

CHAPTER II

LITERATURE REVIEW

2.1 Vocabulary

According to Nation (2022), vocabulary mastery is not simply a single understanding of the meaning of a word. Rather, it is a complex competency that involves three essential aspects: form, meaning, and usage. To fully master a word, a learner must be able to recognize its spoken and written forms, understand its conceptual meaning, and use it appropriately in grammatical and contextual situations.

Vocabulary is generally defined as knowledge of word meanings, emphasizing that it goes beyond a mere collection of separate words (Hiebert & Kamil, 2005). In other words, vocabulary involves understanding how words function in specific contexts. Similarly, Schmitt and Schmitt (2020) define vocabulary not merely as individual words, but as units of meaning that can consist of single words or multi-word expressions. This perspective highlights that vocabulary knowledge includes an understanding of collocations, phrases, and fixed expressions.

Vocabulary plays a crucial role in language learning, as it serves as the basis for developing productive skills (speaking and writing) and receptive skills (reading and listening) (Nation, 2022). Without adequate vocabulary knowledge, learners may find it difficult to understand language structures and convey meaning effectively (Marpaung & Situmeang, 2020).

Dang et.al (2022) emphasize that vocabulary is not just a list of separate words, but a deep understanding of how words function dynamically in various contexts to produce effective communication. This view is supported by Alqahtani (2015), who states that vocabulary mastery enables learners to express ideas accurately and reduce ambiguity in social and academic interactions.

2.1.1 Types of Vocabulary

As stated by Nation (2022) identifies two similar categories: receptive vocabulary, which involves recognizing words, and productive vocabulary, which entails actively using them:

a. Receptive Vocabulary

Receptive vocabulary is words that learners recognize and understand when they are used in context, but which they cannot produce. It is vocabulary that learners recognize when they see or meet in reading text but do not use it in speaking and writing.

b. Productive Vocabulary

Productive vocabulary is the words that the learners understand and can pronounce correctly and use constructively in speaking and writing. It involves what is needed for receptive vocabulary plus the ability to speak or write at the appropriate time. Therefore, productive vocabulary can be addressed as an active process, because the learners can produce the words to express their thoughts to others.

2.2 Vocabulary Mastery

According to Nation (2022), vocabulary mastery refers to the learner's ability to understand and use words appropriately, which involves knowledge of three essential aspects: form, meaning, and usage. Knowledge of form includes the ability to recognize and produce words in both spoken and written forms. Knowledge of the meaning relates to understanding the relationship between words and their meanings, while knowledge of usage involves applying words correctly in grammatical structures and appropriate contexts. Mastering these aspects enables learners to use vocabulary effectively.

According to Keraf (2007), as cited in Suryanto et.al (2021), vocabulary serves as an important tool for expressing and organizing thoughts or concepts. Stronger vocabulary mastery enables individuals to communicate ideas more effectively and fluently. Hariati (2020) stated that vocabulary mastery, defined as the ability of students to recognize and

understand a number of words learned in a particular language context. This includes the capacity of students to identify the meaning and appropriate use of these words, which in this study was demonstrated through the students' achievement in completing the vocabulary test provided.

2.3 Motivation

According to Herwati et.al (2023), motivation comes from the word motive, which means an active driving force. In learning process, motivation is one of the factors that determine the effectiveness of learning process. As cited in the book '*Motivasi dalam Pendidikan: Konsep-Teori-Aplikasi*', Mc. Donald defines motivation as an energy change within an individual, characterized by the emergence of feeling and preceded by response to a specific goal.

Motivation is defined as a combination of the desire to learn a language, a positive attitude toward the learning process, and the effort invested in learning Gardner (1985), as cited in Asmali, (2017). The definition emphasize that motivation is not only about interest but also involves sustained effort and engagement in learning activities. Low motivation is a common problem in educational settings, especially in rural areas with limited facilities.

Therefore, it is important to creating an interesting environment for engaging students' motivation. Interactive learning activities such as games can increase students' interest, encourage the participant to be active, and provide a sense of achievement. In this study, memory-based games are used as a learning media to support students' motivation by making the learning process more enjoyable.

2.3.1 The Role of Motivation in language learning

Motivation plays an important role in language learning. Motivation influences learners' effort, persistence, and level of engagement in learning activities. As stated by Gardner (1985) cited in Asmali, (2017) motivated learners are more willing to invest time and energy in learning

a language and tend to persist when facing learning difficulties. In EFL context, motivation encourages students to participate actively and practice vocabulary more frequently, with support better learning outcomes.

As stated in Herwati et.al (2023), motivation plays a fundamental role in the success of the learning process. Based on the ideas of Uno (2011) and Soemanto (2006), the role of motivation can be summarized into several main points:

- a. As a Driver and Motivator: Motivation functions as an internal and external force that drives students to begin and actively engage in learning activities.
- b. Direction and Learning Goals: Motivation helps students understand the relevance and benefits of the material being studied, so that learning objectives become clearer and the results achieved are more optimal.
- c. Enhancer of Diligence and Strength: Motivated students will be more diligent, consistent, and have high endurance in solving learning problems in order to achieve better results.
- d. Action Selector: Motivation helps students determine the priority scale of actions that must be taken in order to be in line with the academic goals they want to achieve.
- e. Determinant of Learning Achievement: There is a direct relationship between motivation and achievement; high motivation tends to produce better learning achievements, because there is a strong drive to achieve success.

2.3.2 The type of motivation

According to (Dörnyei, 2001) there are two types of motivation in learning: intrinsic and extrinsic motivation. **Intrinsic motivation** is driven without the need for external stimuli, it refers to personal interest, enjoyment, or satisfaction derived from the learning process itself. In the other words, this motivation arises without any external influence.

Extrinsic motivation is driven by external factors such as grades, rewards, praise. In language learning context, extrinsic motivation can encourage students to participate learning activities even when the material is challenging or less interesting. Both types of motivation play an important role in supporting students' engagement and persistence in learning, particularly when interactive activities such as games are used in the classroom

2.3.3 Indicator motivation in learning

As stated by Hamzah B. Uno (2009) cited in Fitriyani et.al (2020), motivation in learning can be divided into eighth indicators :

- a. Concentration, this refers to the student's ability to maintain focus on the learning material or the teacher's instructions. In a language classroom, a motivated student shows high concentration by ignoring distractions and staying engaged with the task at hand
- b. Curiosity, this is the internal drive to know more about the subject. Students with high curiosity will often ask questions, explore new vocabulary independently, and show a keen interest when a new topic is introduced.
- c. Enthusiasm, this is characterized by a positive emotional response toward learning. Enthusiastic students are eager to join classroom activities, such as games or songs, and display cheerful energy during the lesson.
- d. Independence, this refers to the student's willingness to complete tasks without constant hand-holding. A motivated learner attempts to solve problems or find the meaning of a word using available resources before asking for help.
- e. Readiness, this indicator involves the physical and mental preparation of the student before the lesson begins. It includes having the necessary tools (books, stationery) ready and being mentally "present" to receive new information.

- f. Effort, this is the amount of energy and hard work a student puts into their learning. It is visible when a student tries their best to pronounce difficult words or participates actively even when the task is challenging.
- g. Perseverance, this refers to the student's "grit" or staying power. Motivated learners do not give up easily when they face difficulties in understanding grammar or vocabulary; they keep trying until they succeed.
- h. Self-confidence, this is the belief in one's own ability to learn and use the language. Students with self-confidence are not afraid of making mistakes and are willing to speak up or perform in front of their peers.

2.4 Young Learners

Young learners refer to children from early childhood to early elementary school, around 6-12 years old, who have unique characteristics in the language learning process (Suaibatul, 2022). In this process, they will express every feeling they have, especially when they are angry and happy. In addition, young students' emotions are still inconsistent and unpredictable. Their emotions can change quickly in any situation (Oktavia et al., 2022). Since they have a short attention span but high energy levels, teachers are required to be creative and innovative in planning learning activities for young students, especially in language learning (Suwastini et al., 2022).

Teaching young learners must be based on three main pillars: clear purpose, meaningfulness, and social characteristics. Teachers are not only required to understand the learning objectives before entering the classroom, but also to act as motivators who support student development (Oktavia et al., 2022).

In the Indonesian context, especially in rural areas such as Sunyalangu, challenges such as limited resources and low student motivation make interactive approaches crucial (Armelia et al., 2021). This study shows that young learners in rural areas often face obstacles such as a lack of environmental stimulation, so innovative learning methods are needed to support their vocabulary development and motivation.

2.4.1 Characteristics of Young Learners

According to Scott and Ytreberg (2004); Slattery & Willis (2001) in Suaibatul, (2022), there are several characteristics of young learners:

- a. Active learners: learning by doing
- b. Sensory & concrete: respond to language through real objects and sensory stimulation (sight, hearing, touch)
- c. Short concentration span: have a short attention span, so they need varied and fun activities to keep them from getting bored
- d. Physical movement: interested in physical movement and real activities to stimulate their thinking

According to Harmer (2001), there are several characteristics of beginner learners, namely:

- a. They respond to meaning even if they do not understand every word;
- b. They often learn indirectly so that they learn information from various angles, learning everything from their surroundings rather than focusing on one topic being taught;
- c. Their understanding comes not only from explanations, but also from what they see and hear, and most importantly, from touching and interacting with things.
- d. In general, they show enthusiasm for learning and curiosity about the world around them.
- e. They need individual attention and recognition from their teachers.
- f. They want to talk about themselves and respond well to learning that uses themselves or their lives as topics of study in class.
- g. They have a short attention span, so learning that is not truly interesting or engaging will bore them and cause them to lose focus in less than 10 minutes.

2.4.2 Young learners learning style

According to Bandler and Grinder (1988) as cited in Ikawati (2017) research, there are three main categories of learners based on their sensory preferences: visual, auditory, and kinesthetic.

a. Visual

Children who have a visual learning style will progress quickly if given regular opportunities to display their work through visual elements. For their learning to be effective, they must be able to observe, imagine, and describe their knowledge, abilities, and ideas. Characteristics of visual learning include the ability to remember visible details, a preference for seeing learning materials directly, a need for writing tools such as paper and pen, a habit of drawing or taking notes while listening, and a tendency to write instructions or watch demonstrations. In addition, visual learners can benefit from mind maps or flowcharts to explain processes, as well as the use of different colors to emphasize important parts of their works.

b. Auditory

This type of learner really likes to express their ideas through words. They learn material by paying attention to what others say and discussing what they are learning. In addition, they tend to memorize information by saying it out loud, need verbal explanations, may have difficulty understanding written instructions, talk to themselves when learning new things, and prefer group discussion sessions to independent study.

c. Kinesthetic

This type of learners enjoy active involvement in the learning process and are most effective at understanding material through hands-on activities and physical movement. Other kinesthetic characteristics include a desire to actually do what is being discussed or learned, a tendency to move while listening or speaking, frequent use of hands to “speak,” a habit of touching objects to learn about them, and remembering events by focusing on who did what, rather than who said what.

2.4.3 Cognitive Development in learning acquisition

Cognitive development is a key distinguishing factor in how young learner’s process vocabulary compared to adult learners. According to Pinter (2017), elementary school-aged children are in a cognitive transition phase where they rely more on procedural memory and implicit learning,

unlike adults who excel in metalinguistic awareness and explicit analysis of grammatical rules. Empirical evidence shows that while adults use general problem-solving strategies to construct sentences, children tend to acquire language patterns automatically through repeated exposure and imitation in concrete contexts (Arjuna et al., 2022; Erk, 2025). This confirms that children's ability to form simple sentences is not the result of understanding syntactic formulas, as in adults, but rather the result of their brains' greater plasticity in absorbing "language chunks" functionally (Dey et al., 2024)

2.5 Memory-Based Games

Memory plays a crucial role in vocabulary acquisition because learners must temporarily store new lexical items, connect them with meanings, and repeatedly recall in order to transfer the information into long-term memory. As stated by (Nation, 2001) repeated exposure and recall of words strengthen learners' memory and support the development of form-meaning connections.

In language learning, games provide opportunities for meaningful repetition and active student participation (Ur, 1996; Wright et al., 2006). One type of game that strongly involve recall and remembering activities is memory based games. Memory-based games are learning activities that require students to remember, match and recall information through repeated exposure. These games often involve matching pairs of words or pictures, which encourages students' participation and motivation during the learning process (Ur, 1996).

Therefore, memory-based games are used in this study as classroom action that provide opportunities for learners to repeatedly notice, recall, and use vocabulary items in meaningful contexts, making them effective tools for improving vocabulary mastery and motivation.

2.5.1 The Benefits of Using Memory Games

According to Sivakumar (2022) the specific benefits of memory-based games as follows:

a. Improve concentration & increase attention to detail.

Memory-based games require players to maintain prolonged focus on specific stimuli while filtering out irrelevant backgrounds distractions. This continuous stimulation enhances the executive function of attention, thereby increasing a person's concentration span and sharpening their perceptual acuity in recognizing minor details in academic

b. Train visual memory & increase short term memory

These games stimulate the brain's working memory by forcing players to encode, retain, and recall visual configurations and temporary data within a limited timeframe. This active mental rehearsal strengthens visual-spatial memory and expands short term memory capacity, enabling individuals to process and manage new information more efficiently.

c. Improve the ability to find similarities and differences in object & help to classify objects that are grouped by similar traits

Memory games frequently employ mechanics that require matching, sorting, and identifying patterns among various objects. This process sharpens logical reasoning as individuals learn to systematically analyze structural commonalities or variances, fostering higher-order thinking skills such as taxonomy, categorization, and problem-solving.

d. Improve Vocabulary

When memory-based games integrate language-based elements (such as word-image matching or textual puzzles), they facilitate lexical retrieval. This activity reinforces the mental lexicon, helping individuals recall previously learned words more fluidly while simultaneously introducing new vocabulary in an engaging context, which ultimately supports language acquisition.

2.5.2 Type of Memory Games

A. Matching Game

Matching game is a memory-based activity in which learners are required to find pairs of related items, such as words and pictures or words and their meanings. This activity encourages students to recall previously learned vocabulary and connect it with visual cues, which supports vocabulary retention. As a language game, matching provides meaningful repetition and encourages students' active participation in learning (Wright et al, 2006).

From the perspective of working memory theory by Cowan (2001) matching activities train learners to store information while searching for the correct pair. As an educational game, matching helps children learn while they play by strengthening their cognitive development and memory skills. In line with Nation (2001), repeated recall of vocabulary items during the matching process helps transfer the words into long-term memory and strengthens the form-meaning connection.

1. The Advantage of Matching Game

Based on Derakhsan, A & Khatir E.D (2015); Hidayat N (2016); Bakhsh, S.A (2016) in Pradana (2023), utilizing matching games in English Language Teaching (ELT) provides numerous distinct advantages for young learners. These benefits can be categorized into emotional, cognitive, and social-behavioral dimension

a. Enhancing Motivation and Reducing Stress

Matching games create a fun, joyful, and non-stressful learning environment where students can acquire the target language more easily without feeling anxious. By integrating a friendly competition element, this game-based approach successfully boosts students' interest, curiosity, and learning motivation, transforming abstract vocabulary lessons into an enjoyable experience

b. Strengthening Vocabulary Retention and Comprehension

Through matching activities, teachers can bring real world and meaningful context into the classroom, allowing students to use English in a flexible, communicative way. The repeated exposure and visual cues involved in the matching process help students understand word meanings, improve their text comprehension, and retain new lexical items in their long-term memory more quickly. Furthermore, this technique simultaneously activates both the cognitive and physical aspects of the students

c. Fostering Active Collaboration and Discipline:

Matching games promote a cooperative learning environment that encourages students to work together, thereby enhancing their communicative and social skills. Pedagogically, this active method is highly effective in building students' confidence and courage to perform or present their work in front of their peers. Additionally, because the matching task usually operates under a specific time limit, it effectively trains students' discipline and teaches them to respect learning time.

2. Disadvantage of Matching Game

While matching games offer substantial benefits, their implementation in the classroom also presents certain limitations and practical challenges. According to Miftahul (2013) in Fadariyah (2018) and Akdogan, E. (2017); Wulanjani, A. N. (2016) in Pradana (2023), the disadvantages of utilizing matching games include:

a. Inefficient Time Management and Preparation Constraints:

If not meticulously planned and prepared by the educator beforehand, matching games can become highly time-consuming. This operational inefficiency often leaves teachers with limited time to cover the entire mandatory content or syllabus within the designated class hours

b. Risk of Shifting Focus from Learning to Winning:

The competitive nature of games can sometimes backfire if the core learning outcomes become secondary to the desire to win. When students

prioritize winning the match over understanding the material, the pedagogical objective of vocabulary acquisition is easily lost. Additionally, if a throughout the semester, students can become bored, leading to a significant drop in their interest.

c. Classroom Management and Noise Disruptions:

Matching games inherently involve physical movement and verbal interaction, which can easily cause the classroom environment to become overly noisy and chaotic. This high level of noise not only makes it difficult for the teacher to control and manage the class effectively, but it can also disrupt the concentration of neighboring classrooms

d. Behavioral and Social Hesitancy among Students:

During the initial implementation of the matching technique, young learners often display social awkwardness or reluctance, particularly when they are required to pair up or cooperate with classmates of the opposite gender. Furthermore, if the teacher failed to provide strict and wise guidance during the post game presentation phase, many students will lose focus and fail to pay attention to their peers' presentations.

B. Kim's Game

Kim's Game is a memory and observation game in which students are asked to observe a number of object or picture for limited time and then recall them from memory. The name of this game is taken from the novel "Kim" by Rudyard Kipling (1901), in which the main character, a young secret agent named Kim, is trained to remember the details of small objects on a tray as part of his intelligence training stated by William J. Lahneman & Ruben Arcos (2014) in *The Art of Intelligence: Simulations, Exercises, and Games*.

In vocabulary learning, this game can be adapted by using pictures or word card that represent vocabulary item. From the perspective of working memory theory Kim's Game trains students to store visual information in their short-term memory and recall it within a limited time (Cowan, 2001). This process encourages active recall and strengthens

memory retention. In line with Nation (2022), the activity of remembering and retrieving words helps learners build stronger form-meaning connections, which is essential in vocabulary mastery.

In an educational context, Kim's game has been proven to improve vocabulary mastery and student engagement in the learning process through active memory exercises. The main characteristics of Kim's Game include focusing on visual observation, training short-term memory retention, applying time limitations, and encouraging active recall. These characteristics make Kim's Game suitable as a memory-based game in vocabulary learning, as it requires students to actively observe, remember, and recall language items within a limited time.

Previous studies have also supported the effectiveness of Kim's Game in vocabulary learning. Wardani et.al (2023) states that Kim's memory game was more effective in enhancing students' vocabulary mastery compared to traditional translation methods. This shows that activities involving observation and recall provide better vocabulary retention than passive learning techniques.

1. The advantages of Kim's Game

According to Hasanah as cited in Yulisa (2018), implementing Kim's Game in vocabulary instruction offers several practical and cognitive advantages, described as follows:

a. Highly Practical and Easy to Conduct:

Kim's game is incredibly simple to set up and manage in classroom setting. It does not require complex or expensive media, making it highly accessible for teacher in any educational environment

b. High Environmental Flexibility:

This game can be efficiently carried out indoors within standard classroom spaces. It does not demand large outdoor fields, allowing the lesson to proceed smoothly regardless of weather conditions

c. Sharpens Observational Skills and Memory:

Pedagogically, Kim's Game is directly relevant to vocabulary retention because it actively develops and sharpens the students' visual observation skills. More importantly, it trains their short-term working memory to notice, store, and retrieve information quickly

2. The Disadvantage of Kim's Game

Despite its strength, Kim's Game also possesses several inherent limitations, particularly when applied to low-level or young learners. According to Hasanah as cited in Yulisa (2017) described as follows:

a. Requires a Prior Foundation of Vocabulary:

This game requires students to already have a substantial bank of vocabulary. If the students possess very limited baseline knowledge, they will struggle to identify or name the objects being shown

b. Cognitive Hurdles in L2 Translation:

Students who still struggle with English often face difficulties during the recall phase. They might remember the object visually but get stuck trying to translate and formulate the word or sentence into English under a tight time limit.

c. High Potential for Cognitive Fatigue:

Because the game forces the students to focus intensely within a restricted time frame, it forces their brains to think very hard. If overused, this high cognitive load can cause mental fatigue, anxiety, or frustration for struggling students.

C. Crossword Puzzle

Crossword puzzle is a word game in which learners have to fill the words into a grid based on given clues (*Cambridge Academic Content Dictionary*). In vocabulary learning, this activity requires students to recall previously learned words, recognize spelling patterns, and connect clues with appropriate lexical items. This process involves active recall, which is an important element in memory retention.

From the perspective of working memory theory, crossword puzzles require students to temporarily store clues while searching for suitable words to complete the grid. This activity trains students to manipulate information in their memory while reinforcing vocabulary knowledge (Cowan, 2001). In line with Nation (2022) repeated recall and retrieval of words during the puzzle help strengthen the form-meaning connection and support long-term vocabulary retention.

In addition, crossword puzzles function as a game that can make the teaching and learning process more engaging than it was previously. (Manullang et al, 2018) found that using these puzzles should help students discover new words while having fun with the game during vocabulary lessons. Therefore, crossword puzzles in proved for enhanced students' vocabulary and motivation.

1. The Advantage of Crossword Puzzle

According to Salimah (2022) implementing crossword puzzles as an instructional media in English Language Teaching (ELT) offers several distinct advantages:

a. Creating an Enjoyable Atmosphere:

Crossword puzzles transform vocabulary learning into a recreational, game-like activity. This reduces academic anxiety and makes the learning process less intimidating for young learners

b. Fostering Intrinsic Motivation:

The inherent challenge of solving a puzzle naturally stimulates students' curiosity and motivates them to complete the blanks, turning a standard review into an engaging quest

c. Eliminating Classroom Boredom:

By serving as a fresh alternatives to conventional rote-memorization methods, crossword puzzles prevent students fatigue and help them perceive English as an achievable, enjoyable subject rather than a difficult one.

d. Clarifying Word Meaning:

The structural design of crossword puzzles force students to analyze clues and context. This process helps them better understand and internalize the semantic meaning of lexical items, leading to actual vocabulary mastery

e. Reinforcing Memory through Varied Practice:

To solve the puzzle, students must engage in repetitive retrieval, sentence pattern practice, and rewriting the words into the grid. This multi sensory process strengthens their spelling and long term memory retention

2. The Disadvantage of Crossword Puzzle

Despite its numerous strengths, implementing crossword puzzles in vocabulary instruction also presents several constraints and weaknesses that teachers must anticipate. According to Salimah (2022) there several disadvantages of crossword puzzles:

a. Demanding Preparation time:

Constructing a well design crossword puzzle requires a significant amount of time and effort from the teacher. The educator must meticulously plan, create the grid, and ensure that the puzzle perfectly aligns with the specific learning materials and syllabus before stepping into the classroom.

b. Risk of Low Academic Seriousness

Because crossword puzzles carry a heavy recreational connotation, some students may perceive them merely as leisure activities rather than serious learning tasks. Consequently, they might not take the assignment seriously, undermining the media's potential benefit for their vocabulary mastery.

c. Cognitive Difficulty in Decoding Clues

Students frequently find it challenging to guess the correct words to fill the grid because they struggle to comprehend the meaning of the provided questions or clues. Without a foundational understanding of the context, the puzzle can become frustrating rather than educational.

d. High Classroom Noise Levels:

The competitive and interactive nature of solving crossword puzzles, especially when done in groups, can trigger chaotic classroom dynamics. If not strictly managed by the teacher, the activity can cause high noise levels that potentially disrupt the overall concentration of the class.

2.5.3 Characteristics of Memory-Based Games

Memory-based games share several important characteristics that make them suitable for vocabulary learning. According to Cowan (2001) these games require learners to store and manipulate temporary information in their working memory while performing a task. This means students must pay attention, remember information, and use it actively during the game.

Wright et.al (2006) memory-based games often involve matching or recognizing identical items, such as pictures, words, or symbols. This process encourages pattern recognition and association, which are important in strengthening memory

These games involve repeated recall of information. Nation (2022) states that repeated retrieval of vocabulary items helps reduce forgetting and supports long-term retention.

Based on these theories, it can be concluded that memory-based games are characterized by: (1) the use of working memory through storing and manipulating information, (2) matching or recognizing related items, and (3) repeated recall that strengthens memory retention. These characteristics make memory-based games highly relevant for improving students' vocabulary mastery and learning motivation.

2.6 Advantages and Disadvantages of Memory-Based Games

2.6.1 Advantages

According to Wright et.al (2006) games in language learning increase students' motivation, encourage active participation, and provide meaningful repetition of language. These advantages are closely related to memory-based games used in vocabulary learning.

From the cognitive perspective, memory-based games train students to store and manipulate temporary information while learning, which reflects the function of working memory (Cowan, 2001). In addition, Nation (2022) explains that repeated recall of vocabulary during games strengthens the form–meaning connection and supports long-term retention.

2.6.2 Disadvantage

However, Wright et.al (2006) also note that games can become noisy, lose learning focus if not properly guided, and become repetitive or boring for students.

From the cognitive perspective, tasks that are too demanding may cause cognitive overload for students with limited working memory capacity (Cowan, 2001). Therefore, memory-based games must be carefully adjusted to students' level to avoid frustration and loss of motivation

2.7 Previous Research in Improving Vocabulary and Motivation through Memory-Based Games

Numerous studies have delved into the effectiveness of various language teaching methodologies, particularly the application of improving vocabulary and motivation through memory-based games in English as a Foreign Language (EFL) contexts. Researchers across different educational settings have explored the impact of memory-based games on enhancing students' vocabulary and motivation. In this context, three notable studies provide valuable insights into the successful implementation of memory-based games methods:

2.7.1 The effect of “kim’s memory game” on students’ vocabulary mastery viewed from students’ motivation (An Experimental Study at the Seventh Grade Students of SMP N 2 Pedan, Klaten in the Academic Year 2016/2017) by (Hajar, 2017)

The main objectives of this study are: (1) to find out whether there is any different influence on Kim’s memory game and Translation toward

students' vocabulary mastery (2) to find out whether there is any different influence of high students' motivation and low students' motivation toward students' vocabulary mastery (3) to find out whether there is the influence of the interaction between learning technique and students' motivation toward students' vocabulary mastery. This study is experimental study. The population of the research is 331 students of seventh grade students' of SMP N 2 Pedan, Klaten in the academic year 2016/2017. The total sample were 62 students' taken from two classes, 7D and 7E were the sample. The instrument of this research is vocabulary test and questionnaire. In analyzed the data using ANOVA or multifactor analysis and Tukey test. The research findings show that: (1) using Kim's memory game is better than using translation for teaching vocabulary mastery. (2) the students who have high motivation have better vocabulary mastery than the students who have low motivation. (3) there is no influence of the interaction between teaching technique and students' motivation in teaching vocabulary mastery.

2.7.2 Using a memory-based strategy for vocabulary instruction via online games to enhance the vocabulary size of secondary school students by (Honboonherm, 2023)

The objectives of this current research were 1) To explore the effect of a memory-based strategy for vocabulary instruction via online games to enhance vocabulary size and 2) To investigate the students' opinion towards a memory-based strategy for vocabulary instruction via online games to enhance vocabulary size. Purposive sampling was applied to grade ten 37 students in one of the Thai public schools in Chiang Rai province. The research instruments consisted of lesson plans that included vocabulary online games to correspond with each step of the memory-based framework. The vocabulary size pre and post-tests, student reflections, and semi-structured. The analysis of paired sample t-test, mean, standard deviation, and effect size revealed that students' scores were significantly increased by 0.05. In addition, the analysis of the

student's opinions reported that students expressed positive thoughts about the use of a memory-based strategy for vocabulary instruction via online games to enhance vocabulary size in the English language classroom.

2.7.3 Improving Students' Vocabulary Mastery Through Crossword Puzzle Game To The Eighth Grade Students Of Smp Swasta Dharma Bakti Medan by (Manullang et al., 2018)

This research is aimed to improve students' vocabulary mastery through the application of crossword puzzle game. The subject of this research of the eighth grade students of SMP Swasta Dharma Bakti Medan. This research was conducted by applying Classroom Action Research (CAR) which was performed in two cycles (cycle I and cycle II) and each cycle consisted of three meetings. This instrument of collecting data are quantitative (vocabulary test) data and qualitative data (diary notes, observation sheet and photograph evidences).the result of vocabulary test as the quantitative data show that mean of students' score increased continuously from pre-test 36,71, post-test in cycle I 64.10, to post-test cycle II 78,48. The diary notes, observation sheet and photograph evidences as qualitative data showed that the teaching and learning process ran well. It was found that crossword puzzle game could improve students' vocabulary mastery. It is suggested that teachers of English should apply crossword puzzle game as one of the game in teaching vocabulary mastery

2.7.4 The Effect of Using Game on Students' Motivation in Learning Vocabulary by (Faiz & Holman, 2022)

This study focuses on the effect of using stimulant play and word learning hard to remember a new word. The purpose of this study was to describe the motivation of students learning pre-game learning, to explain the motivations of students learning pre-game play, to explore the significant impact of using quiz games words. The research method used in this study is numerical. This type of test is an experimental test. In addition, the test sample included 92 students. It consisted of an experimental class of 48 students as well as a management class of 46

students. During the data collection, the researcher used the research paper to determine the motivation for learning English and speaking in data collection. To analyze the data, the researcher used a t-test method. The score of the test class before using Whispering Game is 64 and the score after using Whispering Game is 85. Currently, the score of the class in the tests 75,52 In addition, the t count score is greater than table ($5.46 > 1.684$)