

Crossword Puzzle Games to Enhance Students' Vocabulary Mastery

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Abstrak

Keterampilan berbahasa pertama yang harus dikuasai ketika belajar bahasa Inggris adalah kosakata. Faktanya, penguasaan kosakata masih kurang karena rasa ingin tahu mereka masih rendah dan mereka menganggap mempelajari kosakata tidak menarik dan tidak terlalu penting dalam pembelajaran. Tujuan penelitian ini adalah untuk mengetahui apakah penggunaan media pembelajaran "Crossword Puzzle Game" efektif dalam meningkatkan penguasaan kosakata siswa kelas X pada salah satu sekolah menengah atas di Gresik. Penelitian ini menggunakan desain penelitian tindakan kolaboratif yang bekerja sama dengan salah satu guru bahasa Inggris. Untuk pengumpulan data, penelitian ini menggunakan pre-test, post-test, dan wawancara. Data yang diperoleh dianalisis menggunakan SPSS (Statistical Package for Social Science). Hasil penelitian ini adalah rata-rata nilai siswa pada pre-test sebesar 41,90 dan rata-rata nilai siswa pada post-test sebesar 76,67. Rata-rata nilai post-test siswa lebih tinggi (34,77) dibandingkan pre-test. Hal ini menunjukkan bahwa penggunaan teka-teki silang meningkatkan kosa kata siswa secara signifikan. Hasil uji normalitas pada penelitian ini menunjukkan bahwa data normal didukung dengan menggunakan uji sampel berpasangan untuk menguji hipotesis. Hasil uji sampel berpasangan adalah Asymp. sig. 2 tailed atau nilai probabilitas pre-test dan post-test sebesar 0,000. Nilai ini lebih rendah dari α 0,05, Artinya hipotesis penelitian diterima. Dalam wawancara dengan siswa untuk mengetahui perspektif siswa mengenai pengalamannya dalam menggunakan media permainan teka-teki silang yang dapat meningkatkan penguasaan kosakata. Mereka mengatakan bahwa dengan membiasakan melihat atau mengenali kosa kata baru yang mereka temui; akan lebih mudah bagi mereka untuk mengingat kosakata dan membuat pembelajaran kosakata bahasa Inggris menjadi efektif dan menyenangkan. Berdasarkan hasil di atas menunjukkan bahwa penggunaan "Crossword Puzzle Game" dapat membantu siswa meningkatkan penguasaan kosakata.

Kata Kunci: *Crossword puzzle game*, penguasaan kosakata.

Abstract

The first language skill that must be mastered when learning English is vocabulary. Vocabulary mastery is still lacking because their curiosity is still low and they consider learning vocabulary uninteresting and not very important in learning. This research aims to find out whether the use of the learning media "Crossword Puzzle Game" is effective in increasing the vocabulary mastery of class X students at one senior high school in Gresik. This research applied a collaborative action research design in collaboration with one of the English teachers. For data collection, this research used pre-tests, post-tests, and interviews. The data obtained was analyzed using SPSS (Statistical Package for Social Science). The results of this research are that the mean student score in the pre-test is 41.90 and the mean student score in the post-test is 76.67. The students' mean post-test score was higher (34.77) than the pre-test. This shows that the use of crossword puzzles increases students' vocabulary significantly. The results of the normality test in this study show that the data is normal which is supported using a paired sample test to test the hypothesis. The results of the paired sample test are Asymp. sig. 2-tailed pre-test and post-test probability values of 0.000. This value is lower than α 0.05, This means that the research hypothesis is accepted. In interviews with students to find out students' perspectives on their experiences in using crossword puzzle game media which can improve vocabulary mastery. They said that by getting used to seeing or recognizing the new vocabulary they encounter; it will be easier for them to remember the vocabulary and make learning English vocabulary effective and enjoyable. Based on the results above, it shows that using "Crossword Puzzle Game" can help students improve vocabulary mastery.

Keywords: *Crossword puzzle game*, vocabulary mastery

INTRODUCTION

Language is a social communication tool that has an important role in human life. The first language skill that must be mastered when learning English is vocabulary. According to Anwar and Efransyah (2018, p.4), "Vocabulary is one of the clearest components of language and one of the first things that applied linguists pay attention to." This shows that one of the secrets to successfully learning English is vocabulary. Without being proficient in vocabulary, they will have difficulty developing their language skills. Vocabulary is the main component in connecting the four components of English, including speaking, reading, listening, and writing. To master these four language skills, students must, first and foremost, acquire a sufficient vocabulary. Vocabulary is a crucial component of language acquisition and helps students utilize language effectively.

This is in line with several opinions of linguists such as Harris & David (1973) who stated that language includes four skills, or a complex of skills: listening, speaking, reading, and writing. This means the more vocabulary we master, the more we master English, because in essence without vocabulary we cannot communicate, it is difficult to express things, and interaction between humans will never occur. As explained above, it shows the significance of vocabulary in language acquisition. As a result, one of the key components of modern language acquisition is vocabulary. To increase the amount of vocabulary mastery, students must develop their practice and study. In fact, because of their continued lack of curiosity and belief that acquiring language is unimportant and boring, their vocabulary competence is still insufficient. They only focus on learning the four components of English, reading, speaking, listening, and writing. They are not aware that without mastery of vocabulary, they cannot master these four components. 'Without grammar, very little can be conveyed, without vocabulary, nothing can be conveyed' (Sun & Yin, 2022). This is a challenge for English teachers in exploring increasing vocabulary mastery and making them aware of how important this is.

Media and learning have a close relationship. The learning process will not run smoothly without the right learning media. It is said that teaching media is very helpful in providing maximum, efficient, and effective teaching. With the existence of learning media, students can feel comfortable and enjoy the ongoing learning process. This is in line with Susilana & Krismono's (2020) statement that interesting media will encourage students' interest in learning. For this reason, researchers use crossword puzzles to improve students' vocabulary mastery. According to Sabiqoh (2016, p.10), "Crossword puzzles are an effective teaching tool about terminology,

definitions, spelling, and pairing key concepts with related names, resulting in greater retention and memorization of facts". The "crossword puzzle game" is done by filling in a blank form which is presented with letters forming words as answers to the questions given. This game asks students to answer a statement in a sentence and complete a crossword puzzle, the word answers will be linked to each other with a hint to the next answer (Malunui, 2014). The use of crossword puzzles as a learning media is highly significant in increasing students' vocabulary.

Learning using the "Crossword Puzzle Game" as a media was investigated by Nainggolan (2023) who experimented on "The Effect of Crossword Puzzle Game on Students' Vocabulary Mastery". This research uses a quantitative approach with quasi-experimental and control methods. The results stated that teaching using crossword puzzles influenced students' vocabulary mastery at grade eight of SMP GKPS 3 Pematang Siantar. Another research was investigated by Nurteteng (2019) who experimented on "The Use of Crossword Puzzle towards the Student's Vocabulary". This research uses pre-experimental design methods and experimental classes. The results of this research show that using puzzles can improve the students' vocabulary mastery in the first grade of SMAN 5 Makassar. Apart from Nainggolan and Nurteteng, other research also uses crossword puzzle games as a media for learning such as Alfaini & Ma'rifatulloh (2022) who experimented on "The Effectiveness of Using Crossword Puzzle Games Towards Students' Vocabulary Mastery". The research methodology used is quantitative and pre-experimental design. The results state that the crossword puzzle game has a significant effect on student learning outcomes in mastering English vocabulary (Fachrozi, 2021).

Previous research has proven that the use of crossword puzzle-solving game media to help junior high school and senior high school students improve their vocabulary mastery abilities shows good results. Previous researchers carried out a "crossword puzzle game" strategy using printed images of descriptive text as conventional media in conducting research. Based on responses from students in the questionnaire, students said that this "crossword puzzle game" is an efficient and suitable way to help students increase their vocabulary mastery and also make the learning process more fun and make students more active (Citra & Cristian, 2022; Lailatul & Dwi, 2020; Syavira, 2022; Wina et al., 2019; Silfester et al., 2023). Apart from the results showing that students' vocabulary mastery has increased, some abilities arise naturally with the use of this English crossword game learning media, students' speaking and spelling skills improve correctly when completing the English crossword game (Imam & Rahmawati, 2021).

Based on observations made by researchers at MAN 1 Gresik, during his internship he discovered facts in the field, that many students were classified as having poor vocabulary mastery, as seen by the average results of multiple English tests given by researchers to students in 10th of graders at that school. Based on students' English tests, it was found that many students got a score of 40-60 which was categorized as a score below the student's KKM. From the results of previous tests, researchers found several obstacles to students' lack of vocabulary which had an impact on English language learning. First, in learning descriptive text. Researchers asked students to explain an image object into sentences, they said it was difficult to translate into English words that matched their explanation. Second, students also don't know how to read and write vocabulary correctly. This happens when learning Narrative text. The teacher asks students to read dialogue and do listening questions with fill-in-the-blanks. Thirdly, students find it difficult to memorize the meaning of vocabulary because they are less interested in learning English. After all, the learning model used by the teacher at that time does not interest them. Therefore, Puzzle Game be used to Enhance Students' Vocabulary Mastery of students of MAN 1 Gresik.

METHODS

In this research, researchers applied a collaborative action research design in collaboration with one of the English teachers at MAN 1 Gresik. The aim of researchers using a collaborative action research design is to encourage professional research. As Burns (1999) points out, the advantage of a collaborative perspective in action research is that it extends beyond individual action research; communicating with peers and colleagues on the outcomes of group action projects is a crucial step in the process that strengthens the system of professional contacts that the project has built. Researchers carry out collaborative actions that include experienced teachers in the classroom, this is very important to provide an overview of the school context and observe daily events from the teacher's perspective. In practice, researchers used collaborative action research in one group.

The researcher followed the process from (Ary et al., 2014) which starts from Reflect, Plan, Act, Observe, Reflect Plan, Act, and Observe. In the Reflect stage, the researcher identifies one group from the class teacher's perspective, for the Plan stage the researcher prepares materials and collects data to create an action plan, and then the researcher carries out the action plan in the form of a pre-test, then the researcher observes to review the literature and analyze with collaborators. From the test, the teacher and researcher then carry out an action plan and also provide a post-test at the observed stage, and in

reflection the researcher and teacher evaluate and share the findings. In this research, it stopped at the reflection stage without making a new plan, which was carried out in 1 cycle. The use of this design is adapted to the objectives to be achieved in this research, namely to find out whether the use of "crossword games" as a learning medium can improve students' vocabulary mastery. Meanwhile, the sample in this study was class X-9 students with a total of 30 students at MAN 1 Gresik.

The first research instrument is Tests, especially pre-tests and post-tests, which are used in Instrument research to answer RQ 1. The English "Crossword Puzzle game" application learning media was employed in the pre-test to gauge the student's mastery before action. Students will receive 2 Crossword puzzle images at the easy level of the "Crossword Puzzle game" application as a question for pre-test later. Students are asked to fill in the crossword puzzle from a list of questions and then submit the answers to the teacher. The second research instrument is an interview. This method has an instrument that is used to collect data from the research location about students' direct experiences. The collection stage begins with compiling an observation guide, and an interview guide with students followed by an audio/video recorder and camera, transcribing the interview, and analyzing the results of the interview which are used to answer the research question.

In collecting data, researchers use the process as follows (Ary et al., 2014):

1. Reflect. Experience and perception are used to identify focus areas based on a problem. At this stage, researchers and English teachers identify students' English grades which are caused by a lack of vocabulary mastery and limited topics. The time used to review what is already known about the problem or focus area is around 15 minutes and to learn more about the problem, researchers and English teachers conduct a literature review.

2. Plan. A plan is developed to take action and to gather information. At this stage, researchers prepare various plans as follows: a.) Determine the research sample: In this research, the subjects were 10th-grade namely class X-9 students with a total of 30 students at MAN 1 Gresik.

b.) Determine the material to be tested: In this research, researchers focused on using learning media in the form of a "Crossword Puzzle game" application.

c.) Prepare the pre-test: The pre-test consists of 5 questions from a list of questions and a column of 5 answers in the form of a crossword puzzle. The pre-test will be given to class X-4. All students will get a pre-test. The pre-test task was taken from the crossword puzzle game application. The researcher took 5 questions in part 1 with an easy level of difficulty which was equivalent to the student's abilities.

d.) Prepare the pre-test and Action: The researcher also prepared a post-test, to measure and compare the results of student improvement after being given action. The post-test consists of 6 questions in the form of a crossword puzzle which are almost the same as the pre-test but in a higher version/difficulty level. The test is given to the same student after receiving the action.

3. Act. At this first meeting, the English teacher gave a pre-test to the students. The estimated time needed to carry out the pre-test is 5 minutes and the test will be given at the start of the activity before action is given. To support the smooth running of the research, we use "PPT clue" which is designed to provide clues to the answers and give the meaning of the pre-test vocabulary, the aim of which is to familiarize, recognize, manipulate, and remember words, as well as produce a pleasant atmosphere in completing the pre-test task also certain mental challenges. Initially, students will be asked to fill in 5 questions in part one of the easy level in the crossword puzzle game, then after students have completed them, they will come forward to match and explain the answers to the teacher's desk. During the do collect the pre-test, they will be assessed by the English teacher about vocabulary mastery based on the vocabulary mastery aspect (Cameron, 2001, p. 78). Researchers and English teachers synthesize and analyze data. Data is obtained from students' pre-test results, then the English teacher will identify key problems related to students' lack of vocabulary mastery.

4. Observe. At this stage, researchers and teachers reflect, interpret information, and communicate or report it together. A new perspective of the problem is developed and further action is taken. New actions are taken and data is collected through: a.) Second meeting: At the second meeting, the English teacher gave action to the students. Students will be given questions by the English teacher in the crossword puzzle game application. They will be asked to fill in the questions in parts 3 and 4 at the easy level in the crossword puzzle game application. In this section, we also provide clue directions, such as the meaning of each vocabulary word, random answers, etc. In this action, students will be given 15 minutes to complete it and 5 minutes to match and explain the answers. Then at the end of the session, the researcher will give feedback to the students.

b.) Third meeting: At this meeting, the researcher gave action to students. Students were given time by the researcher to fill in the questions at the easy level in the crossword puzzle game application independently. The duration given for this action is 15 minutes to complete and 5 minutes to match and explain the answers. They are free to choose which parts to work on and how many questions. Even so, researchers will still give feedback to the students.

c.) Fourth meeting: At this final meeting, a post-test will be held. The instructions that will be given in this post-test are still the same as when the pre-test was carried out. Students will be given 1 question picture that is different from the picture during the pre-test, with the same ease level but with a higher level of difficulty, namely crossword puzzle part 2. They will be assessed by the English teacher about vocabulary mastery based on the vocabulary mastery aspect (Cameron, 2001, p. 78). The duration given to both groups was 5 minutes to complete the questions and 5 minutes to compare and explain the results. After the presentation is finished, students will get some input.

5. Reflect. At this stage, Researchers and English teachers analyze new data, synthesize it, and interpret it. Researchers conducted short interviews with students who had used the crossword puzzle game to improve their vocabulary mastery.

This research was carried out in 1 cycle because the application of crossword puzzles to improve vocabulary mastery and the influence of the teaching and learning process on increasing students' vocabulary mastery using the "Crossword puzzle game" application showed good results.

Data for research must be checked after it is collected. Data analysis was carried out in stages:

1. To determine whether students are equal or not, data from their pre-test scores is used.
2. Post-test data from students is used to compare whether or not they had different outcomes following various actions.
3. Normality test data can be calculated when student Pre-test and Post-test data have been collected. This research can calculate data using the T-test if the data are normally distributed but it must use the Wilcoxon test if the data is unusually distributed.
4. Student interviews were used to gather first-hand experiences demonstrating the benefits of use.

RESULTS AND DISCUSSION

The research question in this study is as follows, "Does the use of the learning media "Crossword Puzzle Game" increase the vocabulary mastery of class X students at MAN 1 Gresik?" And "What experiences in crossword puzzle games do students perceive as the ones that can improve their vocabulary mastery?" After carrying out data collection techniques and data calculations, it was discovered that the hypothesis in this study was accepted, which means that there was an improvement in vocabulary mastery of students in class X-9 MAN 1 Gresik after receiving action treatment using the strategy of filling answers into puzzles using the "Crossword Puzzle" method Games.

1. To answer the first research question, the researcher gave a pretest–action–post-test to students. This was done to measure students' ability in vocabulary before and after being given action. The results are presented in the following table.

Table 1

Paired Sample Statistic

		Mean	std. Deviation
Pair 1	Pre-test	41.90	17.133
	Post-test	76.67	11.621

Referring to Table 4.3, the mean pre-test score is 41.90 and the mean post-test score is 76.67. The mean post-test score is higher (34.77) than the pre-test. This shows that the use of crossword puzzles increases students' vocabulary significantly.

Table 2

Paired Sample Test

		Paired Differences		
		T	df	Sig.(2-tailed)
Pair 1	Pre-test			
	Post-test	-10.774	29	.000

Referring to table 4.4 sig. 2 tailed or pre-test and post-test probability values of 0.000. This value is lower than alpha α 0.05, which indicates there is a significant difference between the pre-test and post-test scores. This means that the research hypothesis is approved, which states that Crossword puzzle games can increase students' vocabulary.

2. To answer the second research question, researchers conducted short interviews with students. This part of the findings is presented based on the second research question which discusses what experiences in crossword games according to students can improve their vocabulary mastery.

Based on the analysis of the results of interviews conducted on student vocabulary tests, it was found that students believed that the Crossword puzzle game was an efficient and fun technological medium for the vocabulary learning process. During the interview, one of the questions asked was, "What do you think about using Crossword puzzle games for vocabulary tests?" The purpose of the question was to ascertain student's basic comprehension. Student response was positive. The students have relatively the same perspective in using the Crossword puzzle game for a vocabulary test. AF, the student participant, said that using the Crossword puzzle game in the vocabulary test was more fun and more efficient than using traditional teaching. Students only need to fill in the correct answers and type them without any pen or book preparation to take the test.

While ES, a different participant, claimed that she was unfamiliar with the crossword puzzle game, she discovered that it was simpler to comprehend and utilize after being given instructions. Apart from that, students prefer to use Crossword puzzle games compared to traditional teaching because Crossword puzzle games are supporting media used on their phones which are rarely used during lessons. The students approved that the supporting media in the Crossword puzzle game helped them understand the vocabulary test, as AF stated during the interview:

"Hmmm I think this Crossword puzzle game is good for testing vocabulary because when I have difficulty understanding the words or find it difficult to find the answer, there is a puzzle answer that connects." (01.02)

Also, ES added:

".... Using Crossword puzzle games for vocabulary tests was good for me, it made me understand the test better than using traditional tests. Moreover, it can be accessed for free and easily, so it can be used at any time." (02.13)

To deepen the interview theme, another question was asked: "What experience did you get from this crossword puzzle game that can improve your vocabulary mastery?" This question is asked to answer in more detail about the research question. Some students' experiences were positive. AF, one of the students, said that when using the Crossword puzzle game, by getting used to seeing or recognizing new vocabulary that she encounters, it will be easier for her to remember the vocabulary. Meanwhile, another participant, ES, said that this crossword puzzle game could make her think creatively and awaken forgotten cognitive vocabulary mastery. As AF pointed out during the interview session:

"So, it's like this miss when I play the Crossword puzzle game, I see a lot of new vocabulary, the more often I look, read, and think about finding the answer the easier it is for me to remember the vocabulary I have encountered..." (03.02)

Also, ES mentioned that:

"...when I have found one answer, then I get a letter clue for the next answer, this can trigger my mind to recall forgotten vocabulary. And, when I connect several letters randomly to find the answer this trains my creativity." (03.14)

Additionally, AF gave opinion:

"Coupled with providing the meaning of the question sentence in the ppt clue, it helps me recognize the meaning of new vocabulary so that I can remember it and directly increase my vocabulary knowledge..." (03.16)

These two students have demonstrated their experience after undergoing tests and actions using the Crossword puzzle game. For them, Crossword puzzle games make them experience English vocabulary lessons effectively and enjoyable. Their achievement in the exam has also been attributed to the adequate time allotted for them to collaborate and respond to questions. These two themes have caused their vocabulary mastery scores to increase.

The findings demonstrate how using the Crossword puzzle game as a digital tool to help students acquire more vocabulary has affected both their vocabulary mastery and their learning outcomes in English. Data from all participants has proven a significant increase in their vocabulary mastery learning as shown by the difference in student test scores. The pre-test score was 41.90 and the post-test after-action score was 76.67. Using this interesting crossword puzzle game media will encourage students' interest in learning, when students' interest increases it will be in line with their achievement scores (Susilana & Krismono, 2020).

Apart from that, students become more comfortable and enthusiastic about learning new vocabulary which increases their vocabulary mastery when using this application (Purwitasari, 2022). This statement is shown by their enthusiasm, activeness, and involvement in using the Crossword puzzle game as an assessment of vocabulary learning in English subjects which they show has a positive impact on their achievement in vocabulary learning. This is all expressed in interviews that tell students' experiences in using the crossword puzzle game. Regularly using crossword puzzle games in the classroom can also assist students in learning how to use the app for vocabulary examinations.

Apart from the results showing that students' vocabulary mastery has increased, some abilities arise naturally with the use of this English crossword game learning media, students' speaking and spelling skills improve correctly when completing the English crossword game (Imam & Rahmawati, 2021). This statement is in line with the results of using the Crossword puzzle game application during the research, namely teaching students to think creatively in filling in and finding answers sequentially. Students are also taught to be able to mention the vocabulary they have acquired because usually after students learn new words, they tend to forget them as time goes by. Thus, exposing kids to new terms regularly can aid in their memory retention. Students can practice the new words they just learned from textbooks more because of the nature of crosswords. The results show that students acquire new vocabulary every day and remember it well through direct application and repetition methods (Siti, 2020).

The fact that they can use it wherever and whenever they want to practice as much as they like, conceptualize puzzle shapes, and choose the content they want to learn, makes students feel like they have many opportunities to improve their vocabulary mastery (Purwitasari, 2022). This is in line with other benefits that students get, namely that students can use this application because the features available in the application are quite easy to use. This application has many questions reaching hundreds of questions at various levels that students can use to train themselves both at school and home. The application can also be accessed offline, so students who do not have an internet connection can access the application. From the explanation above, after entering the data it was found that the results of using the "Crossword puzzle game" application were to improve students' vocabulary mastery abilities.

Based on the statement above, the author concludes that using crossword puzzle games is a good way to improve students' vocabulary because by using crossword puzzle games students experience benefits that increase students' abilities in learning English. Vocabulary also provides greater involvement in conveying the meaning of a language than grammar.

CONCLUSION

Based on the data described previously, it can be concluded that the application of crossword puzzles to improve vocabulary mastery and the influence of the teaching and learning process on increasing students' vocabulary mastery using the "Crossword puzzle game" application shows good results. It can be seen from the increase in the average pre-test score of 41.90, and post-test of 76.67, that students can understand, spell and memorize the vocabulary taught as well as pronounce the vocabulary correctly. Students are more active in learning, quieter, and less noisy so they can be more focused and active in following the teacher's instructions. This can influence the teaching and learning process so that it can improve student learning achievement in English lessons. From these statements, it can be concluded that the use of crossword puzzle strategies using the "Crossword puzzle game" application is effective in increasing students' vocabulary mastery at MAN 1 Gresik.

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