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The Effectiveness of Hyponymy Games to Enhance English Vocabulary Acquisition

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Abstract

Previous studies have shown that language games enhance language learning as well as vocabulary. The purpose of this study was to determine the effectiveness of hyponymy game usage to enhance vocabulary acquisition among students in Grade VIII at an Indonesian junior high school. Answers were sought to a number of questions: (a) Are there any significant differences in students' vocabulary ac$_h$ievement between experimental and control groups? (b) Are there any differences in vocabulary achievement scores between male and female students in the experimental group and those who are in the control group? (c) Contrasting females with males, which group achieved a higher score?; and (d) What were students' attitudes toward the implementation of hyponymy games; do they have a positive or negative impact? An experimental research design was adopted involving two intact random sampling groups with 70 students. The results showed there was a significant difference between students who were taught using hyponymy games and those who were not taught using them. No differences were found between males and females in the experimental group, but a significant difference was seen in the control group. Overall, hyponymy games improved the students' ability to learn English vocabulary.

Keywords: *Vocabulary acquisition, hyponymy games, quantitative research*

Introduction

English is the international language of communication, as well as cultural and information exchange. Proficiency in it assists in obtaining a job. Mastery of a language requires that an adequate vocabulary be possessed so that it can be used accurately. Words express meaning, can affect an individual's actions, and are important in communication. Hosseini & Salehi (2016) stated that to express or convey an idea, a student needs to have an adequate vocabulary. This means that vocabulary can be the foundation of language teaching. Taslim (2016) has correctly said that language proficiency has a strong connection with mastering vocabulary, for this means the user is able to know the words in a language and when it is appropriate to use them.

A number of other researchers also have expressed the opinion that vocabulary is an important part of language learning (Alqahtani, 2015; Hosseini & Salehi, 2016; Manik & Chistiani, 2016; Nurweni & Read, 1999; Rezaei et al., 2015). Alqahtani (2015) emphasized that sufficient lexical knowledge is required to master a second or foreign language. To communicate with a native speaker, people need to have knowledge of at least 3000 word families. Meara et al. (1997) noted that learners in an intensive second language area may be unable to acquire vocabulary easily. Extensive explanation may be required through written text or other means. Clearly, they lack the capability to identify, understanding, and learn new vocabulary.

Furthermore Purnamasari et al. (2017) explained that because it is hard for students to learn and enrich their vocabulary knowledge, their motivation to read English books is low. Despite the fact that there may be extensive schooling in English, mastery of it may be low (Hiew, 2012). For example, in Malaysia students still are not able to master English although they have spent about 11–13 years studying it. Tang et al. (2016) also observed that in Hong Kong, a former British colony, students do not have a standard grasp of the vocabulary.

In Indonesia, students have problems in acquiring vocabulary. Several studies and methods have been investigated to increase students' vocabulary knowledge (Amalia, 2020; Katemba & Parilla, 2020; Katemba & Sianipar, 2020; Katemba & Sitompul, 2018; Purnamasari et al., 2018). Gu (2003) argued that to learn vocabulary effectively, strategies must rely on the task, the learner, and the learning

context. To solve this problem with vocabulary, the present researchers used a technique designed to facilitate student learning through games. Interesting activities can be motivational and are able to challenge students to improve their vocabulary.

Hedge (2000) argued that semantic links have an important role in vocabulary acquisition. In order to solve this problem, Taslim (2016) argued that teaching vocabulary by using hyponymy games (to seventh graders at MTs Syech Ibrahim Payakumbuh) increased students' vocabulary knowledge. The present researchers adopted this method to enrich students' vocabulary that was connected with the area of semantics. This provided for enhancement of the learners' lexical entries in an enjoyable learning atmosphere. By way of explanation, according to Joshi (2014), hyponym [Hypo- under; -Onym: name] is a word that denotes a particular item from a general category of words. For example, football/hockey/cricket are hyponyms of game, and eagle/peacock/sparrow are hyponyms of bird. A hyponym also is called "Subordinate," "Subtype," or "Subset."

As McCarthy & O' Dell (2006) indicated, grouping words is beneficial to enhance vocabulary. It is easier for students because words are grouped according to their classification. It has been said:

> That is so beneficial to organize vocabulary into groups. It is not about the way you group those words or your grouping make sense to anyone else or not, but it talks about the words enough to create a group that improves the way we learn those words.

In this research, the researchers adopted several guiding principles. First, future researchers could use the information as a reference source and for guidance. Second, the aim was to develop a method that would be useful in enriching students' vocabulary achievement and, finally, the aim was to help both teacher and students move towards solving the problem of teaching and learning vocabulary.

This research was expected to provide practical contributions for both teachers and students. First, the findings of this research should help teachers to find a better way to teach vocabulary. By using the hyponymy method, the teacher encourages students to learn English indirectly and in a fun way, hopefully helping them to love learning English.

Research Questions

The following questions were posed:

1. Are there any significant differences in students' vocabulary achievements between those who are taught using hyponymy games (experimental group) and those who are not taught using such games (control group)?
2. Are there any differences between male and female students in the experimental and control groups in enhancing vocabulary achievement scores?
3. Contrasting female and male students, which group achieved a higher score?
4. What were the students' responses toward the implementation of hyponymy games?

The hypotheses adopted were as follows:

Null Hypotheses

H_{10}: There are no significant differences in students' vocabulary achievement between students who are taught using hyponymy games (experimental group) and those who are not taught using hyponymy games (control group).

H_{20}: There are no significant differences in vocabulary achievement score between male and female students.

Alternative Hypotheses

$H_{1a:}$ There are significant differences in students' vocabulary achievement between students who are taught using hyponymy games (experimental group) and those who are not taught using hyponymy games (control group).

$H_{2a:}$ There are significant differences between male and female in vocabulary achievement scores.

Methodology

This study focused on developing vocabulary through hyponymy games for Grade VIII students in Public Junior High School #1 (Sekolah Menengah Pertama Negeri–SMPN), Parongpong, Bandung, West Java, Indonesia. The study was continued for 50 hours (once a week for two hours spread over three and a half months) for both the experimental and control groups. The researchers limited the hyponymy games used to the Last Man Standing, Hangman, and Race Board.

The study was a quantitative one, and used a pre-test and post-test design to enable vocabulary achievement to be monitored before and after the treatment.

Population and Sample

The population selected for this research were students at SMPN 1, Parongpong, West Bandung. The sample consisted of two groups from Grade VIII. The first group was the experimental group and the second group was the control group. The students in the experimental group were taught through hyponymy games, and the students in the control group were taught using conventional methods. The range of ages was 13–15 years. The experimental group was composed of 37 students, and the control group numbered 33 students. The students' English ability was at the beginner level. The students were selected randomly for both groups.

Research Instrument

The instrument (vocabulary test) was pilot tested on a different group of 30 students to determine its validity and reliability. The pilot test consisted of 50 multiple-choice questions, five true and false questions, and five matching questions. Moreover, eight questions involved nouns, seven questions verbs, seven questions adjectives, eight questions involved tag questions, seven questions involved modal verbs, eight questions contained suggestions, eight questions involved agreeing or disagreeing, and eight questions assessed understanding. The results of the pilot test were analyze through a software program called Anatest to determine validity, reliability, and the index of difficulty level of each question. The questions that were considered reliable, valid, and significant were retained for the pre- and post-tests. The pre-test and post-test consisted of 45 multiple choice questions, six noun questions, seven verb questions, four adjective questions, four questions about modal verbs, six questions about suggestions, six questions that involved agreeing or disagreeing, and eight questions that assessed understanding. Moreover, some instructional objects were used in this research—such as a ball, trash bin, speaker, painting, lyrics of a song, a PowerPoint about adjectives, pictures of a woman and a man, marker, whiteboard, textbook and paper, letter, and other devices.

Pre-test

Both the hyponymy games group and control group were given a pre-test to measure their ability in vocabulary before the researchers gave the treatment. The pre-test was focused on nouns, adjectives, verbs, and adverbs. It was administered during the first week at the first meeting.

Procedures Adopted for the Hyponymy Games Class

First, the researchers motivated the students at the beginning of class by asking a few questions about the topic. For example, if the lesson was about fruits and vegetables, the teacher might ask questions such as "what kind of trees grow in your yards?", or "did you eat any fruits or vegetables for breakfast this morning?" Then the lesson commenced. Following this, students played one of the hyponymy games and repeated the games several times. At the end, a quiz was given to assess their learning of new vocabulary. Details of the three hyponymy games utilized are as follows.

Last Man Standing

Procedure for Playing the Last Man Standing Game. The researcher chose the name of a category or theme, such as kitchen, transportation, profession, food, and so on. Then all students ideally made a circle. It is easier for the students to play these games in this configuration, but if this is not possible,

they can sit in their chairs. Then the researcher began by tossing a ball to a student who was randomly picked. That student needed to shout a word that is part of the category or theme that has been chosen. For example, the words that belong to the theme of transportation could be car, bicycle, truck, plane, ship, and so on. Next, the student tossed the ball to another student. If that student repeated a word that has been mentioned already or cannot think of a new word, he/she would be disqualified. The last person who avoided being disqualified was the winner.

Hangman

Procedure to Play the Hangman Game. In this procedure, the researcher chose the name of a category or a theme, such as kitchen, transportation, profession, food, animal, and so on. The class was divided into two groups. Next the researcher wrote the theme, the number of dashes, and a column of stars on a whiteboard. After that, each group guessed a letter by taking turns. Then, the group that correctly guessed the letter got a star. At the end of the game, the group which got the most stars was the winner.

Race Board

Procedure Adopted to Play the Race Board. In the first step, the researcher divided the class into two groups. If the number of students was more than 30, it is better to divide the class into three or four groups. Next, divide the whiteboard into sections depending on the number of groups. Then the researcher chose one topic or theme and wrote it on the whiteboard. The students were given two minutes to write as many vocabulary items as they could remember. After that, the spelling of the vocabulary was checked. Finally, the group that was able to write the most words/vocabulary correctly was the winner.

Procedures Adopted in the Control Group

First, the researcher introduced the topic and motivated the students as described above at the beginning of the class. Then the researcher gave them a regular lesson. After that, the researcher gave a quiz to know whether the students had learnt new vocabulary or not. Procedures and steps adopted were all the same as for the experimental group. However, the control group did not participate in any games.

Conducting the Post-Test. Both the experimental and control groups were given a post-test to determine their improvement in vocabulary mastery.

Results and Findings

Both the experimental and control groups were pre-tested. The pre-test data was analyzed to determine whether it was normally distributed or not, and to see also whether it was homogeneous. The pre-test scores obtained for both the experimental and control groups were normally distributed, as assessed by the Kolmogorov-Smirnov method. The experimental group's score was 0.66 and the control group was 1.03, both of which were greater than 0.05. Levine's homogeneity test further indicated that the data were homogeneous (.968 > 0.05). These results allowed the *t*-test to be applied with confidence.

Table 1 *Results of Independent Sample t-test of Pre-test Data*

Levene's Test for Equality of Variances				***t*-test for Equality of Means**		
		F	**Sig.**	***t***	***df***	**Sig. (2-tailed)**
Pre-test	Equal variances assumed	.002	.968	-2.21	52	.032
	Equal variances not assumed			-2.21	52	.032

There were significant differences between the pre-test scores in both groups (.032 < .05). This meant that H_{1a} could be accepted (There are significant differences in students' vocabulary

achievement between students who are taught using hyponymy games (experimental group) and students who are not taught using hyponymy games (control group). At the start of the treatment, the control group's scores were significantly higher than those of the experimental group.

The gain scores of both groups is shown in Table 2. The mean and standard deviation figures indicate enhanced vocabulary mastery through the use of hyponymy games. This can be seen from the elevation of scores after the exercise was completed—the gain of the experimental group (0.32) was higher than gain in the control group (0.18). Hence, the hyponymy games were effective in enhancing students' vocabulary achievements, and after the treatment, the experimental group's scores exceeded those of the control group.

Table 2 *Results of Pre-Test, Post-Test, Standard Deviation, and Normalized Gain*

Test Details	**Experimental Group**		**Control Group**	
	Mean	Standard Deviation	Mean	Standard Deviation
Pre-Test	46.89	10.77	53.22	10.33
Post-Test	64.22	8.55	61.82	10.75
Normalized Gain	0.32	0.11	0.18	0.19

The scores of both males and females in the experimental group showed improvement (Table 3). Tests of normality (Shapiro-Wilk test) and homogeneity (Levene statistic) for both the pre- and post-test score groups indicated that the data were normally distributed and homogenous. Hence, based on normalized gains, males (0.34) in the experimental group slightly outperformed the females (0.31). However, in the control group the females outscored the males. The normalized gain for females (0.26) was higher than that for the males (0.11).

Table 3 *Results of Pre-Test, Post-Test, Standard Deviation and Normalized Gain of Gender in the Control and Experimental Groups*

Group and Test Details	**Males**		**Females**	
	Mean	Standard Deviation	Mean	Standard Deviation
Control Group				
Pre-Test	54.21	8.37	52.15	12.38
Post-Test	59.64	7.83	64.15	13.14
Normalized Gain	0.11	0.16	0.26	0.20
Experimental Group				
Pre-Test	46.50	10.11	47.20	11.61
Post-Test	65.25	7.06	63.40	9.75
Normalized Gain	0.34	0.13	0.31	0.08

A test was done to see whether the data was normally distributed or not. H_o is accepted if the *p*-value is > .05 and H_o is rejected if *p*-value is < .05. The normalized gain for both groups was found to be normally distributed, with values for the Control Group of .979 and for the Experimental Group of .777, both of which were greater than .05. Thus, the data was normally distributed.

A test was also performed to check on the normalized gains for gender in both the Control and Experimental Groups. The normalized gains for males and females in both the Control and Experimental Groups were normally distributed, with scores of .425 and .402 respectively for the males, and .878 and .792 for the females. Since all of these scores were greater than .05, thus it can be concluded that these gains for gender were also normally distributed.

Since the normalized gain data from both the Control and Experimental Groups were normally distributed, they were tested for homogeneity based on their means. The levels of significance were .481 and .081, respectively for the Control and Experimental Groups, both of which were greater than .05. This showed that the data was homogeneous.

Further analysis using an independent samples *t*-test on the Control and Experimental groups (Table 4), showed that there was no significant difference between the scores of females and males who were taught using hyponymy games. However, a significant difference was noted between gender-based scores in the Control Group.

Table 4 *Independent Samples Test of Gender in the Control and Experimental Groups*

Levene's Test for Equality of Variances			***t*-test for Equality of Means**		
	F	Sig.	*t*	*df*	Sig. (2-tailed)
Gain: Control Group					
Equal variances assumed	0.51	.480	2.23	25	.035
Equal variances not assumed			2.21	22.84	.037
Gain: Experimental Group					
Equal variances assumed	3.30	.081	-0.82	25	.420
Equal variances not assumed			-0.78	18.25	.444

Based on the results shown in Table 4, a significant difference was found between the learning of females and males in the Control Group (p = .035). For the Experimental Group, however, no significant difference was found between the scores of females and males who were taught using hyponymy games (p = .420 > .05). This appears to indicate that males, whose scores would otherwise be lower than females, benefited to a greater extent from the use of hyponymy games.

The percentage of participants and their responses to survey items about hyponymy games is shown in Table 5. It was found that 63.3% of the subjects gave positive responses to questions about hyponymy games. Furthermore, no questions in the questionnaire received a negative response.

Table 5 *Summary of Students' Responses to the Questionnaire*

Response Category	**Students' Response (%)**
Positive	63.3
Moderate	36.7
Negative	0.0

Discussion

The data indicated that hyponymy games are a good method to enhance vocabulary. Students were motivated to acquire and differentiate the vocabulary into their correct classification group in an easy and enjoyable way. This conclusion is in line with a study completed by Krashen (1989), who concluded that accidental learning of vocabulary produced better results than deliberate learning efforts.

The atmosphere evident in the control group differed from that found in the experimental group. Students in the experimental had more fun learning English. This made it easier for the students because they needed to remember just one theme. For example, if the theme was transportation, they needed to remember names such as car, motorcycle, plane, and ship. The same applied to verbs, with action words such as walk, jog, bring, and talk. This made it easier for the students to understand vocabulary words by their classification.

Hyponymy games exerted a positive impact on both females and males, but were more effective for males. This appears to be on account of the female students being shy to keep moving. For example, students needed to run from their chairs to other chairs in order to give the ball to other students in the Last Man Standing game. The female students did not want to run. A similar difficulty also occurred in the Race Board game—the speakers needed to run from their chairs and write as many words as possible on the whiteboard. Female students avoided being a spokesperson, ostensibly because they did not want to run from their chair to the whiteboard. A gender difference also was

found by Boyle (1987) in vocabulary acquisition. Male students outperformed their female peers in listening to vocabulary, despite female dominance in general proficiency.

The normalized scores of gender differences for females and males in the control group indicated the female gain scores were higher (0.26) than male gain scores (0.11), which was significant (p = .035). This might be explained along the lines that the female students were more confident using the conventional method, which was more convenient since they did not need to run from their chairs to another chair in front of the class. On the other hand, Oxford et al. (1996) found that women were far more likely to try new vocabulary learning techniques than men, a conclusion also reached in a few other studies (Gu, 2002; Young & Oxford, 1997).

After the experimental group was exposed to vocabulary learning experiences using hyponymy games, males and females failed to show any significant differences in vocabulary achievement. This meant that overall, hyponymy games exerted a positive impact particularly on males. This appears to be on account of the female students being shy about moving about while playing the games.

Students' responses towards the implementation of the hyponymy games were positive (63.3%), which meant that students agreed that the implementation of hyponymy games improved their vocabulary achievement scores. This agrees with studies conducted in several parts of Indonesia/Asia, China, Europe and the United States (Herdayani, 2019; Fang, 2014; Taslim, 2016; Telaumbanua, 2017; Wang, 2016).

Differences between this research and previous studies were that a different grade level was involved, and also some previous researchers investigated English acquisition as a native language, whereas in Indonesia, English is a foreign language. This study also differed in that the focus was on male and female achievement score achievements. It was found that this method was more effective for male students.

Hopefully, this method can be utilized effectively in Asian countries, as students in Asia have similar characteristics. The use of hyponymy games could help teachers solve the problem of learning vocabulary.

Conclusions

The answer to the question "Is there a significant difference between students who were taught using hyponymy games, and students who were taught using conventional methods?" was in the affirmative. Based on the different scores of males and females, hyponymy games were more effective in enriching the vocabulary achievement scores of males.

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