American Spaces Educational Gamification (Edgame) Quick2game Literacy Program: Basis for Classroom Game Development

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ABSTRACT

This study evaluated the American Spaces Educational Gamification (EdGAME) Literacy Program as a foundation for developing a vocabulary game. A total of 58 respondents—comprising 20 Reading Coordinators, 20 Quick2Game Coordinators, and 18 School Heads from 20 participating secondary public schools under the Department of Education, Division of San Jose Del Monte—were purposefully selected.

A mixed-methods sequential explanatory design was used in this study, which entails gathering and evaluating quantitative data first, then using qualitative data to clarify or expand on the quantitative findings.

The quantitative data collected through the survey were analyzed using descriptive statistics, followed by a SWOT analysis. The initial statistical analysis involved calculating means and standard deviations to summarize respondents' perceptions towards the implementation of the EdGAME program. After the descriptive results were obtained, SWOT analysis was applied to transform numerical outcomes into actionable insights.

The results revealed a consistently positive perception among all respondent groups regarding the EdGAME Literacy Program's effectiveness in enhancing vocabulary skills and promoting word recognition among Grade 7 frustrated-level readers through gamified, interactive learning strategies. The program's consistent alignment with the Department of Education's Most Essential Learning Competencies (MELCs) demonstrated strong curricular coherence.

The findings are grounded in several learning theories. Rooted in Vygotsky's Social Constructivism, the EdGAME Program leverages social interaction and collaboration, critical elements for cognitive development, to enhance literacy outcomes. Consistent with Piaget's Constructivist Learning Theory, the program supports learners in constructing their own understanding through active engagement and experience-based learning. Moreover, the motivational structures of the program are aligned with Deci and Ryan's Self-Determination Theory, which emphasizes the importance of autonomy, competence, and relatedness in fostering intrinsic motivation. Finally, the principles of Gamified Learning Theory by James Paul Gee are evident, as EdGAME employs game-based mechanisms to create authentic, meaningful contexts for learning, thus increasing student engagement, agency, and literacy achievement.

The results of this study reveal a consistently positive perception among school heads, Quick2Game coordinators, and reading coordinators regarding the effectiveness of Quick2Game as an instructional and learning material, particularly in enhancing vocabulary skills and promoting word recognition among Grade 7 frustrated-level readers through gamified, interactive learning strategies.

In response to the findings, the researcher developed VocaBank, a classroom-based vocabulary game adapted from Quick2Game, designed to teach vocabulary in an engaging, low-stress, and collaborative environment, further embodying the principles of constructivism, social, motivational, and gamified learning frameworks.

Keywords: educational gamification, reading intervention, reading programs, vocabulary, classroom games, Quick2Game

THE PROBLEM AND ITS BACKGROUND

Introduction

The United Nations Children's Fund (UNICEF, 2021) has reported that over 600 million children worldwide cannot attain minimum proficiency levels in reading and mathematics, even though two-thirds of these children are in school. A year later, the United Nations Children's Fund (UNICEF, 2022) warned the world of the shockingly low levels of learning, with only a third of 10-year-olds globally estimated to be able to read and understand a simple written story. Lack of access to quality learning during the COVID-19 pandemic exposed and exacerbated a pre-existing learning crisis that has left millions of children worldwide without foundational numeracy and literacy skills.

The Program for International Student Assessment (PISA) was developed by the Organization for Economic Cooperation and Development (OECD) to measure 15-year-olds' ability to use their reading, mathematics, and science knowledge and skills worldwide. In 2022, Mathias Cormann, the Secretary-General of the OECD, stated that PISA was the initial extensive study examining the impact of the COVID-19 pandemic on students. Nonetheless, the decrease in performance across all three assessed areas can only be partially linked to the COVID-19 pandemic. In 2018, among 79 participating countries in reading, science, and math scores, the Philippines ranked lowest in reading comprehension. In PISA 2022, marking a second consecutive bottom 10 ranking in reading comprehension, mathematics, and science, the Philippines ranked 76th among 81 participating countries. Based on the 2022 PISA, the mean scores of the participating countries were 476 for reading; however, the Philippines scored approximately 120 points below the average. Overall, the Philippines achieved a 2.2-percentage-point increase in mathematics from 2018 to 2022, 6.9 percent in reading, and a 0.8-percent drop in science proficiency (OneNews.PH, 2023).

In the Philippines, assessments such as the National Achievement Test (NAT) provide insights into students' reading proficiency in public schools. The 2018 NAT results indicated that only 59.6% of grade 6 students achieved a proficiency level in English, while just 47.7% achieved a proficiency level in Filipino (Department of Education, 2019). These statistics highlight the need for effective strategies to address the challenges faced by Filipino students in reading. PISA and DepEd's National Achievement Test (NAT) provide the required feedback for policy decisions and improvements. The Philippines has regularly participated in these evaluations to ensure the continuity of data for evaluating improvements and identifying gaps and areas for growth in basic education.

Despite the emphasis on reading proficiency in the K-12 Basic Education Curriculum, many Filipino students struggle with reading. Many students need help with reading comprehension, vocabulary development, and critical thinking skills, which negatively impact their academic performance and overall development (Idulog et al., 2023). To support the "Every Child is a Reader Program, the Department of Education issued Department Order 014 s. 2018 to use the Philippine Informal Reading Inventory (Phil-IRI) as a classroom-based assessment to measure and describe the learners' reading performance both in English and Filipino languages to determine the learners' independent, instructional, and frustration reading levels. The Phil-IRI serves as a basis for planning and redesigning the reading instructions of the teachers and the school's reading programs/activities to improve the school's overall reading program.

In the Division of the City of San Jose Del Monte in Bulacan, the result of the Philippine Informal Reading Inventory (Phil-IRI) assessment from the school year 2022– 2023 showed that among 12,478 Grade 7 students in 20 public schools in the City of San Jose Del Monte, 1,272 students were classified as non-readers, 2,033 were classified as frustrated readers, and 3,377 were classified as instructional readers. The total number of independent readers was 3,682. (DepEd San Jose Del Monte, 2022). Unfortunately, many students found it difficult to read and

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comprehend due to a lack of vocabulary and interest. Many students have lost interest in reading books and spend most of their time on online games and social media. As a result, students' vocabulary is limited. Knowledge and vocabulary are essential building blocks for comprehension (Kolhar et al., 2021). These challenges may also negatively affect students' self-esteem and motivation, leading to disengagement from the learning process and reduced academic achievement (Mayano et al., 2020).

To help his fellow San Joseños, Luis Rico Gutierrez, the head of the City Youth and Sports Development Office (CYSDO) of the City of San Jose Del Monte, Bulacan, introduced the Quick2Game to the learners and teachers. Quick2Game is a Scrabble- inspired game created by Luis Rico Gutierrez in March 2016. It has been played in different tournaments by students and teachers from both public and private schools, and other professionals from San Jose Del Monte, Bulacan (Quick2Game, 2020). This is much like playing Scrabble: players must form words from the tiles they are holding. Harrison & Roberts (2021) stated that Scrabble provides entertainment and a valuable tool for expanding vocabulary skills, improving literacy, nurturing fundamental mathematical abilities, and fostering critical thinking among players. Players are allotted a specific number of tiles within each time frame to inject excitement. The game offers different levels of complexity, challenging players to form valid English words using 32 tiles in 60 seconds, 64 tiles in 120 seconds, and 128 tiles in 360 seconds. It can be played solo or in pairs, with eight players engaging at a single table. A game arbiter ensures the validity of words, with uncommon terms cross-checked against official references like the Oxford English Dictionary, Merriam-Webster Dictionary, and Hasbro Dictionary (Quick2Game, 2020).

American Spaces Philippines is an international organization promoting different literacy programs to address students' problems in vocabulary and reading comprehension in more than 140 countries, including the Philippines. American Spaces Philippines provides innovative resource spaces for diverse individuals and partners to connect, discover, and share ideas, skills, and opportunities for positive change in individual lives and communities. It aims to build bridges of understanding, collaboration, and partnership between the Filipino and American people. (IAmSpacesPH, 2020). American Spaces also offers programs on various topics, including free internet access, objective news, advanced technology, freedom of cultural expression, scholarships, grants, educational advice, workshops, classes, and lectures on various topics (American Spaces, 2024).

In August 2022, American Spaces Philippines announced an open competition for non-profit organizations to organize a program to develop technology-based solutions to address the most pressing challenges in education. This proposal is called the American Spaces Education Gamification (EdGAME) Program, which aims to bring together game developers, teachers and students, AR/VR enthusiasts, and coders, collaborating with the United States Embassy and other partners to create gamified solutions. Other partners could include U.S. and Philippine government departments/agencies, education organizations, education leaders/experts, U.S. Government exchange program alumni, and local communities. A $15,000 grant will be given to the winner (U.S. Embassy Manila, 2022).

On September 23, 2022, Luis Rico Gutierrez submitted Quick2Game as his proposal for the American Spaces Educational Gamification Program (Quick2Game, 2022) and won a $15,000 grant (City Youth and Sports Development Office-CSJDM, 2022). Upon receiving the grant, Gutierrez collaborated with the Department of Education Division of the City of San Jose Del Monte, Bulacan, and then called this program the American Spaces Educational Gamification (EdGAME) Quick2Game Literacy Program for Underprivileged Students (Quick2Game, 2022). Through Schools Division Advisory Number 107 Series 2022, "The Presentation and Scheduling of the American Space Education Program: Literacy Program for Underprivileged Students Using Quick2Game by Creating a User-Friendly Educational Game, Developing the Learner's Vocabulary, Reading Comprehension, and Critical Thinking", the EdGAME program was presented to DepEd City of San Jose Del Monte Bulacan. Through Division Advisory 06, series 2023, the official list of all reading coordinators and Quick2Game coordinators of the twenty public secondary schools in the City of San Jose Del Monte, Bulacan, has been disseminated. To support the Department of Education's objective of enhancing the language proficiency of the youth and improving the reading comprehension of the students, Gutierrez, together with the school reading coordinators and Quick2Game coordinators in the schools division of San Jose Del Monte, implemented the EdGAME Quick2Game Literacy

Program for Underprivileged Students in twenty public schools of the City of San Jose Del Monte Bulacan from February to August 2023. The EdGAME literacy program aims to develop vocabulary and word proficiency, develop reading comprehension, enhance the language ability, camaraderie, and social well-being of the underprivileged students in the City of San Jose Del Monte, Bulacan, and determine the present status of the learners in terms of spelling, word meaning, and reading comprehension. The program's recipients are Grade 7 learners from twenty (20) secondary public schools of the division who are categorized as frustrated-level readers. The frustrated readers were determined through the results of the Phil-IRI administered in the whole division in 2022. Frustrated Level Readers can recognize some words, but they lack comprehension (Sornito, 2020). The students scored 58% or below on the reading comprehension test, the student is classified as slow reader (Ata & Idillo, 2020).

Thus, to monitor the activities effectively, the Quick2Game set schedules and grouped twenty schools according to availability. The first group of schools consists of San Isidro National High School, San Martin National High School and Marangal National High School, Muzon National High School, Muzon Harmony Hills High School, and Santo Cristo National High School facilitated the pre-assessment in February 2023 and the post-assessment in May 2023. Meanwhile, the second group of schools consists of Mulawin National High School, San Jose Del Monte Trade High School, Bagong Buhay B Integrated School, Bagong Buhay F Integrated School, City of San Jose Del Monte National High School, Kaypian National High School, Kakawate National High School and San Manuel National High School facilitated the pre-assessment in March 2023 and the post- assessment in June 2023. The third group of schools, including Paradise Farm National High School, Kakawate National High School, Citrus National High School, San Jose Del Monte National High School, and San Rafael National High School, facilitated the pre-assessment in April 2023 and the post-assessment in July 2023. Lastly, Sapang Palay National High School is the biggest school in San Jose Del Monte, Bulacan. Facilitated the pre-assessment in May 2023 for the pre-post-assessment in August 2023.

During the implementation of the EdGAME program, the Quick2GAME proponents assigned school reading coordinators and Quick2Game coordinators collaboratively conducted an orientation and a 75-item pre-assessment consisting of a 30- item vocabulary test, a 20-item reading comprehension test, and a 25-item spelling test for the Grade 7 frustrated readers. The Quick2Game proponents provided pre-assessment materials and activities, while the assigned coordinators assisted the students in taking the test. The day after the pre-assessment, students started playing Quick2Game inside the library every lunch break, during, and after their classes. After three months of playing Quick2Game, students took the post-assessment.

After implementing the American Spaces Educational Gamification (EdGAME) Quick2Game Literacy Program in 20 public junior high schools in the City of San Jose Del Monte, Bulacan, the Quick2Game organization gathered the pre-test and post-test results from the frustrated readers. The result shows that among the twenty participating schools, seven schools had the highest number of students who got the passing scores in the post-assessment passing score while the remaining schools were classified as having no progress. This data proves a need to evaluate the reading program, specifically the implementation of pre-assessment, intervention, and post-assessment. The result of the evaluation will serve as a springboard for the researcher in developing a vocabulary game activity that promotes effective ways to learn English vocabulary in a relaxed manner.

Statement of the Problem

This study aims to evaluate the American Spaces Educational Gamification (EdGAME) Quick2Game Literacy Program's pre-assessment, intervention, and post- assessment implemented in twenty public secondary schools in the City of San Jose Del Monte, Bulacan, as a basis for developing a classroom vocabulary game.

Specifically, this study will find answers to the following questions:

How do the respondents perceive the American Spaces Educational Gamification (EdGAME) Quick2Game

Literacy Program in terms of:

1.1. Purpose and objectives,

1.2. relevance, and

1.3. implementation?

What are the strengths and weaknesses of the American Space Educational Gamification (EdGAME) Quick2Game Literacy Program in terms of its:

1.4. pre-assessment,

1.5. intervention, and

1.6. post-assessment?

Based on the identified strengths and weaknesses, what are the opportunities and threats of the American Space Educational Gamification (EdGAME) Quick2Game Literacy Program as perceived by the respondents?

Based on the identified strengths, weaknesses, opportunities, and threats, what vocabulary game can be developed?

Significance of the Study

The findings of this study provide valuable insights into the evaluation criteria for materials and program guidelines used in the administration of the EdGAME Quick2Game Literacy Program. These insights are expected to benefit various stakeholders in the field of education in the following ways:

QUICK2GAME Developers. The findings of this study may help the developer to improve the materials used for pre-assessment, intervention, and post-assessment. The improved quality of the Quick2Game may continuously promote literacy to the students in both public and private high schools in the Philippines.

Curriculum Implementers. The findings of the study will aid policymakers in incorporating Quick2Game into the DepEd curriculum. It will give them further knowledge in improving their management and supervisory plan to progress learners' vocabulary skills and reading comprehension.

School-Based Management (SBM) Chairpersons. The results obtained from the study could be the basis for improving collaboration between the administrators and the reading coordinators. The school-based management can evaluate the reading project based on the standardized evaluation tool.

School Reading Coordinators. Understanding where students struggle with reading allows instructors to develop structured plans to increase their performance in reading (Jones, 2023). School reading coordinators oversee and monitor the reading performance of the students. At the beginning of the school year, their task is to plan, design, or redesign activities and programs that promote students' passion for reading and develop students' reading comprehension. Since some of the informants in this study are the reading coordinators who administered this educational gamified project will give them guidelines or a basis for designing a reading program.

Parents. Parents are expected to show interest and willingness in helping to develop their children's skills by officially enrolling them in the program, encouraging them to attend the classes regularly, and doing what is requested of them as parents in aid of the children's learning. This study may help them identify the reading program that will best suit the needs of their children.

Quick2Game Enthusiasts. The findings of this study provide meaningful insights for individuals who are

passionate about educational gamification, particularly those who advocate for innovative approaches to literacy instruction. Quick2Game enthusiasts can better understand how the program supports the development of essential reading and vocabulary skills through interactive, game-based learning. The program also demonstrates how gamification can be strategically used to improve learner engagement, foster critical thinking, and promote collaborative learning experiences. These insights may inspire further exploration, support, and refinement of educational games aimed at enhancing literacy outcomes.

Learners. This study confirms the many ways they benefit from participating. Through its gamified structure, the program transforms traditional reading activities into enjoyable and meaningful experiences that build vocabulary, improve reading comprehension, and sharpen critical thinking skills. The collaborative nature of Quick2Game encourages peer interaction and teamwork, helping students strengthen their communication and socialization abilities. By participating in the program, students are not only improving academically but also developing the confidence and motivation necessary for lifelong learning. This study helps students recognize the importance of such games in making learning fun, purposeful, and impactful.

Future Researchers and Aspiring Educators. This study opens new opportunities to explore how game-based learning strategies, like Quick2Game, affect student motivation, academic performance, and classroom dynamics. Future researchers can study the effects, effectiveness, or adapt the program for different settings and age groups. For aspiring teachers, the program provides a useful model for creating engaging and interactive lessons that enhance vocabulary, reading fluency, and social learning. It also emphasizes the need for reflective practice and flexible teaching to address the varied needs of learners.

Scope and Delimitations of the Study

This research was conducted among 18 school principals, 20 reading coordinators, and 20 Quick2Game coordinators, who were purposively selected from 20 participating public junior high schools implementing the American Spaces Educational Gamification (EdGAME) Quick2Game Literacy Program under the Department of Education – Schools Division, City of San Jose del Monte, Bulacan.

The study focused on evaluating the six components of the program: objective, relevance, pre-assessment intervention and post-assessment, and overall implementation of the EdGAME Quick2Game Literacy Program. Specifically, it examined the program's strengths and weaknesses of the EdGAME program based on the perceptions of the implementers. The strengths and weaknesses were analyzed by the researcher to determine the opportunities and threats to the EdGAME program. The scope of the study is limited to the Quick2Game as a learning tool used during the program's intervention and does not extend to other literacy interventions beyond the EdGAME framework.

Although the researchers developed a classroom-based vocabulary game as part of the study, the scope of the game is limited to its development and expert validation; it is not included in the testing or implementation phases of this research.

The instrument that was utilized during the study was a survey questionnaire. The questionnaire was an adapted evaluation tool based on Dr. Tessema's framework, *Evaluating the Quality of Distance Learning Materials*, which contains two main components: assessing respondents' perceptions and identifying the strengths and weaknesses of the program.

Definition of Terms

This section presents the conceptual and operational definitions of the unfamiliar terms used in this study.

Coordinators. Coordinators, as defined by the Cambridge Dictionary, are individuals responsible for fostering

organized collaboration among various groups to accomplish specific goals. As used in this study, coordinators are the teachers appointed to implement the EdGAME Literacy Program. They are the participants in the study.

Educational Gamification (EdGAME). Gamification has been created and used as a teaching tool. It involves using game mechanics and dynamics to solve problems, engage people, and improve the learning process (Nitiasih & Budiatrha, 2021). In this study, educational gamification refers to the literacy program being implemented in 20 public junior high schools in Bulacan.

EdGAME. Abbreviation for Educational Gamification. The use of gamification in education is a powerful tool that can change how we teach and learn in the 21st century (Singh, 2023). In this study, EdGAME is the name of the program used in 20 junior public schools in the City of San Jose Del Monte. It aims to help struggling readers improve their reading and vocabulary skills.

EdGAME Learning Materials. Refer to the various learning resources used in EdGAME exercises. These include tiles that serve as game equipment, consisting of a flat, thin piece (Kuzumi, 2022). In this study, Quick2Game units act as an intervention tool during the implementation of the EdGAME program.

Frustrated Level Readers. These readers can recognize some words, but they lack comprehension (Sornito, 2020). As used in this study, frustrated-level readers are the recipients of the EdGAME Literacy Program.

Quick2Game. A Scrabble-inspired game played by frustrated level readers (Quick2Game, 2022). As used in this study, Quick2Game refers to the material utilized as an intervention tool to enhance the vocabulary skills and reading comprehension of the students during the implementation of the EdGAME Literacy Program.

Underprivileged learners. According to Oxford Dictionary, underprivileged learners are children who do not have the same level of living or rights as the majority of individuals in a society and are considered "needy and disadvantaged" members of the community. As used in this study, underprivileged refers to the Grade 7 students from twenty public schools in the City of San Jose Del Monte, Bulacan, who are the recipients of the EdGAME program.

THEORETICAL FRAMEWORK

This chapter presents the relevant theories, the relevant literature, the relevant studies, the conceptual framework, the assumptions of the study, and the definition of variables.

Relevant Theories

This part of the paper presents the different theories in gamification, learning, and intrinsic motivation, which serve as the foundation for the researcher in evaluating the EdGAME literacy program as the basis for developing a classroom vocabulary game.

Constructivist Learning Theory. Jean Piaget (1964)

Posits that individuals acquire knowledge about the world by engaging in experiences, actively interacting with their environment, and contemplating those experiences. According to Piaget, knowledge is actively constructed by the learner as they engage with new experiences, transforming these experiences into cognitive structures (Piaget, 1976).

This paradigm stresses cognitive development phases, problem-solving skills, and the learner's active engagement in creating meaningful learning experiences. Constructivism indicates that learners benefit the most from engaging in activities that challenge their prior knowledge and foster exploration and problem-solving, which is important to the creation of educational games (Shah, 2019).

The EdGAME literacy program, when evaluated through the lens of Constructivist Learning Theory, offers effective guidelines for applying a constructivist approach in the classroom setting. The EdGAME literacy program, which combines interactive, learner- centered game mechanics, is consistent with Piagetian principles of active learning, cognitive growth, and the importance of involvement with real-world challenges.

The first concept is active learning and discovery. According to Piaget's theory, active learning is important because it allows learners to develop knowledge through interaction with their environment. The EdGAME Literacy Program invites learners to actively participate in literacy difficulties, solve problems, and navigate through interactive tasks.

This coincides with Piaget's concept of assimilation and accommodation, in which learners incorporate new knowledge into their existing cognitive frameworks and alter their mental structures to accommodate new literacy skills (Piaget, 1976). The EdGAME literacy program demonstrates this through students forming new words from existing ones while playing Quick2Game during the intervention program.

The second concept is cognitive development through progression: Piaget proposed that learners progress through several phases of cognitive development. The EdGAME literacy program supports this approach by providing different Quick2Game levels used in the program's intervention. The EdGAME literacy program, like Piaget's theory that children progress through developmental stages, offers varied assignments that let learners advance as they master each level of complexity. This approach encourages pupils to construct information incrementally, promoting cognitive growth in a tailored and developmental manner (Chew & Cerbin, 2020).

The last concept is collaborative learning and social contact: Piaget emphasized the importance of social interaction in cognitive development, particularly peer relationships and collaborative problem-solving.

The EdGAME literacy program promotes collaboration among learners by allowing the learners to work in pairs while playing the Quick2Game during the intervention program. Learners who engage in cooperative problem-solving exercises enhance not just their literacy skills but also their ability to think critically and connect successfully with others (Xu et al., 2023) both of which are crucial components of Piaget's theory.

The EdGAME Literacy Program is a significant way to implement Constructivist Learning Theory, providing a dynamic platform for students to actively construct their literacy knowledge through interactive and engaging game-based activities. By adhering to Piaget's concepts of active learning, cognitive development, teamwork, and real learning, the initiative improves literacy outcomes while developing deeper cognitive and social abilities. This strategy not only promotes students' literacy development entertainingly but also fosters problem-solving, critical thinking, and teamwork, all of which are required for success in today's complicated educational environments.

Self-determination Theory. Deci and Ryan (2000)

This theory highlights the role of autonomy, competence, and relatedness in promoting intrinsic drive. Self-determination theory states that learners are more engaged and motivated when they have a sense of control over their learning, feel competent in their activities, and possess opportunities for meaningful social interactions.

Some features in gamified learning environments, such as choice, challenge, feedback, and social interaction, are important in encouraging motivation and learning in supporting the Self-Determination Theory (SDT) in gamified learning environments (Reeve et al., 2023; Tóth et al., 2022). There are three psychological needs identified by Self-Determination Theory that are aligned with the EdGAME literacy program:

The first psychological need is autonomy. Autonomy is when learners feel they have control over their learning decisions; they are more likely to be intrinsically motivated and engaged. When learners are given the option of completing tasks, choosing their learning routes, or making decisions within a game environment, they develop autonomy (Deci & Ryan, 2000).

During the intervention of the EdGAME Literacy Program, learners were allowed to choose their partner, they were allowed to create as many words as they could in a given timeline, and they could choose how many letters they wanted to use in forming the words, allowing them to showcase their vocabulary knowledge and enhance their engagement in the game used as an intervention during the program.

The second psychological need is competence: competence is frequently reinforced in gamified learning environments through feedback, accomplishment levels, and prizes. Learners feel valued when they feel competent about their abilities (Reymond et al., 2022). Well-designed game elements such as progressive challenges, skill-based incentives, and immediate feedback on learners' performance were implemented during the intervention of the EdGAME Program.

The program provides grade-level tasks that offer immediate feedback on their progress, which can help them develop a sense of mastery in literacy, promoting intrinsic motivation. This method not only helps the learners gain confidence in their literacy skills but also motivates them to persevere in the face of obstacles.

Relatedness is the third psychological need identified by self-determination theory, which refers to the desire to feel connected with others. Relatedness in education is created through social interactions and a sense of belonging to the learning community. The EdGAME Literacy Program encourages relatedness by introducing collaborative components into the game, such as group challenges, peer feedback, or team-based game activities. These social connections not only increase learners' engagement but also help them build their ability to read in a collaborative and supportive setting. The EdGAME Literacy Program fostered a sense of community, which made the learners feel supported in their learning journey and increased their motivation and persistence.

The EdGAME Literacy Program, when considered through the perspectives of Self- Determination Theory (SDT), can be a strong instrument for increasing student motivation, engagement, and literacy growth. This program can help learners become more intrinsically motivated, persevere through challenges, and enhance their literacy skills by creating game-based learning experiences that meet the psychological needs for autonomy, competence, and relatedness. The integration of self-determination theory into gamified educational technologies emphasizes the need to develop learning environments that nurture the learners' psychological needs, resulting in more successful and enjoyable learning experiences.

Social Constructivism. Lev Vygotsky (1978)

Learning takes place through contact with peers and the environment, in which learners generate meaning through cooperation and problem-solving. Game-based learning like Quick2Game allows students to engage in social interactions in a gaming setting, collaborate on games, and build literacy skills in an immersive, dynamic environment. This is consistent with the findings of Surendeleg et al. (2020), who argue that game-based learning not only enhances cognitive skills but also social learning by increasing group dynamics.

One of the fundamental ideas of social constructivism is scaffolding, which refers to the assistance provided by more competent peers or teachers to help learners complete activities that they cannot finish on their own. Scaffolding can be utilized in a gamified classroom by using game elements that promote collaborative problem-solving, peer feedback, and teamwork. As students move through the game's literacy activities, they receive assistance and help from peers or teachers, allowing them to face more difficult problems.

This dynamic is like Vygotsky's Zone of Proximal Development (ZPD), which outlines the difference between what a learner can do individually and what they can accomplish with help (Latifa, 2024). By integrating scaffolding into the gamified learning environment, students are given the tools they need to advance their literacy skills through meaningful social interactions. Peer cooperation is an important aspect of social constructivism in gamified literacy programs. Games inherently foster student connection because they frequently entail teamwork, collaborative problem-solving, and shared decision-making.

Collaboration in educational games can improve deeper learning by allowing students to share their knowledge and viewpoints. According to Johnson and Johnson (2020), cooperative learning, a key component of social constructivism, improves students' ability to learn from one another, strengthens critical thinking skills, and boosts motivation. In the context of literacy instruction, collaborative game-based activities enable students to practice reading comprehension, writing, and communication skills while learning from their peers' experiences and perspectives. As students work together within the game, they are also able to negotiate meanings, discuss strategies, and develop a shared understanding of the content, all of which are vital aspects of literacy development.

Social constructivism also emphasizes the value of genuine learning experiences, which are based on real-world circumstances and allow students to apply their knowledge in meaningful ways. Situated learning, a concept derived from Vygotsky's work, proposes that knowledge is most effectively gained when contextualized within real-world circumstances.

When created properly, educational games can imitate real-world tasks and problems, encouraging students to apply their literacy abilities in context-relevant ways. For example, a classroom game that resembles a storytelling or writing competition allows students to practice their literacy abilities in a setting that is like real-life scenarios. This technique not only improves literacy skills but also helps students comprehend how to use such abilities in real-world situations. Gee (2020) contends that game-based learning settings create an authentic context for learning by immersing students in complex problem-solving scenarios in which knowledge is actively constructed through involvement.

Furthermore, social constructivism emphasizes the role of language and communication in the learning process. Vygotsky stressed that language is a major tool for cognitive development and that children gain conceptual knowledge through social interaction and conversation. Language is employed in a gamified literacy program not only to engage with written texts but also for collaboration and interaction with peers. Games foster verbal and textual communication among students, whether they are discussing techniques, composing narratives, or providing feedback to one another.

These language-rich environments are essential for literacy development because they give authentic situations for practicing reading, writing, and speaking. Gamified literacy programs foster an environment in which students interact socially through language, allowing for active learning and cognitive development (Smiderle et al., 2020). Finally, social constructivism is consistent with the concept of active, learner- centered education, in which students actively participate in their learning journey rather than passively receiving knowledge. In a gamified classroom, students are actively creating their learning experience rather than simply completing tasks. By combining choice, discovery, and problem-solving into the game framework, students are empowered to take charge of their education.

This strategy promotes intrinsic drive and autonomy, both of which are important components of deeper and more meaningful literacy development. Deterding et al. (2020) contend that gamification promotes learners to embrace challenges and acquire agency, both of which are necessary for lifelong learning.

Game-Based Learning Theory. James Paul Gee (2003)

Gamification has been defined as the use of characteristics commonly associated with video games in non-game contexts, as defined in Bedwell Taxonomy (Deterding et al., 2011). However, in Gamified Learning Theory, Landers (2014) reframed gamification as the use of game attributes, outside the context of a game, to affect learning-related behaviors or attitudes. Gamified learning theory implies that gamification does not directly influence learning but rather stimulates learning-related behavior through a mediating or regulating process. Gamification affects learning when an instructional designer intends to encourage a behavior or attitude that will improve learning. The ultimate impact of that motivational increase is then dependent on the availability of appropriate training. Gamification influences learning through mediation when an instructional designer seeks to foster a behavior or attitude to increase learning. (Landers, 2014).

The goal of game-based learning theory, on the other hand, is to teach content with real games rather than just game elements. It's important to distinguish between gamification (adding game-like elements to non-game activities) and game-based learning (using actual games as learning tools). Understanding game-based learning can help you determine how games can be specifically designed for educational purposes. Game-based learning is the use of actual games as educational tools that aim to improve the learners' learning experience by creating an engaging, immersive, and stimulating environment (Gee, 2020).

In this study, GBL theory is important in guiding the development of a classroom game that promotes reading skills while keeping students engaged and motivated. Game- based learning theory focuses on the development of critical thinking and problem-solving abilities. Games inherently demand players to make decisions, solve problems, and overcome barriers, all transferable skills that help with cognitive growth. Learners who play educational games develop strategic thinking skills, which can be applied to literacy activities such as reading comprehension and writing. Learners who participated in well- designed game-based learning settings had improved problem-solving abilities, which is an important component of literacy instruction (Adipat et al., 2021).

Game-Based Learning Theory is aligned with Piaget's constructivist learning principles, which emphasize that learners build knowledge through active experiences; Vygotsky's social constructivism, where learners construct meaning through collaboration and problem-solving; and Deci and Ryan's Self-Determination Theory (SDT), where intrinsic motivation is a key factor in fostering deep learning (Deci & Ryan, 2020), which is essential for sustaining the learning.

In evaluating the EdGAME Literacy Program, game-based learning theory plays an essential role in developing games that are not only enjoyable but also educationally sound, supporting both motivation and skill development. As Gee (2020) points out, games create a dynamic, interactive environment in which students are encouraged to take ownership of their learning, make decisions, and reflect on their progress, which is especially beneficial for literacy development. The use of game elements in the classroom has the potential to change traditional literacy education into a more interesting and student-centered experience, resulting in better academic achievements.

Related Literature

Vocabulary Knowledge and Reading Comprehension. Vocabulary knowledge is a powerful predictor of reading comprehension across all age groups and educational settings. According to Lee and Kim (2021), vocabulary depth, which involves knowing word meanings, subtleties, and contexts, is as important as vocabulary breadth (the number of words understood). Without appropriate word knowledge, pupils fail to generate meaning from text, resulting in poor comprehension (Gedik & Akyol, 2022). Lack of vocabulary will affect learners' understanding of reading, and reading comprehension is considered a major necessity and vital factor (Hashemi and Kew, 2020). It was easier for those with a strong background in vocabulary knowledge to understand the text compared to those who lack vocabulary knowledge (Kiliç, 2019).

Limited vocabulary knowledge or slow word access can negatively impact children's reading comprehension, as longitudinal studies show that vocabulary knowledge predicts reading comprehension growth. (Chipili, Mwansa & Mpolomoka, 2024). A child with difficulty reading words and low vocabulary knowledge may experience poor reading comprehension, but it's unclear if this is due to word reading or comprehension issues.

Vocabulary expertise enables readers to form inferences and recognize implicit meanings, which are frequently required for comprehending the entire content of a text (Lawrence et al., 2021). Vocabulary offers the cognitive framework required for successful text processing, allowing readers to connect new material with past knowledge and gain a deeper understanding (McKeown, 2019).

Vocabulary Acquisition and Reading Strategies

While vocabulary knowledge is necessary for reading comprehension, the strategies employed to acquire and apply

vocabulary are just as significant. According to Lee & Lee (2020), exposure to words in context allows readers to infer meanings, which improves comprehension. Teaching students to use context clues, such as surrounding text or understanding word parts (prefixes, suffixes), improved their ability to comprehend difficult texts. Students who rely on contextual comprehension of new words perform better in comprehending both literary and factual texts because they may deduce meanings from context rather than relying entirely on explicit definitions (Wongwiwattana & Watanapokakul, 2021).

Vocabulary and reading share common processes, with vocabulary growth requiring mappings between semantic meaning and phonological form, and reading requiring mappings between semantic, phonological, and orthographic units (Siegelman et al., 2020). Within this view, specific underlying processes may be impaired in poor readers, and it is these weaknesses that lead to both poor reading and poor vocabulary. (Chipili, Mwansa & Mpolomoka, 2024)

Moreover, Samat and Aziz (2020) stated that interactive vocabulary activities like word games and multimedia technologies significantly enhance students' reading comprehension skills, enhancing their vocabulary and literature knowledge.

Vocabulary Instruction and Intervention

Improving vocabulary instruction helps students understand what they read (Garden, 2022). Explicit vocabulary training, combined with repeated exposure to words in diverse contexts, was the most successful strategy for enhancing vocabulary and reading comprehension (Vincy, 2020). Yildiz and Celik (2020) stressed the importance of scaffolding vocabulary learning, with teachers allowing students to encounter words from various sources and use them in their speaking and writing. Vocabulary instruction revealed that targeted interventions, such as high-frequency words or challenging vocabulary, significantly improved students' reading comprehension, providing more meaningful learning experiences (Lawrence et al., 2021).

Vocabulary depth and breadth are critical for reading and interpreting texts because they allow readers to recognize words, infer meanings, and process complex data. Effective vocabulary learning and acquisition techniques, particularly those that highlight context, word relationships, and individualized learning, may greatly enhance students' comprehension. As vocabulary knowledge is an important predictor of reading success, future research should investigate how vocabulary interventions might be tailored to help varied learners improve their reading comprehension.

Literacy and Literacy Programs

Literacy can be defined as the ability to read, write, and comprehend information (Dunbar & Cooper, 2020). Literacy is a complex concept that can vary across different contexts and cultures, but it is universally recognized as a crucial foundation for education and lifelong learning (Fadillah et al., 2023, p. 365). According to Roberts and Li (2022), literacy is today recognized as a multifaceted construct that encompasses the ability to navigate, critically analyze, and create content in various formats, including digital texts, social media, and multimedia content.

The Role of Literacy Programs

Closing the achievement gap in reading has been the focus of many literacy programs, hundreds of which are now being implemented in schools nationwide. Although a lot of these applications provide teachers with useful instructional materials, it's crucial to keep in mind that programs don't teach children; excellent teaching does. As a result, it is the responsibility of teachers and educators to evaluate the advantages and disadvantages of the numerous literacy programs (Courtneay, 2020).

Literacy programs are intended to meet the different needs of learners, from early childhood to adult education. Tailoring effective reading programs to learners' demographics and developmental stages is crucial. For example, early childhood literacy programs are critical for setting the groundwork for reading abilities, whereas adult literacy

programs emphasize functional literacy for workplace readiness and social involvement (Busari et al., 2025).

Various early literacy programs that included phonemic awareness, vocabulary development, and interactive reading practices were the most helpful in enhancing children's literacy outcomes (Herrera et. al., 2021). Meanwhile, literacy programs in adult education aim to improve reading, writing, and numeracy abilities to promote employability and civic involvement. According to Rabinowitz (2025), adult literacy programs that combine real-world materials, such as job applications and government documents, provide learners with practical skills they may apply daily.

Future research on literacy and literacy programs should focus on improving the integration of digital tools with traditional literacy activities, ensuring that students gain a diverse set of abilities. As proposed by Roberts and Li (2022), future literacy programs should focus on the development of critical thinking abilities, allowing learners to assess the credibility of digital content and move through a complicated world of information in the digital age. Furthermore, equality in literacy education should be prioritized, particularly when it comes to meeting the needs of underrepresented groups and students in underprivileged communities.

The nature of literacy and the critical role that literacy programs play in developing reading, writing, and digital literacy skills across age groups. Effective literacy programs must be adapted to learners' particular developmental needs and include creative approaches such as personalized learning, gamification, and real-world applications. As literacy is a core ability for academic and personal success, future studies should look into ways to make these programs more inclusive, accessible, and adaptive to the evolving demands of the digital world.

Educational Gamification

Gamification in education focuses on intrinsic and extrinsic motivation (Deterding et al., 2020). Gamified learning environments improve student engagement by offering clear goals, prizes, and real-time feedback. Muntean (2020) revealed that gamified interventions can improve motivation and learning results, particularly when game features are matched to students' specific preferences and competencies. Lopez and Sanchez (2021) found that students in a gamified environment were more motivated than those in traditional learning settings, with gamification encouraging a sense of achievement and competition. Specific gaming elements such as badges, leaderboards, and progress tracking have been related to higher academic performance.

Learning Outcomes and Academic Performance

González and Rodríguez (2022) found that implementing badge systems in an online mathematics course boosted completion rates and student performance. Badges were used to motivate students to continue working through the course material. Similarly, Wang and Lin (2021) investigated how narrative-driven gamification, which frames instructional content within a tale, improves students' capacity to retain and apply knowledge. Their study found that students who engaged with the gamified narrative performed higher on exams, particularly in topics that required deep conceptual knowledge.

Contrary to this, Smiderle et al. (2020) noted that while gamification can increase engagement, it does not always lead to improved academic accomplishment. They stated that the quality of the gamified design, such as the alignment of game components and learning objectives, was critical in assessing the influence on academic performance. Without careful incorporation of pedagogical concepts, gamification risks becoming a surface layer on top of current knowledge rather than a tool for deeper learning.

Challenges and limitations

Despite its advantages, using gamification in educational contexts is not without challenges. One recurrent issue is that gamification has the potential to aggravate student disparities. One-size-fits-all gamified classes can cause or aggravate demotivation if they do not consider students' differences (Hong et al., 2024). For example, students with

low self-efficacy may find the competitive components of gamification disheartening, particularly when they are ranked on leaderboards or compared to peers. This might cause irritation and disengagement in learners who are less secure in their talents. Furthermore, the effectiveness of gamification can be influenced by the degree of customization it offers.

Khaldi et al. (2023) highlighted that for gamification to be effective, it must be tailored to the specific needs and learning preferences of students. Generic gamification designs that do not take into account the diversity of learning styles may fail to engage all students equally. This has led to calls for more adaptive gamified systems that adjust to individual learner progress and abilities.

Learning Vocabulary through Gamification

Teachers can use various strategies to teach vocabulary, such as introducing new words in context, using graphic organizers to help learners understand word meanings, and incorporating vocabulary games and activities into lessons (DepED Matatag Curriculum, 2023). In learning new vocabulary, games have plenty of advantages and effectiveness.

For all students in the class, games will create a friendly atmosphere where every student is interested in a fun and competitive way in a supportive learning environment. In this way, in a group, the students will have the ability to assist each other in solving the issues posed when working together.

They will also stimulate the imagination of students and develop their capability to practice the language entertainingly (Hwang et al., 2023). Prabha and Abdul Aziz (2020) stressed that games should provide learners with a learning experience that is fun-filled and calming. Students can use language in a non-stressful way after studying and using new vocabulary. Although students learn vocabulary, their emphasis is on the message rather than the language. Vocabulary learning is an incremental and ongoing process that has an indispensable value in language acquisition, allowing foreign language learners to convey their thoughts and communicate.

Educational Games for Enhancing Students' Vocabulary and Reading Comprehension

Educational games have positive implications for learning and enhancing students' vocabulary knowledge. This is because students do not feel bored when learning these new words through educational games.

Readers who imagine when they read without any assistance recall the content of the text and help them remember some non-concrete points and significant names (Rasti- Behbahani and Shahbazi, 2020).

Educational gamification highlights its increasing significance in modern education. Incorporating game elements has been shown to boost student motivation, engagement, and, in some instances, academic performance. However, successfully implementing gamification requires careful design and consideration of students' individual needs and learning styles.

Through gamification, learners can use language in a relaxed manner and acquire new vocabulary. As the field progresses, ongoing research is essential to tackle the challenges related to gamification and enhance its application in diverse educational settings.

Related Studies

This section presents relevant information that will shed light on the different foreign and local research studies about the evaluation of literacy programs, perceptions of education-gamified literacy programs, purpose, relevance, and implementation of the gamified literacy program, strengths, weaknesses, opportunities, and threats of the EdGAME program, and developing vocabulary in-game activity.

This review guides the researcher in having an insight into the present study of evaluating the materials and implementation of the American Spaces Educational Gamification (EdGAME) Quick2GAME Literacy Program.

Evaluation of Literacy Programs

In the study of Ata and Edillo (2020) entitled Continuous Improvement Program (Project READERS) Frustration Level of San Isidro National High School, the continuous implementation of the Project Readers improved the performance of the students in the post-evaluation due to the continued reading program. Atla and Edillo also implied that the reading comprehension skill of the students is an unending concern that needs to be addressed by the teachers.

In Bravo's (2018) study, A Program Evaluation of the Laguna Vista School Reading Intervention Program. Laguna Vista Elementary School's Reading Intervention Program supports struggling students in reading and language arts using the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) and the Smarter Balanced Assessment Consortia (SBAC).

The program focuses on reading comprehension, fluency, and phonemic awareness/phonics. Results show significant growth in reading skills each year, with a trend line demonstrating program maturity. The program's effectiveness is supported by significant growth in Common Core Language Arts Standards among fourth- and fifth-grade students. The program had a greater impact on basic skills than on comprehensive reading performance.

Perceptions on Educational Gamified Literacy Program

Learning new vocabulary using games has helped increase vocabulary retention and make language learning fun and inspiring (Hoa and Trang, 2020). Zainuddin et al. (2020) gamified approaches helped clarify learning goals, making literacy development more achievable and motivating for students. these environments' interactive features promoted the two essential components of successful reading instruction: student involvement and participation.

Almusharraf and Alotaibi's (2021) study on the effects of gamification on language acquisition found that participants perceived gamified programs as highly relevant to their academic and personal development. Gamification relies heavily on relevance because it links learning materials to practical applications, which boosts student motivation and engagement.

Purpose and Objectives in the Gamified Literacy Program

Hwang et al. (2021) examined gamified language learning tools in secondary schools, focusing on how purpose and objectives influence student engagement. The study found that students engaged more with the program when the objectives were clear and aligned with literacy goals such as vocabulary expansion and reading comprehension. The findings suggest that students are more likely to perceive these programs as beneficial when the objectives are explicit and tailored to literacy outcomes.

Alsawaier's (2019) study on the effectiveness of gamification in promoting English literacy skills among high school students noted that defining the purpose and objectives helped students set realistic goals, increasing their focus and commitment. The study revealed that when students understand the purpose behind gamified activities, they tend to be more self-motivated, which positively impacts their learning outcomes.

Relevance of Gamified Literacy Programs in Student Learning

Aguilar et al. (2020) found that high school students in literacy programs perceived gamified platforms as highly relevant, especially when these programs incorporated culturally relatable scenarios and vocabulary applicable to daily life. This relevance led to greater engagement and retention, as students saw the immediate value in what they

were learning.

Similarly, Lin and Wen (2021) investigated the applicability of gamified learning platforms that emphasize vocabulary in secondary education and found that students thought these platforms directly improved their language proficiency. The gamified activities promoted active engagement with new words and situations by employing real-life vocabulary scenarios, which improved comprehension and memory. This study emphasizes that students are more likely to be motivated to learn and retain information when they find the content relevant to their lives. Implementation in Gamified Literacy Programs. The success of gamified programs depends on how they are implemented, especially in structured settings like secondary schools (Garcia & Gomez, 2019).

The adoption of gamified literacy programs was investigated to determine the elements that influence learning results and student engagement. According to the findings, methodical implementation, such as dividing the program into phases for pre-assessment, intervention, and post-assessment, facilitates continuing feedback and assists learners in tracking their progress and actively interacting with the subject. According to the study's conclusions, a phased implementation structure encourages active student participation and is necessary for effective learning. (Kalogiannakis et al.,2021).

Furthermore, a study by Dicheva et al. (2019) assessed different gamification strategies for the implementation of language acquisition and discovered that successful implementation required clear instructions, an intuitive design, and constant feedback.

Students showed improved engagement and progress in literacy skills when they had access to organized, gamified exercises with well-defined objectives and feedback loops. The results provide confidence in the belief that program performance is mostly dependent on execution and that students' comprehension of literacy and language concepts is enhanced by structured instruction phases.

Strengths of Educational Gamification Vocabulary

Chen and Hsu (2020) provide further evidence that repetitive exposure to words has a positive influence on incremental vocabulary learning. By using educational games, the students can improve their engagement, memorize new words, and explain the new words (Dindar et al., 2020). Educational games have improved the vocabulary knowledge of the students. Their comprehension and understanding of the vocabulary have also been enhanced.

Alhajaji et al. (2020) indicated that educational games are the key factors to improve vocabulary knowledge. Before this, they felt it was hard to learn English, but when the use of educational games was introduced in the classroom, students felt more energetic and excited to join in the lessons given to them. The findings of the study also show that a variety of educational games benefited students in learning and building vocabulary.

Pre-assessment

In contrast to traditional testing, Huang and Soman (2019) showed that gamified pre-assessment tools improve involvement by fostering a less nerve-racking setting. With this method, teachers can precisely assess their students' current language and literacy levels, providing them with information for focused instruction. In literacy programs, gamified pre-assessment works particularly well because it lowers exam anxiety, boosts motivation, and helps students evaluate themselves honestly.

Similarly, Mendez and Reyes (2021) studied the usage of gamified pre-assessments in secondary schools and discovered that the interactive format prompted learners to actively participate in the evaluation process. According to the study, learners' stress levels were lowered by the lighthearted character of gamified tests, which led to a more accurate representation of their knowledge. Teachers were able to provide specialized treatments that greatly enhanced reading outcomes by first identifying students' strengths and limitations.

Intervention

In their 2020 study, Al-Azawei et al. looked at a gamified literacy intervention in a secondary school context and discovered that using gamification features like badges, awards, and progress tracking greatly raised student engagement and motivation. Because students are more likely to participate in vocabulary-building tasks when they get rewards for their efforts, this study demonstrated how gamified interventions encourage active learning. According to the study's findings, gamified interventions encourage pupils to actively practice and reinforce new language abilities.

Chou and Liu's (2022) study found that gamified interventions assisted learners in achieving quantifiable gains in their literacy abilities. Researchers found that learners applied new language concepts quickly using contextualized activities and interactive vocabulary games, increasing vocabulary retention and comprehension abilities. Gamified interventions' strength lies in making learning interesting and relevant.

Post-Assessment

Chen et al. (2020) investigated gamified post-assessment in literacy programs. The study found that gamified post-assessments, which provided instant feedback, encouraged students to correct mistakes, improve self-awareness, and foster a growth mindset by viewing learning as a continuous process.

Furthermore, Fernandez and Wu's (2021) study examined the effects of gamified post-assessments in a large-scale literacy program and found that students valued the assessments' non-punitive nature. The gamified method strengthened students' confidence and eagerness to study by presenting post-assessment as a chance for development rather than a means of passing judgment. The study found that by offering a constructive conclusion to the learning process, reiterating important language skills, and encouraging ongoing development, gamified post-assessments can enhance literacy programs.

Weaknesses of the Educational Gamification Literacy Program

Pre-Assessment

Gamified pre-assessments occasionally oversimplify complicated reading skills, resulting in incorrect baseline evaluations (Mardiana and Oktaviani, 2020). According to their research, learners frequently prioritize getting high scores or completing the task rather than connecting with the subject matter. This can lead to tests that don't accurately reflect learners' vocabulary or comprehension capabilities, especially when it comes to complex literacy skills that call for more in-depth consideration and analysis.

According to a study by García and Salazar (2021), learners frequently prioritized gaming prizes, which resulted in inconsistent engagement with the real learning material. The study also found that gamified tests that prioritize gameplay mechanics above comprehension of the material may not accurately represent learners' actual reading levels. If the early literacy levels are not adequately tested, teachers may obtain biased pre- assessment data, which could result in less successful interventions.

Intervention

Despite the benefits of gamification at the intervention stage, potential downsides, particularly in terms of establishing a balance between enjoyment and instructional value. Students in a gamified literacy program, for example, occasionally became overly focused with game aspects (such as points, badges, or competition) and lost sight of the learning objectives, according to Li and Tsang (2022).

When learners engage in activities primarily to gain rewards rather than concentrating on comprehending or using new language and literacy skills, this "over- gamification" can result in shallow acquisition of information.

Chandra and Lim's research suggests that gamified interventions may be shallow, especially for students struggling with core reading abilities, and may not always be suitable for different reading requirements, requiring additional support or specialized training. Nicolaidou (2022) found that some students were not interested in gamified applications and preferred traditional methods. The negative effects of gamification in education focus on three main areas: loss of performance, undesired behavior, and indifference (Van der Gaalen et al., 2020). Gamification can negatively impact students' learning process, leading to demotivation, lower transfer skill scores, and perceived difficulty, which can impact grades. Additionally, gamification can cause a gradual loss of motivation and engagement, which may result in a loss of performance over time.

Post-Assessment

Accurately evaluating learning outcomes is another problem with gamified post- assessment. According to research by Kim and Wang (2021), gamified post-assessments frequently emphasize instant feedback, which may lead students to emphasize short-term achievement over in-depth comprehension. According to this study, students who finished gamified post-assessments were more likely to recall certain game solutions or tactics than the literacy skills they had acquired, which resulted in a transient retention of vocabulary and comprehension abilities.

Zhang and Santos (2022) found that gamified post-assessments may overestimate literacy proficiency, as students who excelled on gamified tests did not necessarily perform well on conventional tests, suggesting the need for a more comprehensive assessment.

Opportunities for the Educational Gamification Literacy Program

Research indicates that gamified literacy initiatives offer significant potential for student engagement and motivation. By adding components like points, badges, and leaderboards, gamification can boost learners' interest in literacy exercises and make learning more engaging and fun, as Malik and Ahmad (2021) clarify. Gamified literacy programs boost secondary school learners' motivation and vocabulary, especially those who lost interest in traditional methods, ensuring strong student interest and accommodating diverse learning needs.

Chen et al. (2022) suggest that gamified literacy programs can enhance digital literacy and 21st-century skills, preparing students for future educational and professional environments by enhancing digital navigation, critical thinking, and problem-solving competencies. Lee and Han's study (2020) highlights the adaptive learning potential of gamified programs, which allow educators to tailor learning experiences to individual student needs, track progress, and adjust instructional strategies, enhancing their educational value in large classrooms.

Threats and Challenges in Educational Gamification for Literacy Programs The potential threats of educational gamification for literacy programs include students becoming overly competitive and prioritizing game achievements over meaningful learning, which could undermine the program's effectiveness and educational purpose (Zainuddin et al., 2020).

García and Torres (2023) noted the potential digital divide in educational gamification, as students with lower digital literacy or limited access may struggle to fully participate, potentially widening educational disparities without adequate technology and digital skills training. Lim and Wang's study (2023) warns of cognitive overload in students using gamified platforms, suggesting task simplification or clear instructions to counteract this issue.

Developing Vocabulary in Game Activity

Knowledge and vocabulary are essential building blocks for comprehension. Kolhar et al. (2021). If one element is negative or nonexistent, comprehension competency will no longer be achieved; therefore, it is clear that to understand what is being read, one must be able to decode the words on the page (Chipili, Mwansa & Mpolomoka, 2024).

Learning vocabulary is essential for improving reading comprehension. Reading comprehension requires a high level of language awareness in order to understand the text as clearly as possible. A lack of vocabulary will have an impact on learners' reading comprehension, which is regarded as a critical aspect (Hashemi and Kew, 2020). Building vocabulary is critical for reading comprehension. Learners must build techniques for understanding what they read.

Lack of vocabulary will affect learners' understanding of reading, and reading comprehension is considered a major necessity and vital factor (Hashemi and Kew, 2020). It was easier for those with a strong background in vocabulary knowledge to understand the text compared to those who lacked vocabulary knowledge (Kiliç, 2019).

Hashemi's (2021) study on the use of games in teaching vocabulary in reading comprehension revealed that five different games significantly improved students' vocabulary skills. These games, introduced during class, inspired students to learn vocabulary without facilitators, enhancing their motivation and engagement. Educational games are recommended for both teachers and students as they offer accountability, student-centered activities, and socialization, promoting skills like taking turns and teamwork.

Nitiasih & Budiatrha's (2021) study on Balinese local stories demonstrates that gamification enhances students' reading comprehension by combining fun and meaningful learning. The study found that gamification significantly improved fifth-grade students' reading comprehension and increased their desire to read, as it effectively combined narrative text and game elements.

Wang and Lin's (2021) study found that gamified vocabulary activities, particularly for second-language learners, significantly improved word retention and comprehension. The enjoyable learning experience and level-based elements motivated students to practice vocabulary more frequently.

Vocabulary in-game exercises that enhance word application and understanding can be quite successful when they employ contextual learning techniques (Suryadi, 2022). A study by Jackson and Aram (2020) found that vocabulary games that include new words in dialogues, stories, and scenarios aid children in comprehending word usage and meanings. Pupils who acquired vocabulary in context, like completing puzzles or going on quests, showed superior comprehension and memory compared to those who learned words alone (Hasram et al., 2021).

Contextualized vocabulary games provide an engaging experience that improves language acquisition, particularly for younger pupils who are better served by situational and visual signals (Minalla, 2024). Gamification can improve vocabulary memory retention by providing repeated exposure to new words in varied contexts (Jaiswal, 2024). Lee and Huang (2022) found that students retained words longer than those who received only textbook-based instruction. Morales and Singh (2023) found that incorporating mnemonic techniques such as associations, visual aids, and repetition in gamified vocabulary activities improved retention by making learning more engaging and cognitively accessible for students.

Collaborative in-game vocabulary activities, such as group-based and multiplayer games, effectively support language acquisition. Chen and Lin (2020) found that collaborative games increased motivation and vocabulary retention rates, while López and Sanchez (2021) found that competitive or cooperative games improved communication and teamwork skills. These games can be particularly beneficial in language classrooms, where students can practice using new words interactively.

Developing a Classroom Game. Classroom games have long been acknowledged as powerful techniques for engaging students, improving learning, and encouraging active involvement (Adipat et al., 2021). Games might be utilized in English language training to improve language skills such as vocabulary, speaking, listening, and grammar (Munawarah et al., 2024).

Kéri (2019) found that the most crucial element of a serious game is its ability to be customized. The ability of practitioners to manage various scenarios and contribute their content to a game appears to be a crucial factor in the

growing use of serious games in the classroom.

The Role of Games in English Language Learning

Games are considered successful instructional techniques in English language schools because they can enhance motivation, encourage creativity, and provide an immersive language experience (Buaraphan, 2024). Games not only inspire students but also serve to alleviate anxiety, which is especially useful in language-learning situations when students are afraid of making mistakes (Adipat et al., 2021).

Games for English language learning usually emphasize specific skills such as listening comprehension, vocabulary growth, and speaking fluency (Al Her et al. 2024). Using games in language learning, particularly ones focused on vocabulary, can significantly improve students' ability to retain and use terminology, even during spontaneous speech.

Design Principles for Effective Classroom Games

When creating classroom games for English language learning, experts emphasize the need to align the game design to the learning objectives. (Muhammad and Oktaviani, 2022) Investigated how the design of instructional games influences language acquisition. They contended that gamification was the most frequently used game genre and that a well- designed game should not only be enjoyable but should also allow for meaningful language use, ensuring that kids are exposed to language in context. According to Munawarah et al. (2024), games should increase repetition and contextual knowledge to reinforce language learning.

To keep learners interested and engaged in learning, the researchers emphasized that successful classroom games must blend educational content with enjoyment. Yang and Lee (2022) utilized the "Grammar Battle" game to enhance students' grammatical fluency and correctness in sentence creation, promoting both spoken and written activities..

Competition in learning fosters a dynamic, engaging environment that motivates students, promotes skill development, encourages collaboration, and cultivates a growth mindset (Caveney, 2024). Ahn and Cho's (2023) study found that cooperative learning games foster community and motivation among students, leading to more consistent language use and improved communicative competence.

Challenges in Developing and Implementing Classroom Games

Despite the potential benefits, creating and implementing classroom games in English language instruction presents various problems. One key difficulty is the necessity for appropriate game design that matches educational objectives while keeping students engaged. Ensuring a suitable balance between gaming and learning activities so that students are not distracted by the game-based features and are instead encouraged to pay more attention to the learning content.

Furthermore, novice or inexperienced students find it difficult to apply prior knowledge to gameplay, which leads to low motivation and engagement (Sun et al., 2023).

Lee et al. (2022) found that not all learners react similarly to games, and teachers must consider their specific preferences and learning styles when introducing games into lesson plans.

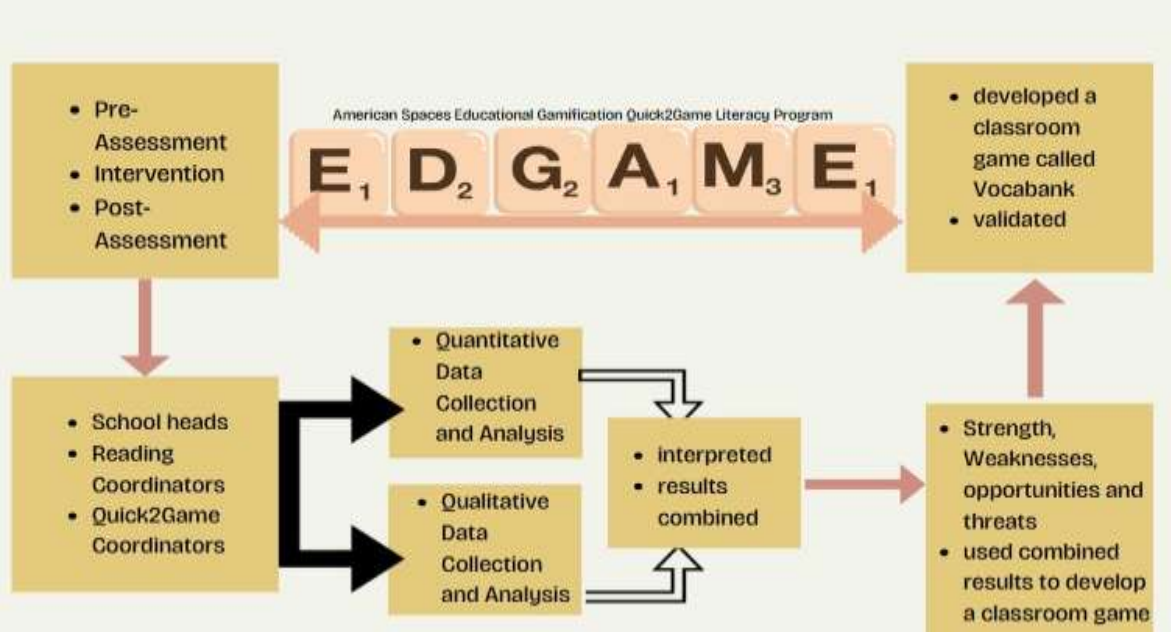
Another problem is ensuring that games remain pedagogically effective. Yang and Lee (2022) cautioned that games should not be used solely for enjoyment but rather to serve specific language learning objectives. They recommended that teachers regularly analyze game learning outcomes and adjust game mechanics as needed to ensure that educational goals are met. Game-based learning, despite limited resources and student diversity, has proven effective in enhancing vocabulary, speaking abilities, and overall language competency, with continued

research and innovation enhancing its effectiveness.

Conceptual Framework

The conceptual framework illustrated in Figure 1 shows how the researcher conducted the proposed study. This was used to support the ideas of the researcher. The diagram shows the tiles that contain different letters that represent Quick2Game, the game used as an intervention tool during the implementation of the EdGAME Program, a short terminology for the American Spaces Educational Gamification (EdGAME) Quick2Game Literacy Program. EdGAME was the program the researcher evaluated.

Figure 1 Conceptual Framework of the Study



The evaluation focused on the EdGAME program's pre-assessment, intervention, and post-assessment intervention and materials, the people who implemented and administered the program, which served as the respondents of the study.

The process for this study revolves around a mixed-methods sequential explanatory design, which entails gathering and evaluating quantitative data first, then using qualitative data to clarify or expand on the quantitative findings. The researcher disseminated the informed consent and thoroughly explained the purpose of the study to the implementers of the EdGAME Literacy Program from 20 participating public high schools in DepEd City of San Jose Del Monte, Bulacan, which include the school heads, reading coordinators, and Quick2Game coordinators.

Before gathering data, a formal permission letter requesting the adaptation and use of the research instrument was sent to the original proponent. Approval was granted via email, thereby authorizing the researcher to proceed with the instrument's utilization.

Following this approval, the researcher consulted subject matter experts to validate the research tools. The survey questionnaire underwent validation by academic professionals to ensure the standardization, content relevance, and overall validity of the instruments. This process was conducted to establish the credibility and reliability of the research tools.

The data gathering started by sending the Google Form questionnaire survey link to the respondents' Facebook Messenger, which most of the respondents used. During the data collection phase, strict adherence to health and safety protocols was maintained, particularly the social distancing guidelines mandated by the Inter-Agency Task

Force for Emerging Infectious Diseases (IATF-EID).

All data gathered was stored securely on a password-protected computer to maintain data privacy and integrity. For the quantitative data analysis, the assistance of a professional statistician was sought.

The gathered data were analyzed using SWOT analysis. The strengths and weaknesses of the respondents were analyzed through the responses of the stakeholders.

Meanwhile, the opportunities and threats were analyzed through the identified strengths and weaknesses of the EDGAME program.

The evaluation of the existing program served as the foundational basis for the development of classroom vocabulary activities. After the game was developed, its content was again validated through consultation with academic experts to ensure its educational value and appropriateness. Furthermore, the original developer was informed about the adaptation of the game mechanic.

The developed classroom vocabulary game is called VocaBank. Adapted from Quick2Game, which was used as an intervention tool in enhancing the learners' vocabulary, the mechanics of the game VocaBank were developed based on the strengths, weaknesses, opportunities, and threats found during the implementation of the EdGAME program.

Assumptions of the Study

In the conduct of the study, the following are the assumptions of the study:

1. The evaluated materials are crafted using established principles of effective reading instruction, including phonics-based methods, vocabulary development, comprehension strategies, and fluency practice.

2. It is assumed that teachers using these materials have received adequate training and support to implement them effectively, including understanding how to administer assessments and deliver interventions based on student needs.

3. It is assumed that schools or educators have sufficient access to the necessary resources, such as material units and pre-test and post-test materials, to fully implement the assessment and intervention components of the reading program.

RESEARCH METHODOLOGY

The research methods used by the researcher during the study are described in this chapter. It offers a succinct explanation of the research design and methodology utilized, along with the standards and methods applied in the respondent selection process. This chapter also describes the research tools used, the data collection methods, and the data and statistical analysis techniques used.

Methods and Techniques of the Study

A mixed-methods sequential explanatory design was used in this study, which entails gathering and evaluating quantitative data first, then using qualitative data to clarify or expand on the quantitative findings. This design was selected to enable a more thorough examination of the subject by offering both breadth and depth knowledge about the research problem (Ivankova et al., 2005, as cited by Toyon, 2021).

To allow for a more thorough examination of a research question, mixed-method research integrates quantitative and qualitative data. It offers responses to complex research questions that cannot be adequately addressed by either

qualitative or quantitative research. It is important to keep in mind that mixed-methods research involves more than just collecting both kinds of data. Rather, it necessitates giving method flexibility and inter- method interactions considerable thought (Damyanov, 2023).

The EdGAME implementers were given surveys and questionnaires to complete to collect quantifiable data in the first step. To determine the EdGAME program's advantages and disadvantages, the data were statistically examined. Interviews were used to collect qualitative data in the second phase. The overall validity and interpretability of the findings were improved by these qualitative insights, which also assisted in interpreting and contextualizing the quantitative results.

Population and Sample of the Study

This research was conducted in twenty public schools located in the City of San Jose del Monte, Bulacan. These schools were participants in the American Spaces Educational Gamification (EdGAME) Literacy Program. The researcher used deliberate criterion sampling, a technique for selecting appropriate respondents that entails choosing participants who fulfill predetermined requirements (Patton, 2019).

One Quick2Game coordinator, one reading coordinator, and one school head were identified as respondents in each of the twenty schools. The study included 18 school heads, 20 Quick2Game coordinators, and 20 reading coordinators in total who were actively involved in carrying out the EdGAME Literacy Program.

The following criteria were set in selecting the respondents of this study.

Quick2Game proponents. These include the developer of the game and his two executive secretaries. The Quick2Game developer is a known advocate for promoting literacy through educational games, particularly by the Quick2Game unit. His executive secretaries played a critical role in the implementation of the EdGAME Literacy Program by administering both pre-tests and post-tests and visiting participating schools. They also provided the researcher with essential data, including the list of participating schools, the number of student participants, and the contact details of both reading and Quick2Game coordinators.

School Heads. These educators selected for this study were the principals of public junior high schools in the District of City of San Jose Del Monte, Bulacan, where the EdGAME Program was implemented. They were purposefully chosen regardless of their academic or subject matter specializations, based on their administrative involvement in the program.

Reading Coordinators. These educators were Department of Education (DepEd) teachers from the Schools Division of San Jose Del Monte, Bulacan, who were designated either as Filipino or English reading coordinators during the program's implementation. Their expertise was deemed valuable due to their direct interaction with learners and their facilitation of the Quick2Game intervention activities. They also oversaw the administration of the Philippine Informal Reading Inventory (Phil-IRI) and collaborated with the Quick2Game coordinators during the program.

Quick2Game Coordinators. These are educators selected based on their proficiency with the Quick2Game tool and their direct role in facilitating the intervention among Grade 7 students. These coordinators were appointed at the beginning of the program and were responsible for supervising students throughout the administration of the EdGAME program.

Language education and curriculum experts. Although not included as respondents in the study, they played a critical role in validating the research instruments and the game developed by the researcher. These experts hold advanced degrees—some being master's degree graduates, while others have completed doctoral coursework—and have been involved in teacher education for a minimum of five years. With extensive experience in language instruction and program evaluation, their contributions ensured the rigor and validity of the tools used in this

research.

Research Instruments

The primary research tool used in this study was a structured survey questionnaire, which was designed to obtain quantitative data from the target population. This method was appropriate for collecting vast amounts of data that could be evaluated statistically to find trends and patterns (Creswell & Creswell, 2022). The structured survey questionnaire was used to gather the perceptions of the school heads, Quick2Game coordinators and reading coordinators towards the EdGAME program.

The researcher adapted the questions from Tessema's (2023) study, *Evaluating the quality of distance learning materials in selected universities in Ethiopia*. This instrument was validated by language and curriculum experts before dissemination." A survey questionnaire through the Google Forms platform was used to collect quantitative data from the respondents. Google Forms is an internet-based medium that can be used to collect data through questionnaires or online surveys. Ulum, Basuki & Eliasa (2023).

The instrument was designed with items categorized under five key components of the program: objectives, relevance, implementation, strengths, and weaknesses. Respondents indicated their level of observation using a 4-point Likert scale:

4 – Always Observed

3 – Sometimes Observed, 2 – Observed

1– Rarely Observed

Data Gathering Procedure

The data gathering procedure started by sending a letter of consent to the district supervisor of DepEd San Jose Del Monte allowing the researcher to conduct a study on the implementers of the EdGAME program from the participating public junior high school in the division. After securing the approval from the district supervisor and receiving the ethical certification from the BulSU Ethical Review Committee. Informed consent letters were sent to study participants.

The EdGAME Literacy Program implementers from 20 participating public high schools, including school heads, reading coordinators, and Quick2Game coordinators, were given a comprehensive explanation of the research's goals and subject matter. The Google Form questionnaire link was sent to the respondents via Facebook Messenger and email to start the data collection process. The responses were safely saved in the researcher's personal Google Drive and automatically entered the related Google Sheets file.

Data Analysis and Statistical Treatment

The evaluation of the EdGAME Literacy Program involved the collection of quantitative data from school heads, reading coordinators, and Quick2Game coordinators using a survey questionnaire.

The quantitative data collected through the survey were analyzed using descriptive statistics, followed by a SWOT analysis. The initial statistical analysis involved calculating means and standard deviations to summarize respondents' perceptions towards the implementation of the EdGAME program. Once the descriptive results were obtained, SWOT analysis was applied to transform numerical outcomes into actionable insights.

The SWOT (Strengths, Weaknesses, Opportunities, and Threats) Analysis technique was employed. The SWOT analysis helped to systematically categorize findings from both quantitative and qualitative phases, allowing for a

structured and critical assessment of the current situation and potential future directions. (Benzaghta et al., 2021)

Application of SWOT to Quantitative Data

In this study, the strengths were identified from the quantitative results, where a mean score ranges from 3.26 to 4.00 and is verbally interpreted as always observed. Weaknesses corresponded to dimensions with mean values ranging from 2.65 to 3.25 and were verbally interpreted as sometimes observed.

Opportunities were analyzed based on the identified strengths of the EdGAME's pre-assessment, intervention, and post-assessment. While threats were analyzed based on the identified strengths of the EdGAME's pre-assessment, intervention, and post- assessment.

Integrating SWOT analysis with quantitative data facilitated a structured and strategic interpretation that goes beyond numerical significance, enabling the identification of practical directions for decision-making. The approach aligns with recent research advocating for mixed-methods data synthesis through strategic tools like SWOT to enhance the usability of quantitative results (Ahmad et al., 2023; CHAdeMO et al., 2020).

The results were presented in tabular form to show the average perception per group of respondents, and to identify which aspects of the program were viewed most and least favorably.

Ethical Considerations

The request for ethical approval for this study was submitted to the Bulacan State University Research Ethics Committee. Additionally, a formal letter of request was sent to the developer of Quick2Game to gain access to the necessary data. To obtain authorization to conduct the study within the academic setting, a permission letter was also addressed to the Schools Division Superintendent of the Department of Education (DepEd), City of San Jose Del Monte, Bulacan.

Before the commencement of data collection, written consent was obtained from all potential participants. They were thoroughly informed about the study's purpose, procedures, and their rights, as well as the potential benefits and risks of participation, including their right to withdraw at any point during the research process. In adherence to ethical considerations and respect of Department Order No. 003, series of 2024, which mandates that teachers should be allowed for uninterrupted vacation during the entire month of June 2024, the researcher deferred data collection and waited for an appropriate time to conduct interviews without interfering with the respondents' break.

The researcher seeks the permission of the DepEd English program supervisor to access the Phil-IRI results in 2022 in the Division of San Jose Del Monte, Bulacan. The names of the frustrated level readers were not disclosed.

Meanwhile, a formal permission letter requesting the adaptation and use of the research instrument was sent to the original proponent. Approval was granted via email, thereby authorizing the researcher to proceed with the instrument's utilization. Following this approval, the researcher consulted subject matter experts to validate the research tools. The survey questionnaire underwent validation by academic professionals to ensure the standardization, content relevance, and overall validity of the instruments. This process was conducted to establish the credibility and reliability of the research tools.

During the data collection phase, strict adherence to health and safety protocols was maintained, particularly the social distancing guidelines mandated by the Inter-Agency Task Force for Emerging Infectious Diseases (IATF-EID).

Confidentiality and anonymity of the participants were guaranteed throughout the study. Respondents' real names were replaced with role-based identifiers such as "School Head 1," "Quick2Game Coordinator 1," and "Reading Coordinator 1" during the transcription of interview responses. To ensure the study's credibility, trustworthiness,

and auditability, rigorous methodological standards were observed. All data gathered was stored securely on the personal Google Drive account of the researcher to maintain data privacy and integrity.

After the data collection, the researcher sought assistance of a professional statistician for quantitative data analysis. The results and information from the respondents remained confidential.

The results gathered from the evaluation of the EdGAME program served as the foundational basis for the development of classroom vocabulary activities. After the game was developed, its content was again validated through consultation with academic experts to ensure its educational value and appropriateness. Furthermore, the original developer was informed about the adaptation of the game mechanics.

Presentation, Analysis, And Interpretation Of Data

This chapter presents, analyzes, interprets, and discusses the respondents' perceptions of the EdGAME program, focusing on its purpose, relevance, and implementation, assessments, and intervention.

Table 1 Description of the Perception and Strengths of the EdGAME Program

Scale	Range	Verbal Interpretation
4	3.26-4.00	Always Observed
3	2.60-3.25	Sometimes Observed
2	1.76-2.50	Rarely Observed
1	1.00-1.75	Not Observed

Using a standardized scale ranging from 1 to 4, responses were categorized to reflect how frequently specific attributes or behaviors associated with the program were observed. The scale includes four levels of interpretation: Not Observed (1.00–1.75), Rarely Observed (1.76–2.50), Sometimes Observed (2.60–3.25), and Always Observed (3.26–4.00).

This paper presents the study's results based on the statement of the problem presented in Chapter I.

I Perceptions of the respondents towards the EdGAME Program's purpose and objectives, relevance, and implementation. The next section of this paper discusses the EdGAME Program's purpose and objectives, relevance, and implementation based on the perceptions of the school heads, Quick2Game coordinators, and reading coordinators.

Table 2Statements	**School Heads ($\bar{X}$, σ, VI)**	**Quick2Game Coordinators ($\bar{X}$, σ, VI)**	**Reading Coordinators ($\bar{X}$, σ, VI)**
Fosters vocabulary improvement among Grade 7 frustrated-level readers through the interactive learning process.	3.67, 0.49, Always Observed	3.55, 0.83, Always Observed	3.80, 0.41, Always Observed
Introduces new words to enrich Grade 7 frustrated-level readers' vocabulary skills, enhancing their	3.61, 0.50, Always Observed	3.50, 0.89, Always Observed	3.70, 0.47, Always Observed

word recognition through engaging activities.			
Uses a reward system to promote joyful learning while improving vocabulary skills to motivate Grade 7 frustrated-level readers in learning.	3.44, 0.51, Always Observed	3.50, 0.76, Always Observed	3.25, 0.79, Sometimes Observed
Provides test materials based on systematic instruction on critical reading priorities (i.e., phonemic awareness, phonics, fluency, vocabulary, & comprehension).	3.06, 0.73, Sometimes Observed	3.05, 0.83, Always Observed	2.95, 0.76, Always Observed
Receives feedback from parents, teachers, and students incorporated into the program to ensure better alignment with DepEd vision and mission.	3.11, 0.76, Sometimes Observed	3.40, 0.75, Sometimes Observed	3.40, 0.60, Sometimes Observed
Grand Mean and Standard Deviation	**3.38, 0.46**	**3.40, 0.73**	**3.44, 0.47**

Table 2 presents the purpose and objectives of the EdGAME program as perceived by the school heads, Quick2Game coordinators, and reading coordinators.

Purpose and objectives of the EdGAME Program

The collective perceptions of school heads, Quick2Game coordinators, and reading coordinators reveal a strong and consistent agreement that the EdGAME Literacy Program is effective in fulfilling its core objectives, particularly in developing vocabulary and word recognition among Grade 7 readers with a frustrated level of reading, through interactive and engaging methods.

All three stakeholder groups identified the statement: "Foster vocabulary improvement among Grade 7 frustrated-level readers through an interactive learning process" as the most positively rated item. School heads reported a mean of 3.67 with a standard deviation of 0.49; Quick2Game Coordinators rated it at a mean of 3.55 with a standard deviation of 0.83, and Reading Coordinators provided the highest mean of 3.80 and a standard deviation of 0.41. These results demonstrate a shared belief in the program's effectiveness and a high level of consistency in perceptions, particularly regarding the program's interactive, game-based approach to literacy instruction.

The finding reveals that the respondents perceive the EdGAME program as a highly effective intervention, particularly in achieving its core objective of enhancing vocabulary development and word recognition through interactive and engaging methods. This affirms the effectiveness of game-based learning in enhancing vocabulary retention and learner motivation (Sadeghi et al., 2022).

This consensus aligns with Jean Piaget's Constructivist Theory, which emphasizes active learning through

meaningful engagement. EdGAME's design encourages students

to build vocabulary and literacy skills through hands-on, problem-solving activities, shifting away from rote memorization toward deeper, experiential learning. The stakeholders' strong agreement affirms that EdGAME's purpose and instructional methods are well-aligned with this pedagogical framework.

However, a recurring concern among all groups involves the limited and inconsistent incorporation of feedback from key stakeholders, namely parents, teachers, and students. School heads rated this component with a mean of 3.06 and standard deviation of 0.73, Quick2Game Coordinators at 3.05 and standard deviation of 0.83, and Reading Coordinators provided the lowest score of 2.95 and standard deviation of 0.76, all of which fall under the category of Sometimes Observed. The relatively higher standard deviations suggest that practices around stakeholder feedback vary across implementation settings and are not uniformly embedded in the program.

The grand mean and standard deviation values in Table 2 reflect the overall perceptions of the school heads, Quick2Game coordinators, and reading coordinators regarding the purpose and objectives of the EdGAME Program. The grand means of 3.38 for School Heads, 3.40 for Quick2Game coordinators, and 3.44 for reading coordinators indicate that all three groups generally observed the program's objectives as being met, with responses falling between Sometimes Observed and Always Observed. Among the three groups, reading coordinators provided the most favorable assessment, suggesting a stronger alignment of the program with its intended goals. In terms of consistency, the standard deviations reveal that school heads ($\sigma = 0.46$) and reading coordinators ($\sigma = 0.47$) had relatively consistent responses, while Quick2Game coordinators ($\sigma = 0.73$) showed greater variability in their evaluations. These results suggest that while the program is perceived positively across all groups, there may be differences in how consistently its implementation is experienced, particularly among Quick2Game coordinators.

This finding signals a critical gap in the program's responsiveness and adaptability. While the EdGAME Program is widely perceived as instructionally effective, it lacks strong, consistent mechanisms for incorporating feedback, a key element for continuous improvement. Research by Garcia et al. (2023) supports the need for regular feedback loops, noting that such mechanisms enhance engagement and contribute to better learning outcomes. This is reinforced by DepEd Order No. 5, s. 2024, emphasizing the importance of structured, ongoing feedback to ensure that programs remain aligned with learner needs and institutional goals.

The contrast between high ratings for instructional execution and lower ratings for stakeholder engagement underscores the need for a more holistic implementation strategy. While the EdGAME Program successfully meets its instructional objectives, its long-term sustainability and relevance depend on better integration of feedback processes.

Relevance of the EdGAME Program

The perceptions from school heads, Quick2Game coordinators, and reading coordinators towards the EdGAME Program's relevance are presented in Table 3.

Across the groups, a consistent theme emerges: EdGAME supports the practical application of vocabulary and literacy skills. School heads reported that learners use vocabulary learned from EdGAME exercises in actual life experiences, with a mean score of 3.33 and a standard deviation of 0.69, suggesting that the program enables functional language use beyond the classroom. This finding is reinforced by educational research.

Statements	School Heads ($\bar{X}$, σ, VI)	Quick2Game Coordinators ($\bar{X}$, σ, VI)	Reading Coordinators ($\bar{X}$, σ, VI)
Aligns the program to the most essential learning competencies in English intended	3.33, 0.49, Always Observed	3.50, 0.61, Always Observed	3.55, 0.69, Always Observed

for Grade 7 learners.			
Measures the literacy activities appropriately in parallel with the educational objectives of DepEd.	3.17, 0.49, Always Observed	3.45, 0.83, Always Observed	3.50, 0.51, Always Observed
Gathers constructive feedback from teachers and students to ensure that the program is effective and motivational.	3.44, 0.62, Sometimes Observed	3.30, 0.73, Always Observed	3.30, 0.66, Sometimes Observed
Uses vocabulary learning from EdGAME exercises in the actual life experiences of the students.	3.33, 0.69, Always Observed	3.40, 0.94, Always Observed	3.50, 0.61, Sometimes Observed
Develops independent readers to advance communications and socialization with others.	3.11, 0.71, Sometimes Observed	3.50, 0.83, Always Observed	3.25, 0.72, Sometimes Observed
Grand Mean and Standard Deviation	**3.27, 0.51**	**3.44, 0.69**	**3.34, 0.57**

Table 3 Relevance of the EdGAME Program

Such as Zhang & Zuwati (2023) who assert that gamified learning enhances motivation and improves learners' ability to use language in authentic contexts.

Similarly, reading coordinators affirmed the program's alignment with the Most Essential Learning Competencies (MELCs) in English intended for Grade 7 learners, a key indicator of relevance within the Department of Education's framework, with a matching high mean score of 3.55 and standard deviation of 0.69. This confirms that EdGAME is not only contextually grounded but also systematically structured to meet curricular benchmarks. According to Reyes and Lim (2024), the MELCS alignment is essential for institutional scalability and long-term program sustainability.

Furthermore, learners' autonomy and social development are also seen as integral parts of the program's relevance. The statement, Develop independent readers to advance communication and socialization, received a high mean score of 3.55 and a standard deviation of 0.83 from Quick2Game Coordinators and a lowest mean of 3.25 and standard deviation of 0.72 from Reading Coordinators. Reyes and Santos (2023) underlined the role of interactive tools in fostering learners' autonomy and reading independence.

While many literacy programs align with formal standards, they often underperform in promoting real-world communication skills and independent reading unless they integrate consistent learner-centered strategies (Elspaß & Pöll, 2024).

One area of shared concern across the groups involves the program's feedback mechanisms. The statement, Gather constructive feedback from teachers and students to ensure the program is effective and motivational, received the lowest ratings from both stakeholder groups, a mean of 3.17 and standard deviation of 0.62 from school heads, and a mean of 3.30 and standard deviation of 0.73 from Quick2Game coordinators.

While still within the Always Observed category, these lower scores indicate that feedback systems are underutilized or inconsistently implemented. This mirrors Piaget's observation that optimal learning environments require both developmental readiness and robust environmental support, suggesting that without structured feedback, the program risks stagnation or misalignment with learner needs. Lim and David (2021) emphasized the importance of program design and feedback collection in the successful scaling of education programs.

The grand and standard deviation values presented in the table illustrate the overall assessment of the relevance of the EdGAME Program by the School Heads, Quick2Game Coordinators, and Reading Coordinators. The grand mean scores of 3.27 for School Heads, 3.44 for Quick2Game Coordinators, and 3.34 for Reading Coordinators indicate that all three groups generally perceived the program to be relevant, with responses falling between Sometimes Observed and Always Observed. Among these groups, the Quick2Game Coordinators rated the program's relevance the highest, suggesting a stronger agreement that the program aligns with essential learning competencies and educational objectives.

In terms of consistency, the standard deviation values of 0.51 for School Heads,0.69 for Quick2Game Coordinators, and 0.57 for Reading Coordinators suggest that School Heads provided the most consistent responses, while Quick2Game Coordinators displayed the highest variability in their ratings. This variation implies that while the overall perception of the program's relevance is positive, some respondents within Quick2Game group may have had differing experiences or interpretations of the program's effectiveness. Overall, the data suggest that the EdGAME Program is generally regarded as relevant to the learning needs of Grade 7 students, though perceptions vary slightly among stakeholder groups.

Davis and Wood (2024) emphasized that effective educational programs benefit from ongoing feedback loops that involve all stakeholders, enhancing both program relevance and participant engagement. Strengthening feedback channels could provide valuable insights to refine program objectives and ensure they meet the needs of all participants.

Implementation of the EdGAME Program

The perceptions of the school heads, Quick2Game coordinators, and reading coordinators towards the implementation of the EdGAME program are presented in Table 4.

Across all respondent groups: school heads, Quick2Game Coordinators, and reading coordinators, the implementation of the EdGAME program was consistently rated as positively perceived, with strong indicators of operational proficiency. However, subtle differences in emphasis and priority among the stakeholders shed light on areas of both strength and needed improvement.

The delivery of literacy activities emerged as a key area of success. School heads reported a mean of 3.44 and a standard deviation of 0.70, indicating that activities were Always Observed as effectively implemented. Quick2Game Coordinators echoed this, providing the highest rating for this indicator with a mean of 3.80 with a standard deviation of 0.52, reflecting robust confidence in the program's ability to deliver engaging and consistent instruction. Similarly, Reading Coordinators rated vocabulary improvement through interactive learning highly, also with a mean of 3.65, with a standard deviation of **0.41.** These findings align with Nguyen et al. (2023), who emphasized that consistent and engaging delivery is essential for sustaining student motivation, especially in programs serving struggling readers.

Table 4 Implementation of the EdGAME Program

Statements	**School Heads**			**Quick2Game Coordinators**			**Reading Coordinators**		
Implementation	$\bar{X}$	σ	Verbal Interpretation	$\bar{X}$	σ	Verbal Interpretation	$\bar{X}$	σ	Verbal Interpretation
Allocates budget from American Spaces through LGU (CYSDO) to sustain the program's	3.44	0.51	Always Observed	3.50	0.83	Always Observed	3.40	0.60	Always Observed

implementation									
Tracks the progress of the program in identifying the challenges encountered by the teachers and students.	3.33	0.69	Always Observed	3.60	0.60	Always Observed	3.55	0.69	Always Observed
Proficiently deliver the activities.	3.44	0.70	Always Observed	3.80	0.52	Always Observed	3.60	0.50	Sometimes Observed
Proficiently provide the learning materials for activities from Quick2 proponents.	3.39	0.70	Sometimes Observed	3.55	0.59	Always Observed	3.55	0.60	Always Observed
Showcases measurable improvement in literacy skills over time.	3.33	0.69	Sometimes Observed	3.65	0.60	Sometimes Observed	3.65	0.49	Sometimes Observed
Grand mean and standard deviation	3.39	0.59		3.62	0.49		3.33	0.54	

In terms of literacy improvement, a more nuanced picture emerges. School heads provided a lower mean of 3.33 with a standard deviation of .69. This suggests a cautious view of the program's measurable outcome, both for tracking the progress of the program in identifying the challenges encountered by the teachers and students and showcasing measurable improvement in literacy skills over time. This highlights a perceived limitation in the program's ability to adapt responsively to emerging issues.

Although the program is generally viewed as beneficial, its measurable impact on students' literacy skills remains unclear due to inconsistent implementation and a lack of feedback mechanisms (Fadli, 2023). Programs that lack contextual sensitivity and adaptive implementation strategies tend to exhibit limited progress in actual literacy skill development. Van der Weijden et al. (2024)

A recurring concern across all groups relates to program sustainability through budget support. The statement Allocates budget from American Spaces through LGU (CYSDO) to sustain the program's implementation received the lowest ratings from both Quick2Game coordinators, with a mean of 3.50 and standard deviation of .83, and Reading coordinators with a mean of 3.40 and standard deviation of .60. Although still interpreted as Always Observed, the relatively lower means and higher standard deviations suggest growing apprehension about long-term resource allocation.

The grand mean and standard deviation values in Table 4 reflect the perceptions of the school heads, Quick2Game coordinators, and reading coordinators regarding the implementation of the EdGAME Program. The grand means of 3.39 for School Heads,3.62 for Quick2Game Coordinators, and 3.33 for Reading Coordinators all fall within

the range corresponding to Always Observed, indicating a generally positive perception of how the program is being carried out across all stakeholder groups. Among them, the Quick2Game Coordinators provided the highest average rating (3.62), suggesting they view the implementation most favorably, particularly in areas such as activity delivery, provision of materials, and program monitoring.

In terms of consistency, the standard deviations are 0.59 for School Heads, 0.49 for Quick2Game coordinators, and 0.54 for reading coordinators. These values suggest that the Quick2Game coordinators not only gave the most favorable ratings but also demonstrated the most consistent responses. Meanwhile, the slightly higher standard deviations from the other two groups indicate moderate variability in how implementation is experienced or perceived.

Overall, the data suggest that the EdGAME Program is being implemented effectively, with key components such as funding, monitoring, materials provision, and literacy outcomes being consistently observed. However, the slight differences in mean scores and variability across groups also indicate the potential need for continued support and communication to ensure uniform implementation experiences across all roles involved in the program.

These factors underpin the operational viability of the program and are crucial for its ongoing success. However, the variation in observed improvements in literacy skills suggests that consistent delivery, teacher training, and equitable resource allocation are vital for ensuring uniform outcomes across schools, an issue echoed in global research on the scalability of educational innovation (UNESCO, 2022).

The EdGAME program stands on a solid foundation of effective delivery and measurable literacy impact, but enhancing feedback systems, monitoring tools, and financial sustainability will be critical for elevating its long-term relevance and scalability.

Strengths and weaknesses of the EdGAME program's pre-assessment, intervention, and post-assessment.

The strengths and weaknesses of the EdGAME Program's pre-assessment, intervention, and post-assessment as perceived by school heads, Quick2Game coordinators, and reading coordinators are presented in Table 5.

Strengths and Weaknesses of Pre-assessment

The strengths and weaknesses of the EdGAME program's intervention, based on the experiences of the school heads, Quick2Game Coordinators, and Reading Coordinators, are presented in Table 6.

Strengths of the EdGAME's Pre-assessment

First, both Quick2Game coordinators with a mean of 3.65 and standard deviation of 0.49 and reading coordinators with a mean of 3.45 and standard deviation of 0.41) reported favorable perceptions regarding the pre-assessment's ability to evaluate reading comprehension and vocabulary skills. These relative deviations, coupled with low standard deviations, indicate a strong and consistent agreement among respondents on this dimension.

Table 5 Strengths and Weaknesses of EdGAME Program's Pre-assessment

Statements	**School Heads**			**Quick2Game Coordinators**			**Reading Coordinators**		
Pre-assessment	$\bar{X}$	σ	Verbal Interpretation	$\bar{X}$	σ	Verbal Interpretation	$\bar{X}$	σ	Verbal Interpretation
Assess learners' performance in reading comprehension and	3.17	0.65	Always Observed	3.65	0.49	Always Observed	3.45	0.41	Always Observed

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vocabulary skills.									
Aligns test materials with the most essential learning competencies of the Grade 7 Curriculum.	3.28	0.67	Always Observed	3.55	0.69	Always Observed	3.45	0.60	Always Observed
Evaluates the progress of learning to achieve intended learning goals.	3.22	0.65	Always Observed	3.40	0.82	Always Observed	3.55	0.51	Sometimes Observed
Provides test materials based on systematic instruction on critical reading priorities (i.e., phonemic awareness, phonics, fluency, vocabulary, & comprehension).	3.17	0.62	Sometimes Observed	3.50	0.61	Always Observed	3.3	0.66	Always Observed
Determines the instructional needs of the learners.	3.11	0.69	Sometimes Observed	3.50	0.51	Sometimes Observed	3.45	0.60	Sometimes Observed
Grand mean and standard deviation	3.19	.56		3.52	.48		3.44	.47	

Regarding curriculum alignment, all three groups recognized that the test materials were consistent with the Most Essential Learning Competencies (MELCs) for Grade 7 English. Although there were slight differences in mean scores, school heads gathered a mean of 3.28 and standard deviation of .67, Quick2Game coordinators gathered a mean of

3.55 and standard deviation of .69, and reading coordinators gathered a mean of 3.45 and standard deviation of .67, the convergence of responses across stakeholder roles suggests broad institutional support for the assessment's relevance to mandated learning outcomes. In terms of progress monitoring, the assessment was considered effective in evaluating learners' development toward achieving instructional goals. The reading coordinators gathered a mean of 3.55, and a standard deviation of 0.51 showed slightly more confidence in this function compared to the Quick2Game coordinators with mean of 3.40, and a standard deviation of 0.82, whose higher standard deviation indicates a more varied perception within their group.

Respondents also acknowledged the pre-assessment's basis in systematic instruction focused on foundational reading skills (e.g., phonemic awareness, phonics, fluency, vocabulary, and comprehension). This was reinforced by mean scores from Quick2Game coordinators with a mean of 3.50, a standard deviation of 0.61, and reading coordinators with a mean of 3.33, a standard deviation of 0.66, suggesting that the tool effectively integrates key components of evidence-based reading instruction.

Finally, the assessment was perceived to successfully identify learners' instructional needs, an essential function in a diagnostic tool. Both reading coordinators with a mean of 3.45, a standard deviation of 0.47) and Quick2Game coordinators with a mean of 3.51, a standard deviation of 0.51 reported consistent, positive feedback in this area,

affirming the utility of the pre-assessment for targeted teaching interventions.

The results indicate that EdGAME's pre-assessment tool is well-received by Quick2Game coordinators, reading coordinators, and school heads, in terms of its alignment with curriculum requirements and role in diagnosing learners' literacy competencies.

Weaknesses of the EdGAME's Pre-assessment

The data reveal that certain aspects of the EdGAME pre-assessment are only sometimes observed by school heads, suggesting areas for improvement in the design or implementation of the tool. The relatively moderate mean scores across key dimensions, accompanied by consistent standard deviations, indicate a pattern of perceived limitations in core assessment functions.

Assessment of learners' performance in reading comprehension and vocabulary skills received a mean of 3.7 with a standard deviation of .65, indicating that the assessment's effectiveness in evaluating foundational literacy skills is seen as inconsistent. While not absent, this function is not perceived to be reliably delivered across all observed contexts.

Evaluation of learning progress toward Intended learning goals gathered 3.22 with a standard deviation of .60. Although slightly higher than the previous item, this suggests that the assessment only moderately fulfills its role in tracking academic progression toward specific educational objectives. This finding may reflect a gap between assessment outcomes and actionable insights into learning progress.

Provision of test materials based on systematic instruction in critical reading priorities, with a mean of 3.17 and a standard deviation of .62, this component also falls within the sometimes-observed range. The perception indicates room for improvement in aligning test materials with structured instruction in key reading domains such as phonemic awareness, phonics, fluency, vocabulary, and comprehension.

Determination of learners' instructional needs received the lowest mean score, at 3.11, and a standard deviation of .68. This reflects the school heads' concern that the pre- assessment does not consistently identify learners' individual instructional needs, arguably one of the most critical functions of any diagnostic tool. The relatively high standard deviation further suggests variability in observations across different contexts or school environments.

The mean and standard deviation scores across school heads, Quick2Game coordinators, and reading coordinators reveal both convergence and divergence in the evaluation of the pre-assessment's implementation and instructional value.

School heads reported a mean of 3.19 a standard deviation of zero .56. This suggests a moderate level of agreement on the pre-assessment's effectiveness, with some variability in observations across school contexts. Their relatively lower mean score indicates that, compared to other stakeholders, principals perceive more room for improvement in how the pre-assessment is utilized or its impact on instruction and learning.

Quick2Game coordinators recorded the highest mean, at 3.52, with a standard deviation of zero .48. This indicates a stronger and more consistent perception of the assessment's strengths. As implementers of the EdGAME program, their familiarity with its structure and objectives may contribute to a more favorable evaluation. The relatively low standard deviation reflects shared confidence among coordinators.

Reading coordinators reported a mean of 3.44 with a standard deviation of .47, also indicating a positive and consistent perception of the pre-assessment. Their insights are particularly significant given their subject-matter expertise in literacy instruction. Their mean score is slightly below that of Quick2Game coordinators but remains well above the school head group's evaluation.

Nguyen et al. (2023) stress that ongoing and systematic assessments help educators identify student needs and tailor instruction accordingly. Garcia et al. (2024) emphasize that assessments should not only measure outcomes but also reinforce the instructional priorities set by the program. Research by Chen & Patel (2020) suggests that engaging educators in the development and review of assessment tools leads to better alignment with classroom practices and improves overall program effectiveness.

Heritage (2023) noted that formative assessments must be systematic and continuous to effectively guide instruction and support learning. The absence of longitudinal tracking mechanisms within EdGAME undermines its formative assessment potential.

Strengths and Weaknesses of the Intervention

The strengths and weaknesses of the EdGAME program's intervention, based on the experiences of the school heads, Quick2Game Coordinators, and Reading Coordinators, are presented in Table 6.

Table 6 Strengths and Weaknesses of EdGAME Program's Intervention

Statements	**School Heads**			**Quick2Game Coordinators**			**Reading Coordinators**		
Intervention	$\bar{X}$	σ	Verbal Interpretation	$\bar{X}$	σ	Verbal Interpretation	$\bar{X}$	σ	Verbal Interpretation
Engages the learners in an interactive learning process	3.56	0.51	Always Observed	3.65	0.59	Always Observed	3.60	0.50	Always Observed
Uses intervention materials with different essential components (i.e., phonemic awareness, phonics, fluency, vocabulary, and comprehension) in reading to achieve intended learning goals.	3.11	0.68	Sometimes Observed	3.35	0.59	Always Observed	3.25	0.72	Always Observed
Utilizes intervention materials based on systematic instruction in critical reading priorities (i.e., phonemic awareness, phonics, fluency, vocabulary, and comprehension).	3.00	0.59	Sometimes Observed	3.25	0.64	Sometimes Observed	3.05	0.83	Sometimes Observed
Employs efficient support to learners who do not benefit adequately from the	3.22	0.81	Sometimes Observed	3.45	0.69	Always Observed	3.5	0.69	Always Observed

core program.									
Addresses the diverse needs of learners in essential reading components.	3.28	0.75	Always Observed	3.50	0.69	Always Observed	3.30	0.80	Always Observed
Grand mean and standard deviation	3.23	.60		3.44	.55		3.44	.57	

Strengths of the EdGAME's Intervention

The data reveal several consistently observed strengths of the EdGAME intervention as perceived by school heads, Quick2Game coordinators, and reading coordinators.

The most prominent and unanimously recognized strength is that the intervention engages learners in an interactive learning process. This was always observed by the majority of all three groups. Specifically, school heads reported a mean of 3.56 with a standard deviation of .51. Quick2Game coordinators recorded a slightly higher mean of

3.65 and a standard deviation of .59, while reading coordinators reported a mean of 3.60 with a standard deviation of zero .50. The high mean scores and relatively low standard deviations across all groups suggest that this component of the intervention is not only consistently observed but also broadly agreed upon in terms of its effectiveness.

Another identified strength, as perceived by both Quick2Game coordinators and reading coordinators, is the use of intervention materials that incorporate essential components of reading instruction, such as phonemic awareness, phonics, fluency, vocabulary, and comprehension. Quick2Game coordinators reported a mean of 3.35 and a standard deviation of .59, while reading coordinators noted a mean of 3.25 and a standard deviation of .72. These values indicate a generally favorable perception of the comprehensiveness of the instructional materials, though slightly more variability in responses was evident among reading coordinators.

Furthermore, the EdGAME intervention is perceived to effectively provide support to learners who do not adequately benefit from the core program. This aspect was viewed as a strength by both Quick2Game and reading coordinators. The Quick2Game coordinators reported a mean of 3.45 and a standard deviation of .69, while reading coordinators gave a mean of 3.50 with an identical standard deviation of .69. These figures suggest that the support mechanisms embedded within the intervention are both visible and appreciated by practitioners closely involved in its implementation.

Lastly, addressing the diverse needs of learners in essential reading components was identified as a strength by all three groups. School heads reported a mean of 3.28 and a standard deviation of .75, Quick2Game coordinators had a mean of 3.50 and a standard deviation of zero .69, and reading coordinators reported a mean of 3.30 with a standard deviation of .80. Although variability in perception is slightly higher among school heads and reading coordinators, the overall means still fall within the always observed range, indicating that differentiated instruction is a visible and valued part of the EdGAME framework.

Weaknesses of EdGAME's Intervention

The data reveal several areas perceived as weaknesses in the EdGAME intervention, particularly from the perspective of the respondents.

One key area of concern is the use of intervention materials with missing reading components such as phonemic awareness, phonics, fluency, vocabulary, and comprehension. This was identified as a weakness by school heads, who reported a mean of 3.11 and a standard deviation of .68, indicating that while the presence of these components is sometimes observed, their integration is inconsistent across settings. Another notable weakness, especially across all respondent groups, is the improper utilization of materials based on systematic instruction in critical reading priorities. School heads reported a mean of 3.00 with a standard deviation of .59, suggesting limited consistency in structured instructional approaches. Quick2Game coordinators rated this component slightly more favorably, with a mean of 3.25 and a standard deviation of zero .64, while reading coordinators recorded a mean of 3.05 with a higher standard deviation of .83, pointing to greater variability and uncertainty within their group.

Additionally, the provision of efficient support for learners who do not benefit from the core program was also seen as a weakness by school heads, who gave this component a mean of 3.22 and a standard deviation of .81, again indicating inconsistent implementation. These findings suggest that while the intervention framework includes essential elements of reading instruction and support, the execution is uneven, and its systematic application and targeted learner support remain areas requiring further development and professional support.

The interpretation of the grand mean and standard deviation data across the three respondent groups, school heads, Quick2Game coordinators, and reading coordinators, offers a clear view of the overall strengths and weaknesses of the EdGAME intervention from multiple institutional perspectives.

The Quick2Game coordinators reported the highest grand mean of 3.44 with a standard deviation of .55, indicating a strong and consistently positive perception of the intervention's implementation and impact. This suggests that those most directly involved in managing or facilitating the program see its components, such as learner engagement, material quality, support mechanisms, and instructional alignment, as effectively executed and reliably present. Their relatively low standard deviation also reflects a high degree of internal agreement, further reinforcing the perception of EdGAME's strength in their context.

Reading coordinators followed with a grand mean of 3.34 and a standard deviation of .57. This group also views the intervention favorably, especially in terms of literacy- related content and learner support. While slightly lower than the Quick2Game coordinators, the mean remains within the always observed range, pointing to perceived strengths in essential areas like reading component integration and instructional relevance. The slightly higher standard deviation suggests a modest degree of variability in their experiences, possibly due to differences in classroom conditions or teacher implementation.

In contrast, school heads reported the lowest grand mean of 3.23 with a standard deviation of .60, suggesting a more moderate perception of the intervention. While still generally positive, their rating reflects more inconsistent observation of EdGAME's components. This may highlight a potential disconnect between leadership-level expectations and actual classroom-level implementation, or it may suggest that school heads have more limited visibility into daily instructional practices. Their perception of certain areas, as sometimes observed, points to implementation gaps in materials usage, systematic instruction, and targeted learner support.

Bonsilao et al. (2024) emphasized that game-based interventions significantly enhance learner motivation and attention, which are critical for sustained reading development, particularly among early readers and struggling learners. Gee (2020) and Niemi et al. (2024) emphasized the effectiveness of adaptive, game-based interventions in enhancing literacy skills. Kirschner et al. (2022) argue that when structured correctly, gamification promotes deep learning by encouraging exploration, problem-solving, and the transfer of skills across contexts.

Serrano and Cruz (2023) reported that game-based learning significantly improves student motivation and vocabulary retention in middle school contexts. Serrano (2019) highlighted the positive effects of digital game-based learning on literacy outcomes, showing that when students are immersed in interactive environments, they exhibit improved comprehension and vocabulary retention.

Strengths and Weaknesses Post-Assessment

The strengths and weaknesses of the EdGAME's Post-assessment as perceived by the school heads, Quick2Game coordinator, and reading coordinators are presented in Table 7.

Strengths of EdGAME's Post Assessment

The results indicate that several key components of the EdGAME post-assessment are consistently observed and are therefore perceived as strengths of the intervention by both Quick2Game coordinators and reading coordinators.

The data indicates that several core components of the EdGAME post-assessment are perceived as consistent strengths by both Quick2Game coordinators and reading coordinators, suggesting that the intervention is effectively meeting its intended instructional and evaluative goals in key literacy areas.

The evaluation of learners' engagement in reading comprehension and vocabulary skills was strongly affirmed, with Quick2Game coordinators reporting a mean of 3.5 and

Table *7* Strengths and Weaknesses of EdGAME Program's Post-assessment

Statements	**School Heads**			**Quick2Game Coordinators**			**Reading Coordinators**		
Post-assessment	$\bar{X}$	σ	Verbal Interpretation	$\bar{X}$	σ	Verbal Interpretation	$\bar{X}$	σ	Verbal Interpretation
Evaluate learners' engagement in reading comprehension and vocabulary skills during EdGAME intervention.	3.17	0.62	Sometimes Observed	3.5	0.69	Always Observed	3.40	0.68	Always Observed
Parallel test materials with the learning objectives of the Grade 7 Curriculum.	3.17	0.62	Sometimes Observed	3.45	0.69	Always Observed	3.40	0.50	Always Observed
Assess various essential components (i.e., phonemic awareness, phonics, fluency, vocabulary, & comprehension) in reading to attain the set academic goals.	3.17	0.71	Sometimes Observed	3.5	0.69	Always Observed	3.3	0.66	Always Observed
Supply test materials based on explicit instruction on critical reading priorities (i.e., phonemic awareness, phonics, fluency, vocabulary, &	3.11	0.68	Sometimes Observed	3.45	0.69	Always Observed	3.35	0.67	Always Observed

comprehension).									
Identify the numerous academic needs of the learners during EdGAME intervention.	3.11	0.68	Always Observed	3.45	0.69	Always Observed	3.2	0.62	Always Observed
Grand mean and standard deviation	3.15	0.60		3.47	0.61		3.33	0.54	

a standard deviation of 0.69 and reading coordinators reporting a mean of 3.4 and a standard deviation of 0.68. These high ratings reflect that the assessment actively engages learners and captures meaningful performance data in comprehension-related domains.

Likewise, the alignment of test materials with the Grade 7 curriculum objectives was viewed positively, with Quick2Game coordinators assigning a mean of 3.45 and a standard deviation of 0.69, and reading coordinators rating it at 3.4 and a standard deviation of

0.50. This indicates that the post-assessment not only evaluates learner performance but does so in direct connection to curriculum standards, a key factor in instructional relevance and assessment validity.

Another major strength is the post-assessment's capacity to assess foundational reading components, phonemic awareness, phonics, fluency, vocabulary, and comprehension. Quick2Game coordinators reported a mean of 3.5, while reading coordinators gave a mean of 3.3, showing solid agreement that the tool evaluates the full spectrum of essential reading skills.

In addition, the provision of test materials grounded in explicit instruction on these same priorities was perceived as another strength. Quick2Game coordinators reported a mean of 3.45 standard deviation of 0.69, and reading coordinators followed with a mean of 3.35 and standard deviation of 0.67, confirming that the assessment is not only comprehensive in content but also structured and deliberate in its instructional design.

Finally, Quick2Game coordinators highlighted the tool's capacity to identify learners' academic needs, assigning it a mean of 3.45 (standard deviation 0.69). This suggests that the post-assessment supports data-driven decision-making by enabling targeted interventions based on diagnostic insights.

Weaknesses of the EdGAME's Post-assessment

The data suggests that school heads perceive several components of the EdGAME post-assessment as only sometimes observed, highlighting potential weaknesses or areas for improvement in its implementation.

The data reflects a moderate and somewhat inconsistent perception of the EdGAME post-assessment's effectiveness, particularly from the perspective of school heads, with some corroboration from reading coordinators. The component focused on assessing essential reading skills, namely phonemic awareness, phonics, fluency, vocabulary, and comprehension, was rated with a mean of 3.17 and a standard deviation of 0.71. This indicates moderate agreement but with notable variability, suggesting that while this element is present, it may not be uniformly applied or evident in all school contexts.

Similarly, the evaluation of learners' engagement in reading comprehension and vocabulary yielded an identical mean of 3.17 and a slightly lower standard deviation of 0.62, reinforcing the pattern of inconsistent visibility or execution across different schools. Although seen as a potential strength, its inconsistency suggests that this component might not be systematically built into all implementations of the intervention.

The identification of learners' academic needs received a mean of 3.11 and a standard deviation of 0.68 from school heads, signaling that this diagnostic function of the post- assessment is only sometimes observed and varies in effectiveness. In contrast, reading coordinators rated it slightly higher, with a mean of 3.20 and standard deviation of 0.62, indicating that practitioners closer to instruction perceive this component more favorably, likely because they are more directly involved in classroom-level data interpretation and intervention planning.

Finally, the provision of test materials aligned with explicit instruction in critical reading areas was rated similarly by school heads (mean of 3.11, standard deviation of 0.68), again pointing to inconsistent implementation of structured literacy practices. This reinforces a broader theme: while the EdGAME post-assessment includes important features aligned with best practices in reading instruction, these components are not being delivered or experienced uniformly across schools, resulting in moderate but fragmented effectiveness. Likewise, the alignment of test materials with the Grade 7 curriculum learning objectives was only sometimes observed, reflected by a mean of 3.17 and a standard deviation of 0.62.

Overall, the grand mean reported by school heads was 3.15 with a standard deviation of 0.60, pointing to a generally moderate perception of the post-assessment's effectiveness, with specific areas, such as instructional alignment, learner engagement, and identification, requiring more consistent application to be fully effective in supporting literacy instruction.

The interpretation of the grand mean and standard deviation across the three respondent groups, school heads, Quick2Game coordinators, and reading coordinators, reveals both the strengths and weaknesses of the EdGAME post-assessment as perceived by different stakeholders involved in its implementation.

The Quick2Game coordinators reported the highest grand mean of 3.47 with a standard deviation of 0.61, indicating that they consistently observed the core components of the post-assessment as effectively implemented. This suggests a strong perception of the assessment's strengths, particularly in evaluating learner progress, aligning materials with instructional goals, and supporting reading development. Their relatively low standard deviation also indicates a high degree of internal agreement, reflecting that the post-assessment is functioning reliably within their operational scope.

Reading coordinators followed with a grand mean of 3.33 and a standard deviation of 0.54, also suggesting a generally positive view of the post-assessment. Their perception supports the notion that the tool is effective in assessing essential reading components such as phonemic awareness, phonics, fluency, vocabulary, and comprehension. However, the slightly lower mean compared to the Quick2Game coordinators may reflect some variability in classroom-level implementation or the depth of observed instructional impact.

In contrast, school heads reported a lower grand mean of 3.15 with a standard deviation of 0.60, pointing to a more moderate and less consistent perception of the post- assessment's effectiveness. This could indicate that while they recognize some strengths in the tool, certain components, such as the alignment with curriculum objectives, the clarity of assessment outcomes, or the identification of learners' academic needs, are not consistently visible or implemented across the schools they supervise. The slightly higher standard deviation also implies greater variability in observations among school leaders, possibly due to differences in context, oversight, or communication about the intervention Ortega & Manlapig (2021) emphasized that inconsistent post-assessment practices often stem from insufficient professional development and unclear assessment guidelines.

Table 8 Summary of the Strengths of the EdGAME Program

Category	Statements	Respondents
Pre-assessment	1. Evaluates the progress of learning to achieve intended learning goals.	School Heads, Quick2Game Coordinators, Reading Coordinators

	2. Provides test materials based on systematic instruction on critical reading priorities.	School Heads, Quick2Game & Reading Coordinators
	3. Assesses learners' performance in reading comprehension and vocabulary skills.	School Heads, Quick2Game & Reading Coordinators
	4. Aligns test materials with the most essential learning competencies of the Grade 7 Curriculum.	School Heads, Quick2Game & Reading Coordinators
Intervention	1. Engages the learners in an interactive learning process.	School Heads, Quick2Game & Reading Coordinators
	2. Uses intervention materials with different essential components in reading to achieve intended learning goals.	Quick2Game & Reading Coordinators
	3. Employs efficient support to learners who do not benefit adequately from the core program.	Quick2Game & Reading Coordinators
	4. Addresses the diverse needs of learners in essential reading components.	School Heads, Quick2Game & Reading Coordinators
Post-assessment	1. Evaluates learners' engagement in reading comprehension and vocabulary skills during EdGAME intervention.	Quick2Game & Reading Coordinators
	2. Parallels test materials with the learning objectives of the Grade 7 Curriculum.	Quick2Game & Reading Coordinators
	3. Assesses various essential components in reading to attain the set academic goals.	Quick2Game & Reading Coordinators
	4. Supplies test materials based on explicit instructions on critical reading priorities.	Quick2Game & Reading Coordinators
	5. Identifies the numerous academic needs of the learners during the EdGAME intervention.	School Heads, Quick2Game & Reading Coordinators

Table 9 Summary of the Weaknesses of the EdGAME Program

Category	Statements	Respondents
Pre-assessment	1. Evaluates the progress of learning to achieve intended learning goals.	Reading Coordinators
	2. Provides test materials based on systematic instruction on critical reading priorities.	School Heads

	3. Determines the instructional needs of the learners.	School Heads, Quick2Game & Reading Coordinators
Intervention	1. Utilizes intervention materials based on systematic instruction in critical reading priorities.	School Heads, Quick2Game & Reading Coordinators
	2. Uses intervention materials with different essential components in reading to achieve intended learning goals.	School Heads
	3. Employs efficient support to learners who do not benefit adequately from the core program.	School Heads
Post-assessment	1. Evaluates learners' engagement in reading comprehension and vocabulary skills during EdGAME intervention.	School Heads
	2. Parallels test materials with the learning objectives of the Grade 7 Curriculum.	School Heads
	3. Assesses various essential components in reading to attain the set academic goals.	School Heads
	4. Supplies test materials based on explicit instructions on critical reading priorities.	School Heads

Tables 8 and 9 summarize a detailed evaluation of the EdGAME program, focusing on its three main components: Pre-assessment, Intervention, and Post-assessment. The data reveal a nuanced profile of the program, demonstrating both commendable strengths and critical areas for improvement as perceived by the school heads, Quick2 Game Coordinators, and Reading Coordinators.

Pre-assessment

In the pre-assessment phase, the statement assesses learners' performance in reading comprehension and vocabulary skills, aligns test materials with the most essential learning competencies of the Grade 7 Curriculum were both recognized by School heads, Quick2Game & Reading Coordinators as the strengths of the EdGAME program.

The statement evaluates the learners' progress toward achieving intended learning goals, despite being considered a strength by the school heads and Quick2Game coordinators. Reading Coordinators noted that evaluating learning progress still presents challenges, possibly in consistency or execution.

Providing test materials grounded in systematic instruction and aligned with critical reading priorities was considered as one of the strengths of the EdGAME assessment, according to Quick2Game & Reading Coordinators, who are the first-hand implementers of the program. Since the school heads oversee the implementation of the program, they see this aspect as needing improvement rather than the weakness of the pre-assessment.

All groups acknowledged that determining the instructional needs of learners remains a weakness, suggesting a lack of diagnostic precision or inadequate adaptation to learners' varying levels. Reyes and Lim (2024). Literacy programs that are closely tied to national education standards are better positioned for long-term scalability and educational impact. Lupo, Strong, and Smith (2020) argue that early and precise identification of learners' skill gaps is critical to designing responsive instruction The pre-assessment phase is especially commendable for its role in evaluating learners' reading comprehension and vocabulary skills. This diagnostic function is crucial for enabling

data-informed instructional planning. According to Kim, Wagner, and Lopez (2022), well-constructed early assessments can identify learning needs effectively and inform targeted interventions, thereby improving outcomes for diverse learners.

Intervention

All three groups of respondents recognized that the EdGAME engages the learners in an interactive learning process and addresses the diverse needs of learners in essential reading components, as the strengths of the intervention.

Meanwhile, the Quick2Game coordinators and Reading coordinators recommend that EdGAME uses intervention materials with different essential components in reading to achieve intended learning goals and. employs efficient support to learners who do not benefit adequately from the core program. However, the school heads foresee this aspect as the area that needs to be strengthened. Lupo, Strong, and Smith (2020), emphasize that interventions grounded in these components significantly enhance literacy development.

Despite the heads and Quick2Game coordinators recognizing that the EdGAME uses intervention materials with different essential components in reading to achieve intended learning goals, the school heads considered this as an aspect that needed to be provided during the intervention. Connor, McNamara, and Day (2021) stress the importance of fidelity of implementation, noting that even well-designed programs can falter if not delivered consistently and accurately. Connor, McNamara, and Day (2021), highlight the importance of differentiated support within reading programs.

Post-assessment

The results of EdGAME's post-assessment show that the perceptions of the school heads and two coordinators contradict each other. Although the Quick2Game and reading coordinators recognized the EdGAME post-assessment evaluates learners' engagement in reading comprehension and vocabulary skills during EdGAME intervention, parallel test materials with the learning objectives of the Grade 7 Curriculum, assess various essential components in reading to attain the set academic goals, supply test materials based on explicit instruction on critical reading priorities.

This suggests a disconnect between implementation (as perceived by program facilitators) and institutional oversight or expectations (as viewed by school heads), especially in post-assessment procedures. (Day et al., 2024). Without uniform delivery, the credibility and sustainability of the program are at risk, especially in diverse educational settings.

On the positive note, all of the respondents recognized that EdGAME identifies the numerous academic needs of the learners during EdGAME intervention is a strength of the post-assessment.

The pre-assessment and post-assessment tools exhibit inconsistent alignment with structured instruction, leading to unreliable evaluation of essential reading domains such as phonemic awareness, fluency, and vocabulary. This variability compromises the program's ability to track learner progress accurately and determine instructional needs. These assessments are reportedly grounded in explicit instruction, which aids in identifying residual academic needs after the intervention. This reflects recommendations from Day et al. (2024), who argue that assessment tools should both reinforce explicit instruction and guide subsequent remediation planning to ensure continued learner progress.

Table 10 Opportunities and Threats of the EdGAME Program's Pre-assessment

Opportunities	Threats
Enhance data-driven instruction by using assessment outcomes to personalize learning.	May undermine stakeholder confidence if tracking and assessment remain unreliable or vague.

Position the program as a standardized tool across schools due to its curricular alignment.	Misalignment could result in ineffective instruction, inaccurate diagnostics, and missed learning opportunities.
Leverage an evidence-based foundation to seek partnerships or endorsements from literacy advocacy organizations and educational institutions.	Variability in evaluation may lead to inconsistent outcomes across schools, hindering program scalability and long-term sustainability.
Expand use for progress monitoring and benchmarking at various academic levels.	Failure to individualize instruction could widen learning gaps and negatively impact struggling readers.

Opportunities and threats of the EdGAME program based on identified strengths and weaknesses.

Opportunities and Threats of the Pre-assessment

The opportunities and threats based on the identified strengths and weaknesses of the EdGAME's pre-assessment are presented in Table 10.

The pre-assessment component of the EdGAME program presents both notable opportunities and significant threats, as reported by school heads, Quick2Game coordinators, and reading coordinators. On the opportunity side, the pre-assessment shows promise in accurately evaluating learners' reading comprehension and vocabulary skills while maintaining alignment with the Most Essential Learning Competencies (MELCs) of the Grade 7 curriculum.

This alignment provides a strong basis for data-informed instruction, allowing educators to tailor interventions according to initial learner profiles (Kim, Wagner, & Lopez, 2022). Effective pre-assessment can also facilitate the early identification of instructional gaps and help in setting measurable and realistic learning targets, a strategy shown to improve literacy outcomes when used systematically (Connor, McNamara, & Day, 2021).

However, several threats diminish the effectiveness of this component. One pressing issue is the inconsistent evaluation of reading skills across learning contexts, which compromises the reliability of the data generated. Studies have shown that inconsistent implementation of assessment tools can significantly reduce their utility in informing instruction and meeting individual learner needs (Brown, 2023).

Moreover, the moderate effectiveness in tracking academic progression suggests that the current design of the pre-assessment may not fully support targeted instructional planning. Even more concerning is the misalignment of test materials with structured instruction in key reading domains such as phonemic awareness, phonics, and fluency, elements identified as critical to foundational literacy (Lupo, Strong, & Smith, 2020; Day et al., 2024). If not addressed, these threats could result in misinformed pedagogical decisions, hinder learner progress, and reduce the overall credibility and impact of the EdGAME program in diverse educational settings.

Table 11 Opportunities and threats of the EdGAME program's Interventions

Opportunities	**Threats**
Expand interactive strategies to enhance motivation and participation among struggling readers.	Gaps in instructional content may result in incomplete skill development, limiting program effectiveness and learner progress.
Position the intervention as an evidence-based reading model that can be aligned with national literacy goals and training frameworks.	Misuse of materials can reduce instructional fidelity, leading to poor implementation and inconsistent learner outcomes.

Develop targeted interventions to close learning gaps, potentially improving equity in literacy outcomes.	At-risk learners may continue to fall behind without effective, structured remediation, worsening achievement gaps.
Customize instructional strategies to support differentiated learning and inclusive education.	Inconsistency in delivery across schools may threaten the program's credibility and sustainability; professional development may be urgently needed.

Opportunities and threats of the intervention

The opportunities and threats based on the identified strengths and weaknesses are presented in Table 11. The EdGAME program's intervention component offers significant opportunities to enhance literacy outcomes, particularly for struggling readers.

By expanding interactive strategies, such as gamified learning and digital e-books, the program can increase student motivation and engagement. Research by Day et al. (2024) demonstrates that interactive e-books employing comprehension strategies can significantly improve word knowledge and comprehension skills among students.

Positioning the intervention as an evidence-based reading model aligns with national literacy goals and training frameworks, as seen in initiatives like the Northern Territory's "Boosting Literacy and Numeracy Plan," which emphasizes explicit teaching methods to improve reading skills (Courier Mail, 2025).

Developing targeted interventions is crucial for closing learning gaps and promoting equity in literacy outcomes. The Compton Unified School District's implementation of intensive tutoring and data-driven strategies has led to notable improvements in reading and math scores, particularly among students in high-poverty areas (Ma & Gecker, 2025).

Customizing instructional strategies to support differentiated learning and inclusive education is also vital. Differentiated instruction, which includes tiered assignments and flexible grouping, has been shown to effectively address diverse learning needs and foster a supportive educational environment (Peru State College, 2024).

However, the program faces threats that could impede its effectiveness. Gaps in instructional content may result in incomplete skill development, limiting learner progress. Misuse of materials can reduce instructional fidelity, leading to inconsistent learner outcomes. Without effective, structured remediation, at-risk learners may continue to fall behind, exacerbating achievement gaps. Inconsistency in delivery across schools threatens the program's credibility and sustainability, highlighting the urgent need for comprehensive professional development to ensure uniform implementation

Table 12 Opportunities and Threats of the EdGAME Program's Post Assessment

Opportunities	Threats
Expand the use of structured assessments to provide diagnostic feedback for targeted interventions.	Inconsistent implementation may undermine data reliability and compromise instructional decision-making.
Align post-assessment practices with national literacy standards to support program credibility and policy integration.	Misalignment of post-assessments with instructional content risks failing to identify struggling learners.

Utilize explicit instruction-based assessments to identify and close learning gaps.	At-risk students may fall further behind without effective, structured remediation.
Customize post-assessments to provide differentiated data for inclusive education planning.	Weak credibility and reduced sustainability of the program if test delivery varies significantly across schools.

Opportunities and threats of the post-assessment

The opportunities and threats based on the identified strengths and weaknesses of the EdGAME program post-assessment are presented in Table 12.

The EdGAME program's post-assessment presents key opportunities to strengthen evidence-based literacy instruction and equity-focused educational planning. One critical opportunity lies in expanding the use of structured assessments to generate diagnostic

feedback for targeted interventions, a strategy proven effective in supporting literacy development among struggling readers (Kim et al., 2022). Such assessments, when aligned with instructional goals, can help educators pinpoint specific deficits and design individualized support pathways.

Another opportunity is the alignment of post-assessment practices with national literacy standards, which enhances the program's credibility and integration within policy frameworks (Tan et al., 2021). When post-assessments are rooted in explicit instruction and consistently measure key components of reading, such as phonemic awareness, phonics, fluency, vocabulary, and comprehension, they help close achievement gaps and foster inclusive learning environments (Lupo et al., 2020). Furthermore, the ability to customize post-assessments for differentiated instruction is essential for promoting equity, particularly in diverse classroom contexts (Connor et al., 2021).

However, several threats may impede the effectiveness and sustainability of the post-assessment system. Inconsistent implementation across schools jeopardizes the reliability of assessment data and may compromise instructional decision-making. When educators cannot depend on standardized post-assessment procedures, the ability to monitor student progress and adjust instruction accordingly is weakened (Brown, 2023). Similarly, misalignment between assessment content and actual instruction may prevent the accurate identification of learners' needs, a challenge that can disproportionately affect at-risk students (Day et al., 2024).

Moreover, the lack of structured remediation following post-assessment results poses a significant risk to learners who are already struggling. Without follow-up interventions, these students may continue to fall behind, reinforcing systemic achievement gaps. Finally, variability in test delivery across schools threatens the program's overall credibility and scalability, highlighting the need for ongoing professional development and monitoring to ensure fidelity of implementation (Tan et al., 2021).

Researcher-made vocabulary game activity, based on the identified strengths, weaknesses, opportunities, and threats of the EdGAME Program

Based on the strengths, weaknesses, opportunities, and threats identified from the implementation of the EdGAME Literacy Program, a classroom game called VocaBank was developed by the researcher. VocaBank is a portmanteau, which means vocabulary bank. A Vocabank is a researcher-made classroom board game where some of the mechanics and features of the game are modified for the inclusivity of the learners.

Vocabank aims to provide a unique opportunity to develop vocabulary, promote collaboration, and enhance the social skills of learners from Grade 7 to Grade 10. Through consistent playing of VocaBank, learners will be exposed to new vocabulary, will work together in teams, and will be encouraged to engage socially with others. Through these experiences, learners will build critical skills that are valuable not only within the context of gaming but also

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in many other areas of life.

In response to the strengths, weaknesses, opportunities, and threats (SWOT) identified during the implementation of the EdGAME Literacy Program, the researcher developed a classroom-based board game called *VocaBank*. The term *VocaBank* is a portmanteau of "vocabulary" and "bank," signifying a repository of lexical knowledge accessible through structured play. Designed to address identified challenges, such as varying levels of learner engagement, inequitable access, and limited collaborative interaction, *VocaBank* incorporates adaptive features from the Quick2Game that promote inclusivity across diverse learner profiles.

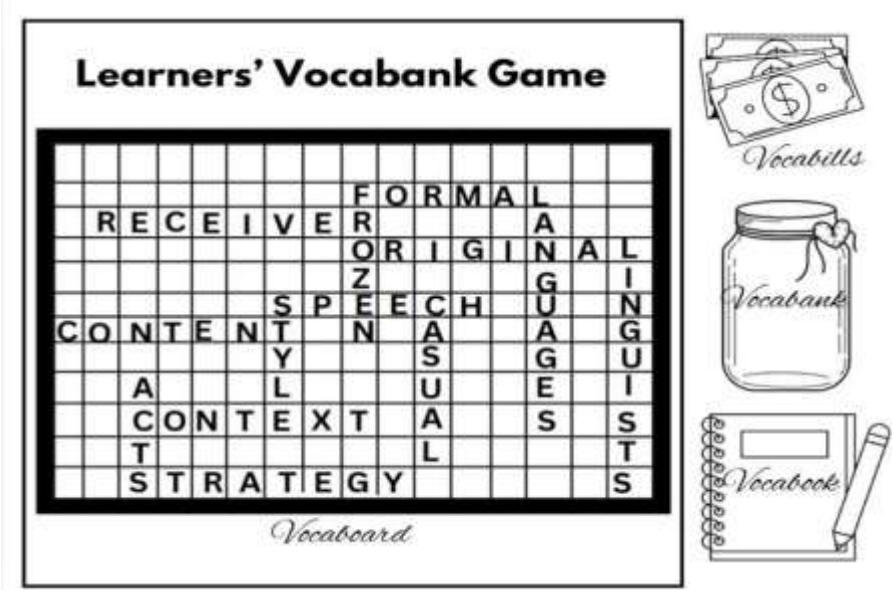
VocaBank is a researcher-constructed instructional tool created for students in Grades 7 to 12. The game was developed to achieve three core objectives: (1) facilitate vocabulary acquisition, (2) foster collaborative learning, and (3) enhance learners' social interaction skills. These aims are consistent with the findings of Thompson and Rivera (2022), who demonstrated that board games, when thoughtfully designed, can improve linguistic proficiency while supporting cooperative learning dynamics in middle and secondary education settings.

The gameplay mechanics of *VocaBank* were intentionally adapted to support differentiated instruction, allowing students of varying proficiency levels to participate meaningfully. According to Kim and Alvarez (2023), game-based learning environments that accommodate learner diversity tend to yield stronger outcomes in both academic performance and learner confidence.

Furthermore, repeated engagement with *VocaBank* is intended to provide consistent exposure to new vocabulary in contextually meaningful ways. This aligns with research by Zhao and Peterson (2021), which emphasized that regular interaction with content-specific vocabulary in game-like formats leads to improved long-term retention and application. The team-based format of *VocaBank* encourages peer collaboration and communication, reinforcing the social dimensions of language learning as described by Waluyo and Leal (2021), who have shown that gamified instructional tools have significantly increased the learners' engagement and comprehension when integrated into curriculum-based frameworks.

In sum, *VocaBank* represents a strategic pedagogical response to both the opportunities and challenges revealed during the EdGAME Literacy Program's rollout. By blending inclusive design with evidence-based game mechanics, *VocaBank* seeks to cultivate not only vocabulary knowledge but also essential 21st-century skills, including teamwork, communication, and social awareness.

Figure 2: Game Materials for playing VocaBank



The following materials will be used for the game VocaBank.

The VocaBank board game utilizes a structured set of instructional materials specifically designed to enhance vocabulary development, promote student collaboration, and encourage meaningful engagement. The following materials are required for effective implementation:

Vocaboard. The *vocaboard* is a researcher-designed vocabulary board constructed from a ¼-sized illustration board. It is marked with gridlines and laminated or covered with a transparent plastic film to allow for repeated use. This board serves as the primary surface upon which learners collaboratively write or form vocabulary words during gameplay. However, you can use a flyboard instead of an illustration board for the durability of the material.

Vocapens. Each participating student is provided with a reusable marker, referred to as a *vocapens*, to record words on the vocaboard. These tools support hands-on engagement and promote student agency in the learning process.

Vocabook. The Vocabook is a personal vocabulary record book in which students transcribe all the words they generate during the game. Entries include the date of play, the vocabulary words created, the corresponding Vocabills earned, and a teacher's signature for validation. This book serves both as a reflective tool and a formative assessment artifact.

Vocabank. The Vocabank is a transparent container (e.g., a plastic jar) labeled with learners' names and group numbers. This jar functions as a collective repository where students deposit the Vocabills earned during gameplay. It serves as a tangible representation of group progress and achievement.

Vocabills. Vocabills are game-based currency, represented by plain, colored paper cut to resemble paper bills. The value of each vocabills is determined by the complexity and quality of the word usage. When the learners create two to three-letter words, they will receive ten vocabills. When the students create four to five-letter words, they will receive 20 Vocabills. When the learners create six to seven words, they will get 30 Vocabills.

When the learners get eight or more letter words, they will receive 40 Vocabills. When the learners write the definition of words (sourced from credible references such as the Oxford English Dictionary, Merriam-Webster Dictionary, Cambridge Dictionary, or Britannica Encyclopedia), they will receive an additional of five Vocabills. Lastly, when the learners use the words in sentences, they will receive an additional of ten Vocabills for every sentence they create.

Teachers may assign specific colors to the Vocabills to indicate different denominations or learning milestones, allowing for easier tracking and classroom management.

Game Instructions for VocaBank

The following procedural steps outline the implementation of *VocaBank* in a classroom setting. The game is designed to be both engaging and educational, fostering vocabulary development, teamwork, and critical thinking among learners from Grades 7 to 12.

Step 1: Group Formation and Material Distribution

Divide the class into small groups, ideally consisting of four to five learners each. Instruct each group to sit in a circular formation to facilitate interaction and collaboration. The teacher will then distribute the required *VocaBank* materials to each group: v*ocaboard*, *vocapens*, *vocabook*, *vocabank*, and *vocabills*.

Step 2: Topic Identification

Direct learners to write the current lesson topic or designated vocabulary category at the center of their *Vocaboard*.

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This thematic focus will guide the word formation process and ensure content alignment.

Step 3: Vocabulary Formation Activity

Allocate three minutes for the core word-generation activity. During this time, all group members are to collaboratively fill the *vocaboard* with words related to the topic. Words must be interconnected and may be written horizontally or vertically, like the gameplay mechanics of the Quick2Game model. The objective is to maximize word production within the time limit while maintaining semantic relevance.

Step 4: Transcription and Teacher Validation

Upon completion of the activity, instruct students to transcribe each word from the *vocaboard* into their individual *vocabook*. The teacher will then verify the accuracy of spelling and assign point values (in *vocabills*) according to established criteria. Only correctly spelled and contextually appropriate words will be awarded points.

Step 5: Transcription and Teacher Validation

Based on the validated entries, the teacher will distribute the corresponding number of *vocabills* to each group. Learners will then deposit the awarded v*ocabills* into their group's *Vocabank* (transparent container labeled with group information), reinforcing a sense of achievement and collective effort.

Step 6: Post-Game Vocabulary Expansion

On the day following gameplay, learners could earn additional *Vocabills* by writing the definitions of the words in their *Vocabook* and using them correctly in a sentence.

Definitions must be sourced from credible academic references, such as the Oxford English Dictionary, Merriam-Webster Dictionary, Cambridge Dictionary, or Britannica Encyclopedia.

Step 7: Weekly Assessment and Rewards

At the end of the week, each group, together with the teacher, will open their *Vocabank* to count the total v*ocabills* earned. Based on the total accumulated, the teacher may award incentives or recognition aligned with the value of the *vocabills*, as part of a reinforcement strategy to motivate continued participation and vocabulary growth.

Development of the Vocabulary Game: VocaBank

The development of the classroom-based vocabulary game *VocaBank* was initiated by the researcher, who was a senior high school Reading Coordinator from one of the participating schools in the EdGAME Program. Although the program was originally designed for Grade 7 learners, the researcher was invited to observe the program's implementation and culminating activity.

As an advocate of game-based learning (GBL) in English instruction, the researcher developed a growing interest in exploring the pedagogical potential of the EdGAME program, specifically, the interactive word-forming activity known as Quick2Game, which was employed as a literacy intervention tool during the program.

Quick2Game is an educational activity designed to improve the vocabulary skills of the San Joseños through collaborative gameplay. It allows learners to form words in multiple directions with lettered tiles, reinforcing both linguistic competence and teamwork. While the EdGAME Program was confined to Grade 7 learners, the researcher noted an emerging interest in the game among students from higher grade levels.

However, the limited availability of game units posed a significant barrier to broader implementation. Each school received only four Quick2Game units, which could accommodate six pairs of learners per unit. Given that one

section could include up to 24 pairs of players, and that six sections were scheduled to play per day, the supply was insufficient to fully support the learner population. This observation aligned with findings by Nguyen and Lee (2023), who emphasized that material and resource shortages are common challenges in the integration of innovative pedagogical tools.

Moreover, Garcia et al. (2022) noted that unequal access to educational resources often leads to disparities in student participation and learning outcomes. These concerns underscored the necessity of developing an alternative, scalable, and cost-effective classroom version of the game.

The researcher conducted a formative evaluation of the EdGAME program, identifying both its strengths, such as learner engagement and vocabulary improvement, and its weaknesses, including accessibility and logistical constraints. Guided by these findings and consistent with best practices in the criteria for the development of a new classroom- based game:

The game must be easily integrated into the daily English lessons across different topics.

1. It must allow for the full participation of all learners in the classroom.
2. It should provide opportunities for teachers to assess learners' progress.
3. It should foster a low-anxiety, enjoyable learning environment.
4. The game must enhance learners' literacy skills.
5. It should align with the target competencies outlined in the English Curriculum.

Drawing inspiration from Quick2Game, the researcher created *VocaBank*, a board- based classroom game that retains similar core mechanics, such as word formation in multiple directions, but adapts them for whole-class implementation. Instead of using physical tiles, learners collaboratively write words using markers on a *Vocaboard*. Each group of four to five students forms words based on a given category or topic, engaging in cooperative learning while developing vocabulary skills. This approach is supported by studies such as Thompson and Rivera (2022), who argue that team-based, vocabulary- focused games foster student engagement, peer learning, and vocabulary retention. Additionally, Morgan et al. (2024) emphasized that collaborative learning environments not only promote linguistic skills but also contribute to learners' socio-emotional development.

After designing *VocaBank*, the researcher consulted a Learning Resources Coordinator from the Department of Education (DepEd) to determine the appropriate evaluation framework for validating instructional materials. Based on this guidance, the Evaluation Checklist for Content*,* developed by the Department of Education (DepEd) was utilized to assess the instructional quality, relevance, and alignment of *VocaBank* with curriculum standards. Since the researcher is a DepEd teacher, this evaluation checklist was utilized as a validation tool for the developed classroom game. The game materials, along with the evaluation checklist and detailed game mechanics, were submitted to expert reviewers for validation. Feedback from these content experts was subsequently incorporated to refine the game before its implementation in the classroom setting.

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This chapter presents a summary of the findings, conclusions, and recommendations derived from the study.

Summary of Findings

This section summarizes the respondents' perceptions of the pre-assessment, intervention, and post-assessment presented in Chapter IV and is supported by relevant studies.

How do respondents perceive the American Spaces Educational Gamification (EdGAME) Quick2Game Literacy Program?

Purpose and Objectives. The results of this study demonstrate a strong and consistent belief that the EdGAME Literacy Program effectively meets its primary educational goals: school principals, Quick2Game coordinators, and reading coordinators all expressed confidence in the program's ability to enhance vocabulary and word recognition skills among struggling Grade 7 readers. The program's use of interactive learning strategies was widely regarded as particularly effective in engaging students and fostering meaningful literacy development.

This collective affirmation lends weight to the notion that EdGAME's instructional design is consistent with active and experiential learning principles. By using game-based strategies, the program goes beyond traditional teaching methods to foster student involvement and a better comprehension of language ideas.

However, a significant concern emerged about the limited and inconsistent utilization of feedback from parents, teachers, and students. Across all groups, this element was seen as seldom observed, indicating that stakeholder input channels are not consistently implemented. The difference in responses indicates that the practice of obtaining and utilizing feedback varies significantly among implementation situations. This gap identifies a key area for improvement. While the program is regarded as instructionally competent, the lack of structured and consistent feedback methods limits its ability to grow and respond effectively. To be effective and connected with learners' increasing needs, EdGAME must take a more comprehensive strategy that involves continuous stakeholder involvement.

Relevance. The findings reveal that school principals, Quick2Game coordinators, and reading coordinators all perceive the EdGAME Program as highly relevant to the educational needs of Grade 7 students. Across all categories, there is widespread agreement that the EdGAME program effectively promotes real-life application of language and reading abilities. Learners were able to use in real-world circumstances what they had learned from the EdGAME program. This demonstrates the program's ability to extend learning beyond the classroom. EdGAME aligns with the Most Essential Learning Competencies (MELCs) for the English curriculum. This connection strengthens EdGAME's position as a structured and curriculum-based intervention, assuring its compatibility with broader standards of learning and adaptability within the educational system. The findings also emphasize the program's benefit to learner autonomy and social development. EdGAME promotes independent readers while encouraging communication and socialization.

However, the data also emphasize the need for strengthening feedback integration and ensuring more consistent implementation of strategies that promote learner autonomy and communication. Doing so would enhance the program's responsiveness and ensure its continued relevance in diverse classroom environments.

Implementation. The findings reveal that the EdGAME Literacy Program is generally well-executed and well-received by school administrators, Quick2Game coordinators, and reading coordinators. All groups recognized the program's ability to regularly deliver engaging and effective literacy activities, especially those that improve vocabulary skills through interactive learning approaches. This consistency shows that the program's basic instructional tactics are effectively implemented in the majority of circumstances.

Despite this overall success, there are some complex issues that require consideration. School administrators were less optimistic about the program's potential to deliver measurable literacy outcomes and detect and address emergent implementation issues. This emphasizes the need for enhanced real-time monitoring and more rapid program adaptations based on the difficulties faced by both teachers and students.

Another major point of concern shared by Quick2Game and reading coordinators is the question of sustainability, particularly in terms of money. Although financial assistance from external sources, such as local government units, was appreciated, there was concern about its long-term viability. This shows that, while the program is currently

operationally sound, its long-term sustainability is at risk unless more secure and regular funding distribution is implemented.

What are the strengths and weaknesses of the EdGAME program's pre- assessment, intervention, and post-assessment?

Pre-Assessment

Strengths. The findings reveal that the pre-assessment component of the EdGAME program is viewed positively by school heads, Quick2Game coordinators, and reading coordinators. Respondents across all groups acknowledged its effectiveness in evaluating learners' reading comprehension and vocabulary skills, with consistently favorable perceptions reported. There is also strong agreement on the alignment of the pre- assessment with the Grade 7 Most Essential Learning Competencies (MELCs), suggesting institutional support for its relevance to the national curriculum.

In addition, the assessment is considered effective for monitoring learner progress toward instructional goals, though perceptions vary slightly across groups. The tool is recognized for incorporating key components of evidence-based reading instruction, including foundational skills such as phonemic awareness, phonics, fluency, vocabulary, and comprehension. This indicates that the assessment is grounded in systematic instructional principles.

Importantly, the pre-assessment is also viewed as a reliable mechanism for identifying students' instructional needs, a critical feature for informing targeted interventions. Overall, the data suggest that the EdGAME pre-assessment is a credible and well- integrated diagnostic tool that supports informed instructional planning and enhances literacy development across different educational roles.

Weaknesses. The findings highlight several critical weaknesses in the implementation of the EdGAME pre-assessment, primarily related to its inconsistency and limited effectiveness in fulfilling essential diagnostic functions.

While the tool is perceived to offer some value in evaluating reading comprehension and vocabulary skills, its inconsistent delivery across school contexts undermines its reliability. The pre-assessment appears only moderately effective in tracking learner progress and lacks strong alignment with systematic instruction in foundational reading components.

Most notably, the tool struggles to consistently identify individual learners' instructional needs, which limits its utility in informing targeted interventions. Perceptions vary across stakeholder groups, with Quick2Game coordinators and reading coordinators expressing more confidence in the tool than school heads, whose responses suggest greater concern about its impact and implementation.

Overall, the assessment's weaknesses point to a need for improved design fidelity, better alignment with instructional goals, and enhanced training for implementers to ensure it supports the broader objectives of differentiated and data-driven literacy instruction.

Intervention

Strengths. The EdGAME intervention demonstrates several key strengths as consistently observed by school heads, Quick2Game coordinators, and reading coordinators. Chief among these is its ability to engage learners in an interactive learning process, which was unanimously recognized across all respondent groups as a consistently observed and effective feature.

Additionally, the intervention materials were viewed positively for integrating essential components of reading

instruction, including phonemic awareness, phonics, fluency, vocabulary, and comprehension. Both Quick2Game and reading coordinators also noted that the intervention provides meaningful support to learners who do not fully benefit from the core program, highlighting its responsiveness to diverse learning needs.

Furthermore, the intervention's capacity to address varied instructional needs across foundational reading components was acknowledged by all three groups, reinforcing the value of differentiated instruction as a central element of the EdGAME framework.

Overall, the data suggest a broad consensus on the intervention's instructional relevance, learner engagement, and adaptability to individual student needs.

Weaknesses. The findings highlight several weaknesses in the implementation of the EdGAME intervention, as perceived by school heads, Quick2Game coordinators, and reading coordinators. A key concern is the inconsistent integration of essential reading components, such as phonemic awareness, phonics, fluency, vocabulary, and comprehension, across different school contexts. The improper and inconsistent use of instructional materials based on systematic reading instruction further underscores challenges in maintaining fidelity to evidence-based practices.

Additionally, support for learners who do not benefit from the core program is viewed as uneven and inadequately structured. While Quick2Game coordinators and reading coordinators generally hold more favorable views of the intervention, school heads report moderate and variable observations, suggesting a disconnect between leadership and classroom-level implementation.

Overall, the data point to a need for improved consistency, stronger instructional alignment, and enhanced professional support to address these observed gaps.

Post-assessment

Strengths. The findings reveal several strengths of the EdGAME post-assessment as perceived by Quick2Game coordinators and reading coordinators. The assessment is consistently recognized for effectively engaging learners in evaluating reading comprehension and vocabulary skills, thereby capturing meaningful performance data. Its alignment with Grade 7 curriculum objectives ensures that evaluation is relevant and valid in the context of mandated learning standards.

Additionally, the post-assessment is valued for its comprehensive coverage of foundational reading components, including phonemic awareness, phonics, fluency, vocabulary, and comprehension. The materials provided are noted to be explicitly instruction-based, reinforcing the structured nature of the assessment. Furthermore, the tool is appreciated for its ability to identify learners' academic needs, which facilitates data- driven instructional planning and targeted intervention.

Overall, the post-assessment is perceived as a well-rounded and effective instrument supporting both instructional and evaluative goals within the EdGAME program.

Weaknesses. The findings reveal that while the EdGAME post-assessment incorporates important components aligned with effective literacy instruction, its implementation is inconsistent, particularly from the perspective of school heads. Essential functions such as the assessment of reading skills, learner engagement, instructional alignment, and the identification of academic needs are only sometimes observed, indicating variability across schools.

Although Quick2Game and reading coordinators generally perceive the post- assessment more positively, especially in terms of instructional alignment and diagnostic value, school heads report more moderate and less consistent experiences. This disparity suggests that while the assessment framework is conceptually strong, there are notable gaps in its application, likely influenced by differences in training, oversight, and resource availability. The

data collectively underscores a need for more consistent execution and stronger professional support to ensure the post-assessment's full potential is realized across all educational settings.

Based on the identified strengths, weaknesses, opportunities, and threats, what vocabulary game can be developed?

The EdGAME Literacy Program evaluation reveals the strengths, weaknesses, opportunities, and threats (SWOT) of VocaBank, a classroom-based board game designed to improve vocabulary acquisition, collaboration, and social interaction among Grades 7- 12 students. VocaBank is an inclusive educational tool that incorporates evidence-based design principles and game-based learning theory.

It encourages repeated exposure to subject-specific vocabulary, fosters social and collaborative competencies, and incorporates a gamified incentive system through Vocabills, a classroom currency awarded for vocabulary complexity, accuracy, and application. To ensure effective implementation,

VocaBank utilizes a range of instructional materials, including the Vocaboard, Vocabook, Vocapens, and Vocabank jars. These materials engage students in hands-on learning and facilitate vocabulary tracking. The game mechanics, such as topic-centered word generation, teacher validation, reflective vocabulary documentation, and team-based accumulation of Vocabills, provide an engaging and structured approach to vocabulary development.

CONCLUSIONS

This section discusses the conclusions of this study.

1. The EdGAME Program is recommended for its effectiveness in enhancing vocabulary and word recognition through interactive learning. However, its feedback mechanisms are weak, with inconsistent and limited input from parents, teachers, and students, potentially affecting its responsiveness to learners' needs and alignment with educational goals.

2. The EdGAME Program is perceived as relevant by key stakeholders, effectively supporting real-life language application, curriculum alignment, and learner independence. However, its continued success and sustainability depend on improving the consistency and utilization of stakeholder feedback to ensure the program remains responsive to learners' evolving needs.

3. The EdGAME Literacy Program is well implemented and perceived by stakeholders, delivering interactive literacy activities. It is aligned with instructional goals, and it has the capacity to support vocabulary development among Grade 7 learners. However, concerns arise regarding the consistency of tracking literacy outcomes, responsiveness to challenges, and long-term funding sustainability. Improvements in monitoring, adaptability, and financial planning are needed for program relevance and viability.

4. The EdGAME program's pre-assessment tool is strong as a diagnostic tool, aligning with curriculum standards and supporting evidence-based literacy instruction. It evaluates reading comprehension, vocabulary skills, and identifies instructional needs. However,

5. inconsistent implementation and limited ability to accurately identify individual needs diminish its effectiveness. Improvements in systematic application and alignment with structured reading instruction could improve the tool's effectiveness in guiding data-driven teaching interventions.

6. The EdGAME intervention is a well-designed tool that effectively engages learners through interactive strategies and aligns with essential reading instruction components. It addresses diverse learning needs and is adaptable, contributing positively to literacy development in various educational contexts. However, its implementation is inconsistent, lacking uniformity across settings. Key weaknesses include incomplete

integration of critical reading components, improper use of instructional materials, and insufficient support for struggling learners.

7. The EdGAME post-assessment is a well-structured program that supports literacy evaluation, engaging learners and aligning with Grade 7 curriculum standards. It covers essential reading components and can identify academic needs. However, its implementation varies across schools, with school heads reporting inconsistent experiences. This suggests uneven execution, likely due to variations in training, guidance, and monitoring.

8. VocaBank is a research-based game adapted from Quick2Game, enhancing vocabulary learning through meaningful play, collaborative engagement, and formative practice.

RECOMMENDATIONS

This section discusses the recommendations of this study.

1. Develop a structured stakeholder feedback system involving teachers, students, and parents, using clear protocols for regular analysis and integration of diverse perspectives on program implementation and effectiveness.

2. Strengthen the program's monitoring and evaluation system by adding consistent assessment tools for tracking literacy outcomes, providing responsive procedures to address implementation issues, and defining a clear financial sustainability strategy.

3. Strengthen the pre-assessment tool by improving consistency, professional development, and alignment with curriculum standards. Increase intervention material availability, allocate time, and improve logistical support for successful program sustainability.

4. Implement the EdGAME intervention across schools with interactive techniques and ongoing professional development to ensure effective adaptation to varied learner requirements.

5. The EdGAME program should enhance post-assessment consistency by incorporating digital tools, professional development for educators, and clear guidelines to ensure uniform application across educational settings.

6. Recommend VocaBank and Quick2Game for wider piloting and integration across Grades 7–12 in all schools of Bulacan.

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