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## IMPLEMENTATION OF *THE WAYGROUND* APPS AS EVALUATING TEACHING AND LEARNING TOOL OF INTERNATIONAL MUSIC APPRECIATION SUBJECT FOR 8<sup>th</sup> GRADER SMPN 29 BANDUNG

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### ABSTRACT

This study aims to analyze the use of the "Wayground" app as an assessment tool for foreign music appreciation among eighth-grade students at SMPN 29 Bandung and to examine its impact on the quality of learning assessment. This study employs a qualitative approach using the case study method. The research subjects consisted of 28 students who participated in the "Wayground"-based assessment. Data were collected through interviews with teachers and students, observations of the evaluation process in the classroom, and documentation of assessment results recorded in the application. The results of the study indicate that prior to the use of "Wayground," teachers had utilized various forms of assessment, including digital media; however, their implementation had not been consistent or systematic. The use of the "Wayground" application introduced a more organized assessment process through features such as time management, automatic grading, and the presentation of assessment results in a visual and structured manner. In addition to enhancing students' motivation, focus, and engagement in completing assignments, this application also supports improved assessment quality through the efficiency of the assessment process, the speed of providing feedback, and the ease with which teachers can document and analyze student learning outcomes more accurately. Thus, the "Wayground" app is considered capable of supporting the implementation of foreign music appreciation learning evaluations that are more effective, systematic, and adaptive to technology-based learning needs. Further research is recommended so that teachers can develop more systematic evaluation plans and integrate the use of the "Wayground" app with appropriate learning strategies to ensure learning outcomes can be measured more optimally.

**Keywords:** *Wayground; Music; Digital Assessment; Gamification,*

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## INTRODUCTION

Advances in digital technology have transformed assessment practices from merely a tool for measuring learning outcomes into an integral part of the student learning experience. Digital assessment not only serves to gather data on academic achievement, but also contributes to student engagement, motivation and interaction throughout the learning process (Hidayatullah, 2024; Maulana, Sukmayadi, & Gunara, 2025; Maulana, Sukmayadi, Sunaryo, dkk., 2025). Various studies show that the use of systematically designed assessment tools can improve students' academic engagement and learning outcomes (Holmes, 2018; Lang, 2022; Zhao & Wong, 2024). However, the effectiveness of assessment technology is determined not only by the technical sophistication of the application, but also by its alignment with pedagogical needs, the characteristics of the learning material, and the user experience during the assessment process (Scanlon dkk., 2000; Vivet, 1996; Youngblood & Dev, 2005).

The implementation of learning assessments in Arts and Culture at the junior high school level is still dominated by written tests and conventional assignments. These forms of assessment are relatively easy to implement, but they have a number of limitations, such as a grading process that takes a considerable amount of time, feedback that students cannot receive directly, and low engagement among some students during the assessment. This situation becomes more complex when it comes to the subject of international music appreciation, as assessment requires not only the ability to recall concepts but also the ability to identify musical elements, recognize the characteristics of a piece, and develop a contextual understanding of the material being studied. In this context, monotonous and unengaging assessment methods tend to fall short of effectively supporting the needs of music education.

Previous studies have examined the use of digital quiz applications, such as student response systems and web-based platforms, in enhancing motivation and learning outcomes (Torstrick & Finke, 2025; Wolter dkk., 2013). The meta-analysis also

shows that multimedia-based and virtual reality learning environments have a positive impact on conceptual understanding (Madathil dkk., 2016; Papastergiou dkk., 2014; Rahmi dkk., 2025). However, most of these studies focus on general subjects and higher education, so there has been little research on assessment needs in arts and culture education, particularly music appreciation at the junior high school level. In addition, commonly used assessment platforms, such as Google Forms, tend to be more oriented toward collecting answers and do not yet provide a fully interactive assessment experience. Meanwhile, applications like Kahoot do offer elements of games and competition, but their use often emphasizes speed of answering over a deeper, analytical, and contextual understanding of the musical material. These limitations indicate that the use of digital assessment applications in music education requires an approach that is not only visually engaging but also capable of supporting students' identification with, understanding of, and engagement in music appreciation material.

The Wayground app is seen as having the potential to address the need for more interactive and adaptive music assessment. Wayground allows teachers to design assessments featuring a variety of question types, an instant feedback system, and a more engaging assessment interface for students. These features are particularly relevant to music appreciation instruction, which requires active student engagement in understanding musical elements and the characteristics of international musical works. However, research on the use of Wayground in Arts and Culture education at the junior high school level remains limited, especially studies that examine its implementation in depth based on real-world classroom conditions. Furthermore, a bibliometric review indicates that longitudinal research on the long-term impact of assessment technologies remains a need (Boesch dkk., 2024; Raturi dkk., 2025; Schleyer & Johnson, 2003). These limitations point to a relevant research gap that warrants examination through a field-data-based approach.

This study uses the SECAL and SUMMIT

learning technology evaluation frameworks as the basis for its analysis. The SECAL framework emphasizes the evaluation of learning technology based on actual use, implementation context, and factors influencing its implementation, while SUMMIT provides a structured evaluation framework for assessing the alignment between learning objectives, implementation processes, and outcomes (Gunn, 1999; Van Der Veen dkk., 2000). In this study, both frameworks were used not only as a conceptual foundation but also as analytical perspectives for examining the research findings. The aspects of user readiness, supporting facilities, and the dynamics of evaluation implementation were analyzed through the SECAL perspective, while the effectiveness of implementation, the achievement of evaluation objectives, and the responses of teachers and students were analyzed using the SUMMIT framework. Thus, the results and discussion of the study are aimed at describing the implementation of Wayground systematically based on structured categories of learning technology evaluation.

The selection of eighth-grade students at SMPN 29 Bandung was based on curricular considerations, as the curriculum at this level includes a course on international music appreciation that requires students to identify musical elements and analyze the characteristics of musical works. In addition, eighth-grade students already have experience using digital devices in their studies and are therefore considered better prepared to embrace technology-based assessment methods (Han, 2025; Huang & Zhang, 2020; Yong & Tiong, 2022). Based on initial observations at SMPN 29 Bandung, the assessment of foreign music appreciation courses is still dominated by written tests and individual assignments. Teachers reported that some students showed limited interest during assessments because the question formats lacked variety and assessment results were not immediately available. On the other hand, limited class time means that a thorough discussion of evaluation results cannot always be conducted during the same session. These conditions highlight the need for alternative forms of evaluation that can provide faster feedback and increase student

engagement during the evaluation process.

Research on formative assessment shows that student engagement increases when the assessment process provides immediate feedback and is interactive (Akbar dkk., 2024; Parkinson dkk., 2016; Rienties dkk., 2016). Other studies have also confirmed that the quality of the learning experience acts as a mediator between the use of digital systems and student engagement levels (Dassanayake & Senevirathne, 2019; Gao dkk., 2020; Wong dkk., 2023). These findings suggest that the use of Wayground in music learning assessment warrants further study, as it has the potential to provide a more responsive, engaging, and appropriate form of assessment for music appreciation education.

Thus, this study aims to conduct an in-depth examination of the use of the Wayground application as an evaluation tool in the teaching of international music appreciation to eighth-grade students at SMPN 29 Bandung by analyzing the implementation process, user readiness, supporting facilities, as well as the perspectives of teachers and students regarding the ease of use, appeal, advantages, and challenges of its implementation. The research analysis is structured based on the SECAL and SUMMIT frameworks to describe the implementation of Wayground in a structured manner, both in terms of the context of use and the achievement of learning evaluation objectives. The results of this study are expected to provide practical contributions to teachers in developing more adaptive and interactive technology-based evaluations, while also enriching theoretical studies on digital evaluation innovations in Arts and Culture education at the junior high school level.

## **METHODOLOGY**

This study employs a qualitative approach using the case study method to conduct an in-depth examination of the use of the "Wayground" app as an assessment tool for the appreciation of foreign music among eighth-grade students at SMPN 29 Bandung. The case study method was chosen because it allows the researcher to gain a comprehensive understanding of the phenomenon within clearly defined system

boundaries, including specific locations, time frames, and subjects (Hollweck, 2016; Stake, 1995). This approach is considered relevant for addressing research questions that focus on the processes, experiences, and outcomes generated by the participants during the implementation of a digital app-based evaluation. The study focuses on a single school, a single subject, and a single grade level to ensure that the characteristics of the case are clearly defined, thereby enabling an in-depth and intensive analysis.

This study was conducted starting in 2024 while the researcher was implementing the Professional Development Program for Educators (P3K) at SMPN 29 Bandung. The research process spanned four sessions of foreign music appreciation lessons that utilized the Wayground app as an evaluation tool. The study was carried out in stages, beginning with initial observations of the learning environment, the implementation of app-based evaluations, and the collection of student feedback and experiences during the app's use.

The study participants consisted of 28 eighth-grade students enrolled in a course on international music appreciation, comprising 3 male students and 25 female students. Participants were selected using purposive sampling, taking into account their active involvement in the learning process as well as their experience in using digital media as a tool for learning assessment (Maulana, Darmawanti, & Saputra, 2025). The imbalance in the number of participants based on gender was due to the actual composition of students in the class where the research was conducted; therefore, the study did not group participants by gender but rather by their involvement in learning assessment activities. In the context of qualitative research, this difference in gender composition is not intended to compare responses between male and female students, but to gain a deeper understanding of students' learning experiences in using the Wayground application. Therefore, the focus of the analysis is directed toward the processes of interaction, engagement, and students' learning experiences during the evaluation.

The participating students had diverse backgrounds in musical ability, gained

through both formal experiences at school and informal experiences outside of school. This diversity in background was intended to yield more comprehensive responses and learning experiences regarding the use of the Wayground app as a learning assessment tool. All participants took part in the study voluntarily and provided their consent before the study began.

The Wayground app used in this study is a digital learning assessment platform that allows teachers to design interactive online quizzes. The app has several key features, such as the presentation of visual multiple-choice questions, automatic scoring, time limits, a leaderboard, immediate feedback on student answers, and a summary of assessment results that teachers can access in real time. In addition to serving as an assessment tool, this app also integrates gamification elements through interactive displays and a point-earning system aimed at increasing student engagement and motivation during the assessment process. In this study, Wayground was used to assess students' understanding of foreign music appreciation material through questions aligned with the learning outcomes of the music arts curriculum.

**Table 1. Demographic Data of Participants**

<b>Name</b>	<b>Intials</b>	<b>Gender</b>	<b>Class</b>
	KDR	Women	VIII
	NPR	Women	VIII
	FTR	Women	VIII
	HNAS	Women	VIII
	WNN	Women	VIII
	MPG	Women	VIII
	SR	Women	VIII
	UATK	Women	VIII
	LFA	Women	VIII
	QFN	Women	VIII
	ANF	Women	VIII
	NNA	Women	VIII
	DA	Women	VIII
	SAAI	Man	VIII
	APK	Women	VIII
	SWNA	Women	VIII
	AAD	Women	VIII
	AZN	Women	VIII
	DFR	Man	VIII
	ZNA	Women	VIII
	NDJ	Women	VIII
	NADP	Women	VIII
	EWS	Women	VIII
	NJZM	Women	VIII
	SSP	Women	VIII
	ZAA	Women	VIII

Data collection was conducted through observation, semi-structured interviews, and documentation. Observation was used to record the activities of teachers and students during the evaluation process, as recommended in qualitative research to capture behavior and interactions firsthand (Merriam, 2015). Interviews were conducted with teachers and students, each consisting of five questions, to gain an in-depth understanding of their experiences, perceptions, and challenges regarding the use of the Wayground app in learning assessment. Documentation was used to supplement and verify data from observations and interviews, including grade summaries, screenshots of assessment activities, and learning materials used during the study. The use of these various data collection techniques aimed to enhance the credibility of the findings through cross-checking among data sources (Denzin dkk., 2018).

Data analysis was conducted in stages through the processes of data reduction, data presentation, and drawing conclusions. This analytical model follows the stages of qualitative data analysis proposed by Miles dkk., (2013) emphasize the importance of systematically selecting, organizing, and interpreting data. Data validity is strengthened through triangulation of sources and techniques, namely by comparing the results of observations, interviews, and documentation to ensure the consistency of the information obtained. Furthermore, the evaluation of learning technologies in this study also considers the relationship between users, application systems, and the learning objectives to be achieved. Through these procedures, the research methods were systematically designed to allow for replication in similar research contexts with comparable characteristics.

## RESULTS AND DISCUSSION

### 1. Teachers' Views on the Use of Wayground in Learning Assessment

The interview results indicate that teachers' views on the use of the Wayground app in music learning assessment reflect a

shift in the assessment paradigm from an approach focused on measuring final outcomes (assessment of learning) toward a more formative, interactive, and learning-process-supportive approach (assessment for learning). This shift is evident in how evaluation is no longer viewed solely as a tool to determine students' academic achievement through summative assessment, but also as a means to foster greater student engagement, motivation, and active learning experiences.

The teacher explained that the evaluation practices currently implemented at SMPN 29 Bandung include summative assessments such as daily quizzes, mid-semester exams (PTS), and end-of-semester summative assessments (ASAS). In addition, the teacher also conducts initial or diagnostic assessments to determine students' basic abilities before instruction begins. As the teacher explained: "For example, if the material involves playing simple musical instruments or singing together, I need to know the students' abilities first. Once I know that, it becomes easier to provide the material and to group them." This statement indicates that assessment has been positioned as the foundation for designing more adaptive and differentiated instruction tailored to students' characteristics.

Teachers have been utilizing various digital media such as Google Forms, YouTube, and Kahoot as internet-based assessment tools. However, their use has not been consistent. Teachers emphasize that the effectiveness of technology is determined not only by the applications used but also by the teachers' pedagogical ability to structure the learning process. This is reflected in the statement: "If we are unable to structure the learning process well, the students will still feel bored." This statement demonstrates that technology is viewed as a supporting tool that requires appropriate pedagogical strategies to create meaningful learning experiences.

Teachers view Wayground as a promising assessment innovation for creating more engaging and contextually relevant learning experiences. One teacher stated: "The richer and more diverse the applications of teaching methods, the better—it just depends on whether teachers are able to develop them." This perspective reflects an awareness that the successful implementation of

educational technology depends on the interaction between digital media, teachers' pedagogical creativity, and the readiness of the learning infrastructure.

These findings align with digital assessment frameworks such as SECAL/SUMMIT, which emphasize that technology-based assessment should not only serve as a tool for measuring learning outcomes but also as a medium that provides immediate feedback, enhances student engagement, and supports adaptive, learner-centered learning. In this context, Wayground features such as automatic scoring, a ranking system, and immediate feedback demonstrate the characteristics of digital assessment that support real-time learning reflection.

Teachers have also noticed an increase in student motivation and enthusiasm when using Wayground. This is evident in the students' increased engagement with the exercises and their interest in the app's interactive interface. Teachers explained: "Students appear more enthusiastic and active in working on problems because of the app's attractive interface and its interactive presentation." Additionally, teachers noted that the immediate feedback makes students more curious about their results, thereby encouraging them to study more seriously. These findings reinforce the argument that gamified digital assessments can create a more participatory learning experience compared to conventional paper-based assessments.

Nevertheless, the research findings indicate that the implementation of Wayground in music education still faces challenges regarding the authenticity of musical assessment. The assessments conducted via Wayground in this study were still dominated by the use of visual stimuli—such as text and images—without the integration of audio elements. In fact, in music appreciation education, the auditory aspect is an essential element for assessing students' ability to recognize sound characteristics, timbre, rhythm, and the musical identity of a culture. Thus, this limitation is not only technical in nature but also relates to the validity of the musical assessment itself.

This situation highlights a gap between digital interactivity and the authenticity of musical assessment. While

Wayground has successfully increased student engagement through visual approaches and gamification, it has not yet been able to fully measure the musical experience in a holistic manner. In the context of music education, evaluations that rely solely on text and images tend to focus more on conceptual aspects rather than students' appreciative and perceptual abilities regarding actual musical elements.

Therefore, the development of digital-based assessment in music education should focus on a multimodal approach that integrates visual and auditory elements simultaneously. A concrete implementation can be achieved by directly integrating audio clips of the songs "Arirang" and "Sakura," as well as the "Pinpeat" and "Piphat" ensembles, into the Wayground interface. Through this integration, students are not only asked to recognize images of musical instruments or answer conceptual questions, but their listening skills, ability to identify sound characteristics, distinguish musical patterns, and connect musical elements to their cultural context can also be assessed. This approach will enhance the authenticity of the evaluation while strengthening the validity of assessment in music appreciation education.

## **2. Students' Experiences and Perceptions of Using Wayground**

Interviews with students revealed that the teaching of international music appreciation in the eighth grade at SMPN 29 Bandung had previously been dominated by a conventional approach centered on teacher-led explanations and the limited use of teaching materials. In practice, the material was primarily conveyed through verbal explanations and text, so students' learning experiences with international music did not yet fully provide concrete, contextual, and in-depth experiences. Materials such as the song "Arirang" from Korea, "Sakura" from Japan, and the Pinpeat and Piphat ensembles from Southeast Asia were initially understood by students merely as factual knowledge, not as a musical experience that could be felt directly. This situation caused some students to struggle in developing a comprehensive understanding of the characteristics of music from each culture.

Limitations in learning materials,

particularly the limited use of interactive audiovisual media, are among the factors contributing to low levels of student engagement in the learning process. In music education, the auditory element plays a crucial role because music, by its very nature, is a sound experience that cannot be fully represented through text and images alone. However, in previous teaching practices, students' experiences have largely relied on conceptual explanations and visualizations of musical instruments. Consequently, students' understanding of the material tends to be theoretical and has not yet fully engaged the appreciative dimension or the aesthetic musical experience.

Wayground is used during the final assessment phase of the learning process through visual-based questions equipped with an automatic scoring system, time limits, and a ranking feature. The implementation of these features demonstrates the characteristics of digital assessment that align with the SECAL/SUMMIT principles, particularly in terms of real-time feedback, student engagement, and the reinforcement of learning motivation through gamification mechanisms.

Below, I present the situation in the classroom regarding the use of the Wayground app.

Figure 1. The process of using the Wayground app in the classroom



Source: Researcher, 2026

Throughout the evaluation process, students responded positively to the use of the app. Some students noted that the app's ranking feature and visual interface made the evaluation process more engaging and challenging. As one student put it: "It's exciting

and fun because you can see the rankings automatically go up and down" (ZNA), and "There's a time limit, so it's more challenging and makes us think more critically and stay focused" (AZN). These statements indicate that digital assessment not only serves to measure learning outcomes but also trains students' focus, concentration, and speed of thinking. From an affective perspective, the use of Wayground successfully boosted students' motivation to learn through its interactive interface and game-like assessment experience. Students reported that the assessments felt more enjoyable than conventional methods. One student remarked, "It feels like both playing and learning" (DFR). This indicates that the gamification approach is able to create a more relaxed assessment environment while still encouraging active student engagement.

The research findings also show that students' learning experiences are still largely dominated by responses to visual stimuli rather than authentic musical experiences. The use of images does help students understand the forms of musical instruments and their cultural contexts, but it has not fully developed students' auditory skills in recognizing the characteristics of foreign musical sounds. Thus, high student engagement through visual features and games does not automatically represent a deep, holistic musical competence. In addition, the implementation of Wayground has also faced technical challenges such as limited internet data allowances, network stability, and student device battery life. These challenges demonstrate that the effectiveness of digital assessment is influenced not only by the app's design but also by the readiness of the infrastructure and the availability of technology within the learning environment.

### 3. Evaluation of the Implementation of the Wayground Application

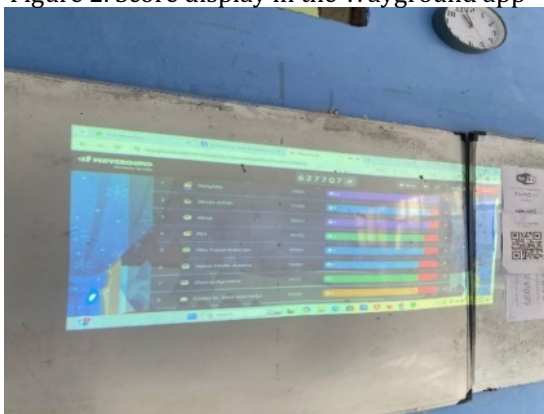
In the context of this study, the evaluation of learning focuses specifically on the implementation phase of the Wayground application as a digital evaluation tool, rather than on the entire learning process. Conceptually, the evaluation of learning is understood as a systematic process for collecting and analyzing information to assess the effectiveness of a method or medium in

achieving learning objectives. This perspective is consistent with the thinking Rahayu dkk., (2022) which emphasizes that evaluation is closely linked to the achievement of learning objectives, as well as Maulana, Sukmayadi, & Gunara, (2025) which classifies learning outcomes into cognitive, affective, and psychomotor domains as the basis for comprehensive assessment. Thus, the evaluation in this study aims to determine the extent to which the use of Wayground supports the achievement of learning objectives, particularly in terms of assessing student learning outcomes.

During the implementation phase, the evaluation was conducted by directly observing students' activities as they used the Wayground app to complete interactive quizzes. This process involves observing students' level of engagement, focus, and responses to the features provided in the app, such as visual displays, the automatic scoring system, time limits, and rankings. Additionally, the evaluation considers how students interact with this digital medium, including their ability to understand instructions, navigate the app, and respond to questions quickly and accurately under time constraints.

Below, the author presents a screenshot of the automatic scoring feature during a classroom session on using the Wayground app.

Figure 2. Score display in the Wayground app



Source: Researcher, 2026

The evaluation criteria used focus on three main aspects. In the cognitive aspect, the assessment focuses on the accuracy of students' answers to questions related to international music, which reflects their level

of understanding of the concepts they have learned. In the affective aspect, the evaluation focuses on students' attitudes and emotional responses during app usage, such as their level of enthusiasm, interest, and active engagement in taking the quiz. Meanwhile, in the psychomotor aspect, the assessment covers students' skills in operating the app, including response speed, accuracy in selecting answers, and the ability to manage the available time.

In addition to cognitive, affective, and psychomotor aspects, the evaluation also took into account technical factors that affect the smooth operation of the application. Several challenges that arose, such as limited internet data, network stability, and device battery life, were taken into account when assessing the effectiveness of Wayground's implementation. Evaluation data was collected through a combination of direct observation during the app usage process and student interviews following the activity, thereby providing a more comprehensive picture of the students' learning experience.

Thus, this evaluation focused on the use of Wayground aims to assess the effectiveness of digital media in creating a more interactive, engaging, and efficient evaluation process. The evaluation results indicate that this application not only serves as a tool for measuring learning outcomes but also as a means capable of enhancing student engagement, motivation, and learning experiences in a more dynamic way. Thus, the evaluation at this stage makes a significant contribution to assessing the relevance and potential of digital technology in supporting learning innovation, particularly in the Arts and Culture subject.

This study aims to analyze how the integration of digital applications into music learning assessment—specifically through the use of Wayground—is transforming assessment practices among students and teachers. The findings indicate that assessment no longer functions as a single mechanism for measuring final learning outcomes but has evolved into a dynamic, interactive process that is integrated with the learning activities themselves. This transformation is reflected in a paradigm shift from “assessment of learning” to “assessment for learning,” where evaluation serves

simultaneously as a tool for reflection, feedback, and reinforcement of understanding. However, as findings within the triadic agency framework suggest, the implementation of this innovation has not developed entirely in a balanced manner. Although students' cognitive and affective dimensions show significant strengthening, the application of evaluation that can optimally accommodate musical complexity—particularly in practical and contextual aspects—remains relatively limited. From a theoretical perspective, these findings expand our understanding of technology integration in education by demonstrating that the success of digital innovation is not solely determined by the presence of the technology itself, but rather by the interaction between pedagogical orientation, user readiness, and the context of implementation. In line with a conceptual framework that emphasizes the importance of coherence between planning, goals, and practice, this study indicates a gap between the potential of technology as an innovative tool and the realization of its use in authentic assessment practices. In this regard, Wayground's interactive features—such as instant feedback, a scoring system, and time limits—have been effective in fostering student engagement; however, they have not yet fully accommodated the need for a comprehensive, music-experience-based evaluation, particularly regarding the auditory and performative dimensions.

The research findings indicate that students experienced increased motivation, participation, and engagement throughout the evaluation process. This suggests that digital technologies based on interactivity and gamification have the potential to create more engaging and meaningful learning experiences. However, this improvement was more dominant in terms of responses to visual stimuli and game mechanics, so it does not yet fully represent a holistic depth of musical understanding. In other words, there is a gap between superficial engagement and the attainment of more substantive musical competencies.

These findings both reinforce and expand upon previous research on the effectiveness of digital technology in learning. Earlier studies have emphasized the

important role of gamified media in enhancing student motivation and participation. However, this study makes an additional contribution by demonstrating that, in the context of music education—which is inherently multimodal—successful assessment cannot rely solely on visual interactivity and game mechanics. Instead, an evaluation approach is needed that integrates auditory, kinesthetic, and contextual aspects to measure musical competence more authentically.

This interpretation emphasizes that the effectiveness of digital-based assessment is a contextual achievement and does not automatically materialize simply through the adoption of technology. Teachers play a central role as pedagogical mediators who determine how the technology is designed, implemented, and adapted to meet learning needs. Thus, there is a fundamental difference between possessing technology as a resource and the ability to use it pedagogically. This underscores that teachers' digital competencies are a critical prerequisite for ensuring that assessment innovations truly impact the quality of learning.

These findings indicate that digital assessment practices are influenced by the interplay between individual factors (teacher and student competencies), structural factors (availability of infrastructure and devices), and cultural factors (learning habits and subject characteristics). Limitations in technical aspects, such as internet access and devices, as well as limitations in the design of assessment instruments—particularly those that have not yet integrated audio elements—indicate that the implementation of digital assessment is still in a transitional phase. Consequently, the innovative potential of technology has not yet been fully realized in optimal learning practices.

Identifying the gap between potential and implementation makes an important conceptual contribution to the field of learning evaluation. These findings indicate that the primary challenge lies not only in the adoption of technology, but in how that technology is interpreted and operationalized within a specific pedagogical context. In music education, this implies that assessments must be designed not only to measure conceptual knowledge, but also to

evaluate students' perceptual, appreciative, and performative abilities in an integrated manner. The implications of these findings underscore the need to recontextualize learning assessment practices as a holistic, adaptive, and experience-based process. The development of multimodal assessment tools—which integrate visual and auditory elements—is a crucial step in enhancing the validity and depth of learning outcome measurements. Furthermore, efforts to improve teachers' digital competencies should focus not only on the technical aspects of using applications but also on their pedagogical ability to design contextual and meaningful assessments.

Nevertheless, this study has a number of limitations that warrant careful consideration. Technical limitations related to digital infrastructure have the potential to affect the consistency of students' learning experiences. Furthermore, the study's scope, which is limited to a single educational context, means that the findings cannot yet be widely generalized. The research focus, which emphasizes the implementation process, also does not provide a comprehensive picture of the long-term impact of technology use on student learning outcomes. The most significant limitation lies in the design of the evaluation instrument, which does not fully reflect the characteristics of music learning, particularly because it does not integrate audio elements as an essential component of musical assessment. Given these limitations, future research is encouraged to develop a more comprehensive approach, both in terms of methodology and instrument design. Strengthening digital infrastructure, expanding the scope of research, and assessing long-term impacts are crucial steps to enhance the validity and relevance of the findings. Additionally, the development of multimodal-based assessments that integrate audio and visual stimuli should be a priority, so that music learning evaluations are not only conceptually representative but also authentic in measuring students' overall musical experiences.

## CONCLUSION

This study examines the evaluation of music learning through the use of the "Wayground" app, focusing on teachers'

perspectives on the learning evaluation process. The findings indicate that evaluation is no longer viewed as a separate activity focused solely on final outcomes, but rather as an integral part of an ongoing learning process. In this context, the use of the "Wayground" app facilitates a more interactive and adaptive form of assessment that enhances student engagement in music education.

The research findings also indicate that the implementation of digital assessment technology has not yet been fully optimized. There remains a gap between the pedagogical potential of the technology and its practical application in the field, particularly regarding the use of digital features, which is still limited to basic assessment functions. The effectiveness of using "Wayground" is greatly influenced by teachers' pedagogical competence in designing, managing, and adapting assessment instruments to the characteristics of music learning materials. Thus, technology in this study is understood as a learning support tool whose effectiveness depends on teachers' ability to integrate it into meaningful assessment practices.

This study also has a number of limitations, including limitations in the infrastructure supporting digital learning, a research scope focused on a single school context, and evaluation instruments that do not fully accommodate musical dimensions comprehensively, particularly in terms of audio and authentic musical experiences. Therefore, the findings of this study are not intended to be broadly generalized but rather have transferability value in educational contexts with similar characteristics, particularly in digital technology-based music learning at the secondary school level. Based on these findings, further research is recommended to develop a more comprehensive assessment tool by integrating audio elements and a more authentic musical experience, expanding the research context to include various school characteristics, and conducting a more in-depth examination of the long-term impact of digital assessment technology on the development of music learning outcomes.

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