

CHAPTER II

LITERATURE REVIEW

A. Theoretical Review

1. Vocabulary Learning in THE EFL Context

a. The Role of Vocabulary in Language Learning

Developing students' vocabulary is important in learning the English Language because it provides the basis of effective communication (Maglalang & Redublo, 2023). Vocabulary knowledge enables students to express their thoughts and ideas either orally or through written form. Students that do not possess an ample vocabulary are unable to express their self effectively. In addition, having a broad vocabulary allows students to comprehend various types of texts; therefore, enhances student's language skills. Students with a broader vocabulary have greater confidence levels and will be much more active in participating in classroom discussions. Therefore, enhancing students' vocabulary development will help them succeed in English (Syarifudin et al., 2021).

Younger students, at an age when they are still developing foundational skills for the purpose of communicating, may have additional concerns regarding vocabulary mastery. Early vocabulary development can greatly impact students' future academic success, and therefore, is also likely to be a major factor in how well students learn over time (Webb, 2020). Vocabulary is considered one of the key components of foreign language education, along with pronunciation and grammar, that comprise students' overall communicative competence (Akbarian, 2023). Many researchers argue that vocabulary is the most fundamental element of language

acquisition, and that a solid vocabulary foundation is required before students will experience meaningful gains in their language learning (Alahmadi & Foltz, 2020; Amirzai, 2021; Ha, 2021; Milton, 2013; D. D. Qian & Lin, 2020). A number of empirical investigations support this argument, as they demonstrate that having a large and varied vocabulary provides a strong foundation for all aspects of language use including listening, speaking, reading, and writing (Alahmadi & Foltz, 2020; Amirzai, 2021; Miralpeix & Muñoz, 2018). Students with a robust vocabulary base are able to read comprehension materials much more easily than other students, can locate relevant information within texts more quickly and effectively process the meanings of what they read or listen to. These factors contribute to higher levels of proficiency in students (Miralpeix & Munoz, 2018).

Furthermore, the ability to communicate clearly and fluently in speaking and listening also depends heavily on students' vocabulary mastery. This is because a strong vocabulary allows students to understand spoken input more easily and express their ideas with greater clarity, which leads to more effective communication. Previous studies support this by showing that better vocabulary knowledge helps increase students' confidence when participating in classroom activities (Asrida et al., 2024; Bashori et al., 2021; Hanafiah et al., 2022). Additionally, pupils' vocabulary proficiency has a major role in their capacity to talk and listen with clarity and fluency. This is due to the fact that having a large vocabulary makes it easier for pupils to comprehend spoken information and articulate their thoughts clearly, both of which improve communication. Better vocabulary knowledge boosts students' confidence when engaging in class activities, according to earlier research (Br Bangun & Simanjuntak, 2022; Hanafiah et al., 2022; Hartini & Suri Ardini, 2024; Santosa et al., 2021). In order to communicate thoughts and concepts both orally

and in writing, vocabulary is crucial. Lack of vocabulary will impair a person's capacity for accurate and clear communication. Additionally, having a large vocabulary helps students understand a variety of texts and promotes their general language development. Additionally, as students with larger vocabularies typically participate more actively in class activities and converse more easily, it greatly boosts learners' confidence. Consequently, increasing vocabulary mastery is essential for students to become more proficient in English and to improve their capacity to communicate successfully in both academic and everyday settings (Syarifudin et al., 2021).

For young learners who are still acquiring the basic abilities required for effective communication, vocabulary mastering becomes even more crucial. This is especially crucial since early vocabulary development has a significant impact on pupils' overall academic success and long-term learning progress (Webb, 2020). Along with pronunciation and grammar, vocabulary is considered one of the three fundamental elements that influence students' communicative capacity when learning a foreign language (Akbarian, 2023). According to several scholars (Alahmadi & Foltz, 2020; Amirzai, 2021; Ha, 2021; Milton, 2013; D. D. Qian & Lin, 2020), vocabulary is the cornerstone of the entire language acquisition process, and substantial progress in language learning is impossible without a strong vocabulary basis. This claim is supported by evidence showing that a comprehensive vocabulary forms a strong foundation for the four language skills: listening, speaking, reading, and writing (Alahmadi & Foltz, 2020; Amirzai, 2021; Miralpeix & Muñoz, 2018). Empirical studies show that students with strong vocabulary knowledge find it easier to understand reading material, extract information more efficiently, and process meaning more effectively, ultimately contributing to their higher proficiency levels (Miralpeix &

Muñoz, 2018).

In addition, students' vocabulary knowledge plays a major role in their ability to speak and listen with clarity and fluency. This is because having a large vocabulary makes it easier for pupils to comprehend spoken information and articulate their thoughts clearly, both of which improve communication. This is corroborated by earlier research that demonstrates how having a larger vocabulary boosts students' self-assurance when engaging in class activities.(Asrida et al., 2024; Bashori et al., 2021; Hanafiah et al., 2022). In Indonesia, where English is not the primary language and exposure to authentic English is very limited, this condition makes vocabulary mastery even more important for students' academics. Therefore, strong vocabulary skills not only support students' learning in school but also prepare them to compete academically and in an increasingly global environment (Br Bangun & Simanjuntak, 2022; Hanafiah et al., 2022; Hartini & Suri Ardini, 2024; Santosa et al., 2021).

b. Vocabulary Learning Strategies

learning strategies describe specific habits, actions, activities, or methods that students use to enhance their learning and increase their language skills.(García-Pérez et al., 2021; Hattie & Donoghue, 2016; Takač, 2008). In addition, effective language learning depends on goal-oriented, self-regulated strategies such as metacognitive, cognitive, memory, affective, and social approaches. Tools and platforms like the internet, multimedia, games, journals, and social interactions in English can support these strategies and help students practice outside the classroom and learn new vocabulary (Schmitt et al., 2017). Students' motivation, cultural background, unique learning styles, and surroundings all have an impact on the tactics they select and employ. (Takač, 2008).

According to alignment with this concept, Vocabulary Learning Strategies (VLS) is a subset of language learning methods that

concentrates on how students comprehend, retain, and apply vocabulary in a second or foreign language. These techniques are intended to improve, streamline, and boost vocabulary acquisition so that students can not only retain word meanings but also apply them correctly in a variety of communication scenarios. (Bai, 2018; P. Y. Gu, 2021; Y. Gu & Johnson, 1996; Useini, 2022). Vocabulary learning strategies can be described as a set of organized steps taken by students to make the process of learning vocabulary more methodical, autonomous, and effective. Examples of these actions include using dictionaries, guessing the meaning of words from context, noting new vocabulary, and repeating and practicing them frequently. It is important to note that a vocabulary strategy must involve deliberate choices, consist of multiple stages, require a thought process, and ultimately increase the efficiency of vocabulary learning (I. S. P. Nation, 2001). In addition, Schmitt (2010) states that vocabulary learning strategies can be classified into five main categories, which are determination strategies, social strategies, memory strategies, cognitive strategies, and metacognitive strategies (Schmitt, 2010).

- 1) **Determination Strategies:** are strategies that students use to find and determine the meaning of new words independently, without direct help from others. These strategies are important because they train students to be independent in learning vocabulary and teach them not to always rely on teachers or friends (Handayani & Nadrun, 2022; Hendrawaty & Retnomurti, 2021). They also motivate students to develop critical thinking abilities when they meet new words in a text. Students can determine the meaning of words by using word forms, contextual clues, and their understanding of starting and ending sounds. Their ability to analyze language is enhanced by this logical guesswork, which also makes learning more engaging and significant. (Pho et al.,

2015). For example, when students find the word “environment” in a text with words such as “pollution,” “nature,” and “earth,” they can conclude that the word relates to “the environment.” Another example is when they find the word "disagree." Students know that the preposition "dis" means "not," so they can guess that the word means "to disagree." During this process, a dictionary can also confirm the predicted meaning. Therefore, determination strategies help students determine word meanings independently and systematically (Schmitt, 2010).

- 2) **Social Strategies:** are vocabulary learning strategies that involve social interaction with other people, like teachers, classmates, or study group members. These strategies are effective because language is essentially a communication tool, so learning through interaction and cooperation can speed up vocabulary comprehension. Through the discussion, students can exchange information about the meaning of words and how to use them in sentences. In addition to increasing understanding, this strategy also improves students' confidence in asking questions and expressing opinions (Colombo et al., 2025). The learning atmosphere becomes more active, collaborative, and less boring, making vocabulary easier to remember. For example, when students do not understand the meaning of the word "consequence," they can ask their teacher or friends. One student explains the meaning in a group discussion, and other students give example sentences like, "If you don't study, the consequence is a bad score." This process of question and answer and discussion proves that social interaction plays an important role in developing vocabulary comprehension (Hou et al., 2022).
- 3) **Memory Strategies:** are strategies that are used to save and remember new vocabulary in long-term memory through association, visualization, and classification (Bambang Purwanto

et al., 2022). These strategies are effective because the human brain is able to remember information more easily when the information is related to images, experiences, or previous knowledge. By connecting new words to something familiar, students can create stronger mental associations with those words. Therefore, the memorization process does not only depend on repetition but also on the meaning connections that are created (Handayani & Nadrun, 2022; Hwang et al., 2023). For example, to remember the word “beautiful,” students imagine a beautiful beach scene or a beautiful flower. For the word “teacher,” students associate it with the figure of a teacher at their school. In addition, students can also categorize words like “apple,” “mango,” and “banana” into the category of fruits. This classification helps the brain to process vocabulary in a more structural form and makes it easier to remember for a longer time.

- 4) Cognitive Strategies: are strategies that involve the direct practice and repetition of vocabulary to reinforce vocabulary understanding and acquisition (Hwang et al., 2023). These strategies emphasize activities such as writing, reading, pronouncing, and using words in sentences continuously. The more repeatedly a word is used, the more strongly it is remembered. In addition, activities like copying and making example sentences involve more than one sense, therefore reinforcing the learning process (Handayani & Nadrun, 2022). For example, students write the word “important” five times, then make three sentences using that word, such as “English is important for our future.” Students can also repeat the vocabulary list every day. Although it seems simple, this activity is effective to help students remember and use words more fluently in their writing and conversation.

- 5) Metacognitive strategies are strategies that relate to students' ability to consciously plan, monitor, and evaluate the vocabulary learning process. These strategies make students more reflective about the learning methods they use (M. F. Teng & Mizumoto, 2025). By setting learning targets and schedules, students can learn more effectively and purposefully. In addition, monitoring their learning progress allows students to identify weaknesses and improve ineffective strategies (Almosa, 2023). For example, a student sets a goal to learn 10 new words every day, writes them down in a special notebook, and reviews them every night before going to bed. At the end of the week, the student reevaluates which words they have mastered and which ones are still difficult. Words that have not been mastered will be studied again the following week. This process shows that students actively control and evaluate their own vocabulary learning.

The five strategies above can be effectively integrated through the use of educational games such as the Baamboozle Game (Hu & Luo, 2024). The students use determination strategies when they guess the meaning of words from the context of questions that appear in the game. They use social strategies when they discuss and work together with team members to find the right answers (M. F. Teng & Mizumoto, 2025). The process of remembering answers, connecting words with specific images or situations, and repeating vocabulary that frequently appears during the game involves memory strategies. And when students spell, pronounce, write, and use words in sentences during the game, they are practicing cognitive strategies. At the end of the game, when students realize which words they have not yet mastered and take the initiative to review them outside of the game, they are applying metacognitive strategies. Therefore, the Baamboozle Game not only provides entertainment but also serves as a structured, strategic, and meaningful method for vocabulary learning.

(Almosa, 2023).

c. Vocabulary Learning Challenges for Indonesian EFL Student

Many students still face challenges in mastering English vocabulary. Vocabulary acquisition is one of the most fundamental elements in language learning. Vocabulary plays an important role as the foundation for developing listening, speaking, reading, and writing skills. However, in reality, not all students have a good enough vocabulary to support their learning process. As a result, students often find English too difficult and Challenges (Rachmah, 2023). Several main factors that influence this condition are limited basic vocabulary, difficulty remembering and pronouncing new words, low motivation to learn, and high levels of anxiety and lack of confidence in applying the English language (Adipat et al., 2021)

- 1) Limited basic vocabulary: The main challenge in learning English is the limited vocabulary of students. This limitation occurs due to a lack of exposure to English in their daily life and a lack of opportunities to use it actively (P. Nation, 2017). In addition, learning methods that focus too much on memorizing words without context also make vocabulary difficult to understand and remember (Schmitt, 2010). Students struggle to comprehend texts, directions, and basic discussions as a result of this limited vocabulary. Additionally, because they lack the vocabulary to articulate their own views, they become passive during the learning process. (Khan et al., 2019). By using Baamboozle as a game-based learning platform, students can improve their foundational vocabulary through interesting contexts, visuals, and repetition. (Zhou, 2024).
- 2) Difficulty in remembering and pronouncing new words: In addition to limited vocabulary, students also have difficulty in remembering and pronouncing new words. This is because of the

differences between the English and Indonesian phonological systems, which make some sounds feel unfamiliar and hard to copy (Gilakjani & Sabouri, 2016). The lack of practice in listening and pronouncing words over and over also makes the words easy to forget from long-term memory. As a result, students often mispronounce words and become hesitant to use them when speaking. This hesitation reduces their ability to participate in class activities. By using Baamboozle, students can hear, see, and pronounce words repeatedly in the form of game activities, so their memory and pronunciation become stronger (Sundqvist & Sylvén, 2014).

- 3) Low motivation: Low motivation to learn is also one of the main obstacles in vocabulary learning. Many students find learning vocabulary boring because it only involves memorizing and writing words in a notebook (Kainta & Rombot, 2020; Phung, 2021; Susanti et al., 2024). The lack of learning methods and learning media makes students lose interest easily. As a result, students do not have the motivation to learn new vocabulary and become passive learners in the classroom. This certainly has a negative impact on the development of their English skills in general. Baamboozle can increase learning motivation because it incorporates elements of games, challenges, and competition that make students more actively involved (Çakıcı & Dilman, 2025).
- 4) High anxiety levels and low self-confidence: High anxiety levels and low self-confidence also obstruct students from using new vocabulary in communication. They are afraid of making mistakes and being judged by their friends or teachers, which makes them feel unconfident to speak English (Badrasawi et al., 2021; Daflizar, 2024; Kuswantoro & Novita, 2024). Their confidence in learning foreign languages is also impacted by negative past experiences. As a result, learners avoid using the

words they have learnt and prefer to stay silent. This results in an extremely slow growth of their language abilities, particularly in speaking.(Lee & Drajati, 2019).

Because of these challenges, a learning strategy is required to establish a more enjoyable, engaging, and less stressful environment for learning. The use of games as a medium to improve student engagement and comprehension in language learning is the focus of game-based language learning, or GBLL (Chowdhury et al., 2024; Zhou, 2024a). This approach helps students learn vocabulary through direct experience, meaningful contexts, and Challengesand enjoyable activities. One of the platforms that supports the implementation of GBLL is Baamboozle, which supports teachers in creating interactive learning games and vocabulary games (Fitriani Fitriani et al., 2025a).

2. Game-Based Language Learning (GBLL)

a. Definition and Theoretical Foundation

Game-Based Language Learning (GBLL) is a language learning approach that integrates game elements into the learning process with the aim of increasing student engagement, motivation, and learning effectiveness (Z. Xu et al., 2020). In this context, the game functions not only as entertainment but also as a learning tool that is designed with a clear pedagogical purpose. GBLL has several key characteristics, including game rules, challenges, immediate feedback, and a reward system that encourages students to continue to actively participate in the learning process (Hwang et al., 2023). These characteristics make students feel challenged and motivated to complete the language tasks given in the game. This shows that GBLL is able to transform a passive and monotonous learning atmosphere into a more active and interactive one, as students are directly involved in activities that require the use of language to achieve the game's objectives (Ortiz-Rojas et al., 2025). Therefore, GBLL creates a fun

and meaningful learning environment, where the students learn language indirectly through a structured game experience.

Furthermore, to understand why GBL is effective in language learning, it is important to look at the theoretical foundation that explains how learners build knowledge through experience. Constructivism theory states that knowledge is not directly transferred from teacher to student, but is actively built by learners through experience, exploration, and interaction with their environment (Aljohani, 2017; Halid, 2024). In this view, students become the center of the learning process because they take an active role in forming their own understanding. This theory has four main characteristics:

- 1) **Active Learning:** Active learning emphasizes that students must construct meaning by actively engaging with tasks rather than receiving information passively. This approach is effective because students learn more deeply when they experiment, explore, and test their own ideas during the learning process. Several studies show that active involvement leads to better retention and understanding, especially in vocabulary learning (Aljohani, 2017; Halid, 2024; Malik, 2024). For example, when students read a short story containing unfamiliar words and are asked to guess their meanings using sentence clues, they actively search for patterns and make logical assumptions. Afterward, they test these assumptions by comparing their guesses with those of their peers, which strengthens the meanings they constructed through their own active thinking (Halid, 2024).
- 2) **Contextual Learning:** Contextual learning claims that students understand vocabulary better when new words are connected to real-life situations. This is because linking information to familiar experiences helps the brain form stronger associations, making the learning more meaningful and memorable. Research also

supports that contextual exposure increases long-term retention compared to mechanical memorization (Guo, 2024). For instance, when students learn the word “wander” through a story about a lost traveler rather than an isolated definition, they immediately relate the word to an actual situation. Later, when they use “wander” to describe their own experience of walking without direction, they reinforce the meaning in a real-world context.

- 3) Collaborative Learning: Collaborative learning argues that students build a stronger understanding when they negotiate meaning through discussion with others. This happens because social interaction exposes students to different viewpoints, helping them refine or correct their interpretations (Puntambekar, 2006). Evidence from learning theories shows that meaning-making becomes deeper when constructed socially rather than individually (Aljohani, 2017). For example, after guessing the meanings of unfamiliar words, students discuss their ideas in small groups and defend their interpretations. Through this process, they compare evidence from the text, correct misunderstandings, and finally agree on the most accurate meaning, demonstrating how collaboration strengthens vocabulary learning (Malik, 2024).
- 4) Reflective Learning: Reflective learning states that students achieve a deeper understanding when they evaluate their own learning progress. The reason is that reflection helps students identify what strategies worked, what confused them, and how they can improve in future tasks (Schraw et al., 2006). Research in constructivism shows that reflection enhances metacognitive awareness, which is essential for long-term vocabulary. For example, after completing vocabulary tasks, students write a short reflection explaining how they figured out each word and which context clues were most helpful. This reflection not only

reinforces what they learned but also guides them to choose better strategies the next time they encounter unfamiliar vocabulary (M. Teng, 2021).

Besides the cognitive foundation offered by constructivism, the effectiveness of GBLL is also influenced by motivational aspects that explain why students feel driven to continue engaging in game-based learning activities. Self-Determination Theory (SDT) is a motivational theory that emphasizes that a person will have strong intrinsic motivation when their three basic psychological needs are met: autonomy, competence, and social connection (McEown et al., 2019; Ryan & Deci, 2020; Wei, 2025).

- 1) **Autonomy:** The principle of autonomy claims that students become more motivated when they feel they have freedom and control over their learning choices. This is because autonomy gives students a sense of ownership, making learning feel personally meaningful rather than externally forced (McEown et al., 2019). Research on SDT consistently shows that greater autonomy leads to higher engagement and persistence in language learning (Noels et al., 2003; Ryan & Deci, 2000). In the context of GBLL, students can choose the game level or activity they want to start with, giving them flexibility to match the challenge with their comfort level (Plass et al., 2015). For example, when students decide whether to play an easy, medium, or hard word-matching level, they feel more in control, which increases their willingness to participate actively in vocabulary tasks (Mayer, 2014).
- 2) **Competence:** The concept of competence argues that students are more motivated when they feel capable, skilled, and confident in completing learning tasks (White, 1959). This happens because a sense of competence reinforces the belief that their efforts lead to success, which encourages further learning (Bandura & Walters,

1977). Studies on SDT show that immediate feedback and manageable difficulty levels are key factors that support students' competence in language learning (Hattie & Donoghue, 2016). In GBLL, students receive instant feedback when they answer vocabulary questions correctly, helping them quickly recognize their progress (Gee, 2004). For example, when a student earns points or badges after correctly identifying word meanings, they experience a sense of success, which strengthens their confidence and motivates them to continue learning (Deterding et al., 2011).

- 3) Social Connectedness (Relatedness): The need for social connectedness claims that students are more motivated when they feel accepted, supported, and connected to others in the learning environment. The reason is that learning becomes more enjoyable and less stressful when students feel they belong to a group. Evidence from SDT research shows that social interaction fosters emotional security and encourages greater effort in language learning (Muttaqin et al., 2025; Wei, 2025). In GBLL, students collaborate or engage in healthy competition with classmates, which naturally increases interaction and a sense of belonging. For instance, when students work together to complete a team-based vocabulary challenge, they share strategies, encourage each other, and feel socially connected, making the learning experience more enjoyable and motivating.

The alignment between GBLL and SDT claims that game-based learning environments can effectively increase motivation because they fulfill students' basic psychological needs. This works because GBLL provides autonomy through choices, competence through feedback, and social connection through interaction, three elements that SDT identifies as essential for motivation. Research shows that learning tools that satisfy these needs significantly boost students' effort and interest in vocabulary learning (Chen & Zhao, 2022; Fung et al., 2024). In

practice, when students choose levels (autonomy), receive instant feedback (competence), and interact with peers (relatedness), they experience a learning environment that feels enjoyable and self-driven. As a result, GBLL helps students feel freer, more capable, and more socially connected, leading to stronger motivation and better vocabulary retention.

b. The Benefits of Game-Based Language Learning (GBLL)

Game-Based Language Learning (GBLL) offers several significant benefits for students, particularly in vocabulary acquisition within EFL classrooms (Xu et al., 2020). GBLL creates a more dynamic and interesting learning environment than traditional approaches, which often depend on rote memory and repetitious exercises. GBLL promotes students to actively participate and maintain focus during the session by using game components such as challenges, points, rewards, team competition, and instant feedback (Hwang et al., 2023). These characteristics encourage learners to persevere even as the vocabulary items get harder by lowering boredom and fostering a sense of wonder. The key advantages of GBLL for EFL vocabulary learning will be further explained in the sections that follow based on these concepts.

- 1) **Active Learning and Critical Thinking:** GBLL helps students become active learners who think critically and solve problems because the activities require them to analyze situations, make decisions, and complete challenges that appear in the game. GBLL is known to enhance higher-order thinking since games force students to compare options, assess responses, and think rapidly throughout each activity. This theory is further supported by research that demonstrates how game-based activities foster critical thinking and problem-solving abilities. (Zhou, 2024b). Students naturally get more engaged in the learning process and build confidence since they feel comfortable trying answers in the

gaming environment without worrying about failing. For instance, students must quickly and accurately select vocabulary boxes in Baamboozle, which forces them to use past knowledge, verify meaning, and draw connections between words and context. (C. Xu et al., 2020). This practice trains their thinking, encourages discussion with teammates, and makes learning more enjoyable.

- 2) **Learning Motivation:** GBLL increases students' motivation because game elements such as points, rewards, and challenges make learning feel exciting and meaningful. According to the theory, games increase motivation because they make learners feel engaged and participated when they have objectives to meet, like achieving points or finishing levels. Compared to traditional memorizing methods, research finds that students who learn through games are more engaged, enthusiastic, and motivated to memorize vocabulary. (Li, 2021; Yu & Tsuei, 2023). Games also reduce boredom and help students stay focused because they enjoy competing with friends and working in teams. When students are motivated, they naturally repeat words, remember them longer, and show more confidence. For example, during Baamboozle, students try hard to answer vocabulary questions correctly so that their team gets points, and this competitive feeling helps them remember new vocabulary more effectively (Zhong, 2024).
- 3) **Interaction and Teamwork:** GBLL promotes interaction and teamwork because students must communicate, share ideas, and help each other during the game. The claim is that games strengthen communication, and the reason is that collaborative tasks encourage students to speak up and work together to win. Studies show that group games create a positive classroom environment where students feel comfortable expressing opinions

and supporting their peers (Yang & Li, 2024; Zuniga et al., 2024). Because speaking is less stressful in an enjoyable environment, these activities also motivate quiet students to participate more actively. Students develop trust with classmates, practice utilizing terminology in authentic interactions, and collaborate to make decisions. For instance, Baamboozle helps kids develop vocabulary, listen to others, and use English organically during teamwork by having them discuss answers before selecting a box.(Mahardhika et al., 2025; Mammadova, 2024).

- 4) **Memory and Understanding:** GBLL helps students remember vocabulary better because it uses visual aids, sound, context, and repetition that make new words easier to store in long-term memory (Bakhtiar & Auladi, 2025). Games improve vocabulary retention, and the reason is that repeated exposure to words during game rounds strengthens students' understanding and recall. Research supports this by showing that game-based vocabulary learning leads to better memory and deeper comprehension compared to simple memorization (Franciosi, 2017). Because the game offers significant context rather than individual categories, students also learn when and how to use words. Vocabulary becomes more helpful for speaking and writing jobs as a result. For instance, Baamboozle helps students comprehend the meaning and correctly apply vocabulary by having them match words with pictures or fill in sentence blanks. Repeated practice across levels also helps students remember the terms.(Al-Jamili et al., 2024).
- 5) **Adaptive and Flexible Learning:** GBLL is flexible and suitable for different learning levels because teachers can adjust the difficulty and type of tasks to match students' needs. GBLL supports personalized learning, and the reason is that digital games can provide tasks, hints, and feedback that fit each

student’s ability. Research shows that game-based activities help both beginners and advanced learners learn at their own pace while still feeling challenged (Chowdhury et al., 2024; Zuniga et al., 2024). Because students can begin with simpler levels and progress to more Challengesones when they feel prepared, this flexibility also lessens frustration. This method is especially beneficial for mixed-ability classrooms since it allows everyone to engage without feeling left behind. For instance, teachers might create Baamboozle with straightforward picture-based questions for novices and sentence-completion questions for more experienced students, enabling each group to progress comfortably and maintain motivation.

Table 1
Benefits of Game-Based Language Learning for Vocabulary Development and Learning Outcomes

No	Benefit	Research-Backed Outcomes
1	Activity & Critical Thinking	Active engagement, problem-solving, higher-order thinking
2	Motivation to Study	Increased motivation, enjoyment, reduced anxiety
3	Interaction & Cooperation	Enhanced teamwork, communication, social skills
4	Memory & Comprehension	Improved retention, comprehension, vocabulary acquisition
5	Adaptive & Flexible	Personalized, self-paced, supportive of diverse learners

Note. Compiled from “Game-Based Language Learning and Vocabulary Acquisition in EFL Classrooms,” by Xu et al. (2020), “Higher-Order Thinking and Problem-Solving in Game-Based Learning,” by Zhou (2024); “Motivation and Engagement in Digital Game-Based Vocabulary Learning,” by Li (2021) and Yu and Tsuei (2023); “Interaction, Teamwork, and Communication in GBLL,” by Yang and Li (2024) and Zuniga et al. (2024); “Vocabulary Retention and Comprehension Through Game-Based Activities,” by Franciosi (2017) and Bakhtiar and Auladi (2025); “Adaptive and Flexible Game-Based Learning for Diverse Learners,” by Chowdhury et al. (2024) and Zuniga et al. (2024).

3. Digital Game-Based Language Learning (DGBLL)

a. Definition and Characteristics of DGBLL

Digital Game-Based Language Learning (DGBLL) is a development of Game-Based Language Learning (GBLL) that uses digital technology to create a more interactive and dynamic language learning experience. This approach is based on the idea that digital platforms can change normal learning activities into something more lively and engaging for students. DGBLL is considered effective because it gives learners visual, audio, and interactive input that helps them understand and remember language better (J. G. Wu et al., 2025). While DGBLL encourages students to actively participate, make decisions, and solve problems during the learning process, traditional approaches frequently focus on memorization. Additionally, because students view games as enjoyable pastimes rather than assessments, researchers indicate that playing digital games can lessen learning anxiety. Students are more willing to try new vocabulary or grammar in a more laid-back setting since they don't fear making mistakes. (Rahmatika et al., 2025). Overall, DGBLL creates a meaningful learning experience that combines fun with clear learning goals.

Before going into the characteristics of digital game-based language learning, it is crucial to recognize that DGBLL contains more than just using gadgets or digital resources. It focuses on how technology creates an organized, stimulating, and encouraging learning environment that supports students in improving their linguistic abilities.(Patra et al., 2022). DGBLL combines good teaching principles with game elements so that students are not only playing, but also learning in a focused and meaningful way. Because it can be adapted to different levels and learning styles, DGBLL offers high flexibility for both teachers and students. The following are the main characteristics of DGBLL along with clear examples.

- 1) **Interactive and Immersive Learning:** Interactive and immersive learning means that students take part directly in the digital environment and interact with the content in an active way. In DGBLL, students often communicate with characters, complete missions, or take roles that look like real-life situations (Bai, 2018). This kind of environment helps reduce anxiety because learning does not feel like a test, and students can explore the language more freely (Ha, 2021). For example, in a digital role-play game, students may be asked to buy food, ask for directions, or have simple conversations using the target language. These activities make students use vocabulary and expressions naturally while solving problems in the game. They also stay focused because the tasks are meaningful and connected to a story. As a result, students understand vocabulary better and remember it longer because they use it in real situations.
- 2) **Focus on Language Skills:** Another important characteristic of DGBLL is that it can support many different language skills, including vocabulary, grammar, reading, writing, listening, and speaking (Kazu & Kuvvetli, 2023). Many digital games focus on

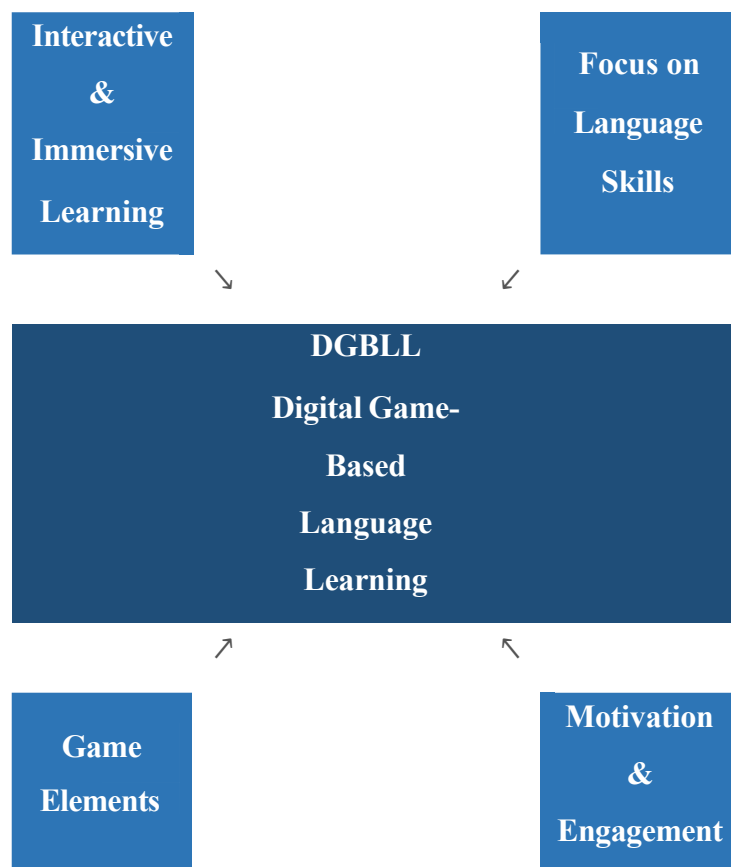
vocabulary because it is the foundation of language learning and can be practiced easily through repetition and pictures. However, games can also train other skills through different types of activities. For example, story-based games can improve reading skills, while games with voice instructions help students practice listening. In some games, students need to type sentences or choose the correct grammar form, which supports writing and grammar learning. By offering visual, audio, and text support at the same time, DGBLL allows students to learn through multiple senses. This makes the learning experience deeper and more complete (Alyaz & Sinem, 2016).

- 3) **Game Elements:** Game elements are a key part of DGBLL because they help keep students interested and involved. Elements like points, levels, badges, timers, and rewards make learning feel more exciting and give students a sense of achievement. These features also give instant feedback, so students quickly know if their answer is correct or (Ray & Ilangoan, 2024). For example, in a digital vocabulary quiz, the game immediately shows the right answer when students make a mistake, so they learn faster. Levels and missions provide a clear path of progress, helping students feel challenged but not stressed. Story elements also make students emotionally connected to the game, which helps them remember the vocabulary that appears in it. In this way, game elements support both motivation and learning.
- 4) **Motivation and Engagement:** Motivation and engagement are very important in DGBLL because students learn better when they enjoy the process (Hung, 2017). The fun and competitive nature of games creates a relaxed atmosphere that is different from traditional learning. In this environment, students are more willing to try, repeat tasks, and spend more time practicing the

language (Zhong, 2024). For example, students may repeat the same vocabulary level several times because they want a higher score, and this repeated practice improves their memory naturally. DGBLL also increases intrinsic motivation because it gives students freedom to choose missions, explore the game world, or create strategies. The instant results and clear progress also help students see their improvement quickly. This makes them more confident, less afraid of mistakes, and more consistent in practicing the language (Li, 2021).

Figure 1

Characteristics of Digital Game-Based Language Learning (DGBLL)



Note. The figure illustrates the characteristics of Digital Game-Based Language Learning (DGBLL) as discussed in this study, based on Bai (2018), Ha (2021), Kazu and Kuvvetli (2023), Ray and Ilangovan (2024), Hung (2017), Zhong (2024), and Li (2021).

b. Benefits of Digital Game-Based Language Learning (DGBLL)

There are some important benefits to using digital games for language acquisition. Students' increased excitement for language study is one of the key advantages (Casañpitarch, 2018). Students are more interested and willing to learn for longer periods of time when they play interactive digital games. Because digital games offer a laid-back, low-risk learning environment, they may also lower students' anxiety levels, which frequently impair language skills. This helps students feel more at ease using the target language without worrying about failing. (Wahyudi et al., 2024).

Additionally, students' language learning becomes more relevant as a result of the contextual and participatory learning experiences that digital games provide. Students encounter the language in real-life simulations, story-based missions, or problem-solving exercises that mirror circumstances they could encounter outside of the classroom rather than learning vocabulary or grammar in isolation. (C. J. Wu et al., 2014). Students learn how to employ words organically in communication as well as their meanings thanks to this contextual presentation. Students are kept actively engaged throughout the course by the interactive elements of digital games, which include selecting activities, investigating locations, and reacting to characters. High interactivity makes learning more fun, dynamic, and effective by encouraging students to interact, collaborate, and negotiate meaning with peers. This boosts students' confidence and language use since they feel like they are "doing" something rather than merely memorizing.

This contextual presentation helps students understand not only the meaning of words but also how to use them naturally in communication. The interactive features of digital games such as choosing actions, exploring environments, and responding to characters keep students actively involved throughout the lesson. High interactivity encourages students to communicate, cooperate, and negotiate meaning with peers, which strengthens both their confidence and language use because students feel like they are “doing” something instead of just memorizing, learning becomes more enjoyable, dynamic, and productive (Chowdhury et al., 2024).

Another important benefit of digital games is their ability to provide immediate feedback and real-time evaluation, which plays a crucial role in language learning. When students receive instant responses to their answers, whether correct or incorrect, they can quickly identify their mistakes, understand why they occurred, and make improvements right away (Nkhoma et al., 2014). This immediate correction process prevents misunderstandings from becoming long-term errors and supports the development of accurate language use. In addition, many digital games automatically record student performance, such as which items they answer correctly, which tasks they struggle with, and how long they take to complete each challenge. With this performance data, teachers gain valuable insights into students’ strengths and weaknesses and can adjust their instruction to better meet students’ needs (Rahmatika et al., 2025). As a result, digital games not only make learning fun but also function as effective assessment tools that support targeted teaching and continuous language development.

Digital Games for Vocabulary Learning

Playing digital games is a fun and efficient way to acquire language. Digital games include several features that make it easier for students to internalize new terminology, including contextual learning, repetition, and instant feedback.(Hazar, 2020). By exposing students to

words repeatedly in a variety of circumstances, repetition improves memory. While contextual learning puts terminology in relevant contexts, improving comprehension and retention of the content, immediate feedback enables learners to immediately remedy their mistakes (Amara et al., 2024). Therefore, compared to what is usually accomplished through traditional pedagogical approaches, language acquisition through digital games can be made more engaging and participatory.

Popular word-learning games like Baamboozle, Kahoot!, Quizizz, and Wordwall take advantage of these features to increase learners' participation and retention. Baamboozle presents vocabulary quizzes in an engaging and competitive manner that encourages active participation (Qureshi & Khatoon, 2023). Kahoot! And Quizizz are two well-known quiz platforms that provide fast-paced activities with instantaneous scoring and feedback, helping maintain students' motivation (Zahara et al., 2025). Through Word Wall, educators may create a variety of customized vocabulary exercises that are appropriate for a range of learning requirements. In addition to strengthening vocabulary, these activities foster student engagement, teamwork, and healthy competitiveness in the classroom.(Hidayaty et al., 2022).

Empirical studies support the effectiveness of digital game-based learning for vocabulary acquisition. Research shows that students who learn vocabulary using digital games achieve higher retention rates and faster progress compared to those using conventional methods (Nazleen et al., 2015). Additionally, the anxiety associated with learning a language is reduced by digital games, which provide a fun and stress-free environment that increases learner confidence, involvement, and sustained engagement. These games' instantaneous feedback and frequent contextual exposure reinforce vocabulary acquisition, making game-based training a potent tool in contemporary language education.(Ratnalestari, 2023).

c.Challenges and Considerations in Implementing DGBLL

Although Digital Game-Based Language Learning has several advantages, implementation in educational settings faces several challenges that must be addressed carefully. First of all, not every school is equipped with appropriate and consistent technological support, not all students are digitally literate enough to actively engage with online learning games (Kaimara et al., 2021). This may cause learning inequality and lessen the overall effectiveness of DGBLL implementation. Thus, the readiness of facilities and technological support is quite crucial for any successful adoption (Greipl et al., 2020).

Another challenge is about teachers' readiness and competence to design and facilitate digital game-based instruction. Many educators still feel at a loss when it comes to adapting learning materials to digital platforms or assessing learning outcomes derived from game-based activities, DGBLL will be successful to the extent that careful pedagogical planning and teachers' ability to use games as part of instructional strategies, not supplementary ones, are ensured (Dashtestani, 2022). Thus, professional training and enhancing teachers' digital competencies are crucial for the effective and sustainable implementation of DGBLL (Ngo, 2024).

Besides technical and pedagogical considerations, psychological and social factors are equally significant in DGBLL implementation. Some students may easily get distracted or focus too much on the entertaining aspects of games, which results in learning objectives not being as effectively attained as possible (Rosyada & Apoko, 2023). Furthermore, not all digital games conform to students' cultural contexts or even learning needs, which might reduce the relevance of instruction. Therefore, the selection and design of digital games should balance educational value and enjoyment. Proper integration of DGBLL, combined with support by teachers, and

designing contextually appropriate games can promote maximum utilization of this tool in becoming an effective, interactive, and inclusive means for language learning (Hou et al., 2022).

4. The Baamboozle Game Platform

a. Overview of Baamboozle

Baamboozle is a digital game-based platform that facilitates interactive learning without requiring students to register or create personal accounts. As a result, it is very accessible and easy to use in a variety of educational contexts (Wulandari et al., 2024) . Teachers may easily create game-oriented learning activities with its useful and user-friendly interface, making the teaching process more dynamic and captivating. Baamboozle is an educational application that promotes active student participation with features including interactive question boards, team-based challenges, and quizzes. In addition to making the classroom exciting, these game components encourage students to participate more regularly and self-assuredly.(Ramadhan et al., 2024). This approach aligns with the broader view that interactive learning environments increase motivation, enhance participation, and support deeper understanding of learning materials, particularly when lessons are presented through enjoyable and student centred activities. In this sense, Baamboozle serves not merely as an entertainment medium but as a pedagogical tool that fosters cognitive engagement and supports effective learning. Moreover, Baamboozle can be categorized as a game-based language learning tool because it allows students to access quizzes and learning tasks anytime and anywhere using their own digital devices, such as smartphones, laptops, or tablets (Rahayu & Irdiansyah, 2025). Students can learn outside of the rules of the classroom due to this high level of accessibility, which improves learning flexibility. In 21st-century education, when students are expected to study

independently and participate in customized learning routines, this flexibility is particularly relevant. Baamboozle helps students practice language ideas in a way that lowers fear, encourages regular exposure to vocabulary and grammar, and offers instant reinforcement by combining repetition, diversity, and interactive aspects. These qualities make learning more pleasurable and help pupils maintain their motivation while gaining confidence. In the end, the platform facilitates efficient learning in a creative and inclusive manner, fitting in nicely with the requirements of learners who are technologically savvy (Rajendran et al., 2025).

Overall, Baamboozle is a digital game-based learning tool that integrates essential game elements such as points, challenges, and interactive visuals to strengthen student engagement and participation throughout the learning process. Its adaptability makes it suitable for teachers and students across various levels of education, from primary school to university settings, thereby broadening its pedagogical impact. In the context of digital education, Baamboozle plays an important role in helping teachers create more dynamic, collaborative, and student centred learning environments (Ramadhan et al., 2024). The platform's features facilitate communication skills development, teamwork, and two-way interaction all of which are critical components of contemporary education. Tools like Baamboozle are becoming more and more useful for enhancing learning experiences through innovative, interactive, and collaborative techniques as technology continues to develop and transform the classroom. Baamboozle thus makes a substantial contribution to the optimization of educational procedures in the digital age. (Susanti et al., 2024).

b. Baamboozle Features Facilitating Vocabulary Learning

Baamboozle provides a variety of multimedia-based features that support vocabulary learning through interactive and engaging activities. The platform allows the teacher to attach visuals such as

images, short definitions, and example sentences that illustrate word meaning and usage in context (Lestari et al., 2024). These multimodal learning features enhance students' understanding by stimulating multiple senses and are supported by research suggesting that multimodal input strengthens vocabulary retention and comprehension (Kostons et al., 2011).

The random score system, which allows equal possibilities and fair competition independent of the students' position or level of game familiarity, is another crucial component (Nurmawati et al., 2025). Additionally, Baamboozle is highly adaptable to a variety of learning environments and teaching modalities because it can be used on a variety of devices to support both synchronous classroom activities and asynchronous independent learning by students at a time and pace convenient for them (Afidah et al., 2022).

Additionally, by promoting systematic review and spaced repetition, the platform's quiz repetition scheduling enhances long-term vocabulary retention. This feature strengthens learners' recall of previously taught words, which is a crucial mechanism in second language acquisition (W. Chen, 2025). As a result, Baamboozle serves as an efficient, pedagogically structured language-learning platform with deliberate reinforcement mechanisms rather than merely a game-based tool (Lestari et al., 2024). In summary, a number of Baamboozle's features greatly aid in vocabulary growth in language learning environments. The main characteristics of Baamboozle and their particular advantages for vocabulary learning are highlighted in the table below.

Table 2*Baamboozle Features and Their Benefits for Vocabulary Learning*

No.	Feature	Benefits for Vocabulary Learning
1	Customizable Quiz	Teachers can create question sets fully tailored to specific vocabulary lists, themes, or textbook chapters, ensuring that learning materials are highly relevant to the curriculum and students' needs.
2	Media Support (Images and Text)	Teachers can attach visuals such as images, short definitions, and example sentences that illustrate word meaning and usage in context. These multimodal features enhance understanding by stimulating multiple senses, which strengthens vocabulary retention and comprehension (Kostons et al., 2011; Lestari et al., 2024).
3	Varied Question Formats	Supports multiple question types such as multiple choice, short answer, and matching. These formats allow vocabulary to be assessed from various aspects: meaning (definition), form (spelling/writing), and use (sentence context).
4	Random Score System	Enables equal opportunities and fair competition regardless of the sequence of students or their prior familiarity with the game, making the learning experience more equitable (Nurmawati et al., 2025).
5	Cross-Device	Can be used on different devices to facilitate

Accessibility	both synchronous classroom activities and asynchronous independent learning, making Baamboozle highly adaptable to various learning environments and teaching modalities (Afidah et al., 2022).
6 Quiz Repetition & Spaced Review	The platform's quiz repetition scheduling supports long-term vocabulary retention by encouraging systematic review and spaced repetition, reinforcing learners' memory of previously learned words—an important mechanism in second language acquisition (W. Chen, 2025).

Note. Compiled from studies on Baamboozle as a game-based vocabulary learning platform. Feature descriptions are based on Lestari et al. (2024), Nurmawati et al. (2025), Afidah et al. (2022), and W. Chen (2025). The benefit of multimodal support is informed by Kostons et al. (2011).

c. Previous Studies on Baamboozle

Several empirical studies show that the use of Baamboozle as a learning tool has positive effects in particular at learning English as a Foreign Language. Students were inspired by the interactive Baamboozle quiz system and felt more enthusiastic while practicing new words when utilizing Baamboozle on a daily basis. As previously indicated, students were also better able to retain new vocabulary and apply it in subsequent quizzes. (Fitriani Fitriani et al., 2025).

It was pointed out that emphasized the perception of students toward Baamboozle-the majority showing positive feedback because the platform is easy to use and enjoyable to access (Wahyudi et al., 2024). An enjoyable feeling throughout learning and gaining easy access directly encourages

higher vocabulary acquisition since students will be more focused, alert, and never get bored. A similar finding was revealed by pointing out that its high level of motivation makes Baamboozle an effective and enjoyable learning material for teachers to use (Barcroft, 2015).

There exist several barriers, however, which have also been pointed out in the studies associated with using Baamboozle, namely, the limited variety of question types, making Baamboozle less flexible in catering to various learning styles and pedagogical needs (Alfiah & Sholihah, 2025). Once more, reliance on dependable internet connectivity is detrimental to pupils in areas with underdeveloped technology infrastructure. However, research generally indicates that Baamboozle has emerged as a promising learning tool to improve social interaction, teamwork, and active student engagement overall. It is anticipated that future feature development will take these disadvantages into account to make Baamboozle more practical and accessible. (Supriani et al., 2022).

d. The Implementation of Baamboozle in Vocabulary Learning Activities

The successful implementation of Baamboozle in vocabulary learning activities requires thoughtful pedagogical planning that aligns game mechanics with explicit instructional objectives. Effective integration begins well before the classroom session, with the teacher carefully selecting or designing game content that directly corresponds to the target vocabulary items identified in the curriculum. This preparatory phase is not merely technical but fundamentally pedagogical, as the quality of vocabulary questions, the accuracy of contextual clues, and the appropriateness of multimedia supports collectively determine the extent to which the game will serve as a meaningful learning experience rather than mere entertainment (Lestari et al., 2024). Teachers must therefore approach game preparation with the same rigor and intentionality applied to lesson plan development, ensuring that each question targets specific lexical knowledge dimensions including word form, meaning, collocations, and contextual usage.

In the pre-activity stage, effective teachers typically begin by activating students' prior vocabulary knowledge through brief warm-up activities such as brainstorming, word association tasks, or reviewing previously learned

vocabulary in context. This activation serves to prime students' cognitive schemas, making new vocabulary input more likely to be retained and connected to existing linguistic knowledge. Subsequently, the teacher introduces the Baamboozle platform to students, explains the game rules, divides students into teams, and provides clear instructions regarding expected behavior during the activity (Ramadhan et al., 2024). Establishing clear expectations at this stage is essential for maintaining a productive learning atmosphere, as without structured guidance, game-based activities can easily devolve into competitive entertainment with minimal linguistic focus.

During the main activity phase, teams take turns selecting questions from the Baamboozle game board. Each correctly answered question earns a designated number of points, though the platform's random scoring feature introduces an element of unpredictability that keeps all teams engaged regardless of their current standing in the game. As students encounter unfamiliar vocabulary items, they must draw upon contextual clues, word structure knowledge, and collaborative team discussion to arrive at correct answers (Nurmawati et al., 2025). The teacher circulates the room during this phase, monitoring student responses, providing targeted scaffolding when teams demonstrate systematic misunderstanding, and documenting vocabulary items that prove consistently problematic for later instructional attention. This real-time observation provides invaluable formative assessment data that can inform subsequent lesson planning and vocabulary instruction.

The pedagogical value of Baamboozle implementation is further enhanced through deliberate post-game activities designed to consolidate vocabulary learning and extend lexical knowledge beyond the game context. Research in second language acquisition consistently demonstrates that vocabulary learned through games requires subsequent meaningful use in authentic communicative contexts to achieve long-term retention and productive mastery (W. Chen, 2025). Therefore, effective teachers follow Baamboozle sessions with activities such as sentence construction tasks using target vocabulary, short writing assignments that incorporate new words, or structured discussions where students must deploy recently encountered vocabulary in meaningful communication. These follow-up activities bridge the gap between receptive vocabulary recognition demonstrated

during the game and the productive vocabulary use required for genuine communicative competence.

Furthermore, the implementation of Baamboozle can be adapted across various instructional configurations to accommodate diverse classroom contexts and learning objectives. In synchronous face-to-face settings, the game functions as a whole-class interactive activity projected on a shared screen, fostering immediate social interaction and collaborative vocabulary negotiation among teammates (Afidah et al., 2022). In blended or hybrid learning environments, students can access Baamboozle games independently on personal devices, enabling asynchronous vocabulary practice outside regular classroom hours. This flexibility makes Baamboozle particularly valuable in educational systems where students have varying levels of access to classroom instruction, as the platform supports self-directed vocabulary learning that can supplement formal instruction without requiring constant teacher facilitation.

The assessment dimension of Baamboozle implementation also deserves careful consideration by teachers aiming to maximize learning outcomes. While the platform's scoring system provides immediate feedback on vocabulary recognition accuracy, teachers should supplement this automated assessment with more nuanced evaluation of students' developing vocabulary knowledge. Systematic observation during game play, collection of student responses to post-game writing tasks, and periodic formal vocabulary assessments provide a more comprehensive picture of students' vocabulary development than game scores alone can reveal (Wulandari et al., 2024). By integrating Baamboozle game performance data with multiple forms of vocabulary assessment, teachers can develop a nuanced understanding of individual students' vocabulary learning trajectories and identify students who may require additional instructional support to achieve curriculum objectives.

e. The Advantages of Using Baamboozle for Vocabulary Learning

The adoption of Baamboozle as a vocabulary learning tool offers a constellation of interconnected advantages that collectively contribute to more effective, engaging, and inclusive language learning experiences. Chief among these advantages is the platform's demonstrated capacity to significantly reduce language learning anxiety, a psychological barrier that has been extensively

documented in second language acquisition research as one of the most significant impediments to vocabulary development and communicative competence (Rajendran et al., 2025). By embedding vocabulary practice within an inherently playful game context, Baamboozle creates psychological safety that encourages even the most reticent learners to participate actively, attempt answers without fear of individual public failure, and engage in the kind of productive vocabulary processing that leads to genuine learning. The team-based structure further diffuses individual performance anxiety, as students experience both success and failure as collective rather than personal outcomes.

The motivational advantages of Baamboozle for vocabulary learning are particularly significant in the context of English as a Foreign Language instruction, where sustaining student engagement over extended vocabulary learning sequences presents a persistent pedagogical challenge. Traditional vocabulary instruction methods, including rote memorization, vocabulary list drilling, and decontextualized translation exercises, frequently fail to maintain student motivation beyond initial learning sessions, resulting in poor long-term vocabulary retention (Fitriani Fitriani et al., 2025). Baamboozle addresses this motivational deficit by incorporating game design principles including points, challenges, visual rewards, and competitive elements that tap into intrinsic motivational systems. Students who might disengage from conventional vocabulary exercises often demonstrate sustained attention and genuine enthusiasm during Baamboozle sessions, creating extended opportunities for vocabulary encounters that research consistently links to successful lexical acquisition.

Another significant advantage of Baamboozle lies in its multimodal learning affordances, which align with contemporary understanding of how vocabulary knowledge is most effectively constructed and retained in long-term memory. The platform enables teachers to present vocabulary items through simultaneous visual, auditory, and textual channels, providing multiple encoding pathways that strengthen neural representations of new lexical items (Kostons et al., 2011). When students encounter a target word accompanied by a contextual image, a definitional sentence, and an auditory pronunciation, they create richer, more interconnected memory traces than those formed through single-channel

exposure. This multimodal approach is particularly beneficial for vocabulary learning because lexical knowledge is itself inherently multimodal, encompassing not only semantic meaning but also phonological form, orthographic representation, syntactic behavior, and collocational patterns.

The collaborative learning dynamics generated by Baamboozle's team-based structure represent another substantial advantage for vocabulary development. When students work together in teams to answer vocabulary questions, they engage in a form of collaborative language processing that generates significant learning opportunities through peer explanation, vocabulary negotiation, and collective problem-solving (Ramadhan et al., 2024). Students who possess partial knowledge of a target vocabulary item can benefit from teammates who provide additional contextual information, while students who confidently answer questions reinforce their own vocabulary knowledge through the act of explanation and peer teaching. This collaborative dimension transforms vocabulary learning from a solitary cognitive task into a social communicative activity, aligning game-based practice with the fundamentally social nature of language use and acquisition.

Baamboozle also offers the practical advantage of exceptional accessibility that enables vocabulary learning to extend beyond the spatial and temporal boundaries of formal classroom instruction. The platform's device-agnostic design allows students to access vocabulary games on smartphones, tablets, and laptops without requiring software installation or account creation, dramatically reducing the technical barriers that often limit the adoption of educational technology in resource-constrained educational contexts (Rahayu & Irdiansyah, 2025). This accessibility is particularly relevant in 21st-century educational contexts where students are expected to take increasing responsibility for independent learning outside scheduled class time. Teachers can assign Baamboozle vocabulary games as homework activities, enabling students to engage in meaningful vocabulary practice at times and in locations that suit their individual learning schedules, thereby increasing the total volume of vocabulary exposure and practice beyond what classroom time alone can provide.

The immediate corrective feedback mechanisms built into the Baamboozle

platform provide a further pedagogical advantage by enabling students to identify and address vocabulary misconceptions in real time rather than waiting for delayed teacher correction (W. Chen, 2025). Immediate feedback has been consistently identified in language learning research as a crucial component of effective vocabulary instruction, as it prevents the consolidation of incorrect lexical knowledge in long-term memory and provides learners with accurate information precisely at the moment when they are most cognitively primed to process and integrate it. The Baamboozle platform delivers this feedback through its game mechanics in a manner that feels natural and game-appropriate rather than punitive, preserving the positive emotional climate that supports ongoing engagement and further vocabulary exploration. This combination of immediate feedback with a positive affective learning environment represents a particularly powerful configuration for supporting vocabulary acquisition across diverse learner populations.

f. The Challenges and Considerations in Applying Baamboozle for Vocabulary Learning

Despite the numerous pedagogical advantages associated with Baamboozle as a vocabulary learning tool, educators must also carefully consider a range of practical and conceptual challenges that can limit the platform's effectiveness if left unaddressed. A thorough understanding of these challenges is essential for teachers who wish to integrate Baamboozle into their vocabulary instruction in a manner that maximizes educational outcomes while minimizing potential drawbacks. The challenges associated with Baamboozle implementation can be broadly categorized across technological, pedagogical, and equity dimensions, each of which requires distinct anticipatory planning and responsive instructional strategies to navigate successfully (Supriani et al., 2022).

The most frequently documented challenge in the empirical literature on Baamboozle and similar digital game-based learning platforms concerns the technology's dependence on reliable internet connectivity, which cannot be assumed in many educational contexts worldwide. Schools located in rural areas, underserved urban communities, or developing nations frequently lack the consistent high-speed internet infrastructure that optimal Baamboozle

functionality requires, creating situations where technical disruptions interrupt game flow and undermine the engaging learning environment that constitutes the platform's primary pedagogical advantage (Alliah & Sholihah, 2025). When internet connectivity is unstable, students may experience frustrating delays in game loading, score display errors, and disconnections that introduce negative affect into what should be a positive learning experience. Teachers implementing Baamboozle in contexts with unreliable internet infrastructure must therefore develop contingency plans for managing technical disruptions while maintaining productive learning engagement and must consider whether the platform is appropriate given local technological conditions.

A second significant pedagogical challenge concerns the limited variety of question formats available within the Baamboozle platform, which may restrict teachers' ability to target the full spectrum of vocabulary knowledge dimensions that comprehensive lexical competence requires. The platform's primary reliance on multiple-choice and short-answer question formats effectively assesses recognition-level vocabulary knowledge, which represents only one dimension of the multifaceted lexical competence that fluent language users possess (Afidah et al., 2022). Deeper aspects of vocabulary knowledge including productive use of words in extended discourse, understanding of subtle connotative meanings, mastery of complex collocational patterns, and ability to deploy vocabulary appropriately across varied registers cannot be adequately assessed or practiced through the question formats that Baamboozle currently supports. This limitation means that Baamboozle, while valuable for vocabulary recognition practice, cannot serve as a comprehensive vocabulary instruction system and must be integrated within a broader pedagogical framework that addresses all dimensions of lexical knowledge development.

The competitive dynamics inherent in Baamboozle's game structure, while generally motivating for many students, present a nuanced challenge for teachers serving diverse learner populations with varying relationships to competition and academic risk-taking. Research in educational psychology suggests that competitive learning environments can produce significantly different motivational effects across student subgroups, with highly competitive students often thriving while less competitive or more anxious

learners may experience heightened stress that impairs rather than supports vocabulary learning (Nurmawati et al., 2025). Students who come from educational backgrounds that emphasize collaborative rather than competitive learning, students with particular vulnerability to performance anxiety, and students who consistently underperform relative to peers may find that Baamboozle's competitive mechanics create a hostile affective environment that inhibits rather than encourages vocabulary risk-taking and participation. Teachers must therefore be attentive to individual student responses to competitive game dynamics and be prepared to modify implementation strategies accordingly.

Another consideration that teachers must address concerns the risk that students may prioritize competitive game performance over genuine vocabulary learning, adopting strategic test-taking behaviors that optimize point accumulation without requiring deep processing of vocabulary meaning and usage. In highly competitive classroom climates, students may focus primarily on quickly selecting answers based on superficial recognition cues, word length, or elimination strategies rather than engaging in the meaningful semantic processing that promotes long-term vocabulary retention (Wulandari et al., 2024). This surface engagement pattern can create an illusion of vocabulary learning, as students successfully accumulate game points while failing to develop the robust lexical knowledge that vocabulary instruction ultimately aims to build. Teachers can mitigate this challenge by explicitly discussing with students the distinction between game performance and genuine vocabulary learning, designing follow-up activities that require productive vocabulary use beyond recognition level, and structuring the game to encourage team discussion and collective reasoning rather than rapid individual responses.

The challenge of ensuring equitable participation across all students during Baamboozle sessions also warrants careful consideration, particularly in heterogeneous classrooms where students demonstrate significant variation in English language proficiency, technological familiarity, and academic confidence. In team-based game formats, more proficient or dominant students may consistently assume responsibility for answering questions, leaving less

proficient teammates as passive observers whose vocabulary learning opportunities are substantially diminished (Rajendran et al., 2025). Teachers must therefore implement deliberate participation structures that ensure all students engage actively with vocabulary content during game sessions, such as requiring teams to designate a different spokesperson for each question, implementing individual response accountability mechanisms, or creating differentiated team compositions that distribute proficiency levels strategically. Additionally, the potential digital divide between students with extensive prior experience with digital game interfaces and those with limited technological exposure may create participation inequities that require teacher attention and targeted support to address effectively.

Finally, teachers implementing Baamboozle for vocabulary instruction must carefully consider the alignment between game content and broader curriculum objectives to ensure that game-based practice contributes meaningfully to overall vocabulary learning goals rather than displacing more comprehensive forms of vocabulary instruction. The inherent entertainment value and student enthusiasm associated with Baamboozle can sometimes lead to overreliance on the platform as a primary vocabulary teaching tool, potentially reducing instructional time allocated to the explicit vocabulary teaching, extensive reading, and productive language use activities that research identifies as essential components of comprehensive vocabulary development programs (Lestari et al., 2024). Effective implementation of Baamboozle requires teachers to maintain a clear pedagogical vision of the platform's role as one component within a coherent, multi-faceted vocabulary instruction framework, using game-based practice to reinforce and review vocabulary initially introduced through other instructional methods while ensuring that the broader vocabulary curriculum maintains appropriate depth, breadth, and complexity.

5. Theoretical Framework Technology Acceptance Model (TAM)

a. The Concept of Perception in Educational Technology

The Technology Acceptance Model (TAM) was developed by Fred Davis in 1989 to explain why people decide to accept or reject new

technology (F. D. Davis, 1989). This model became popular because it gives a simple but strong explanation of how people think before using digital tools. TAM suggests that people do not only use technology because it is available, but because they believe it is helpful and easy to use (F. Davis, 2011) This approach aids educators, learners, and educational institutions in comprehending their own emotions and choices when utilizing technology for instructional purposes. For instance, TAM helps explain why some teachers are enthusiastic about using learning apps while others are apprehensive or uncertain. Since digital tools are now a major component of contemporary classrooms, the model can also forecast whether technology will be used in the future by examining users'

intentions and beliefs. TAM is frequently used to research online learning, learning platforms, digital games, and many other educational technologies. generally. TAM demonstrates that comprehending people's beliefs is essential to comprehending how they use technology.(Sum et al., 2011).

TAM has several important parts that describe how people think and feel before they decide to use technology. These parts work together to show the full process, starting from users' first impressions until their final decision to use the tool regularly. In schools, these factors matter because many teachers and students have different levels of confidence and experience when it comes to technology use (F. D. Davis & Granić, 2024). TAM helps explain why some people feel at ease while others feel anxious or uncertain. Before delving into each component in detail, it is crucial to consider TAM as a system that links beliefs, attitudes, and intents. Knowing the key components of TAM also helps teachers create learning activities that better suit students' requirements. In order to make the concepts of Perceived Usefulness (PU) simpler to understand, the following sections provide a more detailed description of each major component of TAM, followed by examples from classroom settings: The degree to which a person thinks a technology can enhance their performance or learning outcomes is known as perceived usefulness. (Davis, 1989).

If users feel that a tool helps them do tasks faster, understand better, or become more organized, they will be more willing to use it. PU is the strongest factor in TAM because people usually do not want to waste time with tools that feel unhelpful (Sriwardiningsih, 2021). For example, a teacher may feel that Google Classroom is useful because it allows them to give assignments, collect work, and give feedback easily without using paper. Students may find a vocabulary learning app useful because it gives clear meanings, example sentences, audio pronunciation, and short quizzes in one place. When people see real benefits, they tend

to trust the technology and depend on it more in daily learning activities. PU also increases motivation because users feel that they are saving energy and improving their performance. In the classroom, high PU often leads to more consistent technology use over time (Sum et al., 2011).

- 1) **Perceived Ease of Use (PEOU):** Perceived Ease of Use refers to how easy a person feels it is to learn and operate a technology (Davis, 1989). A tool that is simple, clear, and not confusing usually makes users feel more confident. When technology feels difficult, people often avoid it even if it is useful (Davis, 2011). As an example, Baamboozle is popular among educators because to its ease of use, navigation, and opening without the need for specialized training. Additionally, because they lessen stress and uncertainty, students favor apps with straightforward menus, unambiguous directions, and an easy-to-use layout. Users may grow frustrated and quit early if a tool needs a lot of steps or a high level of technical expertise. Easy-to-use instruments tend to feel more useful, therefore PEOU also affects PU. For instance, students may believe that a learning software helps them study more effectively if it is easy to use. Easy-to-use technology is therefore more likely to be embraced and utilized frequently in the classroom. (Santosa et al., 2021).
- 2) **Attitude Towards Use (ATU):** Attitude Toward Use is a person's overall feeling positive or negative—toward using a technology (Davis et al., 1989). Even if a tool is useful and easy to use, people may avoid it if they have a negative attitude toward technology in general (Sriwardiningsih, 2021). Emotional responses, self-assurance, and prior experiences all influence attitude. For instance, a teacher may be reluctant to use new tools, even if they are basic, if they had a negative experience with unreliable internet platforms. Students who like interactive apps and digital games, on the other hand, typically use learning technology with enthusiasm. Users that have a positive outlook are more inquisitive and open to trying out

new features. Resistance, hesitation, or avoidance are frequently the results of a negative mindset. Positive attitudes make learning activities in the classroom run more smoothly since both teachers and students feel more comfortable utilizing technology. Because it serves as a link between beliefs and real conduct, ATU is significant.(Fung et al., 2024).

- 3) Behavioral Intention (BI): Behavioral Intention refers to a person's plan or willingness to use a technology again in the future (Davis, 1989). BI is important because it usually predicts actual behavior. People who intend to use a tool often end up using it consistently (Sriwardiningsih, 2021). BI is formed by PU and ATU; individuals will want to use a tool again if they find it useful and feel good about it. For example, a teacher can choose to keep using a digital assessment tool the following semester if they discover that it facilitates grading. Because the games make learning more enjoyable and interesting, students could claim they want to continue using Quizizz or Baamboozle. In addition to short-term interest, BI also represents long-term acceptance. Technology integration in the classroom becomes more reliable and sustainable when BI is strong.(Venkatesh & Bala, 2008).
- 4) External Variables: External Variables are factors outside the main TAM components that influence PU and PEOU before a person forms their attitude and intention (Sriwardiningsih, 2021). These factors include digital confidence (self-efficacy), social influence, system quality, and enjoyment. For example, students who feel confident using digital devices will find new apps easier to learn, which raises their PEOU. Social impact is also important. When teachers or classmates promote the usage of an app, others tend to follow suit. Because even helpful products can become irritating to use due to delayed loading, errors, or unstable connections, system quality is crucial. Acceptance is also highly influenced by enjoyment; students are more

likely to stick with a learning game if they find it enjoyable and entertaining. These outside influences mold the user's initial perceptions and affect how they assess the technology right away. Understanding external factors in the classroom enables educators to accommodate students from all backgrounds and comfort levels.(Sánchez-Prieto et al., 2019).

Over the years, TAM has been expanded by adding external factors such as self-efficacy, social influence, system quality, task fit, and perceived enjoyment (Venkatesh & Bala, 2008). These additional variables help researchers understand more complex behaviors in modern learning environments where technology changes quickly. Virtual learning, hybrid learning, learning management systems (LMS), digital games, mobile apps, and even cutting-edge developments like artificial intelligence and metaverse-based learning have all made extensive use of this extended TAM. By identifying the elements that support or impede the use of technology in the classroom, the model enables educators to make better plans and lessen obstacles (Santosa et al., 2021). By forecasting long-term acceptability, TAM also helps educational institutions select the best digital resources for pupils. TAM is still a helpful paradigm for examining how educators and students engage with digital resources since technology keeps developing and becoming more sophisticated. It is one of the most widely applied theories in educational technology research because of its adaptability and simplicity.

In conclusion, the Technology Acceptance Model explains that perceived usefulness and perceived ease of use are the main reasons people decide to accept or reject technology (Davis, 2011; Venkatesh & Bala, 2008). When using digital resources in the classroom, these beliefs influence their attitudes, intentions, and actual conduct. TAM has expanded and changed throughout time by incorporating outside variables that provide a more thorough knowledge of user behavior.

TAM assists educators, learners, and educational institutions in comprehending the factors that facilitate effective technology adoption in the contemporary environment, where digital tools play a significant role in education (Sánchez-Prieto et al., 2019). TAM offers precise recommendations for selecting and creating technology that genuinely aids in the learning process by concentrating on user attitudes and experiences. Because of this, TAM is a significant and useful model for education in the future.

B. Study of Relevant Research

1. Studies on Game-Based Vocabulary Learning

Computer game-based learning of vocabulary has advanced rapidly through research and demonstrated encouraging results in various English as a Foreign Language (EFL) environments. It was among the initial works and involved itself with the impact of computer games on EFL learners' recall of vocabulary in Iran showing how early studies already recognized the potential of digital games for language learning (Bakhtiari et al., 2025). In that study, computer games were used as a tool to support vocabulary practice, allowing learners to review and repeat words in a more engaging way than traditional classroom tasks. It was established that the learners who acquired vocabulary through computer games exhibited higher long-term retention compared to learners who used conventional approaches, suggesting that the interactive nature of games helps strengthen memory and supports better recall over time. This finding was also reinforced by later research that reported similar outcomes across different learning settings (Patra et al., 2022).

In Indonesia, conducted equivalent work with more common sites such as Quizizz and Kahoot! for vocabulary education in secondary schools. Her research revealed that, in addition to improved retention of new words, students also participated more actively in class

activities. Besides retention of memory and motivation, the computer games were also shown to promote learner autonomy as well as enhance learners' confidence in using English (Kasap, 2023). These findings are supported by recent studies. For instance, experiments on the use of the online game roblox in primary school education indicated that video game-playing sessions positively affected English vocabulary learning (P. Nation, 2017).

Students who played such games consistently possessed higher vocabulary test results and higher word mastery rates than their counterparts who did not engage in playing games. Other experimental studies further recorded an average score of up to 78% in word mastery among students who consistently incorporated online games into their study routines. These findings collectively suggest that computer games both educational and recreational ones, tremendously hold promise as powerful learning instruments for vocabulary when utilized meaningfully and appropriately (Ndraha et al., 2025).

2. Studies on Student Perceptions of Educational Technology

Studies on student perceptions of educational technology in Indonesia reveal that these perceptions play a crucial role in the success of technology integration in education. Most students have positive views on using various technology platforms such as LMS, Zoom, Google Meet, and Google Classroom to support their learning process (Susanti et al., 2024). These positive attitudes encourage active engagement with technology to enhance learning outcomes (Wulandari et al., 2024).

At the secondary school level, students generally express strong positive attitudes towards digital learning media, particularly those that offer instant feedback and interactive features (Majid et al., 2025). These findings align with broader Southeast Asian studies indicating that digital tools increase student motivation, interest, and self-confidence in learning. Familiarity with technology fosters greater

enthusiasm and confidence to integrate technology into daily learning (Rachmah, 2023).

Additional factors influencing positive student perceptions include user-friendly design, intuitive navigation, quick system responsiveness, and adaptive learning environments tailored to individual needs. Such features are reported as key to sustaining student interest and ongoing use of educational technology in Indonesia, these insights stress the importance of aligning technology with pedagogical goals and providing necessary infrastructure and support to maximize educational benefits (Aswandi, 2020).

3. Studies on User Experience in Educational Games

Studies on user experience in educational games in Indonesia indicate that games effectively make the learning process more engaging and interactive (Sulistyanto et al., 2023). Students report that this method helps them understand the material in a more enjoyable way compared to conventional methods. Furthermore, game features have been shown to increase learning motivation and foster group cohesion (Ortiz-Rojas et al., 2025).

Additionally, the majority of students claim that playing educational games really increases their concentration and zeal when studying. For example, according to 92% of students, learning through interactive game-based media improved their ability to focus and avoided boredom (Alsswey et al., 2024). Additionally, educational games offer a favorable and enjoyable learning environment by accommodating many learning styles, including visual, kinesthetic, and participatory. These results are consistent with earlier research showing how educational games can improve learning outcomes and engagement (Sundqvist & Sylvén, 2014).

However, some obstacles remain, such as limited access to devices and unstable internet connections, alongside the need for technical guidance for some students. Despite these challenges, the

majority maintain that educational games facilitate understanding of the material and boost motivation. This strengthens the evidence that game-based learning media can be an effective tool when paired with adequate infrastructure and support (Yan mei et al., 2019).

4. ,Research Gap

Various studies have shown the benefits of using digital educational games such as Baamboozle in increasing motivation and vocabulary mastery among high school students in Indonesia (Putri & Akhiriyah, 2024). However, there are few studies that specifically investigate students' perceived benefits and challenges of using the Baamboozle platform for vocabulary learning. Existing research generally focuses on quantitative impacts such as improved learning outcomes and motivation, while qualitative aspects of the student experiences, including perceptions, usage strategies, and challenges during the learning process with Baamboozle, have received less attention. Therefore, this study aims to fill this gap by focusing in depth on the experiences of high school students in using Baamboozle as a medium for vocabulary learning.