ABDIMAS

Improving the Competence of Arts and Culture Teachers Through a Workshop on Creating Traditional House Media Based on Pop-Up and Augmented Reality

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Abstract

This community service program aims to improve the competency of high school and vocational high school arts and culture teachers in Tasikmalaya Regency and City in developing creative, culture-based learning media. This program was motivated by the declining understanding of students about traditional Indonesian architecture due to the lack of engaging and interactive learning media. The activity was carried out through a hybrid workshop method that combined online and offline sessions. A total of 30 participants from various schools participated in the training focused on creating Pop-Up and Augmented Reality (AR) media to visualize traditional Indonesian houses in arts and culture learning. Data were collected through pre- and post-training questionnaires, observations, and interviews, then analyzed descriptively to measure the increase in participant competency. The results showed that 85% of participants experienced an increased understanding of the concept of Pop-Up and AR media, 90% were able to create Pop-Up media independently, and 95% assessed the workshop material as relevant to their learning needs. The integration of Pop-Up and AR media has proven effective in combining manual creativity and digital literacy, creating more interactive, contextual, and technology-integrated learning. This program demonstrates that collaboration between universities and MGMP can produce sustainable cultural learning innovations. It is recommended that similar training be developed in other regions to strengthen teachers' cultural literacy and digital competencies.

Keywords: Pop-Up Media, Augmented Reality, Arts and Culture Education, Teacher Competence, Cultural Learning

INTRODUCTION

Indonesia boasts a rich cultural diversity, reflected in traditional architectural forms such as the Joglo, Sasak, and Sundanese houses. Each traditional house serves not only as a residence but also contains philosophical, social, and spiritual values that illustrate the relationship between humans and nature and God. However, in the era of globalization, the younger generation's understanding of this cultural heritage is declining . A 2020 survey by the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek) showed that 63% of high school students were unable to name more than two types of traditional houses outside their home region, while research by Ramadhan and Yuniarti (2021) found that only 30% of students in West Java understood the philosophy of Sundanese traditional houses.

This situation is exacerbated by the limited availability of conventional and unengaging arts and culture learning media. Field observations show that teachers often deliver cultural materials textually without the support of interactive visual media, making it difficult for students to understand the forms and meanings of traditional architecture. However, according to Munadi (2013), visual media plays a crucial role in increasing students' motivation and understanding of aesthetic and symbolic material.

As a solution, innovative learning media are needed that can bridge cultural values with digital technology. The Workshop on Creating Traditional House Learning Media through Pop-Up and Augmented Reality (AR) is a strategic effort to improve the competence of arts and culture teachers in

Tasikmalaya Regency and City. Pop-Up media allows for simple and engaging three-dimensional representations of traditional houses, while AR provides an immersive learning experience through digitally interactable 3D models (Azuma, 1997).

The integration of these two media not only provides creative and contextual learning but also fosters students' appreciation for the nation's cultural heritage. Through this training, teachers are expected to develop innovative learning media that are adaptive to technological developments and rooted in local wisdom.

METHOD

The activity was conducted in a hybrid format, consisting of online (June 15, 2024) and offline (June 22, 2024) meetings at SMK Negeri 3 Tasikmalaya. Participants were 30 arts and culture teachers from 20 high schools and vocational schools, selected through coordination with the Tasikmalaya Arts and Culture MGMP.

Implementation methods include:

- Lectures and discussions, discussing the values of traditional houses and introducing Pop Up and AR media.
- Demonstration, showing Pop Up creation techniques and AR usage simulation.
- In hands-on practice, participants create a Pop Up of a traditional house and integrate it with an AR application.
- Discussion of learning strategies, to design the implementation of the media in the classroom.

Evaluation was conducted through pre- and post-training questionnaires, participant observation, work assessments, and interviews. Data were analyzed descriptively using quantitative and qualitative methods.

RESULTS AND DISCUSSION

This community service activity was conducted through a hybrid workshop model combining online and offline sessions. The online session served as an introduction and provided theoretical understanding of traditional Indonesian houses and the potential use of pop-up and augmented reality (AR) media in arts and culture learning.

This activity was attended by 30 arts and culture teachers from various high schools and vocational schools in Tasikmalaya Regency and City. During this session, participants also discussed the challenges facing cultural learning in schools. Most teachers acknowledged that the learning process remains conventional, relying solely on textbooks and simple visual displays, resulting in students' lack of interest in understanding local cultural material.

Figure 1. Introduction to material

The offline session, held at SMK Negeri 3 Tasikmalaya, was the core of this training activity.

Figure 2. Explanation of the Pop Up Traditional House for culture-based learning

The event began with an opening and a group discussion on the importance of preserving cultural heritage through creative learning. Next, the facilitator team demonstrated techniques for creating pop-up traditional houses, from pattern design, cutting, and assembling three-dimensional elements, to coloring and finishing.

Figure 3. Demonstration of making a Pop Up

Following the demonstration session, participants practiced independently creating pop-up traditional houses using the tools and materials provided. This process fostered creativity, collaboration, and visual exploration skills among the participating teachers.

Figure 4. Practice accompanied by the implementation team

After creating the Pop-Up, the activity continued with an introduction session and practice using Augmented Reality (AR) technology.

Figure 5. Explanation of *Augmented Reality*

Participants were introduced to a simple application that can display three-dimensional models of traditional houses and human figures in traditional clothing via a mobile phone camera.
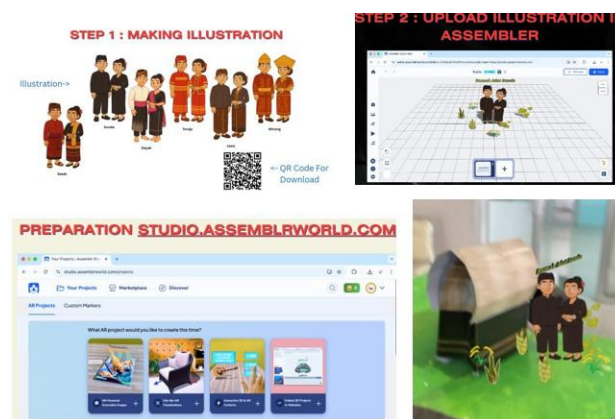

Figure 6. Implementation of *Augmented Reality*

By pointing a camera at the Pop-Up artwork, participants can see digital displays combined with manual media, creating an interactive and engaging learning experience. For most participants, using AR was a new experience that opened up insights into the potential of integrating technology into arts and culture learning.

Evaluation of the activities was carried out quantitatively and qualitatively through pre- and post-training questionnaires, participant observation, and interviews.

Figure 7. Pop Up and AR works resulting from training

The questionnaire results showed that 85% of participants experienced an increased

understanding of the Pop-Up and AR concepts, 90% were able to create Pop-Up media independently, and 95% considered the workshop material relevant to their school's learning needs. Furthermore, observations showed a high level of participation, with most participants actively discussing, asking questions, and collaborating in small groups.

Follow-up interviews revealed that teachers considered Pop-Up media effective for explaining traditional architectural forms in a concrete and engaging manner, while AR was considered capable of increasing the engagement of students who were accustomed to digital media. The integration of these two media combines manual creativity and digital literacy, making the learning process more immersive, contextual, and in line with the character of today's generation. This is in line with the opinion of Munadi (2013) who stated that visual media can increase learning motivation, and Azuma (1997) who emphasized that AR creates an interactive and immersive learning experience.

Some obstacles encountered during the activity included limited time for practical work and differences in digital skills among participants. To address these issues, the implementation team provided digital modules and video tutorials so participants could continue their exploration independently after the activity ended. In addition to improving technical skills, this activity also had social and academic impacts. From a social perspective, the workshop strengthened the collaborative network between the university and the Tasikmalaya Arts and Culture MGMP; while from an academic perspective, this activity served as a means of downstreaming lecturers' research findings into applicable learning media.

Figure 8. Group photo

Overall, the workshop results demonstrated that hands-on training (*learning by doing*) and intensive mentoring were effective in boosting teachers' confidence to innovate in arts and culture learning. The combination of Pop-Up and AR created a learning experience that was not only enjoyable but also meaningful in strengthening understanding and appreciation of local culture. This training model can serve as an example of developing sustainable, technology-based cultural learning and can be replicated in other regions.

CONCLUSION

This PPM workshop succeeded in improving the competence of Arts and Culture teachers in creating creative learning media based on traditional houses.

The integration of Pop-Up media and AR has proven effective in delivering more engaging, interactive, and relevant learning in the digital age. This activity strengthens collaboration between lecturers, MGMPs, and schools in developing arts and culture learning models based on local wisdom.

The program's sustainability is carried out through online mentoring, IPR registration, article publication, and media development plans for traditional houses from various other regions in Indonesia.

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