United International Journal for Research & Technology

*Volume 07, Issue 05, 2026 | Open Access | ISSN: 2582-6832*

# Quizizz App as an Online Assessment Tool in Science

**Annie Rose G. Baylon[1] and Noel G. Benavides[2]**

[1,2]Member, Sorsogon State University Graduate School, Sorsogon City, Philippines

***Abstract*—** This study explored the use of Quizizz as an online assessment tool in Science 8 through a qualitative practitioner-inquiry approach grounded in Constructivist Learning Theory and Feedback Intervention Theory. The primary aim was to examine how the gamified platform influenced students' conceptual understanding, motivation, and engagement. Data gathered from student experiences revealed that Quizizz created a more interactive and supportive learning environment by combining real-time feedback with game-based features. These elements not only enhanced students' comprehension of scientific concepts but also improved their attitudes toward learning science by fostering emotional involvement and sustained participation. Despite these benefits, challenges such as unstable internet connectivity and limited device access surfaced as barriers to equitable implementation. In response, strategies like providing printed quiz alternatives and extending quiz durations were adopted, underscoring the necessity of teacher flexibility and reflective practice when incorporating technology into instruction. The findings highlight that while digital assessment tools hold great potential to enrich teaching and learning, their success depends largely on context-sensitive and inclusive practices. The study recommends that schools strengthen infrastructure and provide training for teachers to effectively utilize such tools. Additionally, curriculum designers are encouraged to integrate technology-based exemplars aligned with frameworks like the 5E instructional model. Future research may investigate the long-term effects of gamified assessments on student achievement and engagement across different learning contexts.

***Keywords*—** Assessment, Engagement, Gamification, Motivation, Technology Integration.

## I. INTRODUCTION

In the constantly changing field of education, particularly in science, the emphasis has moved from merely imparting knowledge to developing abilities like scientific inquiry, critical thinking, and practical problem-solving. However, it is still unclear if conventional paper-based tests are adequate for assessing these skills. Teachers are being forced to reevaluate how assessment can be redefined to not only measure but also ignite learning as a result of the transformation brought about by digital tools such as Quizizz.

### *Science Teachers' Assessment Practices*

The shift from traditional to online assessment is driven by the need to meet students' evolving engagement, motivation, and learning needs in the digital age. Online e-quizzes, particularly through platforms like Quizizz, have emerged as effective tools in enhancing student interaction, motivation, and performance (Areed et al., 2021; Muji et al., 2021).

Quizizz incorporates game-like elements—avatars, memes, music—that increase engagement while providing real-time feedback and post-assessment analytics. This allows teachers to identify learning gaps and adjust instruction accordingly. Its user-friendly interface supports both teacher-created and student-generated quizzes, promoting active learning and ownership.

With the demands of Education 4.0, digital tools like Quizizz align well with the technological transformation in education. They offer responsive, interactive, and data-driven alternatives to traditional assessments, supporting both personalized instruction and parent involvement (Muji et al., 2021; Yan & Mei, 2018).

Research shows that non-traditional assessments, such as in-lecture questioning and online quizzes, are perceived by teachers as equally valid as traditional exams (Al-Anqoudi, 2023). Furthermore, authentic and alternative assessments, when implemented

effectively, provide a broader evaluation of student capabilities (Ghanavati, 2015).

While online assessments have shown benefits—such as improved performance and engagement—challenges remain in implementation, particularly around student readiness, teacher adaptation, and the balance between motivation and reliability (Delos Reyes et al., 2021; Santos & Cruz, 2020; Lopez & Garcia, 2021; Villanueva, 2021)

***Online Assessment in Science Education***

In order to cultivate a society that is scientifically literate and to develop analytical minds, science education is essential (Napal et al., 2020). However, this transformative role is hindered when outdated pedagogies persist. Teachers must adapt to the demands of the twenty-first century by incorporating technology into their lessons and evaluations (Barrot, 2019). Despite its efforts to reform, the Philippine educational system continues to struggle to apply these reforms in a variety of learning environments (Lisao et al., 2023).

When intentionally incorporated, digital technologies increase learning opportunities and assessment flexibility. They improve learner motivation, differentiate instruction, and enable real-time feedback (Black & Wiliam, 1998). Technology has become an indispensable tool for enhancing both learning and assessment within the classroom. Additionally, technology facilitates differentiated and personalized assessments tailored to individual learners' needs, preferences, and goals. Interactive and gamified assessment formats further increase student engagement and motivation, while multiple modes of delivery improve accessibility and inclusion for diverse learners. Moreover, digital tools foster collaboration and communication by enabling peer and self-assessment, as well as feedback from external audiences, thus enriching the learning experience.

In the era of digital transformation, assessment in science education has evolved beyond traditional paper-based formats to include a wide range of technology-driven tools that support real-time feedback, interactive learning, and differentiated instruction. Digital assessment platforms enhance both teaching and learning by making evaluation more accessible, engaging, and data-informed. Gamified platforms like Quizizz are particularly effective in engaging learners through interactive, low-pressure formats (Bui & Usaha, 2021). In developing contexts like the Philippines, these tools also support inclusivity and quality learning in line with SDG 4 (United Nations, 2015). Its game-like features such as avatars, timers, and leaderboards boost student motivation, especially in subjects like science where content mastery often requires frequent practice and concept reinforcement.

As stated in the Policy Guidelines on Classroom Assessment for the K to 12 Basic Education Program, classroom assessment is an integral part of the curriculum implementation. Classroom assessment informs the learners of their progress. Assessment in the classroom is aimed at helping students perform well in relation to the learning standards (DepEd Order No. 8., 2015).

Despite the potential of technology, many educators continue to use traditional approaches that might not adequately reflect student progress or accommodate a range of needs (Gallardo, 2022). Formative and summative assessments in the classroom require both reliable tools and flexible educators who know how to use them for feedback and instruction (Putri, 2023; Jalani, 2020). Therefore, closing the pedagogical and digital divides continues to be a top priority.

The Quizizz app proves to be highly versatile and effective in various classroom settings. On one hand, its game-based quiz format is ideal for straightforward, quiz-show style assessments, which help students recall key facts and prepare for traditional tests. On the other hand, its interactive lesson feature supports more in-depth learning by promoting critical thinking and concept mastery. For quick content reviews, teachers can create new quizzes or customize existing ones to identify areas where students may require further instruction. Meanwhile, for deeper understanding, educators can utilize the lesson mode, which integrates multimedia elements such as videos, audio, images, and embedded questions. These features not only enhance student engagement but also provide valuable

feedback for teachers and parents, enabling them to adjust instructional strategies accordingly . In developing contexts like the Philippines, these tools also support inclusivity and quality learning in line with SDG 4 (United Nations, 2015).

By supporting innovative assessment practices and promoting digital literacy, Quizizz contributes to more inclusive and engaging science education. This is particularly relevant in developing contexts where access to quality assessment tools is limited, and where motivation and interactivity can significantly influence student learning outcomes.

In order to improve student learning and guide instruction, effective assessment—especially formative assessment—is essential. Feedback greatly improves learning outcomes, especially when it is well-executed and has low stakes (Morris, Perry, & Wardle, 2021). Feedback from tutors and peers can be helpful, but its effectiveness depends on how it is used. While technology-based feedback shows promise but requires more research, praise and grading have conflicting effects.

***Quizziz App as an Online Assessment Tool***

Effective assessment, especially formative assessment, is crucial in guiding instruction and improving student learning. Feedback, particularly when low-stakes and well-implemented, significantly enhances learning outcomes (Morris, Perry, & Wardle, 2021). Peer and tutor feedback can be beneficial, but their success depends on proper implementation. Praise and grading have mixed effects, while technology-based feedback shows promise but needs further validation.

Technology integration in assessment is also proving valuable. Luzano et al. (2024) found that apps like Symbolab and Photomath support learning, encourage engagement, and promote inclusivity in calculus education. These tools should be ethically used and actively incorporated by both students and teachers to improve understanding.

Wiliam and Siobhán (2011) emphasized five formative assessment strategies: clarifying learning goals, using class discussions to gauge understanding, giving meaningful feedback, encouraging student involvement, and adjusting instruction accordingly.

Gallardo (2022) stresses that many educators still struggle with the practical application of formative and summative assessments. Strengthening evaluation literacy is key to effectively planning assessments and interpreting outcomes, especially in ICT-enhanced environments.

Ismail et al. (2022) demonstrated that formative assessment positively impacts academic motivation, reduces test anxiety, and improves self-regulation, particularly in EFL contexts. Students also showed a favorable attitude toward both formative and summative approaches.

***Students' Experiences in Using Online Assessment Tool***

Student perceptions and experiences play a crucial role in evaluating the effectiveness of educational technologies because they directly influence learner engagement, motivation, and satisfaction. When students find a digital tool intuitive, enjoyable, and supportive of their learning goals, they are more likely to participate actively and benefit from its features. Moreover, their firsthand experiences provide valuable insights into the usability, accessibility, and relevance of a technology within specific instructional contexts (Scherer et al., 2019). Gathering and analyzing these perspectives helps educators and developers refine technological tools to better meet learners' needs and to ensure that technology integration aligns with pedagogical objectives. In the context of platforms like Quizizz, students' feedback on aspects such as quiz design, feedback mechanisms, and gamification features can significantly inform improvements in both tool implementation and instructional planning.

Student perceptions and experiences play a critical role in evaluating the effectiveness of educational technologies, as they directly influence engagement, satisfaction, and learning outcomes. Research by Davis (1989) emphasized that perceived usefulness and ease of use are key predictors of technology acceptance among students. Furthermore, Dommett, Gardner, and van Tilburg (2019) found that students'

subjective experiences—such as enjoyment, autonomy, and the quality of feedback—significantly affect their evaluation of tools like lecture capture systems. Evaluation frameworks, such as those discussed by Reeves and Hedberg (2003), now increasingly incorporate student feedback to ensure that technological tools align with learners' needs, preferences, and learning styles. Additionally, studies like that of Al-Fraihat, Joy, and Sinclair (2020) demonstrate that features such as intuitive navigation, interactivity, and instructor presence in learning management systems contribute to students' positive perceptions, thereby guiding institutions in refining and improving digital learning environments.

Assessment played a crucial role in measuring students' understanding of scientific concepts, identifying learning gaps, and guiding instructional decisions. For Grade 8 Science, traditional assessments often fell short in maintaining engagement and providing timely feedback. Quizizz, as a digital and gamified tool, addressed these limitations by offering interactive quizzes, immediate feedback, and real-time analytics to help monitor progress. Its game-based features created a fun and motivating environment that increased student participation and retention. This study was significant for Sta. Magdalena National High School as it supported efforts to enhance digital literacy and align with the Department of Education's 21st-century learning goals through the integration of ICT tools.

Generally, this study aimed to explore the use of Quizizz app as an online assessment tool in Grade 8 Science at Sta. Magdalena National High School, Division of Sorsogon Province for school year 2024-2025. Specifically, it aimed to (1) describe how the researcher use the Quizizz app as online assessment tool on selected topics in Science 8; (2) determine the students' experiences in using the Quizizz app as online assessment tool; and (3) reflect on the use of Quizizz app as an online assessment tool.

## II. METHODOLOGY

This portion outlines the methodology used to investigate how eighth-grade students used the Quizizz app as an online science assessment tool. It describes the research instrument, data sources, data collection methods, ethical considerations, and data analysis methodology. Understanding learners' lived experiences in the context of educational technology integration was the goal of this qualitative investigation, which was based on the phenomenological tradition.

### *Research Design*

The study used a descriptive phenomenological design, a qualitative research methodology in order to comprehend and describe individual's lived experiences of a particular phenomenon without the researcher's interpretation or bias,. This method, which was based on Edmund Husserl's philosophy, used bracketing (Giorgi, 2009), in which the researcher purposefully disregarded personal experiences and preconceived notions about using online assessment tools in order to reduce bias.

To guarantee relevance to the phenomenon being studied, participants were purposefully chosen from Grade 8 Science class. Semi-structured, in-person interviews were used to gather data. The interviews were led by open-ended questions allowing students to openly share how they perceived and made meaning of their accounts of their experiences using the Quizizz app.

To encourage participant comfort and openness, interviews were held in a calm, well-known school environment. Each session lasted roughly 30 to 45 minutes. In order to record contextual information and nonverbal clues, field notes were also taken. To increase credibility and guarantee accurate representation of their accounts, transcripts were sent back to participants for member checking, and no follow-up interviews were done.

This design was especially well-suited for the study since it aimed to distil the main ideas, feelings, and thoughts of the students about using Quizizz as an online assessment tool in science classes for eighth graders. The phenomenological framework offered an organized yet adaptable prism that allowed for the genuine analysis and hearing of the students' opinions.

***Sources of Data***

The primary data for this study were collected from Sta. Magdalena National High School, specifically focusing on Grade 8 students from section Amethyst during the school year 2024–2025. This section consisted of 39 students enrolled in the Science subject, and they served as the main participants of the study. These students provided in-depth descriptions of their experiences using the Quizizz app as an online assessment tool, which were crucial in exploring the phenomenon under investigation. Semi-structured, in-depth interviews were conducted to capture their perceptions, reflections, and feelings regarding the integration of Quizizz in their Science learning activities. The open-ended format of the questions allowed participants to share detailed narratives that revealed the impact of the app on their learning experiences.

In addition to student input, the researcher's own experience in utilizing the Quizizz app as an online assessment tool in teaching Science was also considered a valuable source of data. This reflective account offered contextual insight into how the tool was implemented, the challenges encountered, and the observed outcomes from a teaching perspective. Field notes and observations taken during the conduct of the lessons further enriched the data collection process. Altogether, these sources contributed to a comprehensive understanding of the use of Quizizz in the Grade 8 Science classroom, aligned with the descriptive phenomenological approach of capturing the lived experiences of both students and the teacher.

***Research Ethics***

Ethical considerations and confidentiality were essential in maintaining the integrity of this study. The researcher upheld principles such as respect, fairness, and transparency, ensuring that participants' rights and well-being were protected (Israel & Hay, 2006). Informed consent was obtained, and participants were fully briefed on the study's purpose, procedures, risks, and benefits. Confidentiality was strictly maintained by securely handling data and protecting participant identities throughout collection, analysis, and reporting. These measures ensured trust, safeguarded participant privacy, and upheld the credibility of the research.

***Research Instrument***

To explore the lived experiences of Grade 8 students using the Quizizz app as an online assessment tool in Science, the researcher developed a semi-structured interview guide as the primary instrument for data collections. Allowing participants the freedom to express their own ideas, feelings, and reflections, this guide was thoughtfully designed to be in line with the goals of the study and based on the ideas of phenomenological inquiry. The questions' open-ended format encouraged students to talk candidly about how they felt about Quizizz's overall influence on their learning process as well as their views of motivation, engagement, and difficulties.

The interview guide underwent a thorough validation process. Education specialists with backgrounds in science education and qualitative research first evaluated the draft, evaluate the questions' appropriateness, relevance, and clarity. Offered helpful criticism, pointing out that some of the wording could be made more approachable for students and recommending the inclusion of insightful follow-up questions to expand the investigation. Also emphasized the necessity of simplifying some terms to guarantee that Grade 8 students fully understand.

Two Grade 8 students who were not involved in the main study participated in a pilot interview. Through this, trouble in understanding a few technical terms were found out, which were subsequently changed to be more age-appropriate. In order to establish a more organic conversational rhythm, the questions' flow was also somewhat rearranged. The final version of the interview guide was made clear, pertinent, and able to elicit in-depth, meaningful responses. Throughout the data collection process, the researcher also maintained a reflexive journal in addition to the interview guide. By providing a venue for recording observations, introspection, and potential biases, this journal enhanced the study's overall legitimacy and dependability. Through a meticulous process of development and validation, the research tool successfully supported the study's objective, which

was to accurately capture the essence of students' real-world experiences using Quizizz as an online assessment tool in a science 8.

***Data Collection***

Prior to the administration of the data gathering, the researcher obtained the required ethical clearances and permissions. A formal letter was sent to the Schools Division Superintendent, requesting authorization to conduct the study within the division. Following approval, a follow-up letter was sent to the principal of the school, explaining the purpose of the study and asking for Grade 8 students to participate. A letter for the participants was also sent. For the sake of accountability and ethical compliance, all approvals were given in writing.

The researcher moved on to the implementation stage after obtaining permission. The researcher personally led a Science 8 lesson series with the participating students in August 2024, during the first quarter of the academic year. Three topics—Work, Power, and Energy—that were in line with the Department of Education's curriculum were covered during the instructional period. These topics were chosen due to their conceptual alignment with interactive content delivery and digital assessments.

During this phase, the Quizizz app was integrated directly into the delivery of formative assessments. The researcher designed multiple-choice quizzes on Quizizz for each topic, which were administered at the end of each lesson as a form of online formative assessment. Each quiz contained approximately 10–15 items, designed to test students' understanding and encourage active engagement through gamified elements like leaderboards, points, and immediate feedback. The researcher ensured that all students had access to the necessary technology (smartphones or tablets) and that the school's internet connection was stable during the sessions. The Quizizz platform was projected at the front of the classroom to guide students through the process, and students participated individually using their own devices or school-provided units.

After the lesson implementation, the researcher proceeded to the data collection phase. Face-to-face interviews were conducted with the grade 8 students. The interview took place in a quiet, private room within the school premises to ensure comfort and confidentiality. Interviews lasted approximately 30–45 minutes. In total, 39 participants were interviewed, selected through purposive sampling to ensure a diverse representation of student experiences. Students' opinions of Quizizz as an online assessment tool were examined in the interviews, along with their views on motivation, engagement, ease of use, difficulties encountered, and general reflections. To ensure uniformity and allow for flexibility for follow-up questions based on students' responses, an interview guide that had been previously validated and pilot-tested was used.

In addition to student interviews, the researcher maintained a reflexive journal throughout the process. This journal was used to document her own reflections on the integration of Quizizz in the teaching process, observations of student behavior and reactions during the quizzes, and emerging insights during and after interviews. This helped mitigate bias and added a layer of transparency and self-awareness to the analysis.

***Data Analysis***

To make sense of the students' lived experiences with the Quizizz app, the researcher used Giorgi's method of phenomenological data analysis, which is consistent with the study's descriptive phenomenological approach. This method, known as bracketing—the intentional suspension of one's own judgements and presumptions—was chosen to minimize researcher bias while accurately capturing how students interpreted and made sense of their experiences.

The data consisted of two primary sources: the interview transcripts from Grade 8 students and the researcher's personal journal documenting the process of using Quizizz in classroom instruction. Interviews were verbatim transcribed, and significant passages were found, condensed into brief statements that preserved the participants' meaning, coded, and categorized into themes that represented common experiences with motivation, engagement, usability, advantages, and difficulties with Quizizz. Once the themes were established, the researcher organized

them into a thematic table with brief descriptions and direct participant quotes, grounding the analysis in authentic experiences and enhancing the credibility of the findings.

In addition to conducting student interviews, the researcher kept a reflective journal in which she recorded observations, teaching experiences, and thoughts about using Quizizz. These were then subjected to content analysis. After the entries were coded and categorized into themes (strengths, challenges, and areas for improvement), a narrative reflection summarizing the lessons learnt and the app's influence on the teaching-learning process was created.

Deeper meanings and important insights into Quizizz's efficacy as an online assessment tool in the Science 8 classroom were revealed by the study, which combined findings from student interviews and the researcher's journal with Giorgi's phenomenological method and content analysis.

## III. RESULTS

The study explored the lived experiences of Grade 8 students in using the Quizizz app as an online assessment tool in Science 8. Through in-depth interviews and content analysis of the researcher's journal, several themes and subthemes emerged during the pre-implementation, implementation, and post-implementation phases. The themes reflect the authentic voices of students and the observations of the researcher during the use of the Quizizz app.

### *Pre-Implementation: Students' Expectations and Attitudes*

Associating Quizizz with enjoyment, students demonstrated a strong desire to utilize the platform. But issues with connectivity and app navigation also arose, necessitating support and preparation for teachers.

#### *Theme 1: Anticipation and Curiosity*

Students were excited to try a new assessment method. Quizizz's game-like format excited and positively anticipated students. This supports the findings of Zainuddin (2023), who highlighted how gamification encourages students to actively participate in the learning process by fostering curiosity and enjoyment. Even before the lesson started, the new format fostered a spirit of exploration.

#### *Theme 2: Technological Uncertainty*

Despite the positive outlook, some students were worried about technical issues like device availability, internet connectivity, and app navigation. The digital divide, which still poses a threat to inclusive education, is highlighted by this theme. Although technology is a useful tool, its use must take into consideration students' access and readiness to prevent further marginalization, as highlighted by Lim and Yunus (2021).

### *Implementation: Actual Use of Quizizz in the Classroom*

During the use of Quizizz, students were engaged and motivated, especially with real-time feedback. However, the digital divide remained evident, and time-limited questions induced stress in some learners.

#### *Theme 1: Fun and Engagement*

The integration of interactive quizzes created a game-based environment that made assessments enjoyable. Students' engagement increased as they participated in competitive yet supportive learning. This confirms the findings of Asyifa et al. (2024) who stated that game-based platforms such as Quizizz stimulate active learning, especially when students are rewarded through points or ranking

#### *Theme 2: Motivation through Feedback*

The competitive features of Quizizz, such as earning points, ranking on leaderboards, and completing timed quizzes, serve as motivators for students. Students are encouraged to perform their best because the app provided immediate feedback and results after the tasks. When they are motivated to learn it leads to improved their academic performance. The immediate feedback from the app helps them assess their understanding of the topics and do better next time. However, the pressure of competition and time constraints may also cause stress for some students, which teachers should consider when designing assessments. This is congruent with the Feedback Intervention Theory (Schute, 2008), which emphasizes how tailored, real-time feedback can

significantly improve learning results. It helps students develop metacognitive skills by allowing them to reflect and self-correct

***Theme 3: Accessibility and Barriers***

Despite supporting diversity through its digital format, Quizizz's real-world application revealed issues with device accessibility and internet dependability. Al-Anqoudi's 2023 study also found that, while non-traditional evaluations may be as valid as traditional ones, they require equal access to digital resources in order to perform at their peak. This subject advocates for policies that promote fair access to educational technologies.

***Post-Implementation: Reflections and Learning Impact***

The post-use feedback revealed that Quizizz supports long-term learning and shifts attitudes toward science positively. Yet, equitable access remains an area needing attention.

***Theme 1: Knowledge Retention***

Students claimed that exposure to quiz content on several times improved their ability to recall science topics. The combination of graphics and gamified questions made abstract ideas more understandable. This shows that revisiting knowledge in engaging ways improves retention, which is consistent with spaced repetition and multimedia learning theories.

***Theme 2: Positive Attitude Toward Science***

According to Lim and Yunus (2021), motivation is a key factor in long-term academic success, and tools like Quizizz can foster a more positive classroom climate through shifting students' perception of science from a difficult subject to one that is enjoyable and approachable. Quizizz also helped to reduce science anxiety and increase enthusiasm.

***Theme 3: Equity and Inclusion Challenges***

Despite the benefits, disparities in device ownership and internet access persisted. Students called for improved infrastructure and inclusive policies. This is in line with Alda et al. (2020), who advocated for equitable technology integration in classrooms, especially in impoverished populations.

According to constructivist theory, learning is maximized when students actively contribute to the creation of their own understanding through experience. Early replies from students clearly illustrate this concept, as does their excitement and interest in utilising Quizizz. According to Piaget's idea of discovery-driven education, the expectation of a game-based learning experience suggested early stages of cognitive involvement. Interactive, tech-based platforms like Quizizz present new opportunities for interaction and discovery, claims Barrot (2019).

But not all of the students began in the same way. Some expressed skepticism about using and navigating technology, pointing to the need for scaffolding, another crucial element of constructivist philosophy. This supports Alda's (2020) assertion that equitable access to technology is essential for knowledge formation in a digital environment. Without this basis, student performance and engagement may be inconsistent.

As students transitioned into active platform use, their experiences revealed a learner-centered dynamic that is fundamental to both Constructivism and Feedback Intervention Theory (FIT). Real-time feedback, gamified elements, and interactive elements promoted student motivation and self-regulated learning. This theoretical alignment is supported by Schute (2008) and Asyifa et al. (2024), who found that environments with a lot of feedback improve performance and comprehension.

Post-implementation reflections revealed deeper learning outcomes. Students reported better recall and more favorable attitudes towards science, which is consistent with the spaced repetition theory and positive reinforcement processes of FIT. However, digital inequality remained a major challenge. Both the constructivist and FIT frameworks highlight the importance of inclusive environments where all students can interact and receive feedback. These systemic weaknesses need to be filled in order to fully employ digital evaluation technologies like Quizizz.

The themes that surfaced from the students' experiences were used to develop the suggested

enhanced lesson exemplar. The framework addressed accessibility issues by creating adaptable, inclusive, and formative Quizizz-integrated strategies while taking into account student input on what promoted motivation, engagement, and retention.

## IV. DISCUSSION

This study used a practitioner-inquiry approach, informed by Constructivist Learning Theory and Feedback Intervention Theory (FIT), to investigate how the Quizizz app was used as an online assessment tool in Science 8. To gain a deeper understanding of student experiences and pedagogical implications, the researcher practiced reflection before, during, and after implementation.

Students' excitement about Quizizz before its launch was in line with Piaget's constructivist theory, which holds that curiosity and active participation are the foundations of learning. But technological uncertainty dampened this enthusiasm. The reality that innovation must be accompanied by readiness and equity was highlighted by worries about restricted device access and erratic internet connections. These observations made clear that closing systemic access gaps is necessary for the successful integration of technology in the classroom.

Students showed high levels of motivation and engagement during implementation, demonstrating Quizizz's capacity to turn assessment into an engaging, game-like experience. The FIT principles were embodied in the real-time feedback mechanism, which assisted students in tracking their performance and promptly clearing up any misunderstandings. The teacher was able to make timely instructional adjustments—moving from reactive to proactive teaching—by identifying patterns of errors. Thus, Quizizz promoted formative learning in addition to assessment.

Reflections after implementation showed better retention and a more enthusiastic attitude towards science. Students started to link the subject to success and enjoyment. Affective learning greatly aids knowledge acquisition, as demonstrated by the platform's ability to stimulate both emotional and cognitive engagement through visual engagement and feedback.

Quizizz revealed persistent issues with digital equity in spite of its advantages. According to practitioner reflection, students who lacked dependable devices or internet ran the risk of being excluded. Reflectivity is crucial in practitioner research, and these insights resulted in useful changes to the improved lesson exemplar, such as printed assessments, flexible pacing, and peer support.

Overall, the results support the idea that responsive pedagogy combined with technology such as Quizizz can improve instruction. The study highlighted the teacher's changing role as a designer of inclusive, flexible, and student-centered learning environments, going beyond theoretical alignment with constructivism and FIT. Technology is valuable when it is used to empower students and close educational gaps, but it is not transformative on its own.

***Researcher's use of the Quizizz app on selected topics in Science 8.***

"As a teacher and the researcher of this study, I'm always looking for innovative methods to improve my students' learning experiences. This role permits me to research educational techniques that could be useful in the classroom specially in assessment. One such tool that caught my curiosity was the Quizizz app, which is well-known for its ability to transform standard questions into interactive learning experiences. This tool was utilized in one of the seminars I attended, and it truly helped in making a classroom experience more entertaining and effective."

"In this study, the researcher looked at the pedagogical benefits of gamified learning systems such as Quizizz. According to studies, introducing aspects of fun and competitiveness into these tools can greatly improve student engagement in the lesson. With this knowledge, the researcher decided to use Quizizz in her own classrooms to explore how it would affect her students' understanding of complex concepts in science and how would this be an effective tool in assessing students' learning."

"Aside from the benefits it offers to make teaching and learning easier, the researcher encountered certain issues and difficulties when using this program. The researcher can only access it for free because I can't afford to upgrade it to Pro. But she can still utilize it in my teaching, particularly in my assessments. The researcher created a custom quiz for her class on WORK, ENERGY, and POWER, carefully crafting questions that varied from fundamental concepts to practical applications. To make the quiz visually interesting, she incorporated diagrams and photos to assist students visualize the concepts being taught."

"Before the session begins, they will use their smartphone to visit www.quizziz.com and then join my quiz. The researcher shared the game code via Live Mode, and the classroom was soon filled with excitement as students took the quiz on their smartphones. If all of the students are in the portal or have already joined the class, the researcher will now begin the lesson using the app until the assessment part."

"As the quiz went, the researcher noticed how Quizizz's quick feedback helped clarify misconceptions in real time. Students who were previously reserved became more involved, discussing issues and strategies with their peers. The competitive element encouraged the students to think critically and reply quickly, so strengthening their understanding of topics in science."

"The quiz she created contains a timer for each question, which is intended to stimulate quick thinking and keep the enthusiasm up. However, as the lesson went, she noticed some changes in the mood. Some students excelled under pressure, their competitive nature propelling them to respond fast and effectively. Others seemed less at ease specially those students who have issue with the internet connection and in other lesson some of them don't have phone so the researcher let them borrow her phone.(there are only an instance that 2 students don't have phone in my discussion)."

"Following the session, the researcher reviewed the reports supplied by Quizizz. These findings were essential, revealing areas in which students excelled and identifying problems that needed additional investigation. This data-driven approach enabled me to improve my teaching tactics and ensure that each student's learning needs were met. The problem regarding time pressure where address and let the lesson or activity be done in two periods, since we only have 45 minutes for every period. The problem that we all really cannot control is the internet connectivity, because it is really unstable."

"The success of using Quizizz in my following topics, which is ENERGY and POWER, prompted me to include quizzes in their homework to reinforce learning outside of class. Students valued the freedom and loved revisiting topics at their own speed."

"During this experience, she witnessed the revolutionary potential of technology in education. As a researcher and teacher, she discovered that Quizizz not only increased student engagement, but also enabled me to provide more effective and personalized assessment. This journey reinforced my view that digital tools, when intelligently incorporated, can revolutionize the way we teach and learn."

The narrative highlights both the benefits and challenges of using the Quizizz app as an online assessment tool in Science 8. The experience of the teacher emphasizes the advantages of gamified learning to improve students' motivation and overall performance in class. The integration of Quizizz in teaching Science 8 topics such as Work, Energy, and Power proves that technology can help students to learn science concepts effectively. The researcher noted that the app encouraged the learners to participate in class.

However, it cannot be denied that there were also potential limitations of the technology-based assessment such as internet connection, availability of devices and some of the premium features of the app. Some students also struggles on time constraints during the quizzes which means that gamification may not be effective to all learners. Thus, the researcher made necessary actions to resolve these challenges such as extending the time of quiz activities and allow them to borrow a device.

Students' Experiences in using the Quizizz app as Online Assessment Tool.

***Pre-Implementation: Students' Expectations and Attitudes***

***Theme 1: Anticipation and Curiosity***

The themes Anticipation and Curiosity and Technological Uncertainty emerged prominently before the implementation. Quizizz's game-like design sparked students' excitement and interest in using it. The tool was described as "fun," "motivating," and "like a game" by many, who saw it as a welcome change from conventional tests. This zeal is consistent with research showing how gamified learning resources can motivate students (Lim & Yunus, 2021). This theme is supported by their responses; Student 16 mentioned, "Excited po ako kasi parang game siya, hindi katulad ng usual quiz"("I'm excited because it's like a game, not like the usual quiz." This was seconded by Student 9, "Yes, by playing the games but at the same time you are learning something. It helps the student to do better because there is a map where whose first to reach the peak is the winner. Also, Student 13 disclosed, "Yes, because it has games, it is not only fun it will also help you to learn things."

***Theme 2: Technological Uncertainty***

But excitement was accompanied by a related worry: technological uncertainty. Due to erratic internet access or a lack of personal devices, students questioned whether they could participate effectively. This is in line with research by Al-Anqoudi (2023), who emphasized how access gaps can be made worse by digital learning, especially in settings with limited resources. Students' initial attitudes towards digital assessment were framed by these conflicting expectations: anxiousness and hopeful engagement. This theme is supported by these responses by Student 15 saying that, "Paano po kung wala kaming signal o cellphone?"("What if we don't have a signal or cellphone?"). This was corroborated by Student 14, "It is not easy to access not only you need a wifi/load to use this application but also you have to use code to a particular learning games making things much more difficult." Likewise, Student 24 said that, "The Quizizz app is easy to use and navigate in its graphics, it has buttons where choices are written inside of it, shows illustrations and sometimes give you second chance to answer it correctly in second time. In other hand, I is also encountered some difficulties from using this app. Sometimes when the signal doesn't have strong connection, it is hard to use."

***Implementation: Actual Use of Quizizz in the Classroom***

During implementation, three central themes emerged: Fun and Engagement, Motivation through Feedback, and Accessibility and Barriers.

***Theme 1: Fun and Engagement***

The theme Fun and Engagement revealed that most students perceived Quizizz as an enjoyable and interactive platform that made science learning more engaging. Responses that indicated a change in learners' affective experience towards assessment included "the game is so much fun to play" and "it definitely makes learning more fun." This backs up research that shows gamified tests improve focus, attention, and perseverance (Asyifa et al., 2024).This theme is supported by their responses; Student 13 said that, "Quizizz helps us learn science 8 by providing a nice animation online and it makes us students curious and interested to answer questions, it is fun to us rather than local papers which is a little bit boring to study or answer something but local papers is also a need to most students. Therefore, I have learned a lot in science 8 because of Quizizz". Also, Student 4 "In my opinion or experience, using Quizizz to learn science is really fun especially through the challenges in each game, we learn and enjoy at the same time because of the game, the game is full of challenges and excitement of me and my classmates very much love it, we learned lots of things in a fun, joyful and excitement way". Student 13, "Quizizz is a wonderful and exciting app which you can learn and enjoy at the same time. We've been using Quizizz since grade 7 and we can all say that it is a very enjoying app." Similarly, Student 6, "Learning science topics with the help of Quizizz is so much fun. The games and sound used in the app helps me to focus more, learning science and other subject engaged me to develop more in such a fun way"

***Theme 2: Motivation through Feedback***

One important element that improved the learning process was found to be motivation through feedback. Students were encouraged to improve by the app's real-time feedback, which assisted them in recognizing their mistakes. Participants confirmed the value of instant formative assessment as outlined by Schute (2008) and Zimmerman (2002) by sharing that they were able to reflect and self-correct after seeing their scores right away. Gamified tools' feedback systems are essential for developing self-regulated learners. This is supported with their responses: Student 6 said that, "If I would describe my overall experience using the application Quizizz. I would say this is very good app because of this app helped me gain, more knowledge about our topics at science 98. I did not just gain knowledge but also have fun learning science at this app, through Quizizz passing the question and getting into the leaderboard of the most gain point. And it I would rate this app 1-10 I will give it a 10/10 ratings". This was supported by Student 23,"Overall, my experience using Quizizz app in learning science 8 topics is fun and enjoy at the same time because, the games is so much fun to play however, based on my experienced you can face the pressure since every questions has a timer but for me Quizizz is a must for students because it's fun". Also, Student 13 telling that,"For me, my overall experience in using application that is Quizizz, as I use this app sometimes there is a timer in a game so it put to a lot of pressure because of this it helps my mind to think fast. This application helps me to learn in a fun way and help me focus on the lecture, so I love this game."

***Theme 3: Accessibility and Barriers***

The experience wasn't without difficulties, though. The topic of accessibility and barriers brought to light how some students' learning was hampered by shared devices, unstable internet, and a lack of digital fluency. These problems validate enduring disparities in digital equity. Some students found it difficult to keep up because of poor connectivity, as the researcher's journal notes, indicating that proactive planning for inclusivity is necessary for the successful use of digital assessment tools. This theme is supported by these responses; Student 8 uttered, "Internet connectivity is the most challenging and difficult". Further, supported by Student 23, "The quizzes app was easy to use and navigate because everything was clear and it didn't take much time to figure out how to play. The only difficult I encountered was sometimes the Internet connection made it slow, which could mess up my answers." Similarly, Student 13 mentioned that, "It is a little bit hard especially when your network connection is low, it will make you hard to submit. It is also hard because there is a thing that I don't know how to use."

***Post-Implementation: Reflections and Learning Impact***

Following the classroom use of Quizizz, students reflected on their learning experiences, resulting in three more themes: Knowledge Retention, Positive Attitude Toward Science, and Equity and Inclusion Challenges.

***Theme 1: Positive Attitude Toward Science***

Students' perceptions of science improved, according to the theme Positive Attitude Towards Science. According to some participants, Quizizz made science "entertaining" and "easy to understand." This is significant because learning experiences frequently influence students' attitudes towards science, and favorable emotional connections can boost engagement and sustain long-term interest in the topic. Student 24 disclosed that, "I've enjoyed using this application because like I said in the previous question I've learned how things by just only exploring and using this application." Also, Student 22 that, "Yes, because its easy to use and fun to learn and answer quizzes with friends." Likewise, Student saying that,"Yes, it helps me to keep entertained while learning."

***Theme 2: Equity and Inclusion Challenges***

While many students found the platform beneficial, others felt excluded because of limited access or learning challenges, as highlighted by the theme Equity and Inclusion Challenges. In order to ensure inclusive learning environments, differentiated instruction and scaffolded access are necessary to support even well-intentioned digital tools, as one student shared feeling "clueless" and struggling as a "slow learner." (Alda et al., 2020). Student 15

mentioned that “Paano po kung wala kaming signal o cellphone?”(“What if we don’t have a signal or cellphone?”) Then, Student 24 stressed that, “At first I have enjoyed the quizzes that we did using the Quizizz app, but when time flies, I got some problems to face with it, it becomes hard for me to accommodate when lack of signals from our Wi-Fi occurs especially when the signal of our Wi-Fi and serve us all. However it is also good for me that I experience this because even though it's hard for me to adjust. I've learned new things in terms of online class I've explored and stepped out from my comfort zone and tried new things. So overall it's 9 / 10 for me.” Also Student 22 said that, “Yes and No. Yes because it is fun and easy to understand , no because sometimes I am clueless I am a slow learner and its hard for me but it takes time.”

***Reflection on the use of Quizizz app as an online assessment tool.***

This narrative presents the reflection of the researcher on the use of Quizizz app in teaching Science 8. This reflection explores how the teacher integrated the Quizizz app and the insights gained as well the challenges encountered. The researcher also provides the overall impact of using the app as an online assessment.

“As a teacher at the same time as the researcher, incorporating Quizizz into my classroom has been a transforming experience. It enabled me to see firsthand the effectiveness of gamified learning in increasing student engagement and motivation. The interactive element of Quizizz added a new level of excitement to classes, making complicated scientific concepts more accessible and engaging for pupils. Seeing their enthusiasm and participation reinforced my belief in the value of bringing innovative tools into education. I discovered that, while competition may be a great motivator, it is critical to strike a balance between entertainment and teaching. Emphasizing comprehension over speed became critical to ensuring that students fully understood the topic. Furthermore, addressing students' different technological abilities needed patience and adaptability, reminding me of the significance of giving help and advice that is tailored to their specific requirements. This study highlighted the challenges of educational research. Positive effects were clear, but the problems encountered, such as dealing with technological concerns and balancing competitiveness between students, highlighted the significance of a nuanced approach to suit individual student. It became evident that successful integration of technology in education necessitates not just a grasp of its benefits, but also a proactive approach for overcoming potential impediments. Overall, this experience confirmed my desire to foster an open and dynamic learning environment. By consistently reflecting on and modifying my teaching practices, I hope to create a classroom environment in which every student feels empowered to learn and succeed.”

This reflection highlights the insights of the researcher on the use of the Quizizz app as an online assessment tool. This emphasizes the impact of the tool on students’ motivation, engagement and overall performance in science class. The gamified app provides instant feedback that can be used by the teachers to adjust her teaching strategies. It was observed that students participated enthusiastically in class while using the app in assessment process.

## V. CONCLUSION AND RECOMMENDATION

This study demonstrated that the integration of Quizizz as an online assessment tool in Science 8 positively influenced student learning by enhancing conceptual understanding, increasing motivation, and fostering active engagement. The gamified format and real-time feedback contributed to a dynamic learning environment that combined assessment with meaningful support. While challenges such as unstable internet connectivity and limited access to devices were noted, the adjustments made such as printed quiz versions and extended quiz durations highlighted the importance of flexibility and adaptability in digital instruction. Overall, the findings affirm that when implemented thoughtfully, technology-enhanced assessments like Quizizz can significantly enrich both teaching and learning experiences.

In light of the study’s findings, it is recommended that schools invest in adequate digital infrastructure and provide professional development for teachers to maximize the potential of online assessment tools. Educators are encouraged to adopt inclusive practices

that address diverse student needs and access issues, ensuring equitable participation in technology-based learning. Curriculum designers should also consider embedding technology-integrated lesson exemplars aligned with frameworks such as the 5E model to guide effective classroom implementation. Furthermore, future research should explore the long-term effects of gamified assessments across different contexts to better understand their sustained impact on learner engagement and achievement.

## REFERENCES

[1] Al-Anqoudi, M., Bikanga Ada, M., McQuistin, S., Ntarmos, N., Parkinson, J., & Moshfeghi, Y. (2023, October). Traditional vs. non-traditional assessment activities as learning indicators of student learning: Teachers' perceptions. 2023 IEEE Learning with MOOCs (LWMOOCS). https://doi.org/10.1109/LWMOOCS58322.2023.10305928

[2] Alda, R., Boholano, H., & Dayagbil, F. (2020). Teacher education institutions in the Philippines towards education 4.0. International Journal of Learning, Teaching and Educational Research, 19(8), 137–154. https://doi.org/10.26803/ijlter.19.8.8

[3] Areed, M. F., Amasha, M. A., Abougalala, R. A., Alkhalaf, S., & Khairy, D. (2021). Developing gamification e-quizzes based on an Android app: The impact of asynchronous form. Education and Information Technologies, 26, 4857–4878. https://doi.org/10.1007/s10639-021-10491-6

[4] Asyifa, A. K., Widyarani, A. S., & Qurniawan, S. (2024). The advantages and disadvantages of using Quizizz in English learning as an assessment tool based on students of UIN SAIZU's perception. CELTI Journal, 7(1), 23–35. https://doi.org/10.24090/celti.2024.1009

[5] Barrot, J. S. (2019). English curriculum reform in the Philippines: Issues and challenges from a 21st-century learning perspective. Journal of Language, Identity & Education, 18(3), 145–160. https://doi.org/10.1080/15348458.2019.1627510

[6] Black, P., & Wiliam, D. (1998). Inside the black box: Raising standards through classroom assessment. Phi Delta Kappan, 80(2), 139–148.

[7] Bui, T. T. H., & Usaha, S. (2021). The effects of game-based learning on students' motivation in science learning: A case study using Quizizz. LEARN Journal: Language Education and Acquisition Research Network, 14(2), 1–24.

[8] Bui, T., & Usaha, S. (2021). The effects of game-based learning on students' motivation in science learning: A case study using Quizizz. Journal of Educational Research and Innovation, 9(2), 1–13.

[9] Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13(3), 319–340. https://doi.org/10.2307/249008

[10] Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13(3), 319–340. https://doi.org/10.2307/249008

[11] DepEd. (2015). Policy guidelines on classroom assessment for the K to 12 Basic Education Program (DepEd Order No. 8, s. 2015). Department of Education. https://www.deped.gov.ph

[12] Gallardo, K. (2022). The importance of assessment literacy: Formative and summative assessment instruments and techniques. In Workgroups eAssessment: Planning, Implementing and Analysing Frameworks (pp. 3–25). Springer. https://doi.org/10.1007/978-3-030-50435-0_1

[13] Ghanavati, F. (2015). Alternative versus traditional assessment. Journal of Applied Linguistics and Language Research, 2(6), 152–161.

[14] Giorgi, A. (2009). The descriptive phenomenological method in psychology: A modified Husserlian approach. Duquesne University Press.

[15] Ismail, S. M., Rahul, D. R., Patra, I., & Rezvani, E. (2022). Formative vs. summative assessment: Impacts on academic motivation, attitude toward learning, test anxiety, and self-regulation skill. Language Testing in Asia, 12(1), 40. https://doi.org/10.1186/s40468-022-00142-z

[16] Israel, M., & Hay, I. (2006). Research ethics for social scientists. Sage Publications.

[17] Jalani, N. A. B. M. (2020). Quizizz: ESL students' perceptions in rural school. International Journal of Scientific and Research Publications, 10(3), 23–27. https://doi.org/10.29322/IJSRP.10.03.2020.p9935

[18] Larrivee, B. (2020). Authentic classroom management: Creating a learning community and building reflective practice (4th ed.). Pearson.

[19] Lim, T. M., & Yunus, M. M. (2021). Teachers' perception towards the use of Quizizz in the teaching and learning of English: A systematic review. Sustainability, 13(11), 6436. https://doi.org/10.3390/su13116436

[20] Lisao, C., Kilag, O. K., Tamayo, J. M., Abella, J., Cañete, N., & Abendan, C. F. (2023). Reimagining science education in the Philippines: A systematic analysis of the 7E Learning Cycle Model's efficacy. Excellencia: International Multi-disciplinary Journal of Education, 1(5), 100–111.

[21] Liu, S. H. (2017). A study of teachers' attitudes toward integrating technology into teaching. The Journal of Research on Technology in Education, 55(3), 1–10.

[22] Lopez, C., & Garcia, M. (2021). Teachers' challenges in online assessment during the pandemic. Journal of Educational Innovation, 5(1), 45–60.

[23] Luzano, J. F. P., Nallada, J. G., Hulagpos, D. R. B., & Damasco, J. R. C. (2024). Unveiling the power of educational mathematics applications as formative assessment tools: A multiple case study. International Journal of Research in STEM Education, 6(1). https://doi.org/10.33830/ijrse.v6i1.1657

[24] Morris, R., Perry, T., & Wardle, L. (2021). Formative assessment and feedback for learning in higher education: A systematic review. Review of Education, 9(1), e3292. https://doi.org/10.1002/rev3.3292

[25] Muji, A. P., Ambiyar, A., Aziz, I., & Hidayat, H. (2021). The implementation of Quizizz-based online evaluation in higher education: An exciting alternative for evaluation. International Journal of Research in Counseling and Education, 5(2), 149–157. https://doi.org/10.24036/00505za0002

[26] Napal, M., Mendióroz-Lacambra, A. M., & Peñalva, A. (2020). Sustainability teaching tools in the digital age. Sustainability, 12(8), 3366. https://doi.org/10.3390/su12083366

[27] Piaget, J. (1973). To understand is to invent: The future of education. Grossman Publishers.

[28] Putri, N. L. P. S. R. (2023). Exploring teachers' digital formative assessment practices in Indonesian junior high schools. Journal of Educational Research and Innovation, 11(1), 1–14.

[29] Santos, R. T., & Cruz, A. A. (2020). Teachers' perceptions on the use of online formative assessment in science during pandemic. Asian Journal of Education, 2(1), 10–19.

[30] Scherer, R., Siddiq, F., & Tondeur, J. (2019). The technology acceptance model (TAM): A meta-analytic structural equation modeling approach to explaining teachers' adoption of digital technology in education. Computers & Education, 128, 13–35. https://doi.org/10.1016/j.compedu.2018.09.009

[31] Schön, D. A. (1983). The reflective practitioner: How professionals think in action. Basic Books.

[32] Schute, V. J. (2008). Focus on formative feedback. Review of Educational Research, 78(1), 153–189. https://doi.org/10.3102/0034654307313795

[33] United Nations. (2015). Transforming our world: The 2030 Agenda for Sustainable Development. https://sdgs.un.org/2030agenda

[34] Villanueva, A. D. (2021). Exploring learners' motivation and perception of gamified online assessments. Philippine Journal of Educational Measurement, 12(1), 20–35.

[35] Wiliam, D., & Leahy, S. (2011). Embedding formative assessment: Practical techniques for K–12 classrooms. Solution Tree Press.

[36] Yan, E., & Mei, L. (2018). Gamification in learning: Students' perception and performance in Quizizz. International Journal of Advanced Computer Science and Applications, 9(10), 371–378. https://doi.org/10.14569/IJACSA.2018.091048

[37] Zainuddin, Z. (2023). Integrating ease of use and affordable gamification-based instruction into a remote learning environment. Asia Pacific Education Review, 25(1), 1261–1272. https://doi.org/10.1007/s12564-023-09832-6