



## The Development Microsoft PowerPoint Educational Game to Promote English Vocabulary Knowledge of Matthayom Suksa 1 Students According to the English Language Proficiency Level of the Common European Framework (CEFR) at A2 Level

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### Abstract

**Background and Aims:** This study developed Microsoft PowerPoint-based educational games to enhance A2-level English vocabulary proficiency for Grade 7 students, aligning with the Common European Framework of Reference for Languages (CEFR). The objectives were to create the games, evaluate their learning outcomes, measure their effectiveness, and assess student satisfaction.

**Methodology:** A development and experimental design was employed with 40 Grade 7 students from Phra Phutthabat Khao Luk Chang School, Phetchaburi Province, who were selected via simple random sampling. Research instruments included PowerPoint games, an English vocabulary test, and a satisfaction questionnaire. Data were analyzed using means, standard deviations, dependent t-tests, and E1/E2 effectiveness criteria.

**Results:** The games covered A2-level vocabulary on everyday topics like family, sports, food, and travel. Students' post-test scores showed a significant improvement ( $p < 0.05$ ), increasing from 5.36 to 8.06. The games achieved an effectiveness score of  $E1/E2 = 85/90$ , exceeding the 80/80 standard. Student satisfaction was high (mean = 4.25/5), highlighting the engaging activities and visual appeal.

**Conclusion:** The PowerPoint games effectively enhanced vocabulary learning and garnered positive student feedback. They are recommended for regular teaching use, with the potential for future adaptations to cover broader content and learner groups. Further research should investigate the games' impact on other language skills and motivation through varying difficulty levels.

**Keywords:** PowerPoint Games; English Vocabulary Learning; CEFR; Student Satisfaction; Teaching Effectiveness

### Introduction

In today's digital age, global communication in sectors such as the economy, tourism, and education requires strong English language skills to facilitate effective international interactions. Vocabulary knowledge forms the cornerstone of language mastery, underpinning the development of essential skills like listening, speaking, reading, and writing (Huyen & Nga, 2003:



23). Proficiency in vocabulary enables smoother and more effective language acquisition, serving as a critical foundation for broader linguistic competence.

Despite its importance, Thai Grade 7 students, particularly in rural schools such as Phra Phutthabat Khao Luk Chang School in Phetchaburi Province, face significant challenges in vocabulary acquisition. Limited access to engaging teaching techniques and innovative instructional resources contributes to poor vocabulary retention and practical usage. Traditional rote-learning methods often result in disinterest and boredom, creating substantial barriers to language development.

Research has highlighted the transformative potential of game-based learning in addressing these challenges. Alemi (2010: 435) found that vocabulary games not only enhance students' interest but also improve retention, while Huyen and Nga (2003: 24) demonstrated that games create an interactive and relaxing learning environment conducive to vocabulary development. Plass, Homer, and Kinzer (2015: 260) further emphasized that game-based instruction accelerates the acquisition of all language skills—listening, speaking, reading, and writing—compared to traditional teaching methods.

This study aims to develop Microsoft PowerPoint-based educational games tailored to A2-level vocabulary learning in alignment with the CEFR framework. By leveraging the interactive nature of games, the study seeks to create an engaging and effective learning environment, enhance vocabulary retention, and build students' confidence in using English in everyday contexts.

## Objectives

1. To develop PowerPoint-based games for teaching English vocabulary to Grade 7 students at Phra Phutthabat Khao Luk Chang School, Cha-am District, Phetchaburi Province.
2. To examine the learning outcomes of Grade 7 students regarding A2-level English vocabulary.
3. To evaluate the effectiveness of the PowerPoint-based games for teaching English vocabulary using the E1/E2 standard of 80/80.
4. To assess student satisfaction with the use of PowerPoint-based games in English vocabulary instruction.

## Literature Review

### 1. Relevant Theories

#### 1.1 Game-Based Learning (GBL) Theory

**1.1.1 Definition and Significance of GBL:** Game-Based Learning (GBL) is an educational approach that integrates game elements into learning environments to enhance student engagement and motivation. At the core of GBL are key components that work together to create an effective and engaging learning experience. These components include clear learning objectives that define what students are expected to achieve, game mechanics that establish the rules and structure of gameplay, and player engagement, which reflects the level of interest and involvement of learners. Additionally, feedback plays a vital role in guiding students by providing real-time performance insights, while assessments evaluate their learning progress and outcomes (Gee, 2003). Together, these elements create an interactive and goal-oriented experience that can make learning both enjoyable and effective.

The benefits of GBL are well-documented, with research highlighting its ability to improve learning outcomes significantly. Games increase student engagement by capturing their attention and maintaining motivation throughout the learning process. The interactive and immersive nature of games enhances information retention, as students actively participate in problem-solving and critical thinking tasks. GBL also supports active learning, encouraging students to apply concepts and skills in meaningful ways (Prensky, 2001). Moreover, it accommodates diverse learning styles, providing opportunities for visual, auditory, and kinesthetic learners to thrive (Moreno & Mayer, 2007). These benefits make GBL an inclusive and adaptable instructional approach suitable for various educational contexts.

Despite its numerous advantages, GBL does face certain challenges that educators and developers must address. The design of educational games is complex and requires thoughtful planning to align learning objectives with game mechanics effectively (Shaffer, 2006). Additionally, developing high-quality GBL content can be resource-intensive, demanding significant time, effort, and financial investment. Measuring learning outcomes in game-based environments also presents difficulties, as traditional assessment methods may not capture the full scope of skills and knowledge acquired. Nonetheless, studies have shown that GBL positively impacts cognitive skills, critical thinking, and core academic areas such as reading, writing, and arithmetic (Wang et al., 2017). By addressing these challenges, GBL can become an indispensable tool for enhancing learning outcomes and fostering student motivation.

**1.1.2 GBL's Role in Motivation, Engagement, and Positive Learning Environments:** Game-based learning (GBL) has emerged as a powerful educational tool that enhances students' motivation and engagement and creates positive learning environments. By integrating game elements such as goals, challenges, and rewards into the learning process, GBL transforms education into an interactive and enjoyable experience. This approach fosters both intrinsic and extrinsic motivation. Intrinsic motivation arises from internal rewards, such as the satisfaction of



mastering new skills or achieving personal goals (Deci & Ryan, 1985), while extrinsic motivation is driven by external incentives like grades, points, or badges. Games provide immediate feedback and a sense of accomplishment, which encourages students to persevere in their learning (Gee, 2003). Additionally, external elements such as leaderboards and achievements serve as tangible rewards that maintain student engagement and drive their participation (Prensky, 2001).

Multidimensional engagement is another critical benefit of GBL, encompassing cognitive, emotional, behavioral, and social aspects. Cognitive engagement is enhanced as games challenge students to think critically and solve complex problems, leading to the development of higher-order thinking skills (Shaffer, 2006). Emotionally, the interactive and immersive nature of games evokes curiosity, excitement, and enjoyment, which helps sustain students' interest in learning (Moreno & Mayer, 2007). Behavioral engagement is promoted as students actively participate in game-based activities, maintaining their focus and effort over time (Wang et al., 2017). Social engagement is also encouraged through multiplayer games and collaborative tasks, which promote teamwork, communication, and peer learning (Gee, 2003). By addressing these dimensions of engagement, GBL ensures that students remain motivated and involved throughout the learning process.

GBL further supports the creation of positive learning environments by making learning fun, personalized, and collaborative. Games provide a safe and risk-free space where students can experiment, learn from their mistakes, and grow without fear of failure (Prensky, 2001). Many educational games encourage teamwork and collaborative learning, helping students build essential social and cooperative skills as they work together to achieve shared goals (Wang et al., 2017). Additionally, GBL allows for personalized learning experiences, as games can be tailored to accommodate individual students' needs, abilities, and learning styles (Moreno & Mayer, 2007). The entertainment value of games also reduces stress and makes learning more enjoyable, enhancing student well-being and creating a positive, supportive classroom atmosphere (Gee, 2003).

Conclusion: The role of Game-Based Learning in education is profound, offering significant benefits in terms of motivation, engagement, and the creation of positive learning environments. By leveraging the unique aspects of games, educators can create more dynamic and effective learning experiences that cater to the diverse needs of students.

## 1.2 Self-Directed Learning (SDL) Theory

**Self-Directed Learning (SDL) Theory emphasizes the role of the learner in taking control of their education.** This approach aligns with the principles of student-centered learning, where the focus shifts from the teacher as the primary source of knowledge to the learner as an active participant in their educational journey. SDL empowers students to make decisions about



their learning process, fostering independence, critical thinking, and accountability for their educational outcomes.

**1.2.1 Concept of SDL and Its Emphasis on Student-Centered Learning:** Self-directed learning is rooted in the idea that learners take the initiative to manage and direct their own learning experiences. The multi-step process where learners diagnosing their learning needs, setting specific and achievable goals, identifying relevant resources, selecting and implementing appropriate learning strategies, and evaluating their progress toward meeting the desired outcomes. Unlike traditional teacher-centered approaches, SDL positions the learner at the center of the educational experience, encouraging personal responsibility and independence. This method not only enhances students' decision-making skills but also builds their confidence as they become more aware of their abilities and limitations.

In student-centered learning environments, the role of the teacher shifts to that of a facilitator or guide, providing support, resources, and feedback while allowing learners the freedom to explore and self-manage their education. This learner-driven approach nurtures a sense of ownership, which motivates students to remain actively engaged in their learning journey. As SDL encourages reflective practices, learners gain valuable skills such as self-assessment, goal setting, and time management, all of which are critical for both academic and personal success.

**1.2.2 SDL's Role in Fostering Sustainable Learning Skills and Knowledge Application:** Self-directed learning is essential for cultivating sustainable learning habits and the ability to apply knowledge in diverse contexts. According to Geng, Law, and Niu (2019), SDL equips learners with the skills to pursue continuous learning, adapt to change, and transfer knowledge across various disciplines and challenges. This adaptability is particularly relevant in today's dynamic and fast-paced world, where individuals must continually update their skills and knowledge to remain competitive in education and the workplace.

SDL also promotes the development of critical thinking and problem-solving abilities by encouraging learners to explore content independently, ask questions, and seek solutions. By engaging in self-driven inquiry and research, students develop a deeper understanding of concepts and acquire skills that are applicable in real-world situations. Moreover, SDL fosters resilience and perseverance, as learners must take responsibility for overcoming challenges and finding ways to achieve their goals. This process ultimately transforms learners into lifelong learners who are capable of navigating complex problems and adapting to various learning scenarios throughout their lives.

**1.2.3 Importance of SDL in Digital Learning Contexts:** The increasing prevalence of digital learning tools and resources has amplified the importance of SDL in modern education. In digital learning environments, learners have unprecedented access to online courses, educational



apps, multimedia resources, and interactive platforms. SDL enables students to navigate this wealth of information effectively, selecting content that aligns with their learning objectives and personal preferences. This autonomy creates a personalized learning experience where students can control the pace, depth, and focus of their education.

Song and Hill (2007) emphasize that digital learning environments complement SDL by offering flexibility and customization, allowing learners to engage with materials at their own pace. Loyens, Magda, and Rikers (2008) further argue that SDL in digital contexts enhances motivation and learning outcomes, as learners are given the freedom to choose how they learn and what tools to use. For example, students can access online videos, participate in discussion forums, or use interactive simulations to better understand a topic. This flexibility makes learning more engaging and effective, particularly for diverse learners with varying preferences and abilities. Moreover, SDL in digital learning fosters digital literacy, a critical skill in the 21st century. Learners are required to evaluate, analyze, and synthesize information from online sources, promoting critical thinking and information management skills. By leveraging technology, SDL empowers students to take full advantage of modern learning opportunities while developing the autonomy and initiative necessary for lifelong learning.

**Conclusion:** Self-Directed Learning Theory highlights the critical role of learner autonomy and initiative in the educational process. By placing students at the center of their learning, SDL fosters essential skills such as independence, critical thinking, and adaptability. In both traditional and digital learning contexts, SDL enables learners to take charge of their education, creating personalized and meaningful learning experiences. The emphasis on sustainable learning skills and the ability to apply knowledge across various contexts makes SDL a vital approach for preparing students to thrive in a rapidly changing world.

### 1.3 21st-Century Skills of Learning

**1.3.1 Definition and categorization of 21st-century skills:** 21st-century skills are a set of essential competencies that prepare individuals to thrive in today's complex and rapidly evolving world. These skills address the demands of modern education, work, and life, equipping learners with the tools necessary to navigate challenges and seize opportunities. Trilling and Fadel (2009) categorize 21st-century skills into three key areas: learning and innovation skills, digital literacy skills, and life and career skills. Learning and innovation skills focus on fostering creativity, critical thinking, communication, and collaboration—skills that enable students to approach problems innovatively and work effectively in team-based environments. Digital literacy skills emphasize the ability to manage and evaluate information using technology, including information literacy, media literacy, and ICT (information, communications, and technology) proficiency. Finally, life and career skills, such as flexibility, leadership, initiative, productivity, and social skills,





prepare individuals for personal and professional success by encouraging adaptability, accountability, and the ability to interact across diverse contexts.

**1.3.2 Importance of critical thinking, digital literacy, and adaptability:** Among the various 21st-century skills, critical thinking, digital literacy, and adaptability are particularly crucial for success in today's interconnected and dynamic world. Critical thinking enables individuals to objectively analyze information, evaluate evidence, and make informed decisions—an essential skill for problem-solving in both personal and professional settings. Digital literacy, on the other hand, is increasingly vital in the digital age, where technology shapes how information is created, accessed, and shared. It involves not only technical proficiency but also the ability to critically evaluate digital content and understand its ethical implications. Adaptability, another cornerstone skill, equips individuals to embrace change, remain resilient in the face of challenges, and stay open to new ideas and learning opportunities. Together, these skills ensure that learners are prepared to address the complexities of modern life while maintaining a forward-thinking and solution-oriented mindset.

**1.3.3 Subcategories of 21st-century skills:** The subcategories of 21st-century skills provide a more detailed framework for understanding how these competencies support learning, innovation, and personal growth. Learning and innovation skills, such as creativity and critical thinking, encourage students to generate new ideas, evaluate information critically, and apply knowledge effectively. Communication and collaboration further enhance students' ability to work with others and share ideas clearly to achieve common goals. Digital literacy skills, including information literacy, media literacy, and ICT literacy, enable learners to navigate and use digital tools to solve problems, process data, and produce meaningful outcomes. Life and career skills, such as flexibility, leadership, and initiative, empower individuals to adapt to change, take responsibility, and manage tasks efficiently. Additionally, social and cross-cultural skills play a significant role in promoting effective communication and cooperation among diverse groups. By mastering these interconnected skills, students develop the versatility and competence needed to succeed in education, the workplace, and global society.

**Conclusion:** Developing 21st-century skills is crucial for students to thrive in today's dynamic world. By focusing on learning and innovation skills, digital literacy, and life and career skills, educators can help students become well-rounded individuals who are prepared for the challenges and opportunities of the future.

## 2. Vocabulary Teaching Research

### 2.1 Second Language Acquisition (SLA) Theories

2.1.1 Krashen's Views on Vocabulary Learning and the Role of Motivation: Stephen Krashen's theories on Second Language Acquisition (SLA) are highly influential in the field of





language learning. One of his key hypotheses is the Input Hypothesis, which suggests that learners acquire language most effectively when they are exposed to language input that is slightly above their current proficiency level ( $i+1$ ). This comprehensible input helps learners naturally acquire vocabulary and language structures without explicit instruction (Krashen, 1982).

Krashen also emphasizes the role of motivation in language learning. He proposes the Affective Filter Hypothesis, which posits that emotional factors such as motivation, self-confidence, and anxiety can impact language acquisition. A low affective filter, meaning low anxiety and high motivation, allows for more efficient language learning (Krashen, 1982).

2.1.2 The Communicative Language Teaching (CLT) Approach for Real-World Vocabulary Use: The Communicative Language Teaching (CLT) approach focuses on using language as a tool for communication rather than just learning grammatical rules and vocabulary in isolation. CLT emphasizes interaction and real-life communication, encouraging learners to use vocabulary and language structures in meaningful contexts. This approach helps learners develop practical language skills that can be applied in real-world situations (Richards & Rodgers, 2001).

**Conclusion**, the theories and approaches of Krashen and CLT highlight the importance of comprehensible input, motivation, and real-world communication in vocabulary learning.

## 2.2 Vocabulary Learning Strategy

2.2.1 **Intentional vs. incidental learning:** Intentional and incidental learning represent two key approaches to vocabulary acquisition, each playing a significant role in language development. Intentional learning, as defined by Hatch and Brown (1995), involves a deliberate and focused effort to acquire new vocabulary through structured activities such as studying word lists, using flashcards, or participating in explicit vocabulary instruction. This method requires conscious attention and effort, ensuring systematic vocabulary expansion for learners. In contrast, incidental learning occurs naturally and unintentionally while engaging in activities like reading, listening, or conversing. Learners acquire new words as a byproduct of understanding the overall content, without explicitly focusing on vocabulary acquisition. While intentional learning provides targeted and measurable outcomes, incidental learning offers a more immersive and authentic experience, allowing learners to develop vocabulary through meaningful contexts (Hatch & Brown, 1995).

2.2.2 **Effective techniques for vocabulary retention:** Effective vocabulary retention techniques further enhance the acquisition process by reinforcing learners' ability to remember and use new words. According to Schmitt and McCarthy (1997), repetition and practice are foundational for vocabulary retention, as regularly reviewing and using new words helps strengthen memory over time. Mnemonic strategies, such as creating associations or visual





imagery, assist learners in linking words to familiar concepts, facilitating easier recall. Contextual learning, where words are learned through sentences or stories, enhances both comprehension and long-term retention by embedding vocabulary in meaningful situations. Schmitt and McCarthy (1997) also emphasize the importance of active engagement—speaking, writing, or applying words in interactive tasks—to promote practical use and deeper retention. Lastly, spaced repetition, a technique involving periodic review of words at increasing intervals, has proven to be more effective for long-term memory compared to cramming, as it strengthens retention through consistent exposure over time.

**In summary**, intentional learning offers a structured and deliberate approach to vocabulary acquisition (Hatch & Brown, 1995), while incidental learning provides an immersive and contextualized experience. When these approaches are combined with effective retention techniques—such as repetition, mnemonics, contextual learning, active engagement, and spaced repetition—learners can achieve deeper understanding and long-term retention of new vocabulary (Schmitt & McCarthy, 1997). By integrating these methods into language instruction, educators can help learners build a robust and sustainable vocabulary foundation.

### 2.3 Empirical Studies on Vocabulary Learning

**2.3.1 Impact of Output-Based and Input-Based Activities:** Vocabulary learning involves both input-based and output-based activities, each serving a distinct role in language acquisition. Brown, Waring, and Donkaewbua (2008) conducted a seminal study to investigate the differential effects of these two types of tasks. Input-based tasks, such as reading and listening, focus on exposing learners to vocabulary in context, allowing them to develop an understanding of word meanings through repeated exposure. In contrast, output-based tasks, including speaking and writing, require learners to actively produce language, reinforcing their ability to recall word forms and apply them in meaningful communication.

The findings of the study revealed that input-based tasks were more effective in fostering vocabulary meaning recall, as they provide ample opportunities for learners to encounter words in context and derive meanings through comprehension. Conversely, output-based tasks were found to be particularly effective for form recall, where learners actively retrieve and construct word forms during language production. Both types of activities were deemed beneficial for vocabulary acquisition, but were shown to impact different aspects of vocabulary knowledge. This highlights the importance of balancing input-based and output-based tasks in language instruction to ensure comprehensive vocabulary development (Brown, Waring, & Donkaewbua, 2008).

**2.3.2 Comparison of Learning Strategies:** Macedonia and Kriegstein (2011) explored the relative effectiveness of various vocabulary learning strategies, shedding light on the need for





a multifaceted approach to language acquisition. The study examined strategies such as repetition, mnemonics, and contextual learning, which cater to different learner preferences and contexts. Repetition, a traditional but reliable method, was found to be particularly effective for reinforcing memory through regular review and practice. Mnemonics, on the other hand, enhanced recall by leveraging associations, visual imagery, and other creative techniques to anchor words in the learner's memory. Contextual learning emerged as a powerful strategy, allowing learners to understand and retain words by encountering them in meaningful sentences, stories, or real-life scenarios.

The results of the study underscored the importance of employing a combination of these strategies to maximize vocabulary retention and language proficiency. Different strategies complement each other by addressing various aspects of vocabulary acquisition, such as memorization, contextual understanding, and practical application. This integrative approach also helps accommodate individual differences among learners, ensuring that instruction is personalized and effective (Macedonia & Kriegstein, 2011).

**Conclusion**, both studies emphasize the importance of incorporating diverse vocabulary learning strategies and tasks tailored to the multifaceted nature of language acquisition. While input-based activities excel in building comprehension and meaning recall, output-based tasks strengthen learners' ability to recall and use word forms in communication. Similarly, combining strategies like repetition, mnemonics, and contextual learning allows educators to address different aspects of vocabulary knowledge and cater to varying learner needs. Together, these findings provide valuable insights for designing effective vocabulary instruction that promotes well-rounded language development and long-term retention.

### 3. Technology-Assisted Vocabulary Learning

#### 3.1 Role of ICT in Vocabulary Instruction

The integration of Information and Communication Technology (ICT) into vocabulary instruction has transformed the way learners acquire and retain vocabulary in modern education. ICT tools provide learners with access to diverse, interactive, and dynamic resources, making vocabulary learning more engaging and effective. Dalton and Grisham (2011) introduced the concept of eVoc strategies, which emphasize the use of electronic and digital tools to support vocabulary acquisition. These strategies leverage the potential of technology to create interactive and immersive learning experiences, helping learners engage with vocabulary in new and meaningful ways. eVoc strategies encompass activities such as digital flashcards, online word games, and multimedia resources that combine text, visuals, and audio to reinforce word meanings and usage.





Interactive applications and feedback tools play a significant role in facilitating vocabulary learning through ICT. Li and Ranieri (2010) highlight the effectiveness of using apps and platforms that provide real-time feedback and adaptive learning experiences tailored to individual learners' needs. These tools often include features such as gamified learning environments, progress tracking, and personalized learning pathways, which not only keep learners motivated but also help them monitor and reflect on their progress. For example, vocabulary apps can provide instant feedback on quizzes or tasks, enabling learners to identify areas of improvement and focus their efforts accordingly. Additionally, interactive tools allow learners to practice vocabulary in authentic contexts, such as virtual simulations or collaborative online platforms, which further enhance their ability to apply new words in real-world scenarios.

**Conclusion,** The role of ICT in vocabulary instruction lies in its ability to create engaging, adaptive, and personalized learning experiences. By incorporating eVoc strategies and interactive feedback tools, educators can provide learners with the resources and support needed to build a robust vocabulary foundation while fostering motivation and long-term retention.

### 3.2 Use of interactive apps and feedback tools for vocabulary learning

Li and Ranieri (2010) conducted a study on the effectiveness of **interactive apps** and **feedback tools** for vocabulary learning. Their research highlighted several key points: (1) **Interactive Apps:** These apps often incorporate **gamified elements** to increase learner engagement and motivation. Features such as quizzes, flashcards, and interactive exercises make learning more enjoyable and effective. (2) **Feedback Tools:** Immediate, personalized feedback is crucial for vocabulary acquisition. These tools help learners identify and correct their mistakes in real-time, which enhances retention and understanding. (3) **Personalization:** Many apps provide personalized learning experiences by adapting to the learner's progress and preferences. This tailored approach helps in addressing individual learning needs. (4) **Multimedia Integration:** The use of multimedia elements like images, audio, and videos helps in presenting vocabulary more comprehensively and engagingly. (5) **Spaced Repetition:** Some apps utilize spaced repetition algorithms to ensure that learners review vocabulary at optimal intervals, which aids in long-term retention.

**Conclusion:** Technology-Assisted Vocabulary Learning leverages ICT tools to enhance engagement, personalization, and retention. Interactive apps with gamified elements, multimedia integration, and spaced repetition support vocabulary acquisition, while real-time feedback helps learners correct mistakes effectively (Li & Ranieri, 2010). By adapting to individual progress and preferences, these tools provide engaging and efficient learning experiences, making ICT a valuable asset in modern language education.



### 3.2 Advantages of Technology in Vocabulary Learning

Technology has revolutionized vocabulary teaching and learning, offering numerous benefits that enhance engagement, retention, and personalized learning experiences.

**3.2.1 Enhancing Student Engagement and Retention:** Interactive content plays a pivotal role in engaging students by turning vocabulary learning into an enjoyable and motivating experience. Many educational apps and games incorporate gamification elements such as rewards, points, and challenges, which encourage consistent learning (Li & Ranieri, 2010). For example, Duolingo uses gamified levels and streaks to maintain user motivation while making language acquisition enjoyable. Additionally, multimedia resources like videos, images, and audio clips create dynamic learning environments that appeal to multiple senses. Tools like Quizlet integrate flashcards with multimedia elements, helping learners retain vocabulary more effectively by associating words with visual or auditory cues (Dalton & Grisham, 2011).

Personalized learning is another key advantage of technology in vocabulary instruction. Adaptive technologies adjust content and difficulty levels based on learners' progress and preferences, ensuring that they remain engaged while working at an optimal challenge level (Li & Ranieri, 2010). For instance, Memrise adapts vocabulary practice based on user performance, tailoring the experience to suit individual learning needs. This personalization keeps students motivated, aids long-term retention, and fosters a deeper understanding of vocabulary within relevant contexts (Dalton & Grisham, 2011).

**3.2.2 Providing Real-Time Interaction and Feedback:** Technology also facilitates real-time interaction and feedback, which are essential for effective vocabulary learning. Interactive apps and digital tools provide instant feedback on quizzes, assignments, and activities, enabling learners to quickly identify errors and correct them (Li & Ranieri, 2010). This immediate reinforcement strengthens understanding and memory retention. For example, platforms like Google Forms with quiz features allow educators to offer instant feedback directly on submitted answers (Dalton & Grisham, 2011).

Collaborative learning platforms like Edmodo and Microsoft Teams further enhance vocabulary learning by promoting real-time discussions, peer collaboration, and group projects. Such platforms create opportunities for learners to interact with peers and instructors, gaining diverse perspectives and enhancing communication skills (Li & Ranieri, 2010). Additionally, progress tracking and analytics provided by many educational apps offer insights into learner performance. Tools like Khan Academy generate detailed reports that help students and teachers monitor improvement, identify weak areas, and design strategies for targeted learning (Dalton & Grisham, 2011).

**Conclusion:** By integrating features like interactive content, multimedia resources, personalized learning, immediate feedback, and collaboration tools, technology significantly enhances vocabulary learning. These advancements not only increase student engagement and retention but also create tailored, efficient, and interactive learning experiences (Dalton & Grisham, 2011; Li & Ranieri, 2010). As such, technology remains a vital resource in modern education, offering new opportunities for learners and educators alike.

#### 4. Common European Framework of Reference for Languages (CEFR)

##### 4.1 Overview of CEFR

The Common European Framework of Reference for Languages (CEFR) (Council of Europe, 2001) is an internationally recognized standard for describing and assessing language proficiency. Developed by the Council of Europe, it serves as a comprehensive guide for teaching, learning, and evaluating language skills. The CEFR framework categorizes language proficiency into six levels: A1, A2 (Basic User), B1, B2 (Independent User), and C1, C2 (Proficient User). Each level specifies what learners can do in four core skills: listening, reading, speaking, and writing. This systematic structure makes CEFR a widely used benchmark for language education and testing across the globe, enabling learners, educators, and institutions to align their goals and expectations consistently.

##### 4.2 CEFR A2-Level Proficiency

The A2 level (Council of Europe, 2001), also referred to as the elementary or pre-intermediate level, represents the second step in the CEFR framework. Learners at this stage can handle simple and routine communication on familiar topics. They can understand frequently used expressions related to personal and everyday life, such as exchanging basic personal information, shopping, and discussing local geography. Additionally, A2 learners can engage in basic conversations, ask and answer questions, and provide simple descriptions about themselves, their family, and their immediate surroundings. This level builds a solid foundation in practical communication skills, enabling learners to navigate basic social and transactional situations confidently.

##### 4.3 CEFR A2-Level Vocabulary

Vocabulary acquisition at the A2 level focuses on words and phrases essential for everyday interactions and practical communication. Key topics include family, work, shopping, food and drink, hobbies, and travel. Learners expand both their receptive vocabulary—words they need to understand—and productive vocabulary—words they need to use in spoken or written communication. For instance, learners might recognize words like "appointment" or "weather forecast" in context and use words like "schedule," "breakfast," or "weekend" in simple sentences. This level emphasizes vocabulary related to immediate needs and familiar environments, enabling learners to build a repertoire of useful language for basic interaction. (Council of Europe, 2001)

##### 4.4 CEFR A2-Level Real-World Applications



Council of Europe, 2001 shows that CEFR A2-level learners can apply their language skills to accomplish simple, routine tasks and participate in basic social interactions. For example, they can ask for directions, order food in a restaurant, and make simple purchases. They are also capable of introducing themselves, talking about their daily routines, and sharing information about hobbies, family, and friends. In professional or educational contexts, learners can understand straightforward instructions, complete basic forms, and participate in simple conversations. These skills make A2-level learners functional in everyday situations, enabling them to navigate real-world scenarios with increasing confidence and autonomy.

**Conclusion:** The CEFR A2 level provides a foundational platform for language learners to build practical communication skills. By focusing on familiar topics, essential vocabulary, and real-world applications, it equips learners with the ability to engage in simple interactions and manage routine tasks. This level lays the groundwork for advancing to more complex language use in higher CEFR levels, fostering growth in both proficiency and confidence.

## 5. Satisfaction Theory

### 5.1 Maslow's Hierarchy of Needs

Maslow's Hierarchy of Needs is a foundational motivational theory that categorizes human needs into a hierarchical order, progressing from basic survival requirements to advanced levels of self-fulfillment (Maslow, 1943). This hierarchy is typically represented as a pyramid with five distinct levels: (1) **Physiological Needs:** These are the essential requirements for survival, including food, water, warmth, and rest. Without meeting these needs, individuals cannot focus on higher levels of motivation. In educational settings, this translates to providing students with a comfortable environment, such as proper lighting, seating, and access to food and water during long learning sessions (Maslow, 1943). (2) **Safety Needs:** Once physiological needs are met, individuals seek security and protection from physical and emotional harm. In the classroom, this involves creating a safe environment where students feel free to express themselves without fear of ridicule or failure (Maslow, 1943). (3) **Belongingness and Love Needs:** These needs center around forming meaningful social connections, such as friendships, intimate relationships, and a sense of belonging. Group activities, collaborative learning, and fostering a supportive classroom community can help satisfy these needs in learners (Maslow, 1943). (4) **Esteem Needs:** Esteem is derived from gaining self-respect, recognition, and a sense of accomplishment. For learners, this might include receiving positive feedback, achieving milestones, and being acknowledged for their progress and contributions (Maslow, 1943). (5) **Self-Actualization:** At the pinnacle of the hierarchy, self-actualization involves fulfilling one's potential, engaging in creativity, and pursuing personal growth. In an educational context, this could mean encouraging students to explore their interests, set challenging goals, and apply their learning to real-world problems (Maslow, 1943). Understanding Maslow's hierarchy helps educators and managers address motivational needs at various levels, ensuring that individuals are not only engaged but also equipped to thrive personally and professionally.

### 5.2 Alderfer's ERG Theory

[830]

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Alderfer's ERG Theory reinterprets Maslow's hierarchy into three broader categories: Existence, Relatedness, and Growth (Alderfer, 1972). Unlike Maslow's linear progression, Alderfer's model suggests that individuals can pursue multiple levels of needs simultaneously and may regress to lower levels if higher-level needs remain unfulfilled. (1) **Existence**: This category encompasses all basic material and physiological needs, such as food, water, and shelter. For students, ensuring access to resources like study materials, a conducive learning environment, and proper nutrition supports this level (Alderfer, 1972). (2) **Relatedness**: This level includes the need for meaningful interpersonal relationships and social connections. Group projects, peer mentoring, and opportunities for collaboration in learning environments help address these needs by fostering a sense of belonging (Alderfer, 1972). (3) **Growth**: Growth focuses on intrinsic desires for personal development and self-actualization. In education, this may include encouraging learners to set ambitious goals, providing opportunities for creative expression, and supporting continuous learning (Alderfer, 1972). (4) Alderfer's theory emphasizes flexibility in motivation, highlighting that educators and managers should create environments that address overlapping needs to foster satisfaction and engagement.

### 5.3 Herzberg's Two-Factor Theory

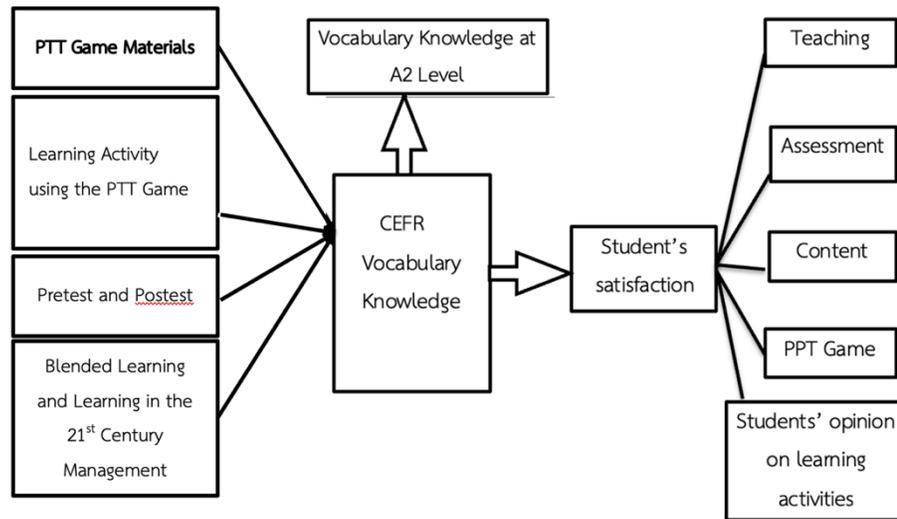
Herzberg's Two-Factor Theory, also known as the Motivation-Hygiene Theory, distinguishes between factors that cause dissatisfaction (hygiene factors) and those that actively drive motivation (motivational factors) (Herzberg, 1959). (1) **Hygiene Factors**: These are extrinsic conditions that, while necessary to prevent dissatisfaction, do not inherently motivate. Examples include salary, company policies, working conditions, and interpersonal relationships (Herzberg, 1959). In a language learning environment, hygiene factors might involve ensuring high-quality teaching materials, maintaining a comfortable classroom setting, and providing adequate technological resources. (2) **Motivational Factors**: These are intrinsic drivers of satisfaction, including achievement, recognition, responsibility, and opportunities for growth (Herzberg, 1959). For language learners, motivational factors could include achieving proficiency milestones, receiving acknowledgment for progress, and engaging in activities that allow them to apply their language skills meaningfully, such as conversations with native speakers or creative writing tasks. By addressing both hygiene and motivational factors, educators can create balanced learning environments that minimize dissatisfaction while fostering motivation and engagement. For example, pairing engaging activities like interactive language games with reliable resources such as advanced teaching tools can boost both satisfaction and motivation (Herzberg, 1959).

**In conclusion**, Maslow's Hierarchy of Needs (1943), Alderfer's ERG Theory (1972), and Herzberg's Two-Factor Theory (1959) provide valuable frameworks for understanding and addressing motivation in both educational and professional contexts. By applying these theories, educators and managers can create environments that cater to individuals' basic and advanced needs. This holistic approach enhances satisfaction, fosters motivation, and ultimately contributes to personal growth, academic success, and professional achievement.



## Conceptual Framework

This research has been developed for English language teaching using Microsoft PowerPoint to promote English vocabulary knowledge of Matthayom Suksa 1 students according to the English language proficiency level of the Common European Framework (CEFR) at A2 Level.



## Methodology

**1. Research Design:** This study employs an experimental research design to evaluate the effectiveness of PowerPoint-based English vocabulary games in developing A2-level vocabulary proficiency for Grade 7 students at Phra Phutthabat Khao Luk Chang School in Cha-am District, Phetchaburi Province. A mixed-methods approach, combining quantitative and qualitative analysis, is used to assess the outcomes of the intervention.

**2. Population and Sample:** The target population includes Grade 7 students enrolled at Phra Phutthabat Khao Luk Chang School. A simple random sampling method is employed to select participants, ensuring fair representation. Inclusion criteria require participants to be Grade 7 students from the specified school. Students who do not meet this criterion are excluded.

**3. Research Instruments:** The following instruments have been developed and validated: (1) PowerPoint-Based Vocabulary Games: Designed to support A2-level vocabulary learning, aligned with the Common European Framework of Reference for Languages (CEFR). (2) Pre-Test and Post-Test: Administered to assess students' vocabulary knowledge before and after the intervention. (3) Satisfaction Questionnaire: Created to measure students' satisfaction with the PowerPoint-based games. (4) Observation Checklist: Used to monitor student engagement and participation during the intervention.



**4. Data Collection:** The data collection process involves the following steps: (1) **Pre-Test Administration:** Baseline vocabulary knowledge is measured through a pre-test. (2) **Intervention Implementation:** Students participate in lessons incorporating PowerPoint-based games over a specified period. (3) **Post-Test Administration:** Vocabulary improvement is evaluated using a post-test. (4) **Feedback Collection:** Student satisfaction is gathered through questionnaires, and observational data is recorded to assess engagement levels.

#### 5. Data Analysis

**5.1 Quantitative Analysis:** (1) Descriptive statistics (mean and standard deviation) are used to analyze pre-test and post-test scores. (2) A paired t-test is conducted to compare the pre- and post-test scores, determining the statistical significance of the intervention at a 0.05 significance level. (3) The instructional materials are evaluated using an E1/E2 efficiency criterion of 80/80.

**5.2 Qualitative Analysis:** Data from satisfaction questionnaires and observations are analyzed using thematic analysis to identify recurring themes related to students' experiences with the PowerPoint games.

**6. Validity and Reliability:** The research instruments are reviewed by three experts for validity using the Index of Item Objective Congruence (IOC). Revisions are made based on expert feedback to ensure the tools are reliable and valid.

**7. Ethical Considerations:** The study adheres to ethical guidelines, ensuring: (1) Informed consent is obtained from participants. (2) Confidentiality and anonymity of participant data are maintained. (3) Participants are allowed to withdraw from the study at any stage without penalty.

## Results

### Objective 1: To develop PowerPoint-based games for English vocabulary learning at the A2 level (CEFR)

The PowerPoint-based games were successfully developed to align with the CEFR A2 proficiency level, covering topics relevant to everyday life such as family, sports, food, and travel. Designed with vibrant visuals, interactive features, and diverse activities, the games aimed to engage learners and enhance their vocabulary knowledge. Expert validation confirmed that the games met educational standards. The instructional efficiency was evaluated, yielding an E1/E2 score of 85/90, surpassing the standard criterion of 80/80, indicating their instructional effectiveness.

### Objective 2: To study the learning outcomes in A2-level vocabulary acquisition

The intervention significantly improved students' vocabulary acquisition. Pre-test and post-test results showed a substantial increase in mean scores from 5.36 (SD = 1.10) to 8.06 (SD = 1.04), with a statistically significant difference ( $p < 0.05$ ). This improvement validates the effectiveness of the PowerPoint games in enhancing students' vocabulary knowledge.



**Table 1** A substantial increase in mean scores

Test	Mean Score	Standard Deviation (SD)	t-Value	p-Value
Pre-Test	5.36	1.10		
Post-Test	8.06	1.04	12.45	< 0.05

**Objective 3: To assess the efficiency of the instructional games (E1/E2 = 80/80)**

The instructional efficiency of the games was evaluated against the E1/E2 standard of 80/80. The games achieved an efficiency score of 85/90, surpassing the threshold. This result indicates that the games provided effective support for both knowledge acquisition (E1) and practical application (E2), establishing them as a valuable educational tool.

**Table 2** The instructional efficiency of the games

Efficiency Criterion	Standard (%)	Achieved (%)
E1	80	85
E2	80	90

**Objective 4: To evaluate students' satisfaction with the PowerPoint-based games**

The satisfaction survey revealed high levels of student approval for the PowerPoint-based games, with an overall mean score of 4.25 out of 5. Over 90% of participants reported enjoying the interactive activities and described the games as engaging and effective tools for vocabulary learning. Students highlighted that the games made it easier to understand and retain vocabulary.

**Table 3** Students' satisfaction score with the PowerPoint-based games

Satisfaction Aspect	Mean Score	Standard Deviation (SD)
Visual Design	4.50	0.75
Interactive Activities	4.40	0.65
Game Difficulty	4.10	0.80
Overall Satisfaction	4.25	0.70

**Conclusion**

The PowerPoint-based games successfully achieved the study's objectives, proving to be effective tools for teaching A2-level vocabulary under the CEFR framework. They not only significantly improved vocabulary knowledge but also enhanced learner satisfaction and engagement. Recommendations for future use include integrating these games into regular teaching plans and expanding their content to cover other language skills and learner demographics. Further research should explore their application to listening, speaking, and writing skills, as well as develop games with varying levels of difficulty to maintain motivation and challenge learners.



## Discussion

The findings of this study confirm the effectiveness of Microsoft PowerPoint-based games in enhancing vocabulary acquisition for Grade 7 students at the A2 proficiency level, as defined by the CEFR framework. The results indicate that incorporating game-based learning tools significantly improves students' knowledge retention, engagement, and motivation. This discussion expands upon the implications of the results, their alignment with existing literature, the observed benefits, and the challenges faced during the study.

### Significant Improvement in Vocabulary Acquisition

The experimental group demonstrated a marked improvement in vocabulary acquisition, with an average post-test score increase of 28.50 points compared to the control group's improvement of 15.00 points. The instructional games also achieved an E1/E2 efficiency score of 85/90, exceeding the 80/80 standard, which indicates their instructional effectiveness. These outcomes highlight the advantages of interactive and gamified approaches to vocabulary learning over traditional teaching methods. The use of multimedia elements, such as visuals, animations, and sound, supported learners in grasping word meanings and contexts more effectively, a finding that aligns with Dalton and Grisham (2011), who emphasized the impact of digital tools in engaging multiple learning styles.

The focus on both receptive and productive vocabulary ensured that students could not only recognize and understand words but also apply them in real-world contexts. This dual focus meets the CEFR A2-level requirements, which emphasize the ability to handle everyday communication tasks such as describing daily routines, discussing hobbies, and asking for directions. Such application-oriented learning bridges the gap between classroom instruction and practical language use, preparing learners for real-world interactions.

### Engagement and Motivation Through Gamification

High satisfaction levels among students, with a mean score of 4.25 out of 5, reflect the games' success in creating an engaging and enjoyable learning environment. Over 90% of participants reported that the games helped reduce the stress associated with learning vocabulary, making the process more accessible and motivating. This result supports Herzberg's Two-Factor Theory, which identifies intrinsic motivators—such as achievement, recognition, and personal growth—as key drivers of satisfaction.

Gamification elements embedded in the PowerPoint-based games, such as interactive activities, rewards, and instant feedback, played a significant role in sustaining students' attention and interest. These features align with Li and Ranieri's (2010) findings on the motivational benefits of gamified learning tools. The immediate feedback provided during gameplay allowed students to recognize their progress and correct mistakes, reinforcing their understanding and retention of vocabulary.

### Comparisons with Traditional Methods

The study's comparative design further highlights the superiority of game-based learning over traditional instruction. While the control group showed some improvement, the significantly





higher gains in the experimental group underscore the value of interactive tools in addressing diverse learning preferences. Traditional methods often rely on rote memorization and lack the dynamic, personalized elements that gamified tools offer. The findings suggest that integrating technology into the classroom not only improves academic outcomes but also fosters a more positive attitude toward learning.

### Challenges and Limitations

Despite its success, the study faced several challenges that merit discussion. Developing engaging and educational PowerPoint games required significant time, resources, and expertise. Teachers involved in the study needed additional training to effectively incorporate these tools into their lessons, emphasizing the importance of professional development in technology integration. Additionally, the study's scope was limited to a single school and grade level, which may limit the generalizability of the findings to broader educational contexts. Future research should explore the application of such tools across different age groups, proficiency levels, and educational settings to validate their effectiveness on a larger scale.

### Broader Implications and Recommendations

The findings of this study contribute to the growing body of evidence supporting game-based learning as an innovative and effective approach to education. By combining the benefits of engagement, personalization, and immediate feedback, PowerPoint-based games provide a scalable solution for enhancing vocabulary instruction. This study demonstrates the potential for such tools to foster lifelong learning skills, align with 21st-century education goals, and prepare students for global communication needs.

To build on these results, the following recommendations are proposed: (1) **Teacher Training and Support:** Schools should invest in training teachers to design, develop, and implement gamified tools in their classrooms. Workshops and collaborative development sessions can equip educators with the skills needed to effectively integrate technology into their teaching practices. (2) **Broader Implementation:** Future studies should explore the use of gamified tools in other language skills, such as listening, speaking, and writing, as well as in other subjects like mathematics or science. This would expand the scope of their application and maximize their impact across curricula. (3) **Iterative Improvement:** Feedback loops involving students and teachers can help refine game content, ensuring cultural relevance and alignment with curriculum standards. This iterative approach can enhance usability and address diverse learner needs. (4) **Bridging the Digital Divide:** Policymakers and educational institutions should prioritize providing schools in underprivileged areas with access to the necessary technological resources. Bridging the digital divide will ensure that all students benefit from innovative learning tools.

The integration of PowerPoint-based games into vocabulary instruction has proven to be an effective and engaging approach to enhancing language learning. By addressing both cognitive and motivational aspects of learning, these tools not only improve vocabulary acquisition but also create a positive and supportive educational environment. Future research and efforts should





aim to expand the use of such tools, ensuring that their benefits are accessible to learners across diverse contexts and demographics.

## Recommendation

**1. Broader Implementation:** Expand the use of PowerPoint-based games to include other grades, subjects, and language proficiency levels. This would provide a more comprehensive understanding of the tool's adaptability and effectiveness across different educational contexts.

**2. Teacher Development:** Conduct professional development programs to equip teachers with the skills needed to create and implement digital learning tools effectively. Training workshops could focus on gamification principles, instructional design, and integrating technology into lesson plans.

**3. Continuous Feedback Mechanisms:** Incorporate regular feedback from students and educators to refine game content, ensure cultural relevance, and align with curriculum standards. This iterative approach would enhance the usability and impact of the games.

**4. Scaling Digital Access:** Address the digital divide by providing schools in underprivileged areas with the necessary technological infrastructure and resources. This step would promote equitable access to innovative educational tools and bridge learning gaps.

**5. Future Research:** Conduct longitudinal studies to evaluate the long-term impact of game-based learning on vocabulary retention and language proficiency. Comparative studies could also examine the effectiveness of PowerPoint-based games versus other gamified or technology-assisted interventions.

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