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THE IANGKLUNG MEDIA PLATFORM AS AN INNOVATION IN DIGITAL LEARNING

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Abstract

As an initial learning medium before using the angklung musical instrument, students can utilize technology to support the introduction to angklung. iAngklung is an application that offers various features to facilitate students' learning of the angklung instrument. This study discusses the use of the iAngklung platform as a digital learning innovation in Class XI IPA 7 at SMAN 2 Tasikmalaya. The purpose of this research is to evaluate the effectiveness of the platform in improving students' conceptual understanding, engagement, and learning motivation. The method employed is a mixed-methods approach with a one-group pretest-posttest design. The results show a significant improvement in students' conceptual understanding, better student engagement, and increased learning motivation after using iAngklung. Qualitative analysis supports these findings, although several technical challenges were identified. Overall, iAngklung has the potential to serve as an effective learning innovation and supports the development of technology-based learning that integrates local cultural heritage with digital technology.

Keywords: iangklung, digital learning, digital platform, angklung musical instrument

Abstrak. Sebagai media pembelajaran awal sebelum menggunakan alat musik angklung, peserta didik dapat memanfaatkan teknologi untuk mendukung proses pengenalan angklung. iAngklung merupakan aplikasi yang menyediakan berbagai fitur untuk memfasilitasi pembelajaran angklung bagi peserta didik. Penelitian ini membahas pemanfaatan platform iAngklung sebagai inovasi pembelajaran digital pada kelas XI IPA 7 di SMAN 2 Tasikmalaya. Tujuan penelitian ini adalah mengevaluasi efektivitas platform tersebut dalam meningkatkan pemahaman konseptual, keterlibatan belajar, dan motivasi belajar peserta didik. Metode yang digunakan adalah pendekatan metode campuran (mixed methods) dengan desain satu kelompok pretest–posttest. Hasil penelitian menunjukkan adanya peningkatan yang signifikan pada pemahaman konseptual peserta didik, keterlibatan belajar yang lebih baik, serta peningkatan motivasi belajar setelah menggunakan iAngklung. Analisis kualitatif mendukung temuan tersebut, meskipun ditemukan beberapa kendala teknis. Secara keseluruhan, iAngklung berpotensi menjadi inovasi pembelajaran yang efektif serta mendukung pengembangan pembelajaran berbasis teknologi yang mengintegrasikan warisan budaya lokal dengan teknologi digital.

Kata kunci: iAngklung, pembelajaran digital, platform digital, alat musik angklung

Background

In the current era, almost all activities are technology-based, ranging from education and economics to transportation, and have adopted modern technologies (Fricticarani et al., 2023). Therefore, it is important for society to learn how to use continuously developing technologies (Rizqi, 2023). The development and creation of technology, in accordance with its essence, are intended to facilitate and support human life activities (Manongga, 2021). The rapid advancement of information technology over time has had an impact on various aspects of human life, including learning and educational activities (Putri, 2023). This situation has transformed the way people learn and engage in education to become more adaptive and flexible. Individuals can utilize technology to carry out learning processes without being constrained by limitations of space and time (Made et al., 2024).

In learning, there are three modes of delivery, namely verbal information, real experiences, and media (Firmadani, 2020). Among these three, the use of instructional media has high effectiveness in the learning process (Faqih, 2020). Media function as intermediaries, while learning refers to situations that encourage individuals to engage in the learning process (Husna & Supriyadi, 2023). Therefore, instructional media refer to the tools used to facilitate the learning process or various resources that can be utilized in learning activities (Astuti et al., 2024). The development of media used in learning processes essentially goes hand in hand with technological advancement (Zahwa & Syafi'i, 2022). Each type of media has unique characteristics that can be utilized in learning. Sastafiana et al., (2024) state that the classification and variety of media that can be used in learning activities include software and hardware. The proper use of technological media in learning will make learning activities more effective and efficient (Permana et al., 2024).

The angklung is a musical instrument originating from Indonesia, specifically West Java Province, and represents a musical identity of the Sundanese community (Muhtar et al., 2024). It is made of bamboo and is played by shaking it. The angklung has undergone several changes, including transformations in function, form, and tuning. Today, the angklung continues to survive, develop, and is recognized not only by domestic communities but also internationally (Yudiawati, 2021). It can be stated that the angklung is one of the traditional musical instruments that has been able to adapt to the development of the times in order to survive in the modern era (Sumaludin, 2022). The angklung has been recognized by UNESCO, and more recently, in commemoration of Indonesia's 78th Independence Day, an angklung performance involving 15,110 participants was held, breaking a Guinness World Record.

Currently, the angklung is widely taught in schools, both in classroom learning and extracurricular activities (Dewi & Juniarti, 2024). This is intended to prevent the angklung from becoming extinct and to ensure that it is known, preserved, and sustained by future generations (Listyaningsih et al., 2023). However, many schools do not possess angklung instruments, and in schools that do, the number of available angklung sets is often limited. As a result, students must take turns using the instruments with other classes and are required to obtain permission from the school to borrow them. These conditions create limitations for students in becoming familiar with and learning to play the angklung.

One form of utilizing technological media that can be applied in angklung learning is the use of applications that can be installed on students' smartphones. The iAngklung application is a locally developed application created by Masagistudio–Biminasoft. It can serve as an alternative medium for students to learn the angklung before using the physical instrument directly. Students only need to install the application on their smartphones, and by utilizing the built-in technology, the features in the iAngklung application can assist in the process of introducing the angklung instrument. The use of smartphone technology in the learning process opens opportunities to explore new approaches to understanding 21st-century learning. This is carried out by addressing conceptual challenges more pragmatically and through a socio-cultural perspective (Jaldemark, 2013; Schuck, 2017). Alfiansyah, (2024) states that "smartphone technology has great potential in supporting more creative and innovative learning." The combination of visual, audio, and motion elements contained in the iAngklung application makes the information and knowledge presented more engaging and provides a more realistic learning experience in studying the angklung. This study aims to determine the extent to which learning media that utilize technology can improve students' learning outcomes in playing the angklung. In addition, this study will assess whether the media meet the necessary standards to be used in the learning process.

Method

The method used in this study was a mixed-method approach with a one-group pretest–posttest design. The sample was selected using a purposive sampling technique. Data were collected using research instruments. This study was conducted at SMAN 2 Tasikmalaya, located at Jl. R.E. Martadinata No. 261, Panyingkiran, Indihiang District, Tasikmalaya Regency, West Java 4615, Indonesia. The population in this study consisted of students from class XI Science 7. The sample comprised 27 students.

Students were given a pretest to determine their initial condition. The pretest was administered at the beginning, prior to using the iAngklung application. After the pretest, students were provided with instructional material on musical elements and an explanation of the iAngklung application. A posttest was then conducted to measure learning outcomes, specifically students' ability to use the iAngklung application and to determine whether their performance met the established assessment indicators. The data collection techniques used in this study were observation, interviews, and documentation. These techniques were employed to obtain secondary data to complement the data that had not been sufficiently obtained through observation and interviews

Result and Discussion

Result

Technology is a sophisticated tool that can be utilized for various purposes, including in education (Mulyani & Haliza, 2021). Technology offers many benefits in education; however, its use needs to be supervised and applied wisely (Liliana et al., 2023). When properly implemented, technological media can support the creation of high-quality learning processes for individuals who use them (Salsabila et al., 2020). The iAngklung application is used as a technology-based learning medium to introduce and learn the angklung in a realistic manner. In learning activities at SMAN 2 Tasikmalaya, the angklung is taught to eleventh-grade students in the subject of arts and culture, in accordance with the lesson plan (RPP) used. Students learn the angklung in the music laboratory, which creates a limitation in their learning process because they are unable to practice or relearn the instrument at home.

The following are the assessment indicators used to measure the effectiveness of the iAngklung application in angklung learning for class XI Science 7 at SMAN 2 Tasikmalaya. By detailing these indicators, the evaluation can be conducted comprehensively to determine the extent to which the iAngklung application is effective in achieving the learning objectives.

Table 1. Assessment Indicators

No	Indicator	Score	Description	Assessment Rubric
1	Pitch Accuracy	3	Good	Able to play notes on the iAngklung application correctly and accurately according to tempo, duration, and dynamics
		2	Sufficient	Able to play a song on the iAngklung application correctly according to tempo and duration
		1	Poor	Not yet able to use the iAngklung application correctly
2	Rhythmic	3	Good	Able to play the iAngklung application correctly and accurately according to tempo
		2	Sufficient	Able to play the angklung fairly correctly and accurately according to tempo
		1	Poor	Not yet able to play the iAngklung application correctly and accurately according to tempo
3	Cohesiveness	3	Good	Able to play the iAngklung application in groups with correct pitch, rhythm, and technique
		2	Sufficient	Able to play the angklung using the iAngklung application in groups according to correct pitch and technique
		1	Poor	Not yet able to play the iAngklung application in groups

The maximum score that could be achieved by students based on the assessment indicators above was 9, while the minimum score was 3. The score range (interval) was therefore $9 - 3 = 6$. When this range was divided into three measurement scales, the class interval width was obtained as $6 \div 3 = 2$.

Table 2. Assessment Category

No	Score	Description
1	3,0 – 5,0	Good
2	5,1 – 7,0	Sufficient
3	7,1 – 9,0	Poor

The 27 students were divided into five groups, with each group consisting of five or six students. They were instructed to play the song “*Bubuy Bulan*,” with each student assigned a specific angklung number. The students were directed to sound the angklung alternately according to the assigned numbers. Subsequently, they began playing the song and sounded the angklung in sequence based on their respective angklung numbers.

The following are the results of the pretest, which indicate that students had not yet fully mastered the use of the iAngklung application, as reflected in their pitch accuracy, rhythm, and group cohesion. Based on the test results presented in Table 3, the pretest showed a mean score of 5.6, which falls into the *fair* category.

Table 3. Pre-Test Results

No	Group	Tone	Rythm	Compactness	Total	Description
1	1	2	1	1	4	Poor
2	2	1	1	1	3	Poor
3	3	1	1	1	3	Poor
4	4	2	1	1	4	Poor
5	5	1	1	1	3	Poor
Total					17	
Score					5.6	

The pretest results indicate that the students had never previously used the iAngklung application and showed interest in using it, because through this application they could spend more time practicing and relearning the angklung instrument. These pretest results provide an overview of students' initial understanding of musical elements and their knowledge of the angklung.

After the pretest, students were provided with instruction on musical elements and learning activities related to the iAngklung instrument. The learning process involved the use of the iAngklung application on students' smartphones. Students were able to install the application and utilize the available features to understand and practice playing the angklung. During the learning process, the material covered included the diatonic scale and musical elements. After students had understood the material presented, the instructor explained the notes produced by the angklung based on the angklung numbers, ranging from low to high pitches. The instructor then instructed the students to access the previously downloaded iAngklung application again and to implement the material they had learned.

After the learning process using the iAngklung application, a posttest was conducted to measure students' learning outcomes. The posttest focused on evaluating students' ability to use the application, covering the assessment indicators that had been previously established.

The following are the posttest results after the students learned to use iAngklung within their respective groups.

Table 4. Pretest Results for Using iAngklung

No	Group	Tone	Rythm	Compactness	Total	Description
1	1	3	3	3	9	Good
2	2	1	1	1	3	Poor
3	3	1	1	2	4	Poor
4	4	3	2	2	7	Sufficient
5	5	1	1	2	3	Poor
Total					27	
Score					9	

Based on the posttest results, the students achieved a score of 9, which falls into the *good* category. The posttest results reflect the effectiveness of the iAngklung application as a learning medium. Students were able to utilize the application well in accordance with the applied assessment indicators. The use of the iAngklung application had a positive impact on changes in students' understanding. The pretest indicated a need for instruction on musical elements, while the posttest reflected an improvement in understanding after the use of the application.

The students also uploaded the task video to the TikTok platform and received positive responses from other TikTok users, as shown in Figures 2, 3, and 4. This is

evidenced by the number of views reaching 1.3 million and the video appearing on the “For You Page (FYP),” as shown in Figure 1.

This study highlights the positive impact of utilizing technology, particularly smartphones, in learning traditional music arts. The use of the iAngklung application opens new opportunities for understanding and adopting 21st-century learning approaches.



Figure 1. Video of Playing the Angklung

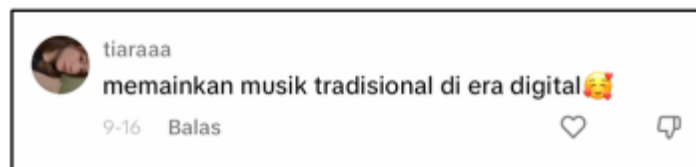


Figure 2. Comment 1

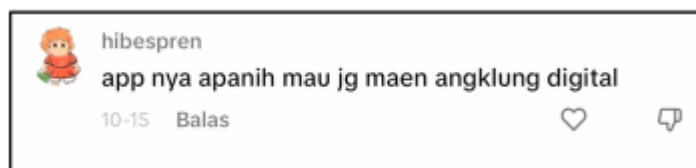


Figure 3. Comment 2

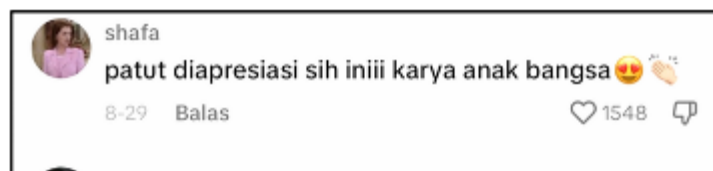


Figure 4. Comment 3

The use of the iAngklung application in angklung learning has a significant positive impact on both the learning process and students' learning outcomes. One of the positive impacts is the increased level of student engagement in learning. This application creates an interesting and interactive learning experience, making students more active and enthusiastic in understanding and playing the angklung instrument. In addition, the presence of iAngklung provides greater flexibility and accessibility in learning. Students can learn the angklung anytime and anywhere through their smartphones, creating flexibility in the learning process. This helps students manage their study time according to their individual needs and

convenience. The iAngklung application also contributes positively to the initial introduction of the angklung instrument. As a preliminary step before using the physical instrument, this application increases students' interest in learning traditional music. Moreover, the integration of technology into traditional learning creates a holistic learning experience that is relevant to contemporary developments.

Discussion

The use of technology in education aims to improve the quality of education (Rahmawati & Nurachadija, 2023). This is because technology has become an integral part of daily life, including in the field of education (Salsabila & Agustian, 2021). Likewise, the learning media used should be engaging and encourage students to be more active in the learning process (Irmadurisa et al., 2022). The iAngklung application represents a technological advancement in the field of music, particularly traditional music, and can be utilized by teachers or instructors in classroom learning (Ahmad et al., 2024).

Based on the pretest results presented in Table 4, it is shown that the use of the iAngklung application in angklung learning has a significant positive impact on the learning process. Through this application, students are actively engaged in learning, supported by an interesting and interactive learning experience. The application allows students to explore angklung learning anytime and anywhere through their smartphones, thereby creating increased flexibility of access. Technology also has a significant impact on the advancement of education (Purba & Saragih, 2023).

The use of the TikTok application in this context is very helpful in increasing the visibility and wider use of the iAngklung application among the public. Even without access to physical angklung instruments, people can still take advantage of existing technology. As explained by Acel et al., (2025), the TikTok music platform can provide clear understanding for students. In addition, TikTok can inspire students' creativity in creating certain movements; however, it should be acknowledged that this platform should ideally be utilized for broader purposes, such as serving as a learning media tool in the school environment (Ahnaf & Rosyidah, 2025). The opportunity to integrate this platform into learning as an instructional medium is widely open (Wahyuni et al., 2024). The TikTok videos produced by students were not only engaging but also creative. These videos were presented in an entertaining manner integrated with learning materials, creating highly valuable works that enhance the classroom learning experience. Based on the above description, it can be concluded that the TikTok application is capable of serving as an effective learning medium (Aji & Setiyadi, 2020). Its success lies in its close connection with adolescents, particularly

students who belong to the millennial generation and are strongly attached to the digital world, especially through the use of gadgets (Imbikri, 2025).

Conclusion

The use of the iAngklung application as a technology-based learning medium to introduce and teach the traditional angklung instrument to class XI Science 7 students at SMAN 2 Tasikmalaya has brought a significant positive impact. Based on the research results using a mixed-method approach and a one-group pretest–posttest design, it can be concluded that the iAngklung application is effective in improving students' understanding of musical elements and their skills in playing the angklung. The assessment indicators, which include pitch accuracy, rhythm, and group cohesion, provide a comprehensive overview of students' abilities in using the iAngklung application. The posttest results showed an improvement in category from “fair” in the pretest to “good” in the posttest, indicating that the use of the iAngklung application had a positive impact on students' learning outcomes. The use of the iAngklung application not only created an engaging and interactive learning experience but also provided a high level of accessibility and flexibility. Students were able to learn the angklung anytime and anywhere through their smartphones, creating adaptive learning that suited their individual needs and comfort. In addition, the use of the TikTok application as a promotional tool opened new opportunities to introduce iAngklung to a wider community. The positive impact of utilizing technology, particularly smartphones, in traditional music learning is also reflected in the positive responses and active participation of students in sharing their learning videos on social media platforms. This study contributes to the understanding that the integration of technology into traditional music education not only enhances the efficiency and effectiveness of learning but also provides a holistic learning experience that is relevant to contemporary developments. As an initial step before using physical instruments, the iAngklung application opens opportunities to make traditional music learning more engaging and accessible to the millennial generation. Therefore, the use of technology in traditional music education, such as angklung learning, has great potential to be further developed in addressing the challenges of 21st-century education.

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