Exploring the potential development of digital modules for arts and culture learning based on local culture: A mixed-method study on Bedhaya Ketawang dance

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Abstract: The need for digital module development in arts and cultural education has become increasingly urgent, especially considering the lack of educational media relevant to local cultural contexts. In today's digital era, integrating traditional cultural values with educational technology is essential for preserving cultural heritage and enhancing education quality. Bedhaya Ketawang dance, rich in philosophical and historical values, offers significant potential as an interactive digital learning module. This study aims to identify the needs of students and teachers in developing a digital teaching module based on Bedhaya Ketawang. The study employed a mixed-method approach, gathering quantitative data through a survey distributed to 87 students, alongside qualitative data collected through interviews and observations with two arts and culture teachers. Research instruments included questionnaires, interview guidelines, and learning observation tools. The data were descriptively analyzed using simple statistical and interactive qualitative analyses. The findings show that while students understand the local culture, their practical engagement remains limited. A total of 80% of students reported that more interactive digital media would enhance their learning process, and 83% expressed a desire for increased use of digital media in arts and cultural education. Interviews and observations revealed that current digital media are passive and suboptimal for promoting student engagement. In conclusion, developing a digital module based on Bedhaya Ketawang is crucial for improving student engagement and understanding the local culture. The implications of this research suggest the need for more innovative, contextual, and relevant curricula to meet the demands of 21st-century education.

Keywords: Arts education, Bedhaya Ketawang dance, Digital module, Interpersonal skills, Local culture.

1. Introduction

The significance of arts and cultural education in secondary schools is increasingly acknowledged for its profound impact on student development, both personally and socially. Engaging students in arts and cultural activities not only fosters creativity, which is essential for self-expression and problem-solving, but also encourages deeper critical thinking (Žnidaršič, 2020). Project-based learning models that integrate cultural contexts have proven to enhance students' creative thinking and decision-making skills (Rahayu et al., 2023). Additionally, arts education promotes collaboration and communication, which are key components in improving interpersonal skills and social competence and are especially important in today's diverse classrooms (Erim et al., 2015). By engaging with different cultural perspectives, students not only explore their identities, but also develop empathy and a deeper understanding of others (Lito D. Mallillin et al., 2022). Collaborative art projects, for instance, teach the value of teamwork and cultivate a sense of community and belonging (Asrizal et al., 2022). These

experiences are essential for emotional and social growth, offering students a supportive environment in which to express themselves while learning to appreciate others.

Moreover, the focus on creativity in arts education aligns seamlessly with the demands of the 21st century, where innovation and critical thinking are highly valued (Wijayati et al., 2019). As students participate in creative endeavors, they develop resilience and adaptability, which are crucial skills for their future success (Rahardjanto et al., 2019). Ultimately, arts and cultural education play a vital role in shaping well-rounded individuals prepared for the complexities of the modern world. By nurturing creativity, enhancing interpersonal skills, and fostering social competence, arts education significantly contributes to the holistic development of students, equipping them to face personal and professional challenges with confidence (Tri Rahayu et al., 2023).

Moreover, arts and cultural activities significantly contribute to personal development by encouraging creativity, self-expression, and social interactions. For instance, visual arts education integrates character development with cultural and critical learning, thereby enhancing cooperation, perseverance, and self-identity (Salam, 2019). These activities not only build individual traits but also foster collaboration and communication among students. Cultural practices also play a key role in developing social skills, as local customs and traditions help preserve cultural heritage and nurture teamwork, empathy, and respect for diversity (Rachmah et al., 2022). Community-based art forms, such as Balinese Karawitan, highlight the importance of moral education and social engagement, offering platforms for teamwork and social interaction (Sujayanthi & Hartini, 2023). Furthermore, recognizing cultural diversity in schools promotes social adaptation and identity formation, encouraging students to understand social dynamics and develop better interpersonal relationships (Careemdeen, 2024). This is reinforced by studies that show the value of cultural competence in building effective communication and social support systems, which are crucial for both personal and professional success (Lipsedge & Mulrooney, 2022). Engaging in culturally relevant activities allows students to gain not only knowledge, but also the social skills needed to navigate complex social environments. In conclusion, arts and culture are indispensable for fostering character and social skills. Through creative expression and cultural engagement, individuals develop essential competencies to prepare them for collaborative and empathetic interactions in diverse environments. Therefore, the integration of arts and cultural education into learning frameworks is crucial for holistic personal development.

Bedhaya Ketawang dance, a deeply significant cultural heritage of Java, carries rich philosophical, moral, and spiritual values. It serves not only as a performance art, but also as an educational tool to shape characters, particularly in fostering discipline and social harmony. Dancers undergo rigorous training that instills discipline, focus, and adherence to strict rules during both practice and performance. This reflects the key values taught to students, such as the importance of cooperation to achieve common goals and respect for individual roles within a group (Fitri, 2023)(Supriyanto, 2019). Through this disciplined practice, students develop a sense of order and responsibility and internalize the values of perseverance and hard work, which are essential in building resilience (Astarinny & Pramutomo, 2020).

Moreover, Bedhaya Ketawang is a symbolic representation of Javanese spirituality and social values, making it a powerful tool for education. Its complex movements and rhythms teach not only technical skills but also the ethical and aesthetic dimensions of Javanese culture, thus transmitting these values across generations (Rahapsari, 2021)(Maryono, 2022). The collaborative nature of dance fosters teamwork and social cohesion, resonating with societal ideals of unity and harmony. As a result, students participating in this dance gain a deeper understanding of their cultural identity while simultaneously enhancing their interpersonal skills and overall character development (Sunaryadi, 2013)(Yoel et al., 2023). Bedhaya Ketawang serves as both a celebration of cultural heritage and a means to nurture essential life skills that contribute to students' holistic growth (Fitri, 2023). In essence, Bedhaya Ketawang dance is not only a celebration of cultural heritage but also a vital educational tool that imparts essential life skills. By engaging in this dance, students can develop a deeper understanding

of their cultural identity while simultaneously honing their discipline and social abilities, thus contributing to their holistic development as individuals and members of society.

The role of digital technology in education is expanding rapidly, with digital modules becoming integral to the learning process. Educational technology has significantly improved the quality and efficiency of learning, particularly through tools such as Zoom and Google Meet, which enable more interactive and effective remote learning (Purba, 2023). Additionally, technology integration fosters innovation in teaching strategies, boosting student motivation and engagement (Subroto et al., 2023). Digital modules not only provide broader access to information but also allow flexible learning tailored to individual student preferences. The availability of digital resources enables students to access learning materials anytime and anywhere, which is crucial during the pandemic (Yudhistira et al., 2021). This aligns with efforts to prepare young people for the digital economy, where technological skills are increasingly vital (Yuangga, 2023). Overall, the use of digital modules enhances learning effectiveness while preparing students for the ever-evolving technological landscape, making technology a driving force in transforming education into a dynamic and responsive experience.

Research has indicated that technology can enhance student participation and make learning materials more engaging. The use of ICT-based learning models has been shown to increase student motivation and facilitate easier access to information (Bhattacharjee & Deb, 2016). Interactive media in religious education can positively impact students' spiritual development and confidence (Alfan et al., 2021). E-worksheets combined with animated videos have demonstrated effectiveness in improving students' creative thinking abilities. Virtual and augmented reality technologies offer potential for educational support, although implementation costs remain a challenge (Saravanan et al., 2022). Overall, educational technology plays a crucial role in solving learning problems and provides innovative alternatives to education.

However, it is important to note that while technology can facilitate increased engagement, it also requires careful consideration of its impact on students' mental health and well-being, as highlighted in (Arsić & Milovanović, 2016). The abrupt transition to online learning during the COVID-19 pandemic has exacerbated students' mental health issues, suggesting that the use of digital technology must be balanced with strategies to mitigate potential negative effects. In summary, evidence from the literature suggests that ebooks and e-modules can indeed improve student participation and make learning materials more engaging (Srivastava & Verma, 2023). Educators must also be mindful of the broader implications of technology use on student well-being (Oztosun et al., 2023). The successful integration of technology in education relies on a holistic approach that not only focuses on engagement, but also addresses the mental and emotional needs of students.

The demand for digital teaching modules for cultural arts education is becoming increasingly urgent, particularly because of the lack of media relevant to local cultural contexts. In numerous regions, including villages rich in artistic traditions, the educational resources that connect students with their cultural heritage remain limited (Irhandayaningsih, 2018). Consequently, students often have a diminished understanding of the local culture, which is a vital component of their education. Digital teaching modules designed to reflect the values and practices of local culture can bridge this gap by providing students with improved access to learning about their artistic and cultural heritage. Furthermore, digital modules can enhance student engagement through interactive elements such as videos, animations, and audio (Merliza, 2023)(Dewi et al., 2022). Research has also indicated that technology-based learning materials can boost motivation and learning outcomes, particularly in the realm of cultural arts, which requires a creative approach (Ran & Jinglu, 2020)(Utami & Atmojo, 2021). Therefore, the development of digital teaching modules rooted in local culture is essential for preserving cultural heritage while simultaneously enhancing educational quality and assisting students in establishing a strong cultural identity amid globalization.

The integration of digital teaching modules based on Bedhaya Ketawang dance offers an interactive and effective solution for education. With its rich philosophical and historical significance (Supriyanto, 2019) and evolution from a political art form to a cultural performance (Fitri, 2023), dance provides a

multidimensional subject for educational content. Traditionally linked to the Jumenengan ceremony with deep cultural and spiritual values (Maryono, 2022), Bedhaya Ketawang aligns with the growing trend of integrating technology into education (Sunaryadi, 2013). The success of constructivist e-learning in boosting student engagement and outcomes, along with the validation of digital teaching materials in other contexts, supports this approach (Fitri, 2023)(Supriyanto, 2019). Dance's cultural depth and adaptability make it a valuable resource for digital modules that can foster engagement and effective learning. Furthermore, expert guidance within these modules could enhance their impact because teaching presence is crucial for online learning engagement.

Observations conducted in several high schools in the Klaten Regency revealed a significant gap in students' interpersonal skills. Most teachers reported that students often struggled with effective communication, both within study groups and when interacting with teachers. This is evident from the low participation rates in class discussions and limited initiative in expressing opinions or ideas. Additionally, students tend to lack the ability to collaborate effectively in teams, which often leads to conflicts or suboptimal results in group tasks. Further observations indicated that, in situations requiring cooperation and communication, many students lacked the necessary skills to collaborate or speak effectively. These difficulties impact their ability to achieve better learning outcomes, particularly in subjects that require group work and social interaction.

The gap in students' interpersonal skills has become increasingly prominent in the current educational landscape. Many students lack adequate interpersonal skills, which may hinder their ability to collaborate and communicate effectively in social and academic settings. Research indicates that poor interpersonal communication skills can negatively impact student learning outcomes because the ability to interact well is essential for the learning process (Mulyani et al., 2021). These skills, including the ability to listen, speak, and work cooperatively with others, are crucial for creating a productive and harmonious learning environment (Ariyani & Hadiani, 2020). Furthermore, a lack of focus on developing interpersonal skills in the curriculum may exacerbate this gap. Students who are not trained in social skills often struggle to build positive relationships with their peers and teachers, which in turn can affect their motivation and engagement in learning (Widiartha, 2023). Research also suggests that students with strong interpersonal intelligence tend to adapt and perform better in collaborative learning environments (Putriana & Saragih, 2020). Therefore, it is crucial for educators to integrate interpersonal skills training into the curriculum, enabling students to effectively develop these abilities and prepare themselves for future challenges (Mahabbati et al., 2017). Addressing the interpersonal skills gap requires a more holistic and integrated educational approach, as enhancing these skills will not only support students' academic growth, but also equip them with essential life skills to interact and collaborate in an increasingly complex society.

The implementation of digital technology in schools faces considerable challenges that can affect its effectiveness in enhancing learning experiences. A major hurdle is the lack of adequate infrastructure and limited teacher training on how to efficiently use technology (Yuliandari, 2023). Many schools struggle with access to the essential hardware and software required for digital learning. Additionally, some teachers feel unprepared to embrace technology-based teaching methods, which results in inconsistent applications (Ibrahim et al., 2022). On the other hand, the growing reliance on digital tools has highlighted gaps in interpersonal skills such as communication and collaboration, which are crucial for social and professional success (Abid et al., 2022). Students with weaker interpersonal abilities often find it difficult to build positive relationships with peers and teachers, which affects their motivation and engagement in learning (Durlak et al., 2011). Therefore, schools must not only focus on integrating technology, but also prioritize the development of interpersonal skills in the curriculum (Tondeur et al., 2016)(Qaddumi et al., 2023). By addressing both the technological and interpersonal aspects, schools can create a more balanced and enriching learning environment that truly meets the needs of today's learners.

This study aims to analyze and identify the needs of students and teachers in developing a digital teaching module based on Bedhaya Ketawang dance. With the increasing importance of technology in

education and the need to maintain a connection between learning materials and local cultural values, this need has become highly relevant. This research is expected to find appropriate solutions for integrating traditional culture with modern digital-based learning approaches.

Furthermore, this study makes significant contributions to the fields of education and curriculum development. The results are expected to provide a foundation for designing a local culture-based curriculum that aligns with the demands of the 21st century. This approach not only strengthens students' understanding of local culture, but also enhances their interpersonal skills, which are crucial in both social life and the workforce. Overall, this research also provides guidance for teachers and module developers in selecting interactive learning media that meets students' needs. Additionally, the findings will help to create more contextual, innovative, and effective teaching materials, thus improving students' communication and collaboration skills through the integration of technology and local cultural values.

2. Method

2.1. Research Design

This research employs a mixed-methods approach to comprehensively collect data by combining both qualitative and quantitative data (Creswell & Clark, 2011). This approach allows researchers to obtain generalizations from quantitative data, while simultaneously gaining deeper insights from qualitative data (Åkerblad et al., 2021). Mixed methods were chosen as they provide a more comprehensive understanding of the phenomenon under study, particularly in the context of identifying the needs for designing a Digital Arts and Culture Module based on the values of *Bedhaya Ketawang* dance to enhance students' interpersonal skills.

2.2. Research Subject and Collecting Tools

The research subjects for quantitative data collection were 87 high school students in Klaten, selected through random sampling techniques (Cvetković & Stanojević, 2017). Data were collected using a needs analysis questionnaire adapted from previous studies (Acep et al., 2021), (Nurrahmah Laili et al., 2021), (Kiong et al., 2022), and tailored to align with the objectives of this research. Subsequently, qualitative data collection involved subjects chosen through purposive sampling (Moleong, 2018), in accordance with the research needs and objectives. Two teachers specializing in Cultural Arts served as primary informants for this study. The selection of qualitative subjects aims to explore various perspectives and provide a deeper understanding of students' experiences during the learning process (Hidayati & Ismail, 2018). Qualitative data collection techniques include interviews and observations utilizing instruments such as interview guidelines and observation sheets (Anggito & Setiawan, 2018). Tables 1, 2, and 3 present the framework of the instruments utilized in this mixed-methods research.

Table 1.
Learning observation instruments.

No	Indicator	Item
1	Use of digital media in learning	4
2	Implementation of Bedhaya Ketawang dance values	3
3	Ability to manage student interactions	2
4	Providing motivation to students	3
5	Feedback on student activities	2

Source: (Acep et al., 2021)(Nurrahmah Laili et al., 2021).

Table 2.
Identification instrument with teachers (Interview).

No	Indicator	Item
1	Use of culture-based learning strategies	3
2	Use of digital media in arts and culture	3
3	Facilities available in schools	2
4	Achievement of learning outcomes (Interpersonal skills)	2

Source: (Widya et al., 2021).

Table 3.
Needs analysis questionnaire instrument (Students).

| No	Indicator	Item
1	The process of learning arts and culture based on Bedhaya Ketawang Dance values	3
2	Use of digital-based learning media	3
3	Students' needs and views on digital learning	2

Source: (Kiong et al., 2022)

2.3. Data Validation Techniques

To ensure data validity, this study employed both source and triangulation techniques. The researchers gathered information from various sources, such as teachers and students, and performed cross-checks to ensure consistency of the information (Denzin, 2017). In addition, multiple data collection methods have been applied to provide a more comprehensive understanding of the phenomenon under investigation (Kościelniak, 2022).

2.4. Data Analysis Techniques

Quantitative data were analyzed descriptively using simple statistical methods to identify trends and general patterns in research findings (Cresswell et al., 2003). For qualitative data, the researchers applied an interactive analysis approach developed by Miles and Huberman (Miles et al., 2016) The data were categorized themes and subthemes relevant to the research objectives. The results of the qualitative analysis are presented in a descriptive narrative supported by percentages that indicate the relationships between the identified themes and subthemes. Figure 1 illustrates the process of qualitative data analysis.
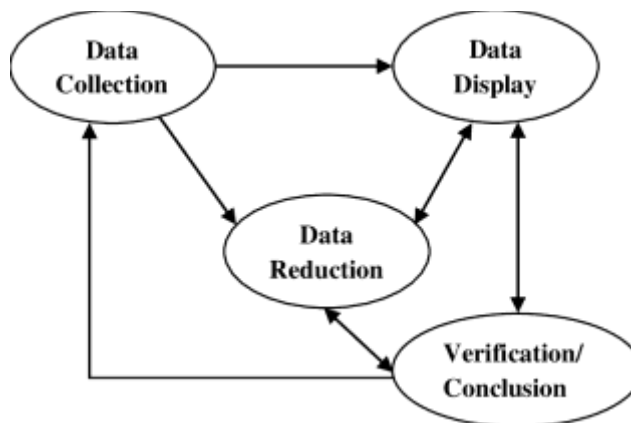
Figure 1.
Data analysis techniques.

3. Results

3.1. Results of Observations on the Implementation of Arts and Culture Learning in Schools

Observations from several arts and culture learning sessions in high schools have revealed variations in how teachers integrate local culture. In most cases, this integration has not yet been fully optimized. One teacher attempted to incorporate elements of local culture into teaching; however, the approach was limited to basic introductions to local traditions, such as brief explanations of various arts and traditions. While digital learning media capture students' attention, it primarily focuses on visual aspects, such as images and videos. Consequently, the students' understanding of local cultural values remained shallow, and their opportunities to explore how these values could be applied in everyday life were limited.

By contrast, a more comprehensive approach was observed in another teacher's practice. This teacher successfully integrated *Bedhaya Ketawang* dance as a central part of the learning process, not only introducing local culture but also emphasizing values such as cooperation, discipline, and social harmony. In each lesson, students not only received theoretical explanations, but were also involved in practicing dance movements and participating in group discussions that delved into the philosophical meanings behind the movements.

The use of digital technology varies. In some cases, technology is used in a limited capacity, primarily for delivering visual content with little interaction. On the other hand, some teachers used digital technology more creatively, employing interactive videos and applications that allowed dance movement simulations. This approach heightened student engagement, enabling them not only to conceptually understand cultural values, but also to internalize and apply them in their learning. As a result, students not only learned about the local culture but also developed interpersonal skills, such as cooperation, communication, and empathy.

Furthermore, teachers who successfully integrated local culture into their lessons emphasized the importance of actively involving students. These teachers created interactive learning environments in which students were encouraged to actively participate in the learning process through discussions and group activities. This approach helped strengthen students' sense of ownership over local culture, while also enhancing their interpersonal skills. In contrast, other observations have shown that more passive learning approaches result in students being less engaged, making it difficult for cultural values to leave a lasting impression or be internalized.

Observational data reveal several intriguing aspects that have captured the attention of researchers, particularly regarding the integration of local culture and the use of digital technology in arts education. Despite the significant potential of leveraging technology to enhance the learning process, digital tools such as smartphones, laptops, and computers have not been fully optimized. The introduction of digital learning materials rooted in local cultural values, such as Bedhaya Ketawang dance, presented in an interactive multimedia format, could serve as an effective alternative. This approach is anticipated to not only aid students in comprehending local culture, but also assist them in developing essential interpersonal skills necessary for navigating the challenges of the 21st century.

3.2. Teachers' Challenges in Implementing Arts and Culture Learning

Interviews were conducted with two high school arts and culture teachers to understand the implementation of teaching strategies, the use of media, available facilities in schools, and the challenges they faced in integrating local culture into their lessons. Generally, interviews with both teachers revealed similar challenges, particularly in utilizing digital technology and creating teaching materials relevant to the local cultural context.

In terms of teaching strategies, both teachers applied traditional lecture-based methods, although they made efforts to incorporate local cultural values. Teachers A and B indicated that time constraints and a lack of training in the use of technology were the main barriers to implementing more innovative teaching practices. Teacher A mentioned that students tended to be passive when only given lectures, especially when there were no activities that engaged them directly with local cultural materials.

Teacher B, who frequently used hands-on practices such as group discussions and dance simulations, also noted the difficulty of providing a deeper cultural context within the limited time available.

Regarding media usage, both teachers relied on traditional media such as PowerPoint and basic videos. Although these media helped convey information, both Teacher A and Teacher B felt that they were not sufficiently interactive to fully engage students in understanding local cultural values. They acknowledged that more interactive and structured digital modules could be a solution to enhance students' understanding of the local culture. However, the lack of facilities and technological skills remains a significant obstacle.

In terms of school facilities, both teachers noted limited access to technological devices, such as computers or tablets, that could be used by students directly. While schools provide projectors and screens for classroom instruction, access to personal devices and stable Internet connections remain an issue in some schools. Teacher B mentioned that students sometimes struggle to access digital resources outside class, which hinders the continuation of independent learning about local culture. Teacher A also highlighted that, while there is potential to use culture-based learning applications, the lack of technical support in schools makes it challenging to fully integrate technology into the classroom.

In terms of learning outcomes, both teachers agreed that students demonstrated a satisfactory understanding of the fundamental concepts of the cultural arts. However, when it comes to the development of interpersonal skills, such as communication and collaboration, the results remain unsatisfactory. Teachers A and B emphasized that the lack of collaborative projects and direct interaction with local culture through digital media limits students' ability to apply these cultural values in their daily lives. Both educators concur that the creation of more interactive digital modules, focused on exploring local culture such as Bedhaya Ketawang dance, could assist students in not only understanding but also effectively internalizing these values. Overall, interviews with teachers revealed that while efforts have been made to integrate local culture into cultural arts education, there is an urgent need to develop more innovative digital modules based on local culture. This module is expected to help teachers overcome the limitations of the current teaching materials and technology. By incorporating local cultural values, such as Bedhaya Ketawang dance, into digital modules, cultural arts education can become more relevant, interactive, and engaging for students. The structured use of digital modules is also anticipated to enhance students' interpersonal skills while preparing them to face the challenges of the 21st century. Optimal technological support and the provision of comprehensive digital modules are crucial steps in strengthening the integration of the local culture into the learning process.

3.3. Students' Views on the Implementation of Learning and the Need for Digital Modules

A survey was distributed to 87 students enrolled in a Cultural Arts subject at the high school level. This survey was designed to assess students' perceptions of the learning process of cultural arts, the use of digital learning media, and their needs and views on technology-based media. The survey results are presented in Table 4.

Table 4.
Results of needs identification analysis.

Question items	Yes (n/%)	No (n/%)
Does art and culture learning help you understand local culture?	65 (75%)	22 (25%)
Does learning involve you in practical activities related to local culture?	61 (70%)	26 (30%)
Is art and culture material relevant to your daily life?	58 (67%)	29 (33%)
Do teachers often use digital-based media in learning?	52 (60%)	35 (40%)
Does digital media help you understand art and culture material better?	55 (63%)	32 (37%)
Do you feel that more interactive digital learning media will help you learn better?	70 (80%)	17 (20%)
Do you want more digital media used during art and culture learning?	72 (83%)	15 (17%)

The results of a survey conducted with 87 students indicate an urgent need for the development of a digital module based on the Bedhaya Ketawang dance. A total of 75% of students felt that arts and culture education helped them understand the local culture, yet 30% still felt insufficiently engaged in practical activities. While 60% of students reported that teachers frequently used digital media, 37% felt that it had not been effective in enhancing their understanding. Furthermore, 80% of the students agreed that more interactive digital learning media would better support their learning, and 83% expressed a desire for increased use of digital media in arts and culture education. These findings underscore the importance of developing an interactive and contextual digital module based on Bedhaya Ketawang dance, enabling students to be more engaged and to better comprehend local cultural values.

The findings from interviews, observations, and student surveys clearly indicate a significant need for the development of digital modules based on local culture to enhance students' understanding of cultural art and interpersonal skills. Currently, the use of digital media, which remains largely passive, has not effectively encouraged active student engagement in cultural art education. Both students and teachers express a demand for more interactive and dynamic digital modules, which are anticipated to boost student participation and facilitate deeper internalization of local cultural values. Consequently, the creation of digital modules centered on the values of Tari Bedhaya Ketawang, integrated with innovative teaching methods, presents a promising solution for fostering more relevant and interactive cultural arts education in this digital age.

4. Discussion

A study of cultural arts centered on the values of Tari Bedhaya Ketawang in high schools revealed that 75% of students possessed an understanding of local culture; however, 30% expressed a lack of engagement in in-depth practical activities. The excessive emphasis on theoretical knowledge, without sufficient hands-on experience such as dance practice, diminishes the effectiveness of instilling values such as cooperation, discipline, and social harmony. The research corroborates these findings, indicating that practical approaches are more effective in fostering cultural awareness and interpersonal skills among students. Therefore, the integration of theory and practice through the Tari Bedhaya Ketawang module is crucial for a holistic and impactful learning experience.

A practical approach to local cultural education can enhance student engagement by merging theoretical knowledge with direct experience. Activities such as extracurricular programs and community projects reinforce interpersonal skills and cultural understanding (Bhatta, 2023), and promote essential communication and collaboration in daily interactions (Maksum et al., 2023). This approach also boosts student motivation, while aiding them in developing a strong cultural identity and self-confidence (Ottmar et al., 2015)(Pusriawan & Soenarto, 2019). Educators must design a curriculum that balances theoretical instruction with practical experiences to support the development of social and emotional skills (Thoib, 2021)(Wardana et al., 2022). Consequently, this approach not only enriches students' knowledge, but also equips them with the vital skills necessary for success in an increasingly complex society.

Digital media and technology demonstrate the potential to improve student outcomes, although their effectiveness varies. Pendekatan blended learning terbukti lebih efektif dibandingkan dengan pembelajaran daring sepenuhnya, memberikan keseimbangan antara interaksi langsung dan penggunaan teknologi (Topping et al., 2022). Digital platforms generally yield small but positive effects on learning outcomes (Alshammary & Alhalafawy, 2023), and media, such as YouTube, have exhibited positive results in supporting the learning process (Cholik et al., 2023)(Jackman, 2019). Furthermore, the utilization of digital textbooks contributes to enhanced academic performance, interest, and learning skills, particularly for low-achieving students (Lee et al., 2022)(Lasfika et al., 2022). Technologies that facilitate parental involvement in the learning process also demonstrate promising results, including improvements in achievement, attendance, and homework completion (Budiarto et al., 2024).

However, the effectiveness of digital media largely depends on its implementation. Constructive and interactive activities have proven to be more beneficial than passive ones (Wekerle et al., 2022). Factors such as the alignment of tasks with technology and communication theory also influence the adoption of digital media in education (Al-rahmi et al., 2023). Overall, tasks involving digital media can empower students as knowledge creators, where they not only receive information but also actively participate in the learning process (Perdana et al., 2021). Thus, the effectiveness of digital media lies not only in its use but also in how it is designed to enhance student engagement and understanding.

Currently, the use of digital media in arts and cultural education in high schools has several limitations, particularly its passive nature. Digital media, often limited to PowerPoint presentations and videos, serves mainly as a tool for one-way information delivery without providing opportunities for students to actively engage with learning material (Aifan, 2022). This passive medium focuses more on presenting information rather than creating dynamic learning experiences. Consequently, students tend to become mere receivers of information, with little opportunity to explore deeper local cultural values or participate in activities that reinforce their understanding. These limitations present a significant opportunity to develop interactive and locally cultured digital media. By leveraging technologies such as interactive simulations, augmented reality (AR), or project-based applications, students could become more engaged in the learning process (Chamorro-Atalaya et al., 2023)(Alfan et al., 2021)(Sung et al., 2022). For instance, the development of a digital module based on Bedhaya Ketawang dance, which allows students to learn dance movements directly or participate in virtual group discussions, could enrich their learning experience. Hence, developing interactive, culture-based digital media presents a potential solution for maximizing the use of digital technology in arts and culture education.

The survey results indicate that the majority of students support the development of a more interactive digital module based on Bedhaya Ketawang dance. Approximately 80% of students believed that interactive media would enhance learning, and 83% desired increased utilization of digital media in cultural arts education. Only 63% perceived the current digital media as sufficiently helpful, suggesting the necessity for improvement. Students' preference for interactive media reflects the need for more dynamic learning experiences, particularly in comprehending local cultural values.

The use of digital media in education has become increasingly vital for fostering innovative and contextual learning experiences. Research indicates that the integration of digital media such as online newspapers can enhance students' critical thinking skills by providing relevant and engaging content (Pentury & Anggraeni, 2021). This approach not only engages students in the learning process, but also aids them in connecting knowledge to broader cultural and social contexts. Furthermore, technology in language learning, such as digital games, has proven effective in offering meaningful and contextual language practices (Taguchi, 2023). This evidence underscores that digital media serves as a powerful tool for increasing student engagement and deepening understanding of the material. The application of digital technology also facilitates improved interaction between teachers and students, supporting personalized learning experiences (Lin, 2023). Consequently, educators must continually develop innovative digital media-based teaching methods to create relevant learning experiences in the digital age (Arsić & Milovanović, 2016). The integration of digital media not only enriches the learning experience, but also assists students in acquiring the skills necessary to navigate an increasingly complex and interconnected world.

Meanwhile, educators face various challenges in integrating local culture, such as Bedhaya Ketawang dance, through digital technology. Several instructors have reported limitations in facilities, including insufficient access to digital devices and unstable Internet connections, which impede technology-based learning processes. Furthermore, lack of training in the utilization of interactive digital media presents a significant obstacle, as educators are more accustomed to conventional teaching methods. Despite the considerable potential of employing technology to enhance the instruction of local culture, limitations in infrastructure and technical knowledge remain substantial barriers to its implementation.

In line with these challenges, the importance of culture-based digital modules in enhancing student engagement and understanding has been increasingly recognized in various studies. Culture-based teaching materials can enhance students' motivation and sense of belonging (Syafii et al., 2022). The use of digital technology, such as digital learning environments and story-based approaches, has proven effective in improving engagement and understanding of history (Taylor et al., 2018). Models such as MAPS, which explore local culture through digital artifacts, help address monolingual biases in language education (Klimanova & Hellmich, 2021). However, cultural factors and digital access inequality, especially during crises such as COVID-19, can affect student engagement (Khlaif et al., 2021). By promoting internal values in culture-based learning, students can achieve a deeper understanding of scientific content (Sagy et al., 2018). Therefore, the implementation of culture-based digital modules not only enhances student engagement but also helps deepen their understanding of learning materials within their cultural context.

The findings of this study indicate that the development of students' interpersonal skills through culture-based learning, particularly *Bedhaya Ketawang* dance, has a significant impact on their ability to interact and communicate effectively. The integration of local culture in arts and culture education not only enriches students' knowledge of their cultural heritage but also provides opportunities for them to practice social skills in a relevant context. In line with the research by (Dewanti & Novitasari, 2020), students involved in culture-based activities, such as traditional arts, showed a significant improvement in communication skills and empathy. This approach also enables students to learn values, such as collaboration and mutual respect, which are essential elements of interpersonal skills (Lu, 2019). The survey results support these findings, showing that students who are more engaged in cultural practices such as traditional dance training demonstrate improvements in communication skills and self-confidence. This aligns with (MacKenzie et al., 2023), who argued that contextual and practical learning experiences help students build a strong cultural identity and improve interpersonal skills. Therefore, it is essential for educators to design curricula that emphasize local culture-based learning, such as *Bedhaya Ketawang* dance, to help students develop the interpersonal skills necessary to function in a multicultural and dynamic society.

Research analysis indicates that the digital module based on Tari Bedhaya Ketawang has significant potential for enhancing students' interpersonal skills, including cooperation, communication, and empathy (Bosméan et al., 2022). Previous studies have corroborated that culturally based learning, particularly through collaborative activities such as traditional dance, markedly improves students' coordination and communication abilities (Klimanova & Hellmich, 2021)(Rahapsari, 2021)(Mulyani et al., 2021). Furthermore, this learning experience fosters empathy as students are encouraged to grasp the social values embedded within the culture. Through the use of an interactive digital module, students not only engage more actively in learning via dance movement simulations or virtual group activities, but also enhance their interpersonal skills, which are increasingly pertinent in a collaborative and digital educational landscape.

However, this study has certain limitations. The sample size was confined to a few schools within specific regions, which may restrict the generalizability of the findings to other areas or educational levels. Additionally, the limited access to technology in some schools affects the optimal implementation of digital modules based on Tari Bedhaya Ketawang. Moreover, the restricted timeframe of the research renders an evaluation of the long-term impact of the module on students' interpersonal skills.

Overall, the findings of this research indicate that the development of a digital module based on Bedhaya Ketawang dance holds significant potential for enhancing students' interpersonal skills, particularly in the areas of collaboration, communication, and empathy. Digital media currently employed in schools tend to be passive and have not been fully effective in promoting student engagement. The survey results reveal that a majority of students desire a more interactive and contextual module that not only conveys content but also actively involves them in the learning process. Previous studies corroborate these findings, suggesting that culturally based learning through digital technology can enhance students' social skills and cultural understandings. Consequently, the

development of a digital module rooted in local culture, such as the Bedhaya Ketawang dance, is anticipated to not only enrich students' learning experiences, but also equip them to navigate the social challenges of the 21st century.

5. Conclusion and Suggestion

This research revealed that the utilization of digital modules in arts and culture education based on the values of Tari Bedhaya Ketawang has not been optimized to support the development of students' interpersonal skills. Educators tend to employ passive digital media such as basic presentations or videos, which inadequately facilitate active student engagement in comprehending and internalizing local cultural values. These findings indicate that the potential of interactive digital modules to enhance interpersonal skills, such as cooperation, communication, and empathy, has not been fully realized. Furthermore, the limitations of technological facilities in some educational institutions pose obstacles to the broader and more effective implementation of digital modules based on the local culture.

Consequently, it is recommended that the development of digital modules grounded in the local culture, such as Tari Bedhaya Ketawang, be integrated with more interactive and contextual learning approaches. Educators require comprehensive training in utilizing interactive digital technology to promote active student participation. Additionally, strengthening the technological infrastructure in schools is essential to support more effective implementation of culture-based learning modules. Further research is also necessary to explore the development of innovative digital media based on local culture, which can assist students not only in understanding local culture, but also in developing crucial interpersonal skills in this digital era.

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