

Child-Friendly Digital Visualization as an Effort to Enhance Multicultural Values in Banten State Museum

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Abstract

Creativity and adaptation are the keys to the development of museums in Indonesia. The era of digitalization has brought many changes in various industries, including the museum industry. For young children, digitalization in museums can provide a more interactive and interesting learning experience. Digital visualization in early childhood has an important urgency in supporting their development. Modernization of museums for early childhood involves the use of technology and design approaches that appeal to children. It is important to ensure that this modernization retains the essence of education and hands-on experience in dealing with real artefacts and objects. In Indonesia, several museums have used digital visualization in presenting their collections, there are 5 museums that have implemented visual technology, including the MACAN Museum (Museum of Modern and Contemporary Art in Nusantara) - Jakarta, National Museum - Jakarta, Angkut Museum - Batu, Malang, the Geological Museum – Bandung and the Puppet Museum – Jakarta. This study aims to determine the implementation of digital visualization in the form of a hologram at the Banten State Museum in increasing child-friendly multicultural values. Through this system, visitors can view and listen to various information related to the history of Banten. The benefits of media through visualization are useful in attracting attention and fostering motivation to learn in alpha generation children who are sensitive to visual stimulation. So that researchers are interested in examining the extent to which the use of child-friendly digital visualization in increasing multicultural values. This study uses a qualitative research method with a case study approach. Qualitative research begins by exploring a particular area, collecting data, generating ideas and hypotheses from the participant data of teachers, users and museum employees. The results obtained are an overview of the implementation of digital visualization contained in the Banten State Museum in the form of a hologram. With digital visualization, children will be more interested in learning Banten historical values displayed in the Museum.

Keywords: visualization, technology, early childhood, museums

A. INTRODUCTION

Museum developments that involve creativity and adaptation need to be considered in an era that is dominated by technology. A digital visualization of an early childhood museum can be designed using appropriate technology and digital media. Early childhood digital museums must have interactive and educational elements that allow children to learn while playing. Digital media is an important learning component. The current education process utilizes digital technology which has been widely developed in the world of education, so technology is used for the benefit of improving services and quality of education, especially for early childhood. The golden age aged 0-6 years (golden age) is an

important period to absorb maximum learning so that the knowledge and education that children receive during this period will greatly influence their future.

A learning process from an early age, it is hoped that children are not only ready to enter further levels of education, but more importantly so that children receive physical-motor, cognitive, social and emotional stimulation according to their age level. Muthmainanah (2013: 372) believes that learning activities are basically a communication process. The communication process will run well if the learning messages conveyed by the teacher can be well received by the children, so educators need media as a communication tool.

Muthmainanah (2013: 372) believes that learning activities are basically a communication process. The communication process will run well if the learning messages conveyed by the teacher can be well received by the children, so educators need media as a communication tool. The multicultural education process for early childhood should be delivered through a learning process that pays attention to growth and development, early childhood has an active tendency to express innocent ideas, such as playing games, singing, listening to stories and expressing what they want (Hasanah, 2018). Activities to internalize multicultural education for students include introducing culture, introducing language, culture, art, field trips (visiting museums) and traditional games. Another way is to set an example for children by giving examples of good behavior to imitate (Syamsudin, 2012). Museums have an important role in the field of education in terms of history learning which can be implemented at various levels of education (Asmara, 2019). Museums also function as tourism objects that provide a sense of fun but still relate to lifelong knowledge factors.

Indonesia is a pluralistic country consisting of various ethnicities, religions, languages and races, but the reality is that people's awareness and maturity to accept differences is still very lacking. Different perspectives give rise to conflict because one another uses and imposes his own reasons to be accepted by others, as a result a conflict arises in society. Instilling the values of multiculturalism in early childhood is considered very important. Multiculturalism is an understanding that provides insight into understanding that humans have different attitudes and perspectives.

Understanding multiculturalism will foster nationalism, namely nationalism, which means someone who has love for their homeland and love for their own nation. Indonesian nationalism is an understanding of love for the Indonesian nation by placing unity and oneness, as well as the interests and safety of the nation and state above personal and group interests while still respecting the equality of honor and dignity of every nation, recognizing and respecting the sovereignty of every nation and establishing friendly relations and cooperation with all nations (Junanto, Civic Education, 2013).

Multicultural education in early childhood is essential to broaden their understanding of a diverse world and promote tolerance, appreciation, and understanding of differences in culture, language, and ethnic background. Introducing multiculturalism to children must be in accordance with the characteristics of the child's age. Early childhood has the characteristics of being easily bored and easily not focused on something, for this reason we as teachers must prepare strategies to support children's development.

The reason it is important to introduce museums to children from an early age is to foster interest and appreciation in art and culture: By introducing museums to young children, they will get used to seeing works of art and cultural artifacts from various places and times. This can foster interest and appreciation in art and culture from an early age, museums can be a source of inspiration for children to be creative and express themselves

through art. Seeing unique works of art and cultural artifacts can spark children's imagination and encourage creativity. Visiting museums can help the cognitive development of young children. They will be exposed to various types of information and will learn to process and organize that information.

Museum child-friendly digital visualization is a way to provide fun and interactive learning experiences for children in museums. In the current digital era, children are capable and accustomed to digital media. Digital media can make it easier for children to access learning materials (Herliani, Maulana, & Wardana, 2024). By using child-friendly digital visualization, museums can provide interactive and fun learning experiences for children, so they can learn more effectively and impressively (Andiyani, Maulana, & Wardana, 2025). A digital museum visualization can be designed using appropriate and child-friendly technology and digital media, so that the museum can give a pleasant impression and provide an enjoyable learning experience. Many young children may not be interested in museums because they do not yet have sufficient understanding about museums and the content in them. Young children tend to be more interested in things they can touch and play with. Therefore, museums can create more interactive experiences by adding elements such as games, creative activities and audio-visual devices.

Banten presents historical diversity that can be enjoyed by the community. One of the places you can visit to find out more about Banten is the Banten State Museum. This museum is located on Jalan Brigjen KH Sameun No. 5, Serang City. This museum, which is located right in the center of Banten city, is quite strategic and easy for visitors to reach to deepen information about history.

The Banten Provincial State Museum is a public museum which initially occupied the Banten Cultural Office in the Central Government Area of Banten Province in 2013. The location of the museum was then moved to the city center, namely to the old Governor's Hall Building in Serang City. This move was carried out due to policy considerations, the location is in the center of the city so that access is easy for museum visitors and the building is a cultural heritage and has a historical background. This museum was inaugurated by Banten Governor Rano Karno S. IP on October 29 2015 based on Banten Governor Decree Number 032/Kep.420-Huk/2015 concerning the use of the Banten Governor's Hall building as the Banten Province State Museum. The Banten State Museum utilizes digital technology in the form of holograms which can display various historical information audio-visually. Through this system, visitors are more free to learn things related to history by seeing and listening to various information.

Based on the background explained above, researchers are interested in conducting research with the title Child-Friendly Digital Visualization as an Effort to Increase Multicultural Values at the Banten State Museum. This research aims to determine the implementation of child-friendly digital visualization, especially early childhood. It is important for this research to illustrate the condition that museums belong to all generations, lest the museum ecosystem itself stops at one generation, creating a huge gap between one generation and the next.

Some previous research that is relevant to our article with the theme of digital visualization includes, "The Impact of Digital Visualizations in Early Childhood Museums" by Cassidy, Fazio, and Rappolt-Schlichtmann (2019) :. "Digital Technology in Early Childhood Museums: A Review of Research and Implications for Practice" by Schachter (2016) :. In this research, we want to find out more about the implementation of visual

digitalization in the Banten museum in increasing multicultural values in children, especially early childhood .

This research is expected to focus on the extent to which digital visualization can increase children's involvement and motivation in visiting museums and interacting with the content presented. This can include the influence of technology in retaining children's attention, increasing curiosity, or motivating them to actively engage in exploration and learning and contribute to maximizing the function of museums as institutions that protect, develop, utilize collections and communicate them to the public.

B. RESEARCH METHODS

Research uses a qualitative method which is to describe and analyze a phenomenon or case. Qualitative descriptive research is used for research that fully describes reality and social phenomena which are presented through comprehensive characteristics, characteristics and models (Thabroni, 2022). The problems that researchers will study in their research are social and dynamic problems. The descriptive research focuses on solving a problem that exists today and in this research we will describe child-friendly digital visualization as an effort to increase multicultural values in Banten state museums.

The subjects of this research are the Banten museum staff in Serang city , Banten Province. Research subjects were determined using interview techniques and observation techniques. The number of research subjects consisted of 1 Banten museum staff. Banten museum staff interviews were conducted to find out information regarding Child-Friendly Digital Visualization as an Effort to Increase Multicultural Values. The subjects of this research are the Banten museum staff in Serang city , Banten Province. Research subjects were determined using interview techniques and observation techniques. The number of research subjects consisted of 1 Banten museum staff. Banten museum staff interviews were conducted to seek information regarding Child-Friendly Digital Visualization as an Effort to Increase Multicultural Values.

The data analysis process is carried out through data reduction, which determines what is considered as the main thing, and can focus on the most important things . Data reduction aims to make it easier for researchers to collect further data and provide a clear picture. The next stage of data presentation is carried out by arranging the data and compiling relationship patterns. So it can make it easier for researchers to plan the next stage, then the verification stage or drawing conclusions obtained from data obtained from the field.

C. RESULTS AND DISCUSSION

This preliminary study in research and development, as explained in the Methodology, is that this research was carried out using interview techniques. When conducting observations, the researcher has carried out an analysis of the situation. During the previous interview, the researcher has prepared an interview guide and carried out an analysis of the interviewee's questions and answers. Based on the data obtained in the research, the results of descriptive analysis through interviews obtained from the Banten Museum, Serang City, findings were found by referring to various literature that helped in this research.

Museums are an important place in early childhood education . An interesting and interactive museum can provide a fun learning experience for children. One innovation that is increasingly popular in the world of museums is the use of digital visualization. This article

will discuss the results and discussion regarding the use of digital visualization in museums for early childhood. The International Council of Museums (ICOM) defines a museum as a non-profit institution that serves the wider community. This includes conducting research, collecting and exhibiting historical relics that are open to the public.

The Banten State Museum was inaugurated on October 29 2015 with the status of a Cultural Heritage Building. The Banten Provincial State Museum is a public museum which initially occupied the Banten Cultural Office in the Central Government Area of Banten Province in 2013. The location of the museum was then moved to the city center , namely to the old Governor's Hall Building in Serang City. This move was carried out due to policy considerations, the location is in the center of the city so that access is easy for museum visitors and the building is a cultural heritage heritage and has a historical background. This museum was inaugurated by Banten Governor Rano Karno S.IP on October 29 2015 based on Banten Governor Decree Number 032/Kep.420-Huk/2015 concerning the use of the Banten Governor's Hall building as the Banten Province State Museum. The Banten State Museum is an important place in preserving and promoting the history and culture of Banten. Through its collections, this museum provides visitors with the opportunity to understand and appreciate the rich culture and history of the area.

The Banten State Museum utilizes digital technology in the form of holograms which can display various historical information audio-visually. Through this system, visitors are more free to learn about things related to history by seeing and listening to various information.

1. Child Friendly Digital Visualization

Digital visualization in museums can create interesting interactions between children and the exhibitions inside. By using technology such as touch screens or interactive projections, children can interact directly with exhibition content. Digital visualization can help create child-centered learning experiences. By utilizing technology, exhibition content can be tailored to children's level of understanding and interest.

Digital visualization in museums is the use of digital technology to create interactive and immersive experiences for visitors in exploring knowledge and understanding the information presented in the museum. This digital visualization can take various forms, such as holographic projection, 3D animation, projection mapping, virtual reality (VR) and augmented reality (AR) content, as well as the use of special applications and software.

Using digital visualization, museums can enhance the visitor experience in a more interesting, educational and interactive way . It also allows museums to reach a wider audience and create a stronger emotional bond between visitors and the materials on display. This is in line with the presentation in an interview by Iffat Fatmawati (2023) who said that "with digital visualization in the museum, it makes the audience interested in visiting the museum at various levels from kindergarten to student level). Digital visualization can encourage visitor engagement and participation in learning and exploration. He also said that it was not only Banten residents who visited the museum, but also foreign nationals such as South Korea, India, Bangladesh, Singapore and also England. We can know that with widespread visits to the Banten museum, more and more people, both at home and abroad, can learn about the history of Banten and of course this can increase multicultural values.

Through interaction with digital content, visitors can choose the story path they want to follow, find additional information, or share their opinions and thoughts with other visitors via the digital platforms provided. By using innovative digital visualization, museums can increase the attractiveness and diversity of visitor experiences. This not only keeps visitors

more engaged and entertained, but also enhances their understanding of the exhibition content and leaves a strong and unforgettable impression. Tamara Munzner (2014): Tamara Munzner, a scientific visualization expert, defines digital visualization as a graphic representation that aims to gain insight and understanding of data. He emphasizes the importance of good visual design, intuitive interactions, and appropriate modeling in achieving this goal.

The years related to digital visualization are not limited to one particular year, because this field continues to develop along with technological developments. However, some important developments in digital visualization include increases in computing speed and capacity, advances in visual display technology, and the development of software and algorithms that support more complex and interactive

Child-friendly digital visualization in museums can create interesting and educational experiences for children. The Banten museum can be said to be child-friendly because based on the information we obtained from sources who said that all media equipment used in the museum had previously been tested so that it was deemed safe and would not harm anyone, including children who would later visit the museum. With this, museums that use digital visualization can be said to be child-friendly.

When designing digital visualizations that are safe for children, there are several things to consider, namely:

- a. Age- appropriate content : Digital visualization content presented is appropriate for children's ages. This includes the choice of themes, the language used, and the suitability of the content to the experiences and levels of understanding of children at different ages.
- b. Age- appropriate content : Digital visualization content presented is appropriate for children's ages. This includes the choice of themes, the language used, and the suitability of the content to the experiences and levels of understanding of children at different ages.
- c. Age- appropriate content : Ensure that the digital visualization content presented is age- appropriate for children. This includes the choice of themes, the language used, and the suitability of the content to the experiences and levels of understanding of children at different ages.
- d. Age- appropriate content : Digital visualization content presented is appropriate for children's ages. This includes the choice of themes, the language used, and the suitability of the content to the experiences and levels of understanding of children at different ages.

It is important to create a safe and supportive environment for children in their use of digital visualization. By paying attention to the guidelines above, we can provide digital visualizations that facilitate learning, creativity and positive interactions for children.

2. Digital visualization technology at the Banten State Museum

Before being used as a museum, this building used to be the office of the Governor of Banten or often referred to as the Banten Governor's Hall. There was a transfer of the location of the museum from the Banten Province Culture and Tourism Office on October 29 2015 to the current building.

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location of the museum from the Banten Province Culture and Tourism Office on October 29 2015 to the current building.

When we enter the front room, we will see equipment that uses digital, there are photo spots with tourist backgrounds in Banten. In the middle room there is a large gray box containing a digital map of the distribution of historical and cultural tourism in Banten. The map is equipped with information and uses a touchscreen display to select the location you want to know.

The resource person said that one of the technologies in the Banten museum was "Even in the Banten museum there is Virtual Assistance which will later explain in detail about the rare things exhibited in the Banten museum" (Iffat Fatmawati, 2023). Virtual assistance is a technology that uses artificial intelligence to provide assistance and information to users through digital interactions. Virtual assistants such as Siri, Google Assistant, and Alexa are examples of popular virtual assistance applications.

Virtual assistants can be used to help users with a variety of everyday tasks, such as searching for information, scheduling meetings, sending messages, playing music, controlling smart home devices, and more. They can be accessed via mobile devices, smart speakers, or even via computers using certain virtual assistants.

Virtual assistance technology is based on natural language processing and artificial intelligence. When a user interacts with a virtual assistant, the device analyzes the user's commands or questions and provides appropriate responses. Virtual assistants can understand context, answer questions, execute commands, and provide relevant information.

Virtual assistants can also learn from experience and interactions with users. They can remember user preferences, recognize behavioral patterns, and provide better recommendations over time. The application of virtual assistance has expanded in various fields, including the business, health, banking, e-commerce and other sectors. They can help increase efficiency, provide a better user experience, and reduce human workload in routine tasks.

3. Banten State Museum Strategy to Attract Children's Attention

The strategy used to attract visitors' attention, the Banten State Museum implements various interesting and innovative strategies. In the interview, the source said that "the strategy we are implementing in highlighting the Banten State Museum is to provide interesting information through our Instagram platform, which contains events or updates so that it can attract visitors from preschool to tertiary level to come to the Banten Museum. "In particular, our children usually give rewards during question and answer sessions after showing animated films, so that children can understand what has been presented" (Iffat Fatmawati, 2023).

According to Jauch and Gleuck (Amirullah , 2015: 5), strategy is a unified, comprehensive and integrated plan that links the company's strategic advantages with environmental challenges and which is designed to ensure that the company's main goals can be achieved through proper implementation by the company. Strategy is understood not only as various ways to achieve goals, but also includes determining the various goals themselves.

The strategy used by the Banten state museum to attract children's attention is as follows:

- a. **Interactive Exhibitions:** The museum presents interactive exhibitions, in which visitors can participate actively. For example, visitors can touch, play with, or try

- replicas of historical artifacts, play games related to Banten history, or participate in creative activities such as making traditional crafts. Direct interaction with historical and cultural objects will increase visitor interest and understanding.
- b. Educational Programs and Workshops: The museum organizes educational programs and workshops that suit the interests and needs of visitors. For example, organizing guided tours to explain in depth about the museum collection, holding workshops on traditional Banten art.
 - c. Technology and Interactive Media: Using technology and interactive media in museum exhibitions can attract the interest of visitors, especially the younger generation. For example, the use of augmented reality (AR) or virtual reality (VR) to present immersive content, the use of interactive touch screens to explore further information about an artifact or historical figure, or the creation of a museum mobile application that allows visitors to access additional information or virtual tours .
 - d. Sensory Experience: Creating a sensory experience in a museum can keep visitors emotionally engaged. For example, creating an atmosphere with the right lighting, using music or sound that matches the theme of the exhibition, or using aromas that are reminiscent of a particular time or place in Banten's history. These things can create a rich and engaging atmosphere for visitors.

Apart from the strategies above, the Banten museum optimizes effective marketing, including promotion via social media, collaboration with schools or educational institutions, as well as keeping museum facilities well maintained, clean and comfortable for visitors. Based on data from visitors to the Banten State Museum from January to May 2023, it was recorded that 5000 visitors from various circles attended to enjoy the history of Banten. This cannot be separated from the optimal strategy carried out by the Banten State Museum in effectively informing the public so that people are interested in visiting the museum. offer.

4. Efforts to Increase Multicultural Values at the Banten State Museum

Multiculturalism is one of the main choices for building national unity and integrity. This happens because reality shows that the Indonesian nation is a nation that has many cultures. A nation that is culturally diverse requires people to be able to live in harmony close to each other (Machmud & Alim, 2018; Minasari et al., 2021). In principle, multiculturalism will realize co-existence which is initiated by a readiness to appreciate and respect other cultures (Deiniatur, 2017).

This is in line with the resource person who said that increasing multiculturalism is very important to implement from an early age , through this museum parents and teachers can provide a platform for children to explore cultural diversity so that children can appreciate and implement harmonious living from an early age. Early childhood has diverse characteristics, of course when presenting historical material they must have a special learning strategy.

The Banten State Museum provides a film screening room, where there are screens and other film equipment to support film screenings. The source said that film screenings are adjusted to the age of visitors. When young children visit, the Banten Museum adjusts by showing animated films that tell stories about Banten history. Theodore Bramelt explained that the philosophy of multicultural values education, namely education that can be a place or intermediary in providing the instillation of multicultural values within students. Guiding also means providing input to students in matters related to values, or

providing an overview of values into the students' souls (Zaim Elmubarak, 2009). The urgency of internalizing multicultural values is based on the view that a person's character is also shaped by the values they believe in (Maharani, 2019; Nurwita, 2019).

So far, children are very interested in enjoying the technology provided by the Banten Museum, children can learn happily accompanied by advances in technology, besides children being able to increase multicultural values, children can also adapt to current technological advances. Further research within the scope of multicultural education can be directed at studying interactive digital media in museums in Indonesia, because as time goes by, technology will develop more rapidly, it is certain that there will be technological updates in the museum industry.

D. CONCLUSION

Digital visualization in museums can play an important role in increasing multicultural values in children. Museum child-friendly digital visualization is a way to provide fun and interactive learning experiences for children in museums. In the current digital era, children are capable and accustomed to digital media. Digital media can make it easier for children to access learning materials. By using child-friendly digital visualization, museums can provide interactive and fun learning experiences for children, so they can learn more effectively and impressively.

A digital visualization designed using appropriate and child-friendly technology and digital media can give a pleasant impression and provide an enjoyable learning experience. By utilizing digital visualization, museums can create experiences that allow children to see the world from someone else's perspective. Digital visualization in museums can serve as a starting point for dialogue and conversation about multicultural issues. For example, through engaging visual presentations, children can learn about cultural, religious or linguistic differences and stimulate their critical thinking and reflection.

By utilizing digital visualization in museums, we can help children develop important multicultural values, such as respect for diversity, empathy, dialogue and global understanding. This is important for building an inclusive, tolerant and respectful society in an increasingly connected global context.

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