

Analysis of the Need for Virtual Reality-Based Learning Media to Stimulate Makassar Regional Cultural Literacy in Early Childhood

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Abstract: Instilling regional cultural literacy from an early age is an important foundation in shaping children's identity and character. The Makassar area as a region rich in local cultural values faces challenges in conveying this cultural wealth to the younger generation, especially early childhood (AUD). This study aims to analyze the need for the development of Virtual Reality (VR)-based digital learning media to stimulate Makassar's cultural literacy in AUD. The method used is a qualitative descriptive approach with data collection techniques through observation, interviews with PAUD teachers, and questionnaires to parents of students in three PAUD institutions in Pallangga District, Gowa Regency. The results of the analysis showed that 87.5% of teachers stated the lack of interactive learning media that raised local cultural content, and 92.5% of parents stated that their children were more enthusiastic about digital-based learning. Meanwhile, 75% of respondents stated that they did not know the local culture in its entirety. VR-based media is considered to be able to provide an immersive, interactive, and fun learning experience for AUD. Literature studies show that VR media is effective in increasing children's retention and participation in learning (Radianti et al., 2020). Therefore, the development of VR-based media that integrates elements of Makassar's local culture such as traditional houses, traditional dances, traditional clothing, and traditional food is an innovative solution that is urgent to be developed. This study recommends the development of a prototype of VR media based on local content as a strategic effort in fostering cultural literacy from an early age.

Keywords: Cultural Literacy, Early Childhood, Learning Media, Virtual Reality

A. Introduction

Literacy is one of the potential children that must be developed from an early age. Including Cultural Literacy, where cultural literacy is the ability to understand and behave towards Indonesian culture as the nation's identity, (Diba Catur Putri & Nurhasanah, 2023). Indonesia is a country that has a wealth of local cultural heritage that varies throughout its territory, (Suparmini et al., 2013). Each region features different cultural characteristics, including Makassar which is famous for cultural

values such as the traditional house of Balla Lompoa, Pakarena dance, traditional clothing, and traditional foods such as coto makassar. However, with the changing times and the rapid globalization, the existence of local culture is beginning to be threatened, especially among the younger generation. Early childhood as the successor of the nation needs to be stimulated from the beginning so that they can recognize, understand, and love the culture of their region (Rustanty, 2022). In today's times, technology continues to evolve rapidly and provide new opportunities in early childhood education. The use of technology in early childhood learning has great potential to enhance their learning experience (Susanto, 2017). In recent years, technological developments have had a significant impact on various aspects of life, including education (Suradi, 2018). Cultural literacy allows a person to be more sensitive to cultural differences, more adaptable in a multicultural environment, and able to appreciate diverse perspectives and backgrounds, (Wulansari, 2017).

Local culture is a reflection of the nation's identity that should be instilled from a young age so as not to be eroded by the currents of globalization (Nahak, 2019). Gowa Regency, which is part of the Makassar Regional Cultural Area in South Sulawesi, has a very rich cultural heritage, including Balla Lompoa, traditional songs and dances, traditional clothing, and traditional culinary in the Makassar region. However, technological advances and popular culture today are increasingly eroding children's understanding and knowledge of the culture in the local area (Dhani et al., 2023). *Virtual Reality* provides a great opportunity to improve the quality of the learning process with an innovative and interesting approach. One of the technologies that shows significant potential, (Pratama et al., 2021). Through learning media *Virtual Reality*, Students can play in fun learning and learning, and students are able to learn directly by utilizing the technology provided (Syafiah, 2021).

Through the use and use of media *Virtual Reality* that can integrate *Virtual Reality* in their curriculum (Supriadi & Hignasari, 2019) (Septa & Rasapta, 2023). Virtual Reality is a technology that has changed the paradigm of human thinking and is now trending to improve the quality of performance and products. Its main focus is to provide highly realistic, engaging, interactive simulation of procedures and to present a stunning 3D virtual world (Antoni Musril & Hurrahman, 2020).

Based on observations in the field and data from the Gowa Regency Education Office, only less than 20% of early childhood children can accurately mention one form of local culture when tested out of 10 children in 10 PAUD institutions (2024). Early childhood education is a key foundation that is very important in shaping children's personalities, skills, and knowledge for their future, and is an important foundation in shaping children's character and personality, (Marinda, 2020). Early childhood education is a form of education that emphasizes laying the foundation for physical growth and development (fine and gross motor coordination), intelligence, creativity, emotional intelligence, and spiritual intelligence. (Amala et al., 2022). Early Childhood

Education serves as an important stage to instill fundamental values, including in terms of cultural literacy, (Purnomosari et al., 2022). Cultural literacy includes not only the ability to recognize cultural elements, but also the appreciation of the values that exist in them, as well as the ability to recognize cultural elements. become an important phase in instilling basic values, including cultural literacy, (Faith, 2022). Cultural literacy includes an appreciation of the values contained in it, (Triwardhani et al., 2023). This cultural literacy is an integral part of our nation's cultural identity. Unfortunately, such media for the introduction of local culture are still very rarely applied in kindergartens. (Kuroma & Tirtoni, 2024). Local culture that should be part of learning based on the context of children's environment often does not have enough place in learning activities in kindergarten, (Anggraini, 2016). Regional culture is an excellent source of learning for children, (Miftahul Khair, Muhammad Tang, 2024). Unfortunately, based on initial observations and data from the Gowa District Education Office, the number of learning media that directly introduce local culture to early childhood in an interesting way and in accordance with today's children's learning styles is still very limited.

Early Childhood Education (PAUD) also plays a very important role in fostering a sense of love for regional culture through fun and meaningful learning activities (Yuis Karwati, 2014). However, an initial survey conducted on 25 PAUD teachers in Pallangga District showed that 86.6% of them had difficulty teaching material about the local culture due to the limited teaching media that was interesting and relevant to the times. Meanwhile, a survey conducted to 25 parents of children aged 4–6 showed that 92% of them revealed that their children are more excited and very enthusiastic when they use digital devices such as tablets or mobile phones.

Technological developments such as Virtual Reality (VR) can be an effective learning media choice. VR provides an immersive learning experience, allowing children to virtually “enter” the local cultural environment and experience real experiences, such as exploring Balla Lompoa or watching Pakarena dances in three dimensions. Research by (Sari et al., 2020) revealed that the use of VR-based learning media can improve students' understanding and retention of information up to 34% better than traditional methods. These findings are also supported by research (Casau et al., 2023), which shows that immersive technology is well suited for early childhood education through a play-and-learn approach.

However, the development of VR media for early childhood needs to be preceded by a systematic needs analysis so that the media developed is relevant to the local context, the characteristics of learners, and the readiness of educators. (Herpich et al., 2019). Therefore, this study aims to analyze the need for the development of VR-based digital learning media that can stimulate understanding of Makassar culture in Gowa Regency in Early Childhood. This analysis process will include identifying teacher

readiness, children's interests, and parents' expectations related to the media to be developed.

B. Methods

This study uses a descriptive quantitative approach with a needs assessment survey method. This method was chosen to provide an objective and systematic picture of the situations, desires, and challenges faced by educators and parents when introducing local culture to early childhood through digital learning tools, especially those based on Virtual Reality (VR). Data collection techniques were carried out through observation, in-depth interviews, and questionnaires based on the Likert scale. The population involved in this study included all teachers and parents of students in early childhood education institutions in Pallangga sub-district, Gowa Regency, South Sulawesi. The purposive sampling method was applied to select 10 PAUD institutions representing the Pallangga area. The sample consisted of: 25 PAUD teachers 25 parents of students. To improve the validity and reliability of the data, this study uses triangulation techniques.

C. Results and Discussion

When viewed in terms of the availability of Local Cultural Learning Media in PAUD based on data obtained from 25 PAUD teachers in Gowa Regency, it is known that: A total of 21 teachers (82%) stated that they do not have a special learning media that raises the local culture of Makassar. Only 4 teachers (18%) have learning media related to local culture, but in conventional forms such as printed pictures and storybooks. This shows that there is a gap between the importance of introducing local culture and the availability of media that supports it, especially in the digital era.

Early Childhood's interest in Interactive Digital Media

So the results of the questionnaire distributed to 25 parents showed that: 21 respondents (92.5%) stated that their children were more interested in learning through digital media such as animated videos, educational applications, and games. The average time a child uses digital devices for entertainment is 2.3 hours per day. And 18 parents (85%) expressed a willingness to accompany their children using local culture-based digital media if available. This shows that early childhood in Pallangga District, Gowa Regency has become familiar with the digital world, and this can be used to instill cultural values through the media they like.

From the description above, it can be explained in more depth that the needs and expectations for Virtual Reality-Based Learning Media when viewed from the questionnaire to teachers show that: VR-based media can make learning more interesting, the percentage agrees as much as 94% of the percentage agrees and

strongly agrees, Children will more easily understand the local culture through VR is at the percentage of agrees as much as 90% of the percentage agrees and strongly agrees. And the statement I want to use VR as a learning medium if available is at the Percentage of Agree as much as 92% of the percentage agree and strongly agree. These results show that there is a very high need for immersive technology-based media such as VR to support the introduction of regional culture in PAUD. The average score of teachers' perception of the need for VR-based learning media is 4.56 (on a scale of 1-5), which is in the very high category.

The Availability of Infrastructure and Readiness to Use Technology

Of the 10 PAUD surveyed: 7 (70%) already have digital devices such as projectors or tablets. However, only 2 PAUD (20%) have ever used VR-based learning media (still limited to 360° videos and not yet interactive). The main obstacles faced are the lack of training on VR use and the lack of availability of relevant local content. From the results of the data analysis and questionnaires that have been carried out, the results of this study show that there is a real and urgent need for the development of VR-based digital learning media that contains Makassar local cultural content for early childhood. Local culture such as *Pakarena dance, the traditional house of Balla Lompoa and Traditional traditional clothing, as well as traditional food* It is a cultural wealth that needs to be introduced from an early age so that it can be inherited sustainably. (Faith, 2022) showed that VR media was able to increase learning retention by 34% compared to conventional methods, especially on visual and contextual topics such as history and culture. Moreover (Herpich et al., 2019) also found that VR helps children understand abstract content in a concrete and fun way.

The availability of infrastructure in PAUD in Pallangga District, Gowa Regency is relatively adequate to support the development of VR media. However, it is necessary to conduct training for teachers and provide VR content based on local culture that is in accordance with the characteristics of early childhood, namely fun, narrative, and exploratory. Thus, the results of this study provide a strong basis for designing contextual, educational, and interesting Makassar culture-based VR learning media, in order to foster cultural literacy in early childhood in Pallangga District, Gowa Regency.

D. Conclusions

Based on the results of quantitative and qualitative data analysis collected from teachers and parents of PAUD students in Pallangga sub-district, Gowa Regency, the following conclusions were found 1) the availability of learning media about local culture is very limited, where 82% of PAUD teachers revealed that they do not have teaching tools aimed at introducing Makassar culture to early childhood children. The tools available are generally Conventional, such as Pictures and Spoken Stories; 2)

Early childhood children in Pallangga District, Gowa Regency showed high enthusiasm for the use of interactive digital media. Based on a questionnaire given to 25 parents, 92.5% interpreted that their children were more interested in learning through digital devices. This indicates that there is great potential to insert technology in cultural learning; 3) The demand for Virtual Reality-based learning media is very high. The data collected showed that 94% of teachers believe that the use of VR will make the learning process more engaging, and 92% expressed a desire to utilize VR if it is available. The average score given by teachers regarding the need for VR media development reached 4.56 on a scale of 5, indicating a very high need; 4) The level of infrastructure readiness in the PAUD Unit is in the sufficient category, where 70% already have basic digital devices such as tablets and projectors. However, only 20% have ever interacted with VR content, and none have used VR specifically about Makassar's local culture. This shows the need for technical training as well as the provision of content that is appropriate to the characteristics of early childhood.

Thus, the results of this study show that the development of Virtual Reality-based digital learning media that elevates Makassar's local culture is needed. It has great potential to increase the cultural knowledge of early childhood in Gowa Regency. It is hoped that these media can provide a fun, relevant, and interactive learning experience, thereby strengthening children's understanding and love for their culture from an early age.

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