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High School Student's Perceptions of Augmented Reality Technology in Animaxtion Art Exhibition

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ABSTRACT

This study investigates high school students' perceptions of Augmented Reality (AR) technology in the *Animaxtion* art exhibition organized by Multimedia Nusantara Polytechnic. AR has transformed animated art exhibitions by offering interactive and immersive experiences, yet its acceptance among young visitors remains underexplored. Employing a quantitative approach based on the Technology Acceptance Model (TAM), data were collected through surveys distributed to exhibition visitors. The study examined perceived usefulness and ease of use as factors influencing visitors' intention to engage with AR-based artworks. Descriptive and regression analyses revealed that both factors significantly affected visitor acceptance, with most respondents perceiving AR as enjoyable and helpful for appreciating animation. However, several participants reported hesitation due to limited device compatibility and inconsistent performance. The findings highlight AR's potential as an engaging educational and artistic medium while emphasizing the need for improved implementation strategies. This research contributes insights into design and technology integration within interactive exhibitions.

Keywords: augmented reality, animation, exhibition design, user perception, technology acceptance

INTRODUCTION

As technology develops, communication media are experiencing significant and rapid advancements. One area that has greatly benefited from these technological innovations in the art sector. Technology is progressing quickly and becoming more efficient, making art more interactive and immersive. Technology is a practical discipline; instruction and tools are designed to be as convenient, clear, and possibly accessible. In this time, the information technologies provide real-

time data visualization, effective machine monitoring (Himavamshi et al., 2024). Technology can help people appreciate art; however, not all individuals are able to fully comprehend or visualize works of art, especially in this context using art exhibitions. Internet, multimedia and animation media are important channels for information dissemination, and the wide application of new technologies also adds a touch of new green to the dissemination of art, which greatly enriches the traditional forms of communication and provides a good development space for the progress of new media art (Li, 2023). Therefore, researchers have the initiative to create a form of augmented reality which will help people familiarize themselves with the exhibition's artwork and to enhance their level of overall experience.

Animation art exhibitions are a type of art exhibition that is becoming increasingly popular in the modern era. Animation not only pushes the boundaries of visual arts creativity but also integrates advanced technology to provide viewers with an immersive experience. Immersive increase the user's workload instead of eliminating it, and the designer have to offer instric reward and joy in overcoming the challengers provides. Interaction is a desirable and somewhat expensive aspect, as new technologies are constantly evolving and require time and resources to be implemented in new media. One technology that is increasingly being introduced and used in animated art exhibitions is augmented reality (AR). Augmented reality (AR) are extremely powerful tools with the capability to transform the way learners learn and interact with knowledge (Thangavel et al., 2025). Augmented Reality allows users to view the real world alongside virtual objects, creating the illusion that digital and physical elements coexist in the same space.

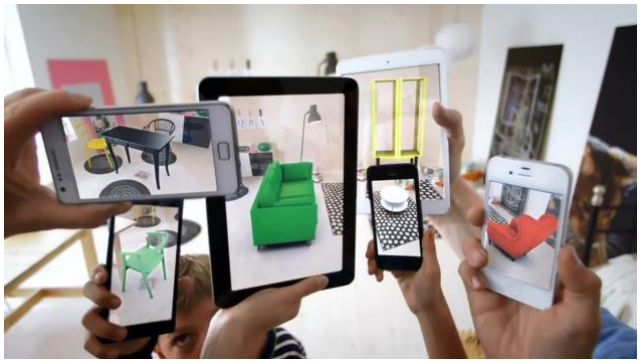

Figure 1. Augmented reality
source: Rock Paper Reality (2025)

Augmented reality in animation art has undergone significant development in recent years. Artists and art curators are increasingly incorporating Augmented Reality into their exhibitions to push the boundaries of traditional artwork. This technology not only adds a visual dimension to the art but also opens up new possibilities in terms of storytelling, spatial exploration, and user interaction with the artwork. Display technology has been used for quite a long time for creating and displaying virtual images of an object. Whatever we see or experience in augmented reality is the work of the display (Mujumdar, 2022). Augmented Reality allows visitors to engage directly with the artwork, adding additional content such as images, historical content, and related information. This also allows for more flexible access and increases the overall scope and impact of your work. When implemented effectively, augmented reality can immerse users in a fully constructed, synthetic world (Pratama & Rosita, 2023).

Researchers are applying augmented reality to an art exhibition called Animaxtion. Animaxtion is an animation exhibition organized by Multimedia Nusantara Polytechnic and held every January. Animaxtion serves as a forum for Animation Students at Multimedia Nusantara Polytechnic to show their work and creation when studying at the Polytechnic. The researchers are utilizing the augmented reality technology for the Animaxtion exhibition in order to understand how the visitor who comes to the Animaxtion exhibition responds to this Augmented Reality. The use of Augmented Reality in animation exhibitions has the potential to reach a wider audience and foster greater engagement. With the interactions offered, it is expected to increase the presence and diversity of the audience present, which ultimately improves the overall experience and impact of the exhibition (Nazhar & Rosid, 2020). The researchers hope that this approach can contribute to a deeper understanding and foster greater interest in animation among both students and the community. This is beneficial for students who may not have extensive resources and facilities regarding animation and its development (Rashid et al., 2024).

Figure 2. Display of the augmented reality application designed by the author
source: author's documentation (2024)

In the development process, the researcher created a costume Augmented Reality application for this exhibition. This application was developed using Unity 3D and supported by Vuvoria SDK. The researcher was assisted by several students from Multimedia Nusantara Polytechnic in designing and modelling the character. Once everything was completed, the researcher finalized the application with the hope that it would be enjoyable and accessible to all visitor groups. The researcher completed this application within two months, so there was a period of Beta Testing and application development for bugs that appeared, which made AR ready enough to be displayed in the exhibition. The way it works is that the augmented reality application displays the 3D character models, making them appear alive alongside the physical space. Because compared to just 3D modeling, 3D scanning methods using AR are much more effective and efficient for producing highly detailed and realistic depictions (Syaputra et.al, 2023). With informative, interactive, educational, and representative delivery through AR (Augmented Reality) technology media, it is hoped that it can help visitors understand the exhibition work (Ainun & Primayudha, 2023). This is precisely what the development of this AR application aims to achieve with bringing the characters to life and adding depth to their presentation in the real world. It facilitates the magic manifestation of a virtual object displayed in real time in a real-world space that

can engage a user in the learning process like no other medium has been able to before. AR is an emerging technology with high potential for learning, teaching, and creative training (Iqbal et al., 2021).

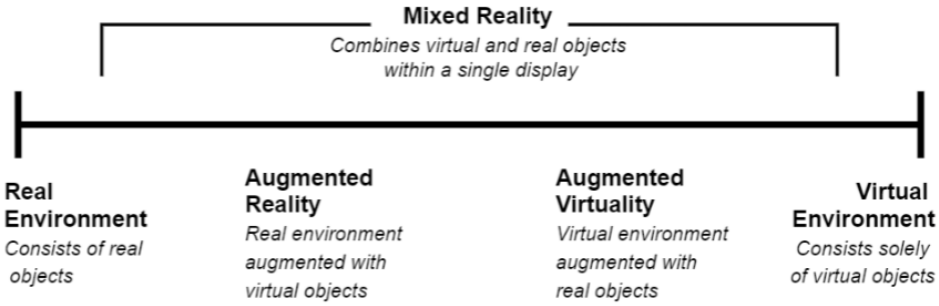

Figure 3. Mixed reality
source: Iqbal, Muhammad Zahid (2021)

A product cannot grow or become well-known without input from its audience. This study focused primarily on understanding how the audience responds to the presence of Augmented Reality in animation exhibitions. The researcher aims to highlight the significance of visitor perspective on Augmented Reality, especially in small or medium scale exhibitions where its application is still rare. The virtual experience provided by Augmented Reality helps make the exhibition feel more immersive, allowing the audience to become engaged and connected to the message and story presented. This is precisely what the researcher seeks to achieve and learn from the implementation of this new media. Augmented Reality can enable the audience to gain a deeper understanding of the world of animation by demonstrating that animation is not just a film, but a medium with vast creative possibilities, one of which involves Augmented Reality. AR serves as a secondary communication medium, enhancing educational experiences through multisensory stimuli that foster empathy and entertainment (Nechita & Rezeanu, 2019). This exhibition and new media may also contribute to increasing public interest in animation in the future. Technological developments have a huge influence in rebuilding behavior and giving meaning itself (Pratama & Nugroho, 2023).

This study was conducted to examine the implementation of Augmented Reality (AR) technology in the Animaxtion art exhibition and to analyze visitors' responses to the presence of this technology within the context of their interaction with artworks. Although AR has been widely applied across various domains, its utilization in animation art exhibitions, particularly in educational settings such as those organized by Politeknik Multimedia Nusantara Polytechnic, remains relatively novel and underexplored. Consequently, the research questions addressed in this study are: how do visitors perceive the use of Augmented Reality in the Animaxtion art exhibition, and how does this technology contribute to enhancing engagement, understanding, and the visual experience of the displayed artworks? The study aims to evaluate the effectiveness of AR as a medium for visual communication in exhibitions and to explore design implications that can enhance the appeal and participation of visitors, particularly among younger audiences.

This study encompasses several objectives, summarized as follows:

1. To gain a basic understanding of the production process of Augmented Reality (AR), as the focus of this research is on how audiences interpret and engage with AR.
2. To analyze visitors' perceptions of the application of Augmented Reality (AR) technology in the Animaxtion animation art exhibition organized by Multimedia Nusantara Polytechnic.
3. To identify the extent to which AR contributes to enhancing visitors' engagement, understanding, and experience of the artworks displayed within the context of the animation exhibition.
4. To evaluate the effectiveness of AR as a visual communication strategy in reinforcing the artistic message and narrative conveyed by the animation artworks.
5. To formulate design implications for AR-based visual communication that can be applied in art exhibitions to attract interest and participation, particularly among younger audiences.

Augmented Reality (AR) can be understood as a system that merges the real world with virtual elements, allowing interaction between the two. The visualization of art and animated content is especially helpful in conveying information in a more engaging way. This highlights the significant potential of AR as a medium for exhibitions and even for educational purposes. However, most existing studies on AR in art exhibitions tend to focus on its technical implementation or on traditional art displays, while relatively little attention has been given to how AR can be specifically integrated into animation exhibitions to enhance audience engagement and educational value. Furthermore, there is limited discussion on applying theoretical frameworks in both the conceptual and execution stages of AR-based exhibition design.

To address this gap, the present study explores the integration of AR into the Animaxtion animation exhibition, emphasizing both theoretical foundations (supporting and main theories) and practical applications. The aim is to demonstrate how AR can not only attract but also actively engage audiences within an animation-focused context. Therefore, integrating AR into animation exhibitions offers a range of benefits, including greater audience engagement, enhanced educational value, and a broader appeal. As technology evolves, this study expects to contribute to the growing discourse by showcasing innovative applications of AR in the context of animation exhibitions.

RESEARCH METHOD

1. Multimedia Development

In developing this work, the researcher used the Multimedia Development Methodology which was further developed through (Pambayun et al., 2021) consisting of Concept, Design, Material Collecting, Assembly, Testing and Distribution. These six phases are essential and cannot be omitted in this study. The researcher carried out concept and design phases over the course of a mount, collaborating with student-created content as materials during the material collecting process. All these elements were then integrated into Unity 3D, after which the application was tested and built as an Augmented Reality application.

Finally, the researcher distributed and presented the application at the Animaxtion Exhibition.

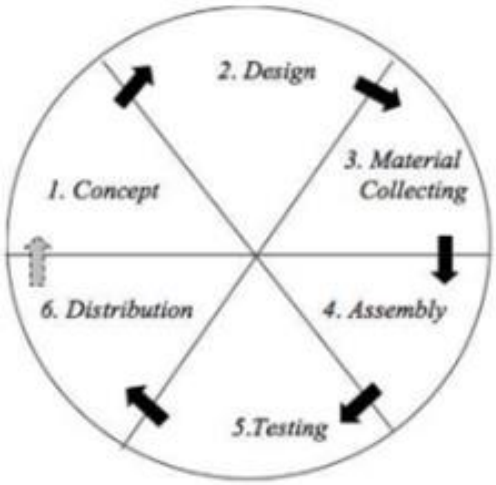

Figure 4. Multimedia development stages
source: Pambayun, Estu Tunjung (2021)

2. Quantitative Approach

This study aims to analyze perceptions of Augmented Reality in the recognition of animated works presented at the Animaxtion Exhibition. Based on the objective of the study, a quantitative description method was used. The data needed of this study consist of primary data from Animaxtion exhibition visitors, focusing on their acceptance of Augmented Reality technology. Data were collected by directly distributing questionnaires to visitors during the exhibition. The questionnaire's validity and reliability were first tested by experts and measured using a 5-points Likert scale. The sampling technique used in this study was convenience sampling, as respondents were selected from visitors who came to the Augmented Reality booth and were available at the time of data collection. The sampling technique used was distributed to visitors when they came to the Augmented Reality booth and sampling was carried out by selecting a number of respondents and selecting 5-10 people each day during the exhibition. A total of 100 respondents successfully completed the questionnaire. Subsequently, the data were analyzed using SPSS Software, employing descriptive statistics and linear regression to determine the

influence of usefulness and ease to use on the intention to recognize animated works through Augmented Reality.

This study utilizes the Technology Acceptance Model (TAM) to evaluate the acceptance of Augmented Reality technology in animation application. TAM is a framework that explains how an innovation can be accepted within a community or population. TAM is recognized for its ability to predict adaptation across various scenarios. Cognitive social theory and decision-making theory identify two key perceptions related to an innovation that can predict its eventual usage (Straub, 2009).These two components are usefulness and ease of use. Usefulness refers to a person's perception that employing a particular technology or system will improve their performance. Ease of use refers to the degree to which a person believes that employing a technology or system will require minimal effort or be easy to use. These two constructs collectively influence attitudes and intentions toward adopting a new technology (Davis, 1989).

In developing the hypothesis, according Ponzoa et al., (2021), the researchers use parameters to estimate the final outcome based on data collected from a sample, namely *ease to use* and *usefulness*. These two factors influence *behavioral intention,* and it is very good and in line with the TAM.

a. Perspective Ease to Use

   The *ease-of-use* perspective refers to the user's belief about how easy a technology is to use. If users perceive the technology as easy to learn and operate, they are more likely to have a positive perception of its usability.

b. Perspective Usefulness

   Usefulness perspective is the user's belief in how effective the technology is in helping them achieve their goals. If users believe that the technology will enhance their performance or productivity, they tend to develop a positive perception of its usefulness.

c. Perspective behavioral Intention

Behavioral intention refers to a user's tendency or intention to use the technology in the future. Both perceived ease of use and perceived usefulness positively influence this behavioral intention.

The constructs of usefulness and ease of use reflect cognitive beliefs that can affect attitudes toward technology. This study assesses their influence on students' intentions to learn more about the Politeknik institution through Augmented Reality. Human behavior is not arbitrary; instead, it is purposeful and influenced by their beliefs. Usefulness refers to the perception that Augmented Reality at the education fair can be used easily and without obstacles. Students appreciate Augmented Reality's ability to save time and aid in their understanding of the campus environment. When users believe that a technology is easy to use, easy to learn, and comprehend, their satisfaction increases. Furthermore, when users become more familiar with a new technology, their intention to continue using it will grow, especially if the technology brings them the expected benefits and a positive experience (Singh & Singh, 2023). Based on these perspectives, the following hypotheses are proposed:

- **H1:** The usefulness of the new augmented reality technology for educational institution introductions positively influences usage behavior.
- **H2:** The ease of use of the new augmented reality technology for educational institution introductions positively influences usage behavior.

No	Question	Variable (Code)
1	Ease to Use of Animaxtion Augmented Reality Application.	Ease of Use (EOU)
2	Clarity of Augmented Reality Character Image Response.	
3	Ease of Understanding Content and Artwork Through Augmented Reality.	
4	Augmented Reality Application Helps in Understanding Animation Works.	Usefulness (UF)
5	Augmented Reality Application Provides an Engaging Virtual Reality.	
6	Augmented Reality Application Helps in Introducing Animation Studies.	
7	Intention to Learn more about Animation Works.	Behavioral Intention (BI)
8	Interest Sparked by Attending an Animation Exhibition that Featured Augmented Reality Technology.	
9	Recommendation to use Augmented Reality Technology in Animation Works was Given to Friends or Relatives.	

Table 1 Data questions and variable hypothesis
source: author's documentation (2025)

RESULT AND DISCUSSION

The research results, obtained through production methods, data collection, and responses from 100 exhibition visitors, highlight several important aspects. First, the Multimedia Development Stages were successfully implemented in the design of the Augmented Reality (AR) application, providing a systematic foundation for its functionality. The descriptive and regression analyses conducted on the

respondents' answers confirmed the validity and reliability of the data, offering a strong empirical basis for interpretation.

From a theoretical perspective, the findings can be critically understood through the lens of the Technology Acceptance Model (TAM). Visitors' positive responses toward the AR exhibition experience reflect two key TAM constructs: Perceived Usefulness (the extent to which AR enhances their understanding and enjoyment of animation artworks) and Perceived Ease of Use (how intuitive and accessible the AR application was during the exhibition). The alignment of these results with TAM suggests that AR technology not only attracts attention but also supports user acceptance in cultural and creative contexts.

These results are also consistent with previous studies that emphasize the effectiveness of AR in improving user engagement and learning experiences in museum and gallery settings. However, unlike prior works that often focus on educational outcomes, this study provides new insight into AR's role in the art exhibition domain, highlighting how interactivity and immersion contribute to visitors perceived value of the artworks displayed.

Implementation of Augmented Reality

In this research approach, the technique employed for this work is based on the Multimedia Development Methodology Model. This method emphasizes the preparation of the work from its initial stages until it is ready to be presented to the general public. This methodology has previously been applied by the researcher in earlier studies. However, in this research, the researcher utilizes character media as the source material for the work, which will be implemented in Augmented Reality.

The production process begins with the preparation of the concept. The concept of this work is to introduce student character designs in a more unique and engaging manner, fostering a closer connection with the audience viewing the results. Displaying the work solely through posters is considered too conventional and requires a more compelling approach. The researcher selected eight of the best 3D modelling character works created by students as the source material to be featured

in the Augmented Reality application. The main menu serves as the primary interface for connecting multiple scenes, facilitating navigation from buttons to the AR Character scene and the AR Portal scene, while also incorporating links to the official website or social media accounts, and providing access to the credit title and questionnaire scenes.

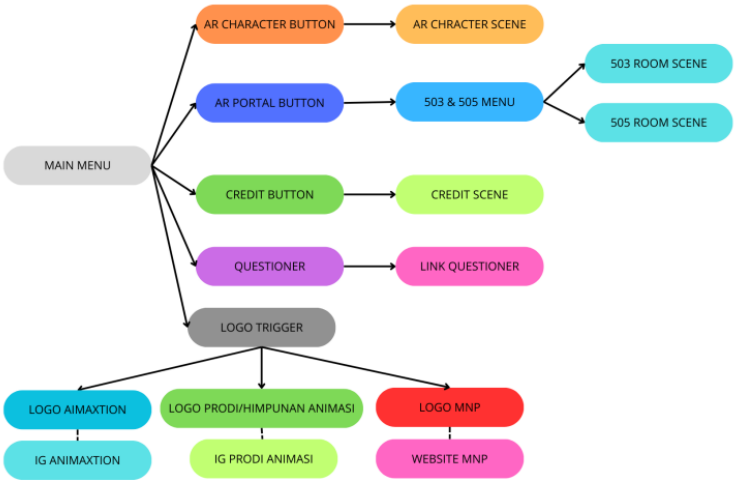

Figure 5. Behaviour tree pattern of UI
source: author's documentation (2024)

The next step involves designing the product. The design process is typically interconnected with material collection and assembly, as these three stages proceed concurrently and complement each other in developing every asset. For modelling, the researcher, assisted by students, utilized Autodesk Maya software to create 3D character models. Subsequently, in the development process, the researcher employed Unity 3D, supported by the Vuforia SDK, to enhance image triggers, enabling the images to appear within the Augmented Reality environment.

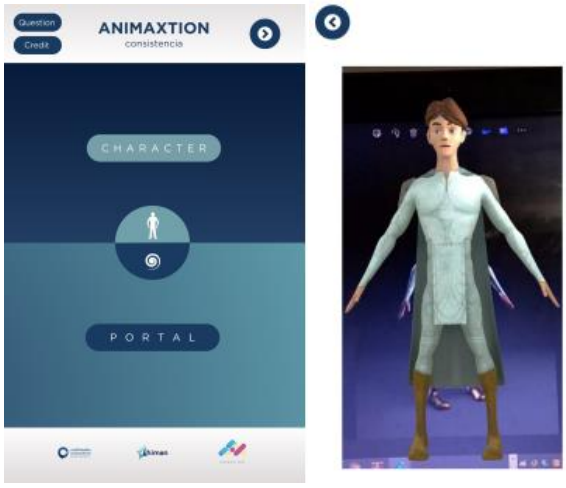

Figure 6. Interface design and augmented reality implementation
source: author's documentation (2024)

Following the completion of the design process, the next step to finalize the project is testing. Testing is a critical phase in the software development process (Menora et al., 2023). During the testing process, the researcher utilized an audience survey involving third-semester students who lacked understanding of augmented reality (AR) production and its ecosystem. In the production phase, the researcher identified several shortcomings encountered during the process. This testing is conducted to obtain initial feedback on the Augmented Reality application, allowing any errors or bugs that arise to be addressed before proceeding to the subsequent stage. In the case of this Augmented Reality project, the occurrence of bugs was relatively minimal, as the researcher had gained insights from previous studies, enabling proactive mitigation. However, some errors were still encountered in the application, such as triggers failing to appear due to insufficient trigger points in the characters. Trigger points are essential for Augmented Reality, as they enable the application to detect and display images. Consequently, the researcher needed to perform recalculations to rectify these issues.

The final step in this implementation process is the distribution of the application. The distribution was conducted offline at the "Animaxtion" Animation Exhibition held at Multimedia Nusantara Polytechnic. The distribution process was supported by the Animaxtion committee through the use of QR code distribution. Visitors

could scan the provided barcodes at the exhibition to access and experience the application independently. However, the researcher and the committee also provided tablet devices for visitors who were unable to download the application.

Quantitative Approach

Descriptive Analysis

This study aims to assess visitors' perception of implementation in Augmented Reality technology in Animaxtion exhibition featuring 3D Character Animation. Augmented Reality application was developed to present artwork interactivity and immersively, enhancing the audience's engagement with the displayed content. Data collection was conducted through the distribution of questionnaires to exhibition attendees, the majority of whom were high school students from the Jakarta and Tangerang regional.

No	School Name	Region	Amount
1	SMK Strada Daan Mogot	Tangerang	15
2	SMAN 32 Jakarta Selatan	Jakarta	10
3	SMA Efata	Tangerang	10
4	SMA Yadika 1 Jakarta	Jakarta	10
5	SMK Nusantara 1 Tangerang	Tangerang	10
6	Flexi School Bintaro	Tangerang	8
7	SMA Agape BK-3	Tangerang	8
8	SMA Al-Fityan School	Tangerang	12
9	Multimedia Nusantara University	Tangerang	5
10	Multimedia Nusantara Polytechnic	Tangerang	12

Table 2 Respondents' background of origin
source: author's documentation (2025)

From this data, respondents range in age from 15 to 18 years old with the distribution of 62,1% male and 37,9% female. This demographic aligns with the target audience of the exhibition, which showcased 3D characters inspired from stylized or realistic styles that are particularly popular among that segmented audience. Therefore, the demographic profile of the respondents supports the relevance of the data to the context of the Augmented Reality experience being exhibited and reflects the perspective of the primary intended user group.

Figure 7. Visitors try the augmented reality application
source: author's documentation (2024)

Variable	Item Question	Mean	Standard Deviation
EOU1	Ease to Use of Animaxtion Augmented Reality Application.	4,52	0,77
EOU2	Clarity of Augmented Reality Character Image Response.	4,58	0,63
EOU3	Ease of Understanding Content and Artwork Through Augmented Reality.	4,47	0,70
Average		4,52	0,70
UF1	Augmented Reality Application Helps in Understanding Animation Works.	4,31	0,85

UF2	Augmented Reality Application Provides an Engaging Virtual Reality.	4,57	0,71
UF3	Augmented Reality Application Helps in Introducing Animation Studies.	4,26	0,86
Average		4,38	0,81
BI1	Intention to Learn more about Animation Works.	4.67	0,75
BI2	Interest Sparked by Attending an Animation Exhibition that Featured Augmented Reality Technology.	4,21	0,86
BI3	Recommendation to use Augmented Reality Technology in Animation Works was Given to Friends or Relatives.	4.16	0,90
Average		4,37	0,84

Table 3 Measurement respondents result from exhibition visitors
source: author's documentation (2025)

The measurements focused on the mean scores and standard deviations for each item associated with the examined variables. The mean score indicates the level of agreement with the questionnaire items, where a score approaching 1 signifies strong disagreement, a score around 3 reflects neutrality, and scores of 4 or higher suggest strong agreement. Conversely, the standard deviation reflects the variability of responses around the mean; lower values indicate that responses are closely clustered, suggesting consistency, while higher values indicate greater variability and divergence from the mean. From the nine items measured, all recorded mean values above 4, indicating strong agreement among respondents with the presented items. Furthermore, all items had standard deviations below 1, suggesting that respondents' perceptions were relatively uniform and stable.

From the nine items measured across different variables, all recorded mean scores above 4 and standard deviations below 1, indicating a high level of agreement and relatively consistent responses. Specifically, the Ease-of-Use variable achieved a mean score of 4.52 with a standard deviation of 0.70. This suggests that the majority of respondents strongly agreed that the Augmented Reality application used in the art exhibition was easy to use, and that the visual responses—such as character image rendering—were clear and effective. The relatively low standard deviation indicates that participants' opinions were largely centralized and exhibited minimal variance. These findings reinforce the conclusion that the application was not only well-received but also perceived as user-friendly and visually reliable by most users.

Figure 8. Augmented reality is easily accessible for all visitors
source: author's documentation (2024)

For the Usefulness variable, the three items measured yielded an average mean score of 4.38 with a standard deviation of 0.81. This indicates that the majority of respondents agreed that the Augmented Reality application was useful in helping them understand animated art content and provided an engaging virtual experience. Visitors found it easier to comprehend the context and meaning of the artworks when presented through AR technology. Furthermore, one of the featured pieces included a simulated animation lab environment from the animation study program. Respondents reported that the Augmented Reality application also enhanced their understanding of the academic program, suggesting that the

technology was effective in communicating both the artistic and educational aspects of the exhibition.

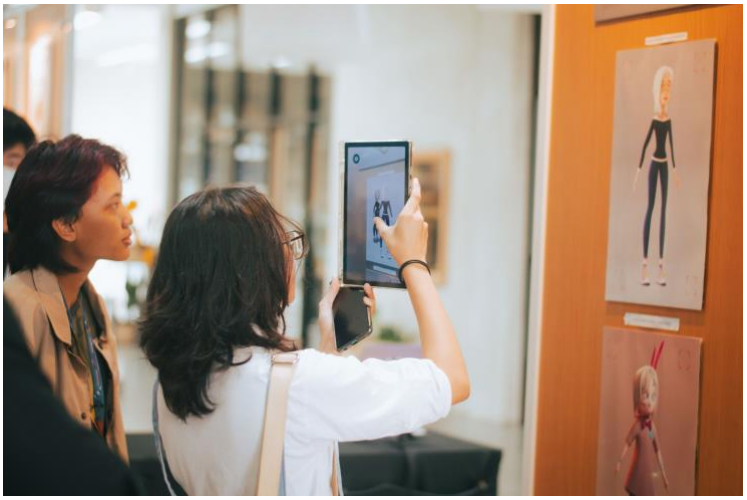

Figure 9. The AR installation serves as a captivating component of the exhibition, sparking visitors' interest in engaging with it
source: author's documentation (2024)

Similarly, the Behavioral Intention variable produced a mean score of 4.37 and a standard deviation of 0.84, indicating a strong agreement among respondents. Most participants expressed that the AR application increased their interest in returning to future exhibitions and that they would recommend this technology to others. This highlights the AR application's potential to not only enhance the exhibition experience but also foster continued engagement and word-of-mouth promotion.

Linear Regression Analysis of Visitor Respondents

In the data development process, the researcher also employed simple linear regression to analyze the relationship between variables concerning the perception of using the Augmented Reality application at the art exhibition. The dependent variable was the behavioral intention to use the Augmented Reality application for introducing artworks. The first step involved testing reliability using the Cronbach's alpha indicator. The reliability test results showed that all Cronbach's alpha values exceeded 0.6, indicating that the indicator variables accurately and consistently measured the latent variables. Multicollinearity and heteroscedasticity tests also

met the criteria, confirming no correlation among the independent variables and that the data were homogeneous.

Multiple regression analysis was conducted to examine the influence of ease of use and usefulness on the intention to use the AR application. The following are the results of the multiple regression analysis:

Regression Model	Coefficients	t	significancy	Notes
Constant	1,179	1,09	0,278	
Ease of Use	0,313	2,68	0,009	Accepted
Usefulness	0,583	5,80	0,000	Accepted
R squared	0,608			

Table 4 Regression analysis result
source: author's documentation (2025)

The results of the multiple regression analysis indicate that both ease of use and usefulness have a significant positive effect on the behavioral intention to use the AR application for introducing artworks. Each variable has a p-value < 0.05 and a positive constant. The ease-of-use variable shows a significance of 0.009 < 0.05, while the usefulness variable has a significance of 0.000 < 0.05. The coefficient of determination, or R-squared, is 0.608, meaning that 60.8% of the behavioral intention to use the AR application can be explained by the ease of use and usefulness variables. Based on the constant from the multiple regression analysis, the following equation is derived:

Y = 1,179+ 0,313.X1+ 0.583.X2

Y = Behavioral intention

X1 = Ease of Use

X2 = Usefulness

The perception of ease of use significantly and positively influences the intention to adopt the Augmented Reality (AR) application. This suggests that the greater the confidence of exhibition visitors in the user-friendliness of the AR application, the stronger their inclination to use it. Visitors to the Animaxtion exhibition who experienced the AR application for presenting artworks found it more convenient compared to traditional methods. Conventionally, art exhibitions feature two-dimensional paintings or images. In contrast, this exhibition showcased artworks interactively in three dimensions through the AR application. The perception of usefulness significantly and positively influences the intention to use the Augmented Reality (AR) application. The stronger the belief among exhibition visitors in the usefulness of the AR application, the greater their desire to utilize it. This indicates that visitors perceive the AR application as beneficial for enhancing their virtual experience and introducing animation artworks. The AR application also serves as a medium to promote the Animation study program through its artistic works, aligning with findings from previous research.

Figure 10. Augmented reality is highly effective in introducing new media animation to visitors
source: author's documentation (2024)

The technology adoption process can be described in five stages: first, when an individual becomes aware of an innovation; second, when the individual acquires knowledge about it; third, the decision-making stage to accept or reject the

innovation; fourth, the implementation of the technology; and finally, the evaluation stage (Menora et al., 2023). This study examines up to the fifth stage, namely evaluating the decision to adopt AR technology for introducing artworks. The questionnaire results indicate that the majority of respondents agree with the statement expressing interest in visiting art exhibitions utilizing the AR application.

CONCLUSION

The development and implementation of the Augmented Reality (AR) application for the Animaxtion exhibition, not only enhanced the presentation of 3D character animation artworks but also received positive responses from the audience, who found the AR features engaging and interactive. By employing Autodesk Maya for modelling, Unity 3D with Vuforia SDK for AR trigger integration, and rigorous testing to address minimal bugs, the project successfully delivered an interactive and engaging experience, evaluated from audience responses, interaction frequency, and level of engagement during the AR exhibition. This study demonstrates that the implementation of Augmented Reality (AR) in the Animaxtion exhibition successfully enhanced visitor engagement and understanding of 3D animation artworks. AR technology made the exhibition more interactive, educational, and appealing, particularly for younger audiences familiar with digital media. Descriptive and regression analyses confirmed that Ease of Use and Usefulness significantly influenced Behavioral Intention, with Usefulness as the dominant factor. These findings align with the technology adoption model and highlight AR's potential as an alternative medium for visual communication and the promotion of animation studies.

Descriptive analysis of questionnaire responses from 100 exhibition visitors revealed strong agreement across key variables: Ease of Use (EOU), Usefulness (UF), and Behavioral Intention (BI), with mean scores of 4.52, 4.38, and 4.37, respectively, and standard deviations below 1, indicating consistent and positive perceptions. Visitors found the Augmented Reality application user-friendly, visually clear, and effective in enhancing their understanding of animation

artworks and the Animation study program. The high mean scores and low variability underscore the application's success in delivering an immersive and comprehensible experience, surpassing conventional exhibition methods.

Multiple regression analysis further confirmed the significant positive influence of Ease of Use ($p = 0.009$) and Usefulness ($p = 0.000$) on Behavioral Intention, with an R-squared value of 0.608, indicating that 60.8% of the intention to use the Augmented Reality application is explained by these variables. The regression equation, $Y = 1.179 + 0.313X1 + 0.583X2$, highlights the stronger impact of Usefulness (X2) compared to Ease of Use (X1). These findings align with the technology adoption model, particularly at the evaluation stage, where respondents expressed enthusiasm for future AR-based exhibitions and willingness to recommend the technology. This suggests that the Augmented Reality application not only enhances the exhibition experience but also holds potential for broader adoption in promoting animation studies and engaging younger audiences in art exhibitions.

Based on the research findings, it can be concluded that the implementation of Augmented Reality (AR) technology in the Animaxtion animation art exhibition has a positive impact on visitors' perceptions and experiences. This technology facilitates immersive interactions and enhances visitors' understanding of the displayed artworks, particularly among younger audiences who are highly familiar with digital technology. The use of AR renders the exhibition more engaging, interactive, and educational, while also expanding the scope of the visual narrative presented by the artworks.

In the context of visual communication design practice, these findings indicate that AR technology can serve as an effective alternative medium for delivering visual messages in a more dynamic and participatory manner. As an implementation strategy, visual communication designers should consider integrating the following elements when designing AR-based exhibitions, based on the data analysis results: Interactivity, Contextual and Informative visual content, and User-friendly interface.

For the future research could expand the sample size and diversity by including participants from varied age groups, educational levels, and geographic regions to enhance the generalizability of the findings. Expand the sample to include more diverse backgrounds and consider additional variables such as technological proficiency, aesthetic appeal, and emotional engagement to gain a more comprehensive understanding of AR adoption. Comparative studies evaluating Augmented Reality applications across different types of art exhibitions, such as fine arts or digital installations, could also provide insights into the technology's versatility and effectiveness in diverse contexts.

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