

The Need for Augmented Reality Batik Media to Increase Cultural Love for Learning, Drawing, Design, and Craft Production in Vocational High Schools

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Abstract

Cultural love in schools is very important, because in addition to preserving cultural heritage, it also strengthens identity, increases tolerance, and builds students' character in a multicultural society. One effective way to foster a love of culture is through interesting and interactive learning innovations. This research aims to identify the need for Augmented Reality Batik Media as a solution to increase cultural love among vocational school students in learning Drawing, Design, and Craft Production. This study uses a qualitative descriptive approach to identify the need for augmented reality batik media in increasing cultural love in learning images, design, and craft production in vocational high schools. The results of data on student interest in batik show that 65% of students feel very interested if batik material is delivered through AR, indicating that this technology has the potential to attract students' attention in a more interactive and visual way. The results of the research conducted show that there is a great opportunity in the development of augmented reality batik learning media in the digital era in the learning process, especially in the subject of drawing, design, and craft production at vocational schools.

Keywords: *Augmented Reality, love of batik culture, interactive learning.*

Abstrak

Cinta budaya di sekolah sangat penting, karena selain melestarikan warisan budaya, juga memperkuat identitas, meningkatkan toleransi, dan membangun karakter siswa di tengah masyarakat multikultural. Salah satu cara efektif untuk menumbuhkan rasa cinta budaya adalah melalui inovasi pembelajaran yang menarik dan interaktif. Penelitian ini bertujuan untuk mengidentifikasi kebutuhan Media Batik Augmented Reality sebagai solusi untuk meningkatkan cinta budaya di kalangan siswa SMK dalam pembelajaran Gambar Desain dan Produksi Kriya. Penelitian ini menggunakan pendekatan deskriptif kualitatif untuk mengidentifikasi kebutuhan media batik augmented reality dalam meningkatkan cinta budaya pada pembelajaran gambar desain dan produksi kriya di sekolah menengah kejuruan. Hasil data mengenai ketertarikan siswa terhadap batik menunjukkan bahwa 65% siswa merasa sangat tertarik jika materi batik disampaikan melalui AR, mengindikasikan bahwa teknologi ini berpotensi menarik perhatian siswa dengan cara yang lebih interaktif dan visual. Hasil penelitian yang dilakukan menunjukkan bahwa terdapat peluang besar dalam pengembangan media pembelajaran batik augmented reality di era digital dalam proses pembelajaran khususnya pada mata pelajaran gambar desain dan produksi kriya di SMK.

Kata kunci: *Augmented Reality, cinta budaya batik, pembelajaran interaktif.*



INTRODUCTION

The development of globalization accelerated by technological advances in the 4.0 era has had a significant impact on various aspects of life, including education and awareness of local culture (Aryanti, A. D., & Ratyaningrum, F. (2023). Amid the flow of easily accessible global information, students are often more exposed to more popular foreign content, while knowledge of local cultures, such as batik, tends to be overlooked. Therefore, this risks causing low awareness and love for cultural heritage among the younger generation, especially in the school environment. Without adequate education about local culture, students may not develop a deep understanding and appreciation of their cultural heritage (Trixie, A. A. 2020). As a result, the potential for local cultural preservation can be threatened, as students do not feel they have a strong emotional connection to the cultural heritage (Azima, Furnamasari, & Dewi, 2021).

The importance of fostering awareness of cultural love in schools is becoming increasingly clear, as it not only contributes to the preservation of cultural heritage, but also strengthens students' self-identity, increases tolerance, and builds their character in the face of a multicultural society (Farhaeni & Martini, 2023). For example, skills and knowledge about batik craft crafts can be an effective way to increase appreciation for local culture. Through batik learning, students not only learn art techniques, but also understand the historical value, philosophy, and meaning contained in each batik motif, thus fostering a sense of pride in their cultural heritage (Wulandari et al., 2021).

However, based on the results of a pre-survey conducted on the learning of Design Drawings and Craft Production in Vocational High Schools (SMK), it was found that the majority of students showed low interest in learning traditional batik. Of the 96 students surveyed, around 65% were in the "Less Interested" category to learn batik. This phenomenon shows that there are great challenges in attracting students' attention to explore batik culture (Ashari, D. 2023). This may be due to the learning approach that is still focused on the theoretical aspect and does not provide opportunities for students to interact directly with the creative process of making batik. In addition, the limitations of the media used in learning, which are often considered monotonous and less interesting, also reduce students' interest in getting involved more deeply (Situmorang, 2024).

For this reason, one of the solutions that can be applied is the development of Augmented Reality (AR)-based learning media, which has been proven to provide a more interactive and interesting learning experience (Aspi, M., & Syahrani, S. 2022). AR technology allows students to interact directly with learning materials, by seeing and understanding the process of making batik more realistically through augmented reality technology (Susanti, I. R., & HM, B. S.2015). This will help students not only understand batik-making techniques, but also appreciate the meaning and cultural values contained in each batik motif.

Several previous studies have shown that the use of AR in learning can increase student motivation and engagement, as well as deepen understanding of complex concepts (Suksma, Margunayasa, & Werang, 2023). Therefore, the application of AR as a learning medium is expected to be an effective alternative to overcome the limitations of conventional learning media, as well as increase students' appreciation of local culture.

This research is important because through augmented reality batik media can increase students' love for culture which can provide creativity in the learning process. Creative learning can make it easier for students to understand the learning material and encourage them to think, learn, and work together to increase innovation so that learning becomes interactive (Rahmawati, F., & Atmojo, I. R. W. 2021). Batik Augmented Reality media in learning is one of the alternatives to improve these skills (Carolina, Y. D. 2023). This study aims to identify the need for Augmented Reality Batik Media as a solution to increase cultural love among vocational school students in learning Drawings, Design, and Craft Production. The development of AR-based media is expected to provide a deeper understanding of regional batik, such as Magetan batik, which includes motifs, history, meaning, and cultural values contained in it. Thus, this media can be an effective and interesting learning tool to foster a sense of cultural love among students, as well as preserve Indonesia's cultural heritage. Therefore, augmented reality batik media plays an important role in building a love for local culture in the process of learning images, design, and craft production in vocational high schools.

This study aims to answer several problem formulations, namely: 1) how the need for the use of Augmented Reality (AR)-based learning media for students' love for culture in learning Drawing Design and Craft Production. 2) what are the factors that cause students' low interest in traditional batik in vocational schools. 3) how students understand batik before using augmented reality batik media. The purpose of this study is to identify the need for the use of AR-based learning media in increasing students' love for culture in learning design drawings and craft production, analyzing the factors that cause students' low interest in traditional batik, and finding out students' understanding of batik.

METHOD

This study uses a qualitative descriptive approach (Rustamana, A., et al. 2024) to identify the need for augmented reality batik media in increasing cultural love, learning, drawing, design, and craft production in vocational high schools. The research began with observation to analyze data needs, followed by the distribution of questionnaires to 96 students of class X Fashion Design and Production at SMK Negeri 2 Magetan and SMK Negeri Poncol. The object of this research is the use of augmented reality batik media, while the subject is students who are involved in learning batik crafts. Data was collected using two instruments, namely questionnaires and interviews, which were then analyzed descriptively using percentages.

The analysis process is carried out in four stages: (1) data collection, (2) data reduction to select core findings, (3) descriptive presentation of data, and (4) drawing conclusions to answer research questions (Fadli, M. R. 2021). The instrument used was a questionnaire consisting of 4 indicators spread over 20 questions. These indicators are student responses regarding students' interest in batik, students' understanding of batik processes and techniques, increased creativity in batik design, and appreciation for batik cultural heritage. Before the questionnaire is shared, the validity of the instrument is tested with expert validators.

RESULTS AND DISCUSSION

Research This research involved 96 student respondents from SMK Negeri 2 Magetan and SMK Negeri Poncol, East Java, to identify the need for augmented reality (AR)-based batik media in learning design drawings and craft production. The results of the study show that the use of AR media can increase students' interest in batik, as well as strengthen their love for local culture. Learning using AR media has proven to be

effective in making it easier for students to understand the process and techniques of making batik, thus supporting the development of their creativity in batik design.

Data on student interest in batik is presented in Figure 1. The results showed that 65% of students felt very interested if the batik material delivered through AR was conveyed, indicating that this technology has the potential to attract students' attention in a more interactive and visual way. As many as 25% of students admitted to being interested, while 5% of students showed low interest, and another 5% were not interested at all. Although the percentage of people who are less interested is relatively small, this shows the need for students in the learning process using augmented reality innovations.

Figure 2 shows data related to the level of students' understanding of batik processes and techniques. Most of the students, namely 45%, the level of student understanding is very low in understanding batik material. While the other 30% are low in undergoing batik materials. As many as 15% of students felt that their understanding of batik was high, and only 5% felt very high in their understanding of batik materials. Overall, this data shows that the need for AR media in facilitating students' understanding of batik techniques is urgently needed.

Furthermore, the researcher analyzed the increase in students' creativity in batik design regarding this can be seen in Figure 3, which illustrates how students need inspiration in making batik designs. The use of AR technology in this learning process will have a positive impact on honing students' creative skills in creating more innovative batik designs.

Overall, the findings of this study show that augmented reality-based batik media is not only able to attract students' attention, but will also increase their understanding and creativity in learning batik design, as well as strengthen their appreciation of local culture.

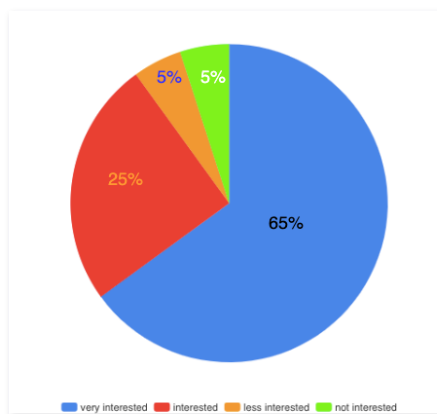


Figure 1. Students' Interest in Batik

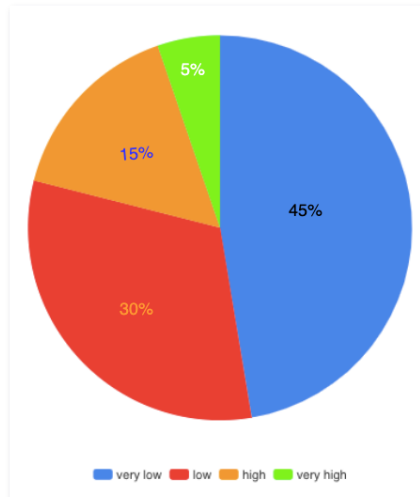


Figure 2. Level of Student Understanding of Batik Process and Techniques

Figure 3 shows the results of the need for the use of Batik Augmented Reality media at SMKN 2 Magetan and SMKN Poncol material regarding the Magetan batik collection as much as 55%, indicating that students are most interested in and easiest to understand this material if presented visually through augmented reality technology. This also contributes to increasing appreciation for local batik. Furthermore, the material on the history of batik is in second place with 35%, showing a significant interest even though it is not as large as the typical Magetan batik material. Meanwhile, the material on the use of batik and techniques for making batik patterns received lower scores, 10% and 0%, respectively. These results show that students still face difficulties or lack of interest in batik materials. Overall, batik materials have not fostered students' interest and understanding.

Based on Figure 4, which measures the increase in students' appreciation of batik cultural heritage, the results show that the majority of students, i.e. 60%, feel very proud of their batik cultural heritage. As many as 25% of students feel proud, while 10% of students feel ordinary, and another 5% do not feel proud. Although the percentage who do not feel proud is relatively small, these findings show that a more in-depth approach is still needed to ensure that the understanding and appreciation of batik cultural values can be more thoroughly accepted by all students. Overall, the use of Batik Augmented Reality has the potential to inspire a sense of pride and increase students' appreciation for batik, which is a positive step in preserving local culture among the younger generation.

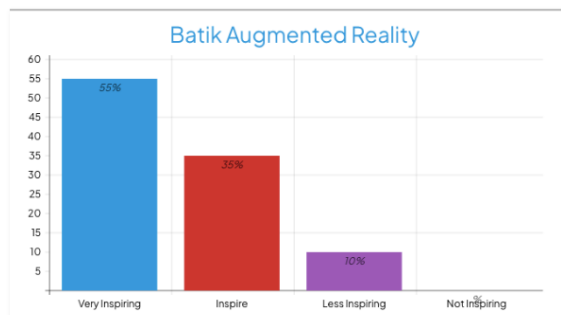


Figure 3. Increasing Creativity in Batik Design

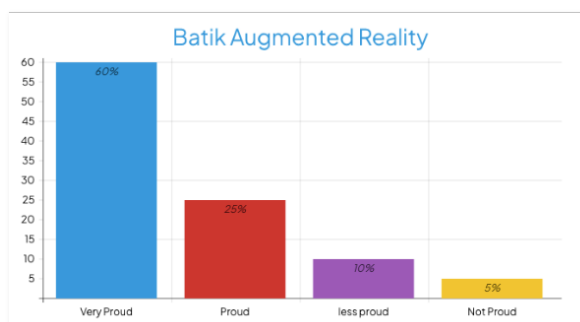


Figure 4. Increasing Appreciation for Batik Cultural Heritage

Technology in the digital era is very important in the consequences of the development of success from various sectors, one of which is education. The use of technology has a very large role in the development of the ability to improve the capacity and quality of students (Fricitarani, A., Hayati, A., Ramdani, R., Hoirunisa, I., & Rosdalina, G. M. (2023). In the field of education, technology supports the management of learning media strategies that are used to provide new experiences with media capacity that can be accessed and used at any time, namely with smartphones (Sari, A. A., Nuromliah, H. S., Marlinda, S., & Marini, A. (2024). Based on the data that has been presented in the results section, it can be seen that the need for augmented reality batik media in the learning process, especially the subject of drawing, design, and craft production at SMK, has a good attraction to increase cultural love in the Augmented Reality-based learning process (Santoso, G. (2022).

Batik Augmented Reality media can have a positive impact on the development of the learning process by making it easier for students to understand learning, increasing interaction and creativity in the learning process, increasing motivation in students' skills (FitzGerald, E., Ferguson, R., Adams, A., Gaved, M., Mor, Y., & Thomas, R. (2013). In the development stage that has been implemented, augmented reality-based learning can also help students in innovating positive activities in the digital era such as communication skills, literacy, and critical thinking (Chiang, T. H., Yang, S. J., & Hwang, G. J. (2014). The use of augmented reality has proven to be effective in increasing students' interest and understanding of batik, especially in visual materials such as a collection of Magetan batik and batik history. To further encourage students' creativity in batik design, it is recommended that augmented reality learning is also focused on batik techniques and patterns, so that students can be more skilled and interested in innovating to create new motifs that still respect local characteristics.

In this stage of development of the digital era, of course, the need for augmented reality batik media in the learning process can be used by educators to develop creative and interactive learning media. This need cannot be separated from the synergy between augmented reality-based batik media as a learning medium that can provide a new learning process experience in the digital era and Augmented reality Batik Media.

The use of augmented reality-based learning media has succeeded in increasing the level of student understanding and creativity of student interaction in classroom activities (Radosavljevic, S., Radosavljevic, V., & Grgurovic, B. (2020). Learning media using augmented reality-based learning applications can make students more focused on the learning process and maximize the Increase of Creativity in Batik Design as an interactive and fun learning medium (Chen, D. R., Chen, M. Y., Huang, T. C., & Hsu, W. P. (2013). In this augmented reality-based learning, it shows that the need for augmented reality batik media in learning provides flexibility for students to explore in

the comfort of fun learning, provide positive ideas in the delivery and understanding of the learning process in the classroom and improve the optimal quality of learning (Figueiredo, M., Gomes, J., Gomes, C., & Lopes, J. (2014). The application of this digital technology is one of the alternatives for educators who initially only use printed books, power point media and worksheets that make students less interactive can turn into creative classes with the use of digital technology in the current era and can increase students' love for culture.

There are several other factors that can open up the need to implement an augmented reality-based learning process for Increasing Appreciation for Batik Cultural Heritage (Syafriana, A. E., & Nurfajri, G. (2021). The results of this study can show that in the learning process with the help of augmented reality batik media, it can increase the appreciation of Batik Cultural Heritage. This result can be seen from the response of students stating that the use of Batik Augmented Reality is effective in fostering students' pride in batik as a cultural heritage, although there are still a small number who do not appreciate it. To improve student appreciation overall, it is necessary to take a more in-depth approach so that every student understands and appreciates the cultural value of batik.

The results of this study can show an excellent need for the development process of augmented reality-based batik media (Sungkur, R. K., Panchoo, A., & Bhojroo, N. K. (2016). Augmented Reality-based learning can create creativity in the process of learning images, design, and craft production at vocational schools because teaching materials can be optimally presented from the visual support of augmented reality technology (Li, M., & Liu, L. (2023). Through the use of technology, it can encourage students' agility and creativity in the learning process using technology in the digital era based on augmented reality and is expected to create a fun, interactive and creative learning environment (Asmurti, A., Unde, A. A., & Rahamma, T. (2017). Overall, Augmented Reality can improve the innovative learning process in the digital era.

In the process of improving learning in the digital era, it makes it easier for students to understand the improvement of learning that creates superior creativity. The use of augmented reality has the potential to prove that augmented reality-based batik media is one of the determining factors for the optimal improvement of learning media. The development of this digital era can be explored in the use of augmented reality-based teaching media products for other subjects. The learning process has an important role in students getting a conducive and interactive learning experience so that students will be motivated and the learning atmosphere will be pleasant when learning activities are carried out.

CONCLUSION

The results of the research conducted show that there is a great opportunity in the development of augmented reality batik learning media in the digital era in the learning process, especially in the subject of drawing, design, and craft production at vocational schools. Students can increase creativity in the learning and creation process that supports the use of augmented reality batik media with optimal visual design results. This need is learning augmented reality batik media that can create a learning atmosphere to be active, creative and innovative. In the development of this digital era, augmented reality batik media can increase appreciation for Batik Cultural Heritage and foster love for batik culture.

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