

Article

Augmented Reality Traditional Dance, Integrating into Students' Cultural Literacy

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Abstract: This research discusses the application of Augmented Reality (AR) technology in teaching traditional dance as a means of increasing the cultural literacy of junior high school students. The research aims to overcome the lack of students' understanding of traditional dance due to the lack of direct interaction with these cultural practices. The research method used a qualitative case study approach. The case study was chosen because it allows researchers to intensively explore the dynamics of learning in a limited context, namely at SMPN 13 Jakarta, and produce a comprehensive understanding of the role of AR technology in building cultural literacy. The results showed that the use of AR in traditional dance learning significantly increased students' interest, participation, and understanding of the cultural values contained in dance. In conclusion, the integration of AR technology in cultural arts learning provides a new alternative in shaping learning that is more contextual, collaborative, and oriented towards strengthening character and local cultural values. This research recommends expanding the use of AR media not only in dance, but also in other cultural arts fields such as music, visual arts, and theater.

Keywords: Augmented Reality; Traditional Dance; Cultural Literacy; Art Education; Dance Art

1. Introduction

Cultural education through traditional dance faces significant challenges as digital technology develops. Many learners lack interest due to unattractive conventional learning methods. Augmented Reality (AR) technology offers an interactive solution that is more interesting and realistic. This article offers a new approach by integrating AR into the traditional dance learning process to improve cultural literacy. In the midst of rapid globalization, the preservation of local culture is an important challenge in education. One form of culture that requires special attention is traditional dance. Dance is not only an aesthetic expression, but also represents the identity and cultural values of the community. However, in practice, traditional dance lessons in schools are often considered monotonous and uninteresting to students. As a result, their interest and cultural literacy in traditional arts is low.

Relevant research explains that in the era of globalization, the influence of foreign cultures is getting stronger, eroding the younger generation's interest in traditional arts. Learners tend to be more interested in popular culture presented through social media and other digital platforms, which often do not authentically reflect local cultural values [1]. This situation is a challenge for education, especially arts and culture lessons that are responsible for maintaining the continuity of the nation's culture (Prasetya, 2022). Previous research has shown the potential of using technology in learning, including the application of fuzzy methods in objectively evaluating student achievement [2], [3]. However, the utilization of advanced technologies such as Augmented Reality (AR) in traditional dance learning is still limited [4]. In fact, the application of technology has been proven effective in increasing

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student motivation, interaction, and creativity in various learning contexts, although it has not specifically reviewed its impact on cultural literacy in traditional dance (Nugraha et al., 2021).

Previous studies have tried to increase learners' interest through visual media, collaborative learning, and project methods. However, challenges remain as learners live in a highly visual and interactive digital era. Therefore, the integration of Augmented Reality (AR) technology in traditional dance learning is a relevant and contextual solution. This research raises the issue of how the application of AR technology can improve students' cultural literacy towards traditional dance. The purpose of this study is to describe the process of AR integration in learning, examine its impact on cultural understanding, and develop recommendations for technology-based dance learning.

The main contribution of this research lies in the development of innovative approaches in art education, especially dance, which not only combines technology with local content but also fosters a sense of cultural love through digital cultural literacy. This article will present the literature review, methods used, research findings, in-depth discussion, as well as conclusions and further suggestions. Based on the review of relevant research, there are still not many studies specifically looking at the impact of using AR on increasing cultural literacy in traditional dance. Therefore, this study aims to fill the research gap by exploring the implementation of Augmented Reality technology in traditional dance learning to improve students' cultural literacy. The novelty in this research lies in the integration of AR technology specifically designed for traditional dance learning with the main objective of increasing students' understanding of the authentic local cultural context. Through the development of this AR media, it is hoped that students will not only be able to appreciate traditional arts but also play an active role in preserving national culture.

2. Literature Review

In this research, the methodology used is qualitative with a case study approach. This method was chosen because it is able to describe in depth the phenomenon of using Augmented Reality in the context of traditional dance learning. The main focus of this methodology is on exploring the experiences of learners and teachers in applying AR technology, as well as its impact on increasing cultural literacy.

2.1. Augmented Reality in Education

AR is a technology that combines the real world with virtual elements in real-time. In the context of education, AR allows the presentation of richer, interactive, and contextualized information. Research by [5] shows that the use of AR in learning can increase learner motivation and retention. Research on Augmented Reality explains that the technology allows virtual objects to appear interactively in a real environment, providing an immersive and enjoyable learning experience [6]. This technology has great potential in teaching traditional dance by creating a more interesting and effective learning atmosphere [7]. Learners can interact directly with three-dimensional models that display dance movements in detail along with the historical and philosophical context behind each movement [8]. Thus, students not only memorize movements, but also truly integrate with cultural literacy through a deep understanding of the historical background, philosophy, and cultural meaning of each dance movement studied (Sulistiani & Rahardjo, 2020).

The advantages of using AR in learning over conventional methods include increased student engagement, clearer visualization of abstract concepts, and flexibility in various learning conditions (Wu et al., 2018; Cheng & Tsai, 2013; Chen et al., 2021). In addition, AR integration can also overcome the limited resources of teachers who are competent in traditional dance, improving the quality of learning without relying on the physical presence of experts in schools (Fatimah & Wardhani, 2022; Zakaria et al., 2020).

Despite showing positive potential, the implementation of AR in traditional dance learning also faces challenges, such as the readiness of teachers and students in adopting new technology, the availability of supporting hardware and software, and technical constraints such as internet network stability and high costs (Supriyanto & Putra, 2019). Therefore, special strategies are needed for effective AR implementation, such as intensive training for teachers, gradual procurement of devices, and continuous technical support from schools and the government (Ramadhani et al., 2020).

2.2 Cultural Literacy

Cultural literacy refers to the understanding, appreciation, and application of cultural values in everyday life. In the Merdeka Curriculum, this aspect is included in the dimension of the Pancasila Student Profile. Arts learning, including dance, is an important vehicle for internalizing local cultural values. Cultural literacy is the ability to understand, appreciate, and actively participate in cultural activities that are passed down from generation to generation [9]. The mastery of cultural literacy through traditional dance learning is essential for preserving national culture, as it enables students to understand and embody elements of traditional culture, foster a deeper connection with their heritage and increase the effectiveness of cultural transmission (Yang 2024). However, currently learners face challenges in understanding the cultural context contained in dance works. This happens because the learning methods used have not fully supported active, interactive, and innovative student involvement [10]. The low cultural literacy of students is reflected in the lack of appreciation and creativity in performing traditional dance works [11]. This condition is very important considering the importance of local culture as a national identity that needs to be passed on to the younger generation [12]. Traditional Dance as a Learning Medium Traditional dance is not just a gesture, but a medium that contains philosophy, history, and social expression of society. Dance also educates aesthetic sensitivity, cooperation, and discipline. However, the conventional presentation of dance material is often unable to touch the emotional and cognitive dimensions of students.

3. Proposed Method

This research uses a qualitative case study approach. The case study was chosen because it allows researchers to intensively explore the dynamics of learning in a limited context, namely at SMPN 13 Jakarta, and produce a comprehensive understanding of the role of AR technology in building cultural literacy. This case study is instrumental because it is used to explain and support the application of innovative media in art education. Data analysis was carried out using thematic analysis techniques, namely identifying patterns or themes from the data obtained. The analysis process starts from data transcription, coding, theme identification, interpretation of meaning, to conclusion drawing.

Location and Research Subjects The research was conducted at SMPN 13 Jakarta in the even semester of the 2024/2025 school year. The research subjects were grade VIII students, cultural arts teachers, and the AR learning media development team. Data collection techniques by observing AR-based traditional dance learning, interviews with teachers and students, documentation of the use of AR applications. Data analysis techniques were carried out thematically through data reduction, data presentation, and conclusion drawing. Validation is done by triangulating sources and techniques.

4. Results and Discussion

The results of this study are compiled based on the analysis of data obtained through observation, interviews, and documentation during the process of implementing Augmented Reality media in traditional dance learning. This research reveals a variety of significant findings that not only describe how AR media is applied, but also how students respond cognitively, affectively, and psychomotorically. Data were obtained from learning activities in three different classes, each with varied teaching approaches and learner responses, thus providing a wealth of information in explaining the effectiveness of AR media in improving cultural literacy.

Direct observation showed that learners were very enthusiastic when first introduced to AR media. The classroom atmosphere changed to be more dynamic, interactive and collaborative. Learners are not only spectators, but also actively explore the features in the AR application. The interactivity presented by AR creates an immersive learning experience, where learners can listen to dance movements in detail from various angles, as well as read historical and philosophical information from each movement displayed.

In interviews, the majority of learners said that they found it easier to understand the meaning of each dance movement because they could see the visualization of the movements in real time through their devices. They also stated that learning with AR is not boring and helps them appreciate regional culture, especially dances that they were previously unfamiliar with. One learner stated, "I just found out that the hand movements in Saman dance have a

meaning of cooperation and cohesiveness. Usually I only see it on TV, but now I can learn it directly and it feels more exciting."

From the teacher's side, the use of AR is very helpful in explaining material that has been difficult to understand through lectures or static images. The cultural arts teacher mentioned that this media accelerates students' understanding of dance structures, movement sequences, and cultural narratives contained in each traditional dance form. Teachers also find it easier to build critical discussions with students, as they can observe the movements together synchronously through their respective devices.

However, not all processes went without a hitch. Some technical challenges arose, mainly related to the hardware used. Not all learners had devices with adequate specifications, so some of them had to share devices. In addition, limited internet connection is also a barrier when learning takes place online. Even so, teachers anticipate by providing video versions of AR content that can be watched offline.

Psychomotorly, the use of AR also encourages learners to imitate and practice dance movements directly. In the practice session, learners seemed more confident in imitating the movements because they already had a clear visual picture beforehand. This strengthens their ability to recognize the elements of dance movements and improves body coordination.

From the affective aspect, there was an increased appreciation for the richness of Indonesian culture. Some learners even expressed a desire to learn other dances outside of formal learning. They claimed to be more proud of the local culture because they felt closer to the values conveyed through dance.

In general, the results of this study show that the integration of Augmented Reality technology in traditional dance learning not only significantly improves learners' cultural literacy, but also creates a more contextualized, fun and reflective learning ecosystem. The use of this media can be an effective learning alternative for cultural arts subjects, especially in the context of the Merdeka Curriculum which emphasizes project-based learning and authentic experiences.

This finding also reinforces previous literature which states that educational technology that is visual and interactive can improve learners' understanding of symbolic and abstract material. AR in this case is not just a visual aid, but a bridge between tradition and technology, between cultural heritage and today's digital generation.

The following are some of the main subsections of the results of this research:

4.1. Implementation of AR in Dance Learning with AR Media was developed to display traditional dance movements (Saman dance, Jaipong dance, etc.) in the form of 3D animations that can be accessed through devices. This application also includes information about the history, philosophy, and meaning of dance movements.

4.2. Impact on Cultural Literacy The interview results showed an increase in students' understanding of local cultural values. They were able to explain the meaning of dance movements and history more precisely. In addition, there is an increased sense of pride in Indonesian culture.

4.3 Learners' Responses The majority of learners stated that the use of AR made dance lessons more fun and easy to understand. They felt as if they were "dancing" directly, even though only through gadgets.

4.4 Challenges Some technical obstacles were encountered, such as device and signal limitations. However, teachers can overcome this by providing video simulations from the AR application.

5. Comparison

Compared to conventional methods, AR-based dance learning is more capable of activating students cognitively and affectively. Conventional learning usually only relies on lectures, static images, or movement demonstrations by the teacher. Often, this makes it difficult for learners to understand the philosophy and meaning behind traditional dance movements. In such learning models, learner interaction tends to be passive, which results in a lack of enthusiasm and low cultural literacy.

In contrast, the use of Augmented Reality presents a multisensory experience that allows learners to learn visually, auditory and kinesthetically at once. Learners can see avatars of dancers moving according to traditional choreography, listen to cultural information through audio and text, and repeat observations independently at any time. This encourages active engagement and personal reflection on the learning material.

When compared with the results of [13], the use of AR in the arts provides a great opportunity to increase understanding and interest in abstract and symbolic content. They emphasized that AR has affordances in learning that conventional media does not have, namely the ability to combine real-world context with virtual objects in real time, so that the learning experience becomes more authentic.

The findings in this study also show that learners are better able to recall and explain the dance elements, cultural meanings, and philosophical values contained in the movements. This is in stark contrast to the results of conventional learning which often ends up only memorizing the name of the dance and its regional origin.

From the teacher's side, the use of AR allows for a more differentiated learning approach. Teachers can customize the content according to the learning needs of each learner, including for those who have a more dominant visual or auditory learning style. This increases the effectiveness of material delivery and supports the principle of inclusiveness in education.

On the other hand, when compared to video-based methods or regular e-learning, AR has the advantage of creating a stronger illusion of presence. Learners feel as if they are in the middle of a dance performance, not just watching from a screen. This strengthens the emotional connection to the cultural material being taught.

However, it is important to note that this advantage still requires school infrastructure readiness and teacher training. Without adequate devices or strong pedagogical understanding from teachers, AR utilization will not be optimal. Therefore, this comparison is also the basis for recommending a gradual and planned integration of technology in the cultural arts curriculum.

Thus, this study confirms that AR is not just a visual aid, but a technology-based learning strategy that can bring traditional dance learning to a more interesting, interactive and meaningful direction. The study from [13] also shows that AR enriches art learning as it provides a powerful multisensory experience.

6. Conclusions

This study concludes that Augmented Reality (AR) technology is a very potential learning media to improve students' cultural literacy in the context of traditional dance learning. AR provides a more vivid and interactive learning experience than conventional learning methods. With three-dimensional visualization of dance movements, cultural narratives, and high interactivity, learners can understand the meaning behind each dance movement and the cultural background that underlies it.

Through observations and interviews, it was found that students were more motivated to learn, more active in the learning process, and showed improvement in understanding and appreciating traditional dance as part of cultural identity. This shows that AR media not only impacts on cognitive understanding, but also touches the affective and psychomotor domains of learners.

Teachers also benefit from the application of this technology because they can deliver material more effectively and interestingly. Challenges such as limited devices and internet networks are still an obstacle, but can be overcome with supporting strategies such as the use of simulation videos or hybrid learning.

Overall, the integration of AR technology in cultural arts learning provides a new alternative in shaping learning that is more contextual, collaborative, and oriented towards strengthening character and local cultural values. This research recommends expanding the use of AR media not only in dance, but also in other cultural arts fields such as music, visual arts, and theater.

With the development of digital technology in education, this research opens space for further studies that examine the long-term effects of AR use on the formation of learners' cultural character and the preservation of traditional arts in the Indonesian education ecosystem to improve learners' cultural literacy. This media helps learners understand the philosophy of movement, history, and strengthen cultural identity. Despite technical challenges, AR remains an innovation that should be developed in art education in the digital era.

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