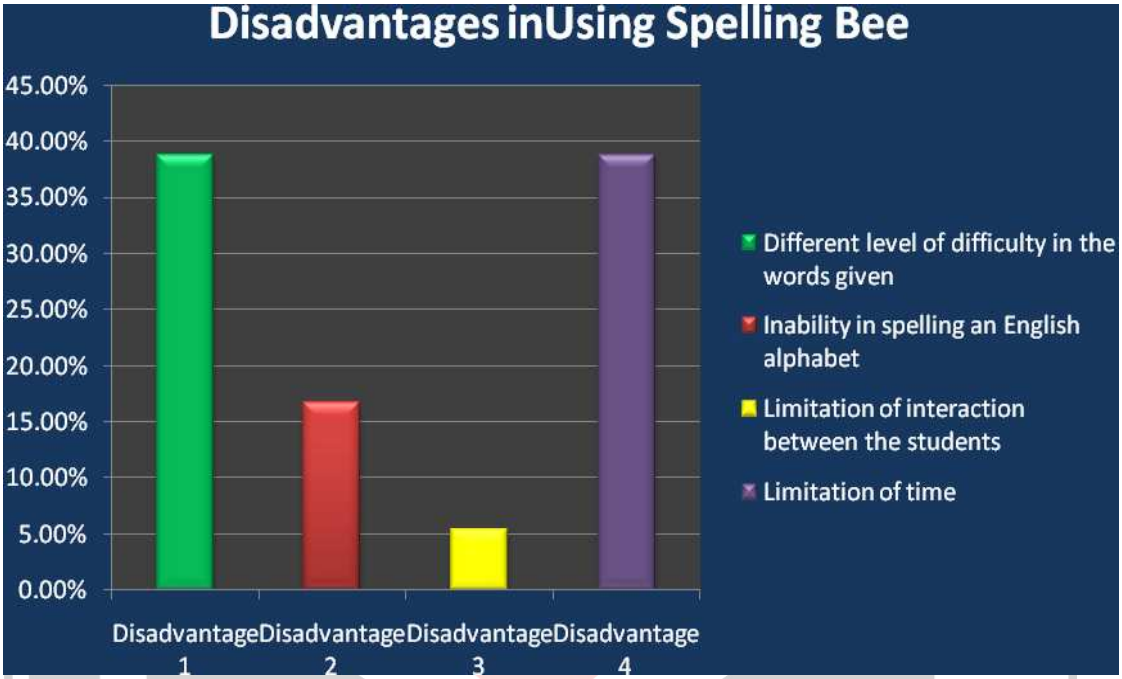


Chart 4.2


Advantages in Using Spelling Bee
45.00%
40.00%
35.00%
30.00%
25.00%
20.00%
15.00%
10.00%
5.00%
0.00%
Advantage 1
Advantage 2
Advantage 3
Advantage 4
5
Exciting game that could gratifying the lesson
Improvement in students' spelling skill
Improvement in students' vocabulary skill
Improvement of students' comprehension on the text given
Practice on students' concentration nad their memory ability

Chart

4.3



From the chart 4.1, it can be concluded that there are six obstacles in using Spelling Bee game in learning narrative text. Based on the students' answers, spelling was the very disturbing thing in playing Spelling Bee game. In addition, it can be seen from chart 4.2 that students thought that their spelling and vocabulary skills had improved because of Spelling Bee. However, they still found the disadvantages of this game. From the chart 4.3, it can be drawn that limitation of time and the different level of difficulty in the words given were the disadvantages that mostly faced by the students.

4.3 Discussions

4.3.1 The Effectiveness of Using Spelling Bee Game

The result of calculation in SPSS 16 for windows shows that initially students of experimental and control groups had a similar ability in understanding narrative text. The mean between the experimental and control groups' students did not signify that there was a significant different between them. However, the scores of posttest showed that the experimental group students actually performed better because they got better scores in test.

The result indicated that Spelling Bee as the independent variable in this study was effective in improving students' understanding on narrative text. That was also supported by the large effect that students in experimental group received from the implementation of Spelling Bee game in learning about narrative text. An improvement of students in the experimental group's scores can be a result from many aspects.

Spelling Bee could be effective due to several reasons. First Spelling Bee can stimulate students' motivation in reading. Spelling Bee in this context was a technique that supported an English teaching and learning process, especially in teaching narrative text. The words that were used in the Spelling Bee were the key words from narrative text and also would be discussed after the game. Accordingly, students automatically motivated in reading the text, since they wanted to be the

winner in the Spelling Bee. Therefore, students' comprehension on narrative text improved because they got a deeper comprehension on the keywords.

Second aspect that could be a causal factor in Spelling Bee game effectiveness was students' awareness toward the words used in the Spelling Bee game. It could also be a causal factor to their success in comprehended the narrative text. It can be seen from the students' ability in guessing the meaning of the text after playing the Spelling Bee game. Therefore, they could guess the meaning of the narrative text given only through the words used in the Spelling Bee. Students were able to make a prediction concerning the meaning of the text without translate all the words in the text. Moreover, students' ability in guessing the meaning of the text, drawing the conclusions from the text, and predicting what will come next in the text were evidence that the students' ability in reading comprehension on narrative text has improved.

Students felt that they could not comprehend the text because they did not know the meaning of some words. Therefore, Spelling Bee was conducted to optimize students understanding on the words from the text, especially narrative text since Spelling Bee facilitated students to learn the words with the meaningful and enjoyable activity.

All this time, students have been accustomed to reading and translating most of the words from the text. They have been accustomed to find out the meaning of the difficult words by opening the dictionary or asking the teachers. Accordingly, a third

factor that caused Spelling Bee game effective in improving students' reading comprehension on narrative text was its technique that can gratify teaching and learning process. Game is fun and students like to play the game. Playing games is a vital part in learning. Games, especially Spelling Bee game added variation to a lesson and increase motivation by reasonable incentive to use the target language, in this context was English. In addition, organizing spelling bee in the classroom is a fun way to get the students to brush up on their spelling skills and get everyone involved in the learning fun.

Spelling Bee game encouraged an English teaching and learning process to become more attractive. Students were motivated more in learning, especially learning narrative text because they wanted to play well in the game. The variation in teaching and learning activity was believed to encourage students' enthusiasm to the material. An important factor to the success of teaching and learning process can be seen from the students' interest during the process. If students seemed attracted to the material, and follow the activity without any compulsion, then they will be more able to absorb the material.

Another possible factor to the effectiveness of Spelling Bee game in improving students' reading comprehension on narrative text was the competitiveness between the students. Spelling Bee game was able to build competitiveness between the students in the classroom. It can be seen during the treatment, they actively involved in the game. Moreover, they paid attention to every aspect, such as the words, and the instruction given by the teacher. Spelling Bee game was easy to set up

and the rules of the game was also set clearly. The key to a successful language game is that the rules are clear and the ultimate goal is well defined. Accordingly, teacher as the facilitator gave the students a very simple instruction. Therefore, every student in the classroom could be followed the game easily and the lesson objective could be achieved as well.

4.3.2 The Obstacles Found in Using Spelling Bee Game

There were several obstacles found from the students' answer on the questionnaire, namely students' problem on their spelling, students' lack of listening skill, nervousness, student's difficulty in vocabulary, limited time allocation, and the classroom condition that did not support the learning process.

The most dominant obstacle during the learning process using Spelling Bee game was students' inability in recognizing an English alphabet. They did not have a good spelling skill. Therefore, most of them failed at the game. The longer words did not mean the more difficult to spell. It was proven from the treatment that most of the students misspelled the words, especially the words that cover the letter of *A, E, H, G,* and *J.*

Students' failure in recognizing an English alphabet might be caused by their difficulty in listening. Therefore, in Spelling Bee, recognizing the words not only means recognizing how to listen correctly, but also how to spell accurately. Those skills were highly related, because students' ability in recognizing the alphabet that

covers the word was depended on their spelling and listening skill. In order to minimize students' error at spelling, the teachers also need to facilitate the students with giving them a good pronunciation. As a result, students will hear a correct word, and then they will spell it correctly.

Besides, from the students' point of view, there was also a problem with the classroom condition. Since, playing game is a fun activity that can make the classroom condition relatively uncontrolled. Therefore teachers as the facilitator need to be more creative in arranging the class. They have to manage the students for not making any noisy during the game. In addition, teachers need to ascertain that students can hear the word they are asked to spell without being bothered from other students. Therefore it was important to give a job to the students who have eliminated from the game. It would be better if they are asked to write the words used in the game on their book, since after the game those words would be discussed as the material.

The all obstacles that had been discussed above were interconnected of each other. Classroom condition influenced student's listening skill toward the words given from the teacher. Moreover, student's listening and spelling skill influenced students' ability in recognizing an English alphabet that covered the words.

4.3.3 The Advantages and Disadvantages in Using Spelling Bee Game

The reasons why Spelling Bee was effective in improving students' understanding on narrative text can also be seen from the students' answer of the questionnaire. Since Spelling Bee game is dealing with spelling the words, students felt that their skill on spelling and vocabulary had improved.

In every meeting students received one different text. They should be able to read the text without asking the meaning of each word from the text to the teacher. Afterwards, students followed the Spelling Bee game and were asked to spell the words from the text especially the keywords. Students were allowed to ask the clues from the teacher. There were two kinds of clue in this game namely definition and word usage in the sentence. That technique of Spelling Bee game can be the important factor of students' spelling and vocabulary improvement. Students who had low spelling and vocabulary skills were motivated to learn more about the words and how to spell them. That was one of the essential aspects to get the deeper understanding of narrative text.

Therefore, based the students' answer on the questionnaire, Spelling Bee game was not only motivating and fun but can also provide excellent practice for improving pronunciation, vocabulary, grammar and the four language skills. It encouraged students to study their spelling words, as well as to learn how to compete with one another.

Games must be more than just fun because games that were needed by a lesson is meaningful games that can be a media to deliver the material, and Spelling bee was one of those kinds of game. It can be drawn from the implementation of Spelling Bee. Students felt that Spelling Bee was not only amusing but also help them to comprehend the material, especially narrative text.

There was an interesting issue about concentration that appeared from the students' answer on the questionnaire. Students responded that Spelling Bee trained their concentration. It could happen because during the game, every single skill that students had been trained to be focus on the words given by the teacher. Spelling was dealing with students' ability in reading, listening and speaking. According to that reason, Spelling Bee familiarized the students to train their concentration in using all of the skill they had. When students need to spell one word, it means that they need to recall their memory concerning that word from the text, they must be able to visualize that word in their mind and finally they need to spell the letters which string up the word with correct pronunciation.

Meanwhile, there were several disadvantages in using Spelling Bee game to improve students' understanding on the narrative text. Some problems occurred in implementing Spelling Bee game. The students complained about the time allocation in implementing Spelling Bee game. Since Spelling Bee game was used to support teaching narrative, students were asked to read the narrative text first. Therefore, time allocation for implementing Spelling Bee game depended on how long the time that students need to read the text.

After Spelling Bee game was conducted, teachers also need to give the explanation about the material that related to the text and the words given in Spelling Bee. As a result, time allocation for implementing Spelling Bee game was very definite. Accordingly, teachers need to be well organized in using Spelling Bee game in the classroom.

Beside time allocation, students also complained about the level of difficulty of the word they were asked to spell. Most of them assumed that the level of word difficulty was highly related to the length of the word. In fact, the longer word does not indicate the difficult word to spell, because the words' difficulty level is not only influenced by the length of those words but also by the letters that cover them.