

Crossword Puzzle as a Learning Tool for Vocabulary Development

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Abstract

This study assessed the effectiveness of crossword puzzles as a learning tool for enhancing the vocabulary skills of Grade 3 learners at Tawangan Elementary School, Kabayan District. It was anchored in Experiential Learning, Reflective Learning, Stimulus-Response Theory, and Ausubel's Learning Theory, which emphasize active participation, reflection, responses to instructional stimuli, and the connection of new knowledge with prior learning. The study employed a pretest-posttest quasi-experimental research design involving 25 Grade 3 learners selected through total enumeration during the School Year 2022-2023. Data were gathered using a researcher-constructed 15-item pretest and posttest based on the Grade 3 Most Essential Learning Competencies. The instrument obtained a Kuder-Richardson Formula 21 reliability index of 0.98. A dependent t-test was used to determine the significance of the difference between the pretest and posttest results. Before the intervention, the learners obtained a mean score of 7.84, interpreted as Satisfactory. Challenges associated with their initial performance included limited vocabulary exposure, difficulty understanding unfamiliar English terms, low self-efficacy, limited motivation, short attention spans, and weak working memory. After using crossword puzzles, the mean score increased to 12.48, interpreted as Very Satisfactory. The computed t-value of 10.087 exceeded the tabular value of 1.711, indicating a significant difference between the pretest and posttest results. The findings confirmed that crossword puzzles effectively improved vocabulary proficiency, participation, motivation, word recognition, spelling, and collaboration. Teachers are encouraged to integrate crossword puzzles and other educational games into instruction, while school administrators should support the development of innovative learning materials. The study supports SDG 4, Quality Education, by promoting engaging and responsive vocabulary instruction. Its sustainability impact lies in strengthening foundational language skills, supporting continued academic participation, and improving instructional practices at the classroom and institutional levels.

Keywords: Crossword Puzzles, Educational Games, Grade 3 Learners, Quality Education, Quasi-Experimental Research, Vocabulary Development, Vocabulary Proficiency

1. Introduction

Vocabulary knowledge is fundamental to language learning, reading comprehension, fluency, and effective communication. However, elementary learners may experience difficulty understanding texts and expressing ideas when their vocabulary is limited. This condition highlights the need for engaging instructional strategies that allow learners to encounter, practice, and retain words in meaningful ways. Crossword puzzles offer an interactive approach that combines vocabulary exercises, problem-solving, spelling, repetition, and active participation. This study therefore examined the effectiveness of crossword puzzles as a learning tool for developing the vocabulary skills of Grade 3 learners at Tawangan Elementary School, Kabayan District.

1.1 Crossword Puzzles as a Learning Tool for Grade 3 Vocabulary Development

Games are commonly used in language teaching because they can increase learner interest, reduce classroom monotony, and encourage active participation. Among these games, crossword puzzles require learners to identify and produce words based on clues, definitions, sentences, or pictures. Karim and Hasbullah (1986) state that one of interesting techniques in teaching language is using crossword puzzle. Through this activity, learners can participate in vocabulary practice within an enjoyable and less threatening learning environment. Paul (2003) described crossword puzzles as word-based activities that may use familiar words and pictures as clues, while more advanced learners may work with definitions or incomplete sentences. Dhand (2008) defined a crossword puzzle as a series of boxes

that must be filled with words or numerals. Similarly, Hornby (1974) described it as a puzzle in which words are identified through clues and placed within a grid. Crossword puzzles may support vocabulary development because they require learners to recognize, recall, spell, and use words correctly. According to Edward (2006), vocabulary-building activities include using words in conversation and completing crossword puzzles. The challenge of completing a puzzle may motivate learners to review vocabulary, apply sentence patterns, and repeat previously introduced words. As an instructional activity, it can make vocabulary learning more attractive, relaxed, and enjoyable while helping learners remember words through repeated written exposure. Vocabulary knowledge contributes to learners' ability to perform academic tasks with greater confidence (Harley, 2006). It refers to knowledge of words and their meanings and serves as a foundation for language learning. Vocabulary knowledge influences both comprehension and fluency (Flood et al., 2004). Learners therefore need opportunities to develop vocabulary through integrated listening, speaking, reading, and writing activities. Colorado (1994) emphasized that knowledge of vocabulary is essential to reading comprehension because learners understand texts more effectively when they possess a wider range of words. Vocabulary development involves increasing knowledge of words and meanings through both direct and indirect instruction. Since learners enter school with different levels of word knowledge, teachers must establish word-rich learning environments and provide appropriate strategies for learning and retaining vocabulary.

1.2 Related Literature on Crossword Puzzles and Vocabulary Learning

Research has explored several strategies for promoting vocabulary acquisition. Educators have used reading-related activities and vocabulary exercises to strengthen word knowledge (Min, 2008). Watson (2003) drew learners' attention to vocabulary through board work, spelling, and questioning. Orawiwatnakul (2011) found that analysing word structures and using contextual clues could support vocabulary instruction. Tabtimsai (2003) recommended vocabulary exercises, while Yeun (2009) found that learners developed a better understanding of unfamiliar words when taught to determine meaning through contextual clues. Summat (2009) also reported improvements in learners' confidence and vocabulary after task-based activities. Crossword puzzles provide another means of practising vocabulary because learners must recognize, manipulate, remember, and produce words (Scrivener, 2011). They may help learners acquire unfamiliar vocabulary while exercising cognitive skills and reducing fatigue associated with conventional exercises. Because crossword puzzles are generally perceived as games, they may be more enjoyable and learner-friendly than routine written tasks (Childers, 1996). Crossword puzzles can also reinforce terminology, definitions, spelling, and relationships between important concepts. Since learners must spell words correctly to complete the grid, the activity may improve retention and memorization (Moore & Detlaff, 2005). Repeated exposure is particularly important because learners may gradually forget newly introduced vocabulary. Crossword puzzles allow them to practise words learned from textbooks and review lesson content before assessments. According to Tasuli (2000), crossword puzzles can attract learners' attention, increase classroom participation, and encourage them to produce and spell English words correctly. They may also motivate learners to discover new vocabulary, interact cooperatively, develop confidence, exercise creativity, and solve problems in an enjoyable setting. The activity may further assist slow or demotivated learners while encouraging teachers to become more creative in selecting instructional strategies. Previous studies have demonstrated the potential effectiveness of crossword puzzles. Tabtimsai (2003) used crossword puzzles as an after-reading strategy for vocabulary development. Crossword puzzles were also found to increase learners' motivation and interest in instructional topics (Franklin et al., 2003). Widsayari (2010) used crossword puzzles to improve vocabulary mastery, while Weisskirch (2006) employed them to review course content and make learning more interesting and pleasurable, particularly during group activities. According to Whisenand and Dunphy (2010), crossword puzzles were also found to be preferable and effective for developing knowledge of technical terms. These findings indicate that crossword puzzles can combine vocabulary instruction with motivation, repetition, spelling practice, problem-solving, and collaborative learning. Their value lies not only in making classroom activities enjoyable but also in providing structured opportunities for learners to retrieve and apply vocabulary.

1.3 Vocabulary Learning Context of Grade 3 Learners at Tawangan Elementary School

Limited vocabulary can prevent elementary learners from understanding reading materials and communicating their ideas effectively. Vocabulary instruction is particularly important during childhood because younger learners may more readily absorb new language presented through suitable classroom activities. Teachers must therefore examine different instructional techniques and identify those that respond to learners' developmental needs and language difficulties. The reviewed literature presents crossword puzzles as a broadly applicable vocabulary-learning strategy. However, the effectiveness of an instructional activity may differ depending on the learners, classroom setting, and manner of implementation. Within the context of Tawangan Elementary School, Kabayan District, there was a need to determine whether crossword puzzles could improve the vocabulary proficiency of Grade 3 learners based on their performance before and after the intervention. The study also recognized the importance of selecting instructional strategies suited to learners who experience difficulty in vocabulary acquisition. By examining learner performance through pretest and posttest

results, the research sought to establish whether crossword puzzles could serve as an appropriate classroom learning tool in the selected school.

1.4 Theoretical and Conceptual Foundations of Crossword Puzzle-Based Vocabulary Learning

The study was guided by Experiential Learning, Reflective Learning, Stimulus-Response Theory, and Ausubel's Learning Theory. Experiential Learning, associated with David Kolb, explains that knowledge is developed through the transformation of experience. Crossword puzzles reflect this process because learners actively engage in analysing clues, recalling words, solving problems, and evaluating possible answers. Such participation may reduce boredom, promote critical thinking, and improve content retention. Reflective Learning allows learners to examine their experiences, analyse what they have learned, and improve future performance. Solving crossword puzzles requires more than memorizing facts because learners must connect clues with prior knowledge, reconsider incorrect responses, and construct meaning from previously encountered vocabulary. Stimulus-Response Theory explains that behaviour develops in response to stimuli within the environment. In the study, crossword puzzles represented the instructional stimulus, while learners' participation, motivation, vocabulary performance, and reactions represented possible responses. The puzzles could therefore produce positive or negative learner responses depending on how the activity was experienced. The integration of puzzles may engage learners intellectually, emotionally, socially, and physically. It encourages questioning, investigation, experimentation, creativity, curiosity, and problem-solving. However, meaningful learning may be limited when new material is presented without activating learners' existing knowledge. McCarthy (1990) suggested that pre-teaching activities can activate prior knowledge and make encounters with unfamiliar vocabulary more meaningful. Ausubel's Learning Theory further explains that meaningful learning occurs when individuals connect new knowledge with relevant concepts they already understand. These connections support the transfer of information into long-term memory. Crossword puzzles may facilitate this process by requiring learners to relate new words to definitions, clues, previous lessons, and existing vocabulary knowledge. Learner motivation, achievement, and self-improvement also contribute to this process. These theories collectively support the use of crossword puzzles as an active and meaningful learning strategy. The activity allows learners to participate directly in vocabulary development, reflect on their answers, respond to instructional stimuli, and connect new vocabulary with prior knowledge. It also reflects the principle that learner involvement strengthens understanding and retention. The conceptual framework followed an input-process-output structure. The input was the use of crossword puzzles as a learning tool for vocabulary development. The process involved a quasi-experimental research design, descriptive survey method, administration of a pretest and posttest, statistical treatment of data, and analysis and interpretation of results. The expected output consisted of activities intended to improve the use of crossword puzzles in vocabulary instruction.

1.5 Research Gap and Rationale for Using Crossword Puzzles in Vocabulary Development

Previous studies have shown that crossword puzzles may promote vocabulary acquisition, learner motivation, spelling accuracy, retention, collaboration, and interest. Nevertheless, the reviewed literature did not establish their effectiveness among the Grade 3 learners of Tawangan Elementary School, Kabayan District. The specific changes in learners' vocabulary proficiency before and after using crossword puzzles therefore required investigation. The study addressed this gap by assessing learners' initial proficiency, measuring their proficiency after the intervention, and determining the gain in their scores from the pretest to the posttest. Examining these changes was necessary to determine whether crossword puzzles could serve as an effective teaching aid for enhancing vocabulary skills in the identified elementary school context. The study was also intended to provide evidence that could guide teachers in selecting classroom strategies responsive to learners with limited vocabulary. Its findings could help school administrators identify instructional needs, support teachers in adopting appropriate approaches, assist learners in developing vocabulary through active participation, and provide future researchers with information for related investigations.

1.6 Alignment of Crossword Puzzle-Based Vocabulary Learning with SDG 4

The study is aligned with Sustainable Development Goal 4, Quality Education, because it focuses on improving vocabulary instruction and supporting the learning development of elementary pupils. Vocabulary knowledge is essential to reading comprehension, language proficiency, classroom participation, and continued academic learning. Investigating an interactive strategy such as crossword puzzles may contribute to the improvement of teaching practices intended to make learning more engaging, meaningful, and responsive to learners' needs. The study also supports inclusive learning by considering a strategy that may assist learners who are slow, demotivated, or experiencing difficulty in vocabulary development. By promoting active participation, repeated practice, confidence, and enjoyment, crossword puzzles may help provide learners with more opportunities to engage in the language-learning process.

1.7 Contribution of Crossword Puzzle-Based Vocabulary Instruction to Educational Sustainability

The study contributes primarily to educational sustainability by examining a classroom strategy that may strengthen vocabulary knowledge, reading comprehension, learner engagement, and the long-

term retention of words. Developing these foundational skills may support learners' continuing academic participation across different learning areas. At the institutional level, the findings may provide school administrators and teachers with information for identifying learner needs and improving vocabulary instruction. Administrators may use the results as a reference when supporting instructional strategies, while teachers may apply the findings when selecting approaches that make the teaching-learning process more meaningful and productive. The study also has relevance to social and psychological aspects of learning. Crossword puzzles may encourage cooperation, communication, confidence, creativity, and active participation. These qualities can help establish a less threatening classroom environment in which learners are more willing to express ideas, solve problems, and interact with others. From a multidisciplinary perspective, the research connects language education, cognitive learning, learner motivation, classroom psychology, and instructional management. Its significance therefore extends beyond vocabulary acquisition by addressing how an engaging learning activity may support learner development, teacher practice, and institutional improvement.

1.8 Purpose, Research Questions, and Hypotheses of the Study

The study aimed to assess the effectiveness of crossword puzzles as a teaching aid for enhancing the vocabulary skills of Grade 3 learners at Tawangan Elementary School, Kabayan District. Specifically, it sought to determine the learners' proficiency level before the use of crossword puzzles, their proficiency level in the posttest after the intervention, and the gain in their scores from the pretest to the posttest. The study hypothesized that the learners' proficiency level before using crossword puzzles was satisfactory, their proficiency level after using crossword puzzles was very satisfactory, and there was no significant difference between their pretest and posttest proficiency levels before and after the use of crossword puzzles.

2. Material and methods

2.1 Research Design

The study employed a pretest-posttest quasi-experimental research design. Quasi-experimental designs do not involve the random assignment of respondents to experimental treatments and are commonly used when a true experimental design cannot be conducted (Yazon, 2019). A single dependent group was given a pretest at the beginning of the month, exposed to crossword puzzles as a learning tool for vocabulary development, and given a posttest during the third week of the month. The design was used to determine the effectiveness of crossword puzzles in improving the learners' vocabulary proficiency.

2.2 Locale of the Study

The study was conducted at Tawangan Elementary School in Kabayan District, Schools Division of Benguet, during the School Year 2022-2023.

2.3 Respondents of the Study

The respondents were twenty-five Grade 3 learners enrolled at Tawangan Elementary School during the School Year 2022-2023.

2.4 Sample and Sampling Procedure

The study used total enumeration, in which all twenty-five Grade 3 learners were included as respondents.

2.5 Research Instrument

The main data gathering instrument was a researcher-constructed fifteen-item pretest and posttest based on the Grade 3 learning competencies in the Most Essential Learning Competencies. The instrument was used to determine the learners' vocabulary proficiency before and after the use of crossword puzzles. The same fifteen-item test administered during the pretest was used during the posttest to measure changes in proficiency. The instrument was developed based on the learning competency guide for Grade 3 learners. It was pretested among ten learners at Ballay Integrated School to establish its reliability using Kuder Richardson Formula 21. The instrument obtained a reliability index of 0.98, indicating that it was very highly reliable.

2.6 Data Gathering Procedure

Before conducting the study, the researcher secured a letter of request from the Dean of the Graduate School and obtained permission from the Schools Division Superintendent. Permission was also sought from the parents or guardians of the Grade 3 learners. The researcher then administered the pretest to determine the learners' initial vocabulary proficiency. After a few weeks, crossword puzzles were employed as a learning tool for Grade 3 vocabulary development. The posttest was subsequently administered to evaluate the learners' vocabulary performance after the intervention.

2.7 Data Analysis Techniques

The dependent t-test was used to test the hypothesis and determine whether a significant difference existed between the learners' pretest and posttest results after the use of crossword puzzles. The analysis considered the sum of the squared differences between the pretest and posttest scores, the sum of the differences between the two sets of scores, and the sample size. The formula used was the dependent t-test (Subong, 2006). The learners' proficiency was interpreted according to their scores. Scores from 13 to 15 were described as Outstanding, scores from 10 to 12 as Very Satisfactory, scores from 7 to 9 as Satisfactory, scores from 4 to 6 as Fairly Satisfactory, and scores from 0 to 3 as Did Not Meet the Expectation.

2.8 Ethical Considerations

Before conducting the study, the researcher secured written permission from the appropriate school authorities to administer the research instrument. The instrument was accompanied by a letter informing the respondents that their identities would not be disclosed in compliance with the Data Privacy Law and that all information and data would be treated with strict confidentiality. The respondents' completion of the instrument indicated their agreement to participate in the study. The researcher also declared that all materials and findings obtained from other sources and included in the study were properly cited and acknowledged.

3. Results and Discussion

3.1 Vocabulary Proficiency of Grade 3 Learners Before and After Using Crossword Puzzles

3.1.1 Vocabulary Proficiency Before Using Crossword Puzzles

Before the use of crossword puzzles, the 25 Grade 3 learners obtained a total pretest score of 196 and a mean score of 7.84, which was interpreted as Satisfactory. The result indicated that the learners demonstrated an average level of vocabulary mastery before the intervention. Their scores also showed varying proficiency levels, ranging from Did Not Meet the Expectation to Outstanding. The finding confirmed the assumption that the learners' vocabulary proficiency before using crossword puzzles was satisfactory. The result indicated that the learners had limited mastery of vocabulary skills and experienced difficulty understanding unfamiliar English terms. Their limited exposure to words may have affected their reading ability and encouraged them to memorize concepts rather than understand their meanings. Lerner and Johns (2008) claimed that learners whose first language is not English, lacked English proficiency, leading to obstacles in many academic subjects especially in a class taught entirely in English. The school principal similarly attributed poor academic achievement to learners' low proficiency in the language used during classroom instruction and their frequent use of vernacular languages in daily conversations (personal communication, September 26, 2022). Low self-efficacy, limited motivation, poor attention, and weak working memory were also identified as factors associated with the learners' initial performance. Some learners easily gave up when their first attempts were unsuccessful. Schultz and Fisher (1997, as cited by Tomino 2012) explained that individuals with low self-efficacy may feel helpless, consider their efforts ineffective, and quickly abandon difficult academic tasks. Low self-efficacy may reduce motivation, aspirations, cognitive performance, and willingness to overcome learning difficulties. The learners also demonstrated short attention spans and limited interest during lengthy classroom discussions. When students lack the motivation to study hard and do well, then they feel despondent and in some cases are unable to make improvements (Kapur, 2018). Their attention frequently shifted between engagement and disengagement during classroom instruction, consistent with the finding of Weimer (2014) that learners do not continuously maintain attention for 10 to 20 minutes during a lecture. Poor working memory also required the teacher to repeat concepts and instructions. Melbourne Child Psychology Institute (2017) describes children with working memory problems as having poor listening skills, seeming "lost", or having attentional issues. Such difficulties may prevent learners from retaining several words at once and transferring newly learned information into long-term memory.

3.1.2 Vocabulary Proficiency After Using Crossword Puzzles

After the use of crossword puzzles, the learners obtained a total posttest score of 312 and a mean score of 12.48, interpreted as Very Satisfactory. All posttest scores were higher than the corresponding pretest scores. Most learners obtained scores of 10 or higher, while many reached the Outstanding level. The increase from the pretest mean of 7.84 to the posttest mean of 12.48 showed improved vocabulary performance following the intervention. The result confirmed the assumption that the learners' proficiency after using crossword puzzles was very satisfactory. The improvement indicated that crossword puzzles contributed to the development of the learners' English vocabulary within the intervention period. The activity provided an enjoyable approach that encouraged learners to identify, define, and formulate words. The learners appeared motivated because crossword puzzles were newly introduced and stimulated their interest. Dornyei (2010) argued that motivation explains why people decide to do something, how hard they are going to pursue it, and how long they are willing to sustain the activity. Similarly, Alderman (2004) contends that those students who have optimum motivation have an edge because they have adaptive attitudes and strategies, such as maintaining intrinsic interest, goal setting, and self-monitoring. The enjoyment produced by the activity also helped reduce anxiety

and encouraged learners to participate without excessive concern about making mistakes. This condition supported their vocabulary fluency, accuracy, word recognition, and ability to define terms. The finding of the study of Mei and YuJing (2000, as cited in Mubslat, 2012) is similar to the finding of the present study which explained that games are fun and children like them. Through games, learners can experiment, discover, and interact with their environment while acquiring words without being fully conscious that formal learning is taking place. Crossword puzzles also provided an effective approach to teaching vocabulary to young learners because important words and terms were practised without excessive boredom. Allen (1983, as cited in Bakhsh, 2016) stated that word games are important in teaching vocabulary because they highlight the necessary and important words to achieve the objectives of the game. The crossword puzzle further served as a drill and practice activity because it was administered at least six times during the second grading period. Repeatedly forming and defining words allowed learners to review unfamiliar terms and improve their mastery.

3.1.3 Difference Between Pretest and Posttest Vocabulary Proficiency

The learners' mean score increased from 7.84 in the pretest to 12.48 in the posttest, with a total score difference of 116. The computed t-value was 10.087, which was greater than the tabular t-value of 1.711 at the five percent level of significance and 24 degrees of freedom. The result was significant, leading to the rejection of the null hypothesis. Therefore, a significant difference existed between the learners' vocabulary proficiency before and after the use of crossword puzzles. The significant improvement indicated that crossword puzzles were effective in enhancing the vocabulary skills of the Grade 3 learners. The intervention helped sustain their interest, encouraged participation, and promoted positive attitudes toward learning English. Learners became more involved during games, classroom recitations, and discussions because they wanted to perform well, earn points, and receive recognition. The individual, pair, and group formats of the crossword puzzle activities also encouraged collaboration, cooperation, and harmonious relationships among learners. The learner-centered nature of the intervention made classroom instruction more challenging and engaging while reducing stress. Schultz and Fisher (1988, as cited in Mubslat, 2012) stated that stress is a major hindrance to the language-learning process. Games may reduce stress by helping learners relax and become less conscious of the traditional classroom setting. The finding was consistent with Putri's (2015) study, which showed that crossword puzzles could enhance learners' vocabulary while increasing their motivation and interest in the subject. Correspondingly, Lidiasari and Supardi (2017) conducted a study on using scrabble game in improving students' vocabulary mastery. Their results showed improvements in word meaning and spelling and demonstrated that vocabulary games could make learning more enjoyable and interesting for learners. Overall, the learners demonstrated satisfactory vocabulary proficiency before the intervention and very satisfactory proficiency after the intervention. The significant difference between the pretest and posttest results showed that crossword puzzles were effective as a learning tool for enhancing the vocabulary skills of Grade 3 learners.

4. Conclusion & Recommendations

The findings showed that the learners had somewhat developed their vocabulary skills before the intervention. However, the use of crossword puzzles further improved their vocabulary proficiency, demonstrating that crossword puzzles were effective learning tools for developing vocabulary skills.

Teachers are encouraged to incorporate crossword puzzles and other educational games into instruction to improve learners' vocabulary, understanding of word meanings, and academic performance through innovative teaching strategies. School administrators are also encouraged to support teachers in developing instructional materials and innovations that can enhance learners' vocabulary performance.

5. Compliance with ethical standards

The study complied with ethical standards by securing the required permissions from the concerned school authorities, the Schools Division Superintendent, and the parents or guardians of the Grade 3 learners before data collection. The identities of the participants were protected in accordance with the Data Privacy Law, and all information gathered was treated with strict confidentiality. Participation was indicated through the respondents' completion of the research instrument, and all materials obtained from other sources were properly cited and acknowledged.

REFERENCES

Alderman, M. K. (2004). *Motivation for achievement: Possibilities for teaching and learning* (2nd ed.). Routledge. <https://books.google.com/books?id=xa6RagAAQBAJ>

- Bakhsh, S. A. (2016). Using games as a tool in teaching vocabulary to young learners. English Language Institute, King Abdul Aziz University. Correspondence: Sahar Ameer Bakhsh, English Language Institute, King Abdul Aziz University, Jeddah, Saudi Arabia. Retrieved October 16, 2022, from <http://dx.doi.org/10.5539/elt.v9n7p120>
- Childers, D. (1996). Using crossword puzzles as an aid to studying sociological concepts. *Teaching Sociology*, 24(1), 231–235.
- Colorado, C. (1994). The components of effective vocabulary instruction. *Articles*.
- Dhand, H. (2008). *Techniques of teaching*. APH Publishing Corporation.
- Dornyei, Z. (2010). *Motivational strategies in the language classroom*. Cambridge University Press.
- Edward, S. (2006). The role crossword puzzle clue. <https://crosswordbuzz.com/clue/2006-adventure-film>
- Flood et al. (2004). Flooding vocabulary gaps to accelerate word learning.
- Franklin, S., Peat, M., & Lewis, A. (2003). Non-traditional interventions to stimulate discussion: The use of games and puzzles. *Journal of Biological Education*, 37(2), 76–82.
- Harley, B. (2006). Introduction: Vocabulary learning and teaching in a second language. *The Canadian Modern Language Review*, 53, 3–11.
- Hornby, A. S. (1974). *Oxford advanced dictionary of current English*. Oxford University Press.
- Kapur, R. (2018). Factors influencing the students academic performance in secondary schools in India. Retrieved October 23, 2022, from <https://www.researchgate.net/publication/324819919>
- Karim, M., & Hasbullah, F. A. (1986). *Language teaching media*. Universitas Terbuka.
- Lerner, J. W., & Johns, B. H. (2008). *Learning disabilities and related mild disabilities: Characteristics, teaching strategies, and new directions* (11th ed.). Wadsworth Publishing. https://openlibrary.org/books/OL18820570M/Learning_disabilities_and_related_mild_disabilities
- Lidiasari, Y., & Supardi, S. I. (2017). Using Scrabble game in improving students' vocabulary mastery of SMP Negeri 1 Jawai. Retrieved October 16, 2022, from <http://jurnal.untan.ac.id/index.php.pdp/article/>
- McCarthy, M. (1990). *Vocabulary*. Oxford University Press.
- Melbourne Child Psychology & School Psychology Services. (n.d.). The impact of working memory difficulties on learning.
- Min, H. (2008). EFL vocabulary acquisition and retention: Reading plus vocabulary enhancement activities and narrow reading. *Language Learning*, 58(1), 73–115.
- Moore, L., & Detlaff, A. (2005). Using educational games as a form of teaching in social work. *Arete*, 29(1), 58–63.
- Mubslat, M. M. (2012). The effect of using educational games on the students' achievement in English language for the primary stage. Retrieved October 16, 2022, from <http://educationalgames.org>
- Orawiwatnakul, W. (2011). Impacts of vocabulary acquisition techniques instruction on students' learning. *College of Teaching and Learning*, 8(1), 47–53.
- Paul, D. (2003). *Teaching English to children in Asia*.
- Putri, D. K. (2015). Using crossword puzzle to enhance students' vocabulary: An experimental study at the second-year students of SMP Negeri 20 Makassar [Undergraduate thesis, Muhammadiyah University of Makassar]. <https://digilib.unismuh.ac.id/fakultas/01/913/>
- Schultz, M., & Fisher, A. (1988). *Games for all reasons: Interacting in the language classroom*. Addison-Wesley. <https://ci.nii.ac.jp/ncid/BA06942697>
- Scrivener, J. (2011). *Learning teaching: The essential guide to English language teaching*.
- Subong. (2006). *Statistics for research*. Rex Book Store.
- Summat, N. (2009). Using task-based activities to improve the students' vocabulary learning at Watsratong Municipal School [M.Sc. thesis]. An Independent Study Report for the Master of Arts in English, Khon Kaen University.
- Tabtimsai, K. (2003). The development of vocabulary learning strategies exercises for mat hayomsuksa three students of Thamakavittthayakom School, Thamaka, Kanchanaburi [M.Sc. thesis]. Silapakorn University.
- Tasuli. (2000). Crossword puzzle as an effective way to teach English vocabulary [Unpublished final project]. UNNES.
- Watson, T. (2003). Memes and the teaching of English. *Essential Teachers*, 1(1), 54–56.
- Weimer, M. (2014, January 23). Students and attention: An interesting analysis. *Faculty Focus*. <https://www.facultyfocus.com/articles/teaching-and-learning/students-attention-interesting-analysis/>
- Weisskirch, R. (2006). An analysis of instructor-created crossword puzzles for student review. *College Teaching*, 54(1), 198–201.
- Whisenand, T., & Dunphy, S. (2010). Accelerating student learning of technology terms: The crossword puzzle exercise. *Journal of Information Systems Education*, 21(2), 141–148.
- Widsayari, Z. (2010). The use of crossword puzzle to improve vocabulary mastery.
- Yazon, A. D. (2019). *Methods of research*. Rex Book Store.
- Yeun, J. (2009). Context clue detectives: Empowering students with a self-learning device through the teaching of context clues [M.Sc. thesis]. University of California.