

The Use of Augmented Reality Technology in Efforts to Promote Library Books

Andre Kurniawan Pamudji

Department of Information System Soegijapranata Catholic University

Jl. Pawiyatan Luhur no IV/1, Semarang, 50234, Indonesia

andre.kurniawan@unika.ac.id

Abstract— The abstract of the article is about the use of Augmented Reality technology to promote physical books and increase interest in reading among the millennial generation. The author highlights the challenge faced by libraries in the current era, which is the lack of interest in reading among young people, as reported by data from the Program for International Student Assessment (PISA) in 2019. The author argues that many books designed for children and young people are perceived as unappealing and lack attractive visual elements, which affects their literacy. To address this issue, the author suggests the use of Augmented Reality technology, which combines the real and virtual world, to promote physical books and increase interest in reading. The author cites Snapchat, a popular social media application with over 332 million daily users, as an example of a software that can be used to implement Augmented Reality technology in promoting books.

Keywords—, Augmented Reality, Metaverse, Library, Literacy, Book

I. INTRODUCTION

The library is a gate of knowledge that can be accessed by the general public globally. There is a lot of knowledge that can be found in the library, ranging from general knowledge to specific knowledge [1].

Libraries are always synonymous with books as a given reference source service. In today's modern era, several books have started to switch to digital books due to the ease of access provided by digital books, but there are still many

books that are still in physical printed form which of course also have valuable information that can be read. conveyed to the general public. It's not an easy job to be able to digitize all the books that exist today [2].

In the current era, the biggest challenge faced by libraries as information provider services is the lack of interest in reading by today's young generation. According to data from the Program for International Student Assessment (PISA) in 2019, Indonesia was ranked 62nd out of 70 countries with low interest in reading [3]. Even though reading is one of the vital things in the progress of the nation and state.

With a low level of literacy, it will have an impact on the ability of students and students in teaching and learning activities that are not optimal so of course the achievements given are not the best [4]. Many books designed for children and young people are sometimes perceived as unappealing to them, because they do not accurately describe their experiences and interests or because they lack attractive visual elements such as pictures or illustrations. This can make them less interested in reading and affect their literacy. Therefore, it is very important for book publishers and educators to ensure that the available books appeal to their readers and facilitate their interests and experiences. So there is a need for new tactics to increase young people's interest in digital literacy [5].

In the current technological era, the millennial generation is being excited about the term metaverse, a concept that describes the virtual world [6]. The current millennial generation considers the metaverse world to be

more enjoyable than having to just read books. So it is necessary to have a metaverse technology that can bridge the millennial generation with a high interest in reading. the presence of technology is not a means to reduce literacy levels [7], but technology is used to increase the function of literacy activities and make literacy activities more enjoyable [8].

The concept of the metaverse itself consists of several technologies in it that help realize the virtual world in the real world. The term metaverse itself has been popular among the public since it was echoed by the founder of Facebook regarding the Metaverse project he created. So that currently many companies are competing to create their respective metaverse projects [9], [10].

One of the technologies in the metaverse is Augmented Reality, which is a technology that combines the real world and the virtual world. In this article, one of the uses of Augmented Reality technology will be discussed in promoting physical books as a means of supporting increased literacy in the millennial generation [11], [12].

Augmented reality is a technology that allows us to be able to see the virtual world in real time with the help of devices such as smartphones, where augmented reality has also been widely used to increase students' learning motivation [13]. Augmented Reality can be enjoyed by all people by using a software that is on their respective smart phones, one of which is the use of the Snapchat software.

Snapchat is a social media application that allows its users to send photos and videos that are only available for 24 hours [14]. The app also provides features such as augmented reality lenses, filters and text. Snapchat also allows users to send messages and communicate with their friends through this application. Snapchat's goal is to provide a fun and entertaining way for users to communicate and share moments with their friends and family. The use of snapchat itself is because snapchat is a quite popular social media,

and has a fairly high number of active users currently up to 332 million daily users which is more than some other social media [15].

So in this article we will discuss the use of Augmented Reality in an effort to promote library books in order to increase existing interest in reading.

II. METHOD

In realizing this Augmented Reality application for promote library books, the development of tools and systems was carried out in several steps.

1. Book Selection

All books can be used as material for using Augmented Reality technology, but making Augmented Reality for all existing books certainly requires a lot of effort and also a lot of time. Therefore, we can choose several selected or superior books with their respective criteria to highlight them by giving them a touch of Augmented Reality technology. Some of the book criteria that are prioritized in making this augmented reality are books with interesting content and have high value to read but rarely read, books that have the characteristics of a library institution, and so on according to the criteria to be made.



Figure 1. Example Cover of Selected Book

2. Content Creation

After the book selection process has been carried out and the books that will be used as Augmented Reality content have been selected, the next step is to create content to promote the book. Content is created in the form of a short video which will later become augmented reality content. The content creation process involves a talent being recorded on a greenscreen area to tell an interesting synopsis of the book. The video content created is a short video with a duration of 30 to 60 seconds. The content created cannot be made with a long duration due to the limitations of the applications used to create augmented reality content which still cannot accommodate large files.

Some of the equipment that must be prepared to help make the shooting process easier includes a good quality camera, a green screen room so that the background can be replaced with a book cover, a soundproof room so that the sound capture process is not disturbed, a teleprompter so that the talent can read the synopsis easily. without having to memorize the script first.



Figure 2. Content Creation Process

3. Video Creation Process

After the shooting is complete, the next thing is the process of editing the video so that it can be included in the application to create Augmented Reality. The editing process can use various types of video editing applications, which have features to remove the green screen (Chroma Key) and replace the background with the selected book cover.

In the example below, the video editing process is carried out using a software called Movavi, which is a video editing software that is easy to learn for beginners.

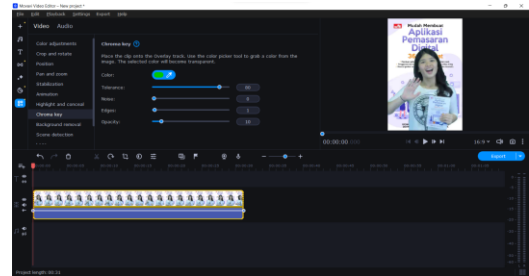


Figure 3. Video Creation Process

In the video editing process, things that need to be considered include video and audio must be separated so that later it can be included in augmented reality applications. Then the finished results of video and audio are recommended not to exceed 4Mb in size so that they are still sufficient when entering the augmented reality creation platform.

In order for video and audio to remain within the safe limits of file size, there are several steps that can be taken, namely to reduce the quality of the existing images or by reducing the total duration of the video being made. The ideal video size is 30-60 seconds with tolerable image quality.

4. Augmented Reality Creation

The process of making Augmented Reality uses an application called Lens Studio which is special software that can be used to create AR on the Snapchat platform.

In the process of making the application using a template that has been provided called a marker, then from there it is only necessary to replace the marker with the selected book cover image, then change the object that appears to be the video and audio that has been made.

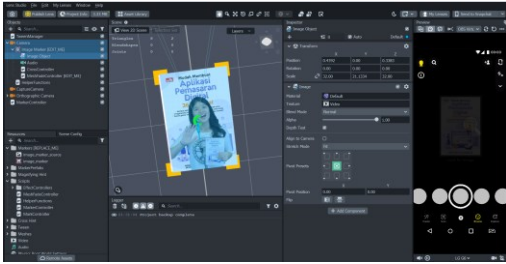


Figure 4. Augmented Reality Process

The next process after the Augmented Reality program has been successfully created is to publish the results that have been made to the Snapchat platform. The publication process takes a while to wait for a direct review from Snapchat whether the Augmented Reality made is fit for publication or not.

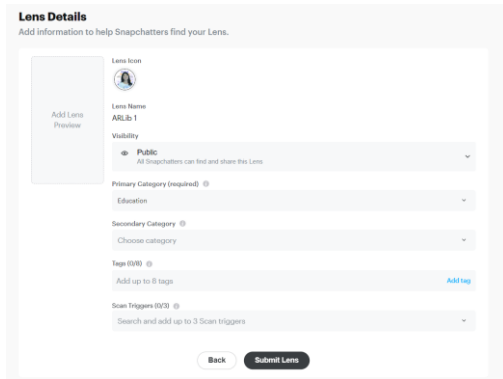


Figure 5. Augmented Reality Publication

After the review process takes place, and the application passes for publication, it will receive a Snapcode which can be shared with users so they can enjoy the AR that has been made. Snapcode is a special QR that can be scanned by the snapchat application to open a link related to the AR that has been created.



Figure 6. Example of Snapcode

From the above process it can be seen the flow of the manufacturing process in the following diagram

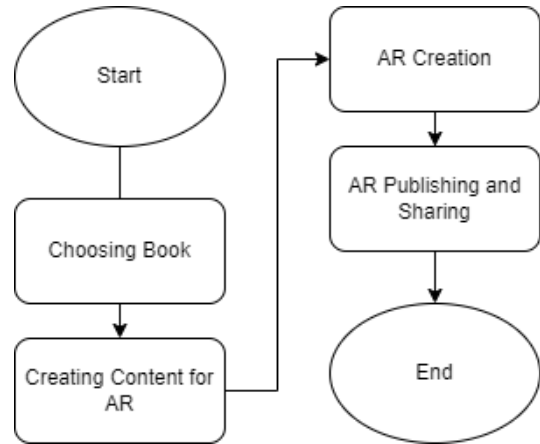


Figure 7. Flow of AR Creation
III. RESULT AND DISCUSSION

1. Publishing Augmented Reality

The results of Augmented Reality that have been made are then published so that they can be used by users who want to visit the library to be able to see new experiences in reading books using AR. Users can independently view AR content with their personal cell phones with the Snapchat application installed on their respective smartphones.

The use of this AR is by snapping on Snapcode first to open the AR address that has been created. Then users can directly point their smartphone at the book cover so that AR objects can appear through the available book cover media.

To further attract library visitors to read books, books with the AR concept are given a special shelf that is directly visible to visitors so they can try using AR technology when visiting the library.



Figure 8. Usage of AR Books

2. AR usage Statistics

The use of Snapchat as a medium for running AR applications is a good choice due to the popularity of the Snapchat application which is already familiar among the millennial generation, thus minimizing the socialization process that must be carried out so that users can enjoy existing AR technology.

From the results of existing AR publications, statistics from the Snapchat application show that the total number of users who have snapped books that have AR in recent times has shown an interaction of 3248 playbacks of one of the books provided with AR technology in it.

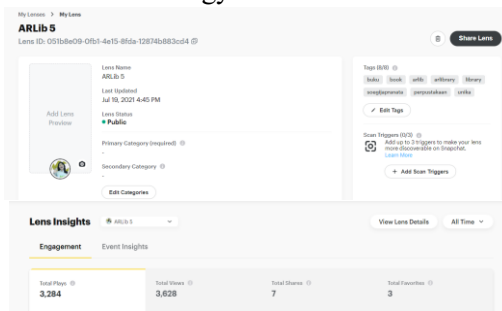


Figure 9. AR usage Statistics

IV. CONCLUSION

The conclusion obtained from the research conducted is that the use of AR is one of the factors that can encourage the millennial generation to be more interested in reading books. An interesting talent in explaining book synopsis can also be one of the attractions for users to be able to read books and increase the current

literacy rate. Currently it is possible to make AR for all books is still a difficult problem for every library so that one day it is hoped that all existing books will already have AR technology in them so that they can attract more interest in reading from among the new generation.

V. ACKNOWLEDGEMENT

This project is one of the projects carried out in library development at Soegijapranata Catholic University, Semarang.

REFERENCES

- [1] Adetoun Adebisi Oyelude and Alice A. Bamigbola, "Libraries as the gate: 'Ways' and 'keepers' in the knowledge environment," *Library Hi Tech News*, 2022.
- [2] Namkee Park, Raul Roman, Seungyoon Lee, and Jae Eun Chung, "User acceptance of a digital library system in developing countries: An application of the Technology Acceptance Model," *Int J Inf Manage*, vol. 29, no. 3, 2019.
- [3] Bahrul Ulum Ilham, "Harbuknas 2022 : Literasi Indonesia Peringkat Ke-62 Dari 70 Negara," 2022. Accessed: Feb. 09, 2023. [Online]. Available: <https://bisniskumkm.com/harbuknas-2022-literasi-indonesia-peringkat-ke-62-dari-70-negara/>
- [4] Saeful Amri and Eliya Rochmah, "Pengaruh Kemampuan Literasi Membaca Terhadap Prestasi Belajar Siswa Sekolah Dasar," *Jurnal Pendidikan Dasar*, vol. 13, no. 1, Jan. 2021, Accessed: Feb. 10, 2023. [Online]. Available: <https://scholar.archive.org/work/uhkkwtkjebcirdtliam5wzipm/access/wayback/https://ejournal.upi.edu/index.php/eduhu maniora/article/download/25916/pdf>

- [5] Joëlle Swart, "Tactics of news literacy: How young people access, evaluate, and engage with news on social media," *Sage Journal*, vol. 25, no. 3, 2021.
- [6] Gagas Yoga Pratomo, "Mengenal Metaverse yang Kini Populer di Kalangan Gen Z," Jan. 08, 2022. Accessed: Feb. 09, 2023. [Online]. Available: <https://www.liputan6.com/crypto/read/4854376/mengenal-metaverse-yang-kini-populer-di-kalangan-gen-z>
- [7] Ruth Ortega-Dela Cruz and Mary Jane D. Quimsing, "Technology-Based Reading Application on Improving Reading Literacy Level Among Struggling Readers in a Public Elementary School in the Philippines," *Pedagogy: Journal of English Language Teaching*, vol. 12, no. 1, 2024.
- [8] Dhanu Ario Putra and Merry Rullyanti, "The Importance of Digital Literacy in Improving Students' Skills in English," *Journal of Dehasen Educational Review*, vol. 4, no. 3, 2023.
- [9] R. Sanjaya, "Ramai-Ramai Metaverse," *Suara Merdeka*, Semarang, Dec. 18, 2021.
- [10] İbrahim Halil Efendioğlu, *Metaverse Concepts and Marketing*.
- [11] Julie Carmigniani, *Augmented Reality: An Overview*. 2011.
- [12] A. K. Pamudji, M. Setiyowati, and R. Sanjaya, *Mudah Membuat Game Augmented Reality (AR) dan Virtual Reality (VR) dengan Unity 3D*. Elex Media, 2017.
- [13] Deepti Prit Kaur, Archana Mantri, and ben Horan, "Enhancing Student Motivation with use of Augmented Reality for Interactive Learning in Engineering Education," in *Procedia Computer Science*, 2020, pp. 881–885.
- [14] Bharat Dhiman, "Snapchat, Happiest and Personal Social Media Platform for Research Scholars, A Critical study," *SSRN Electronic Journal*, 2022.
- [15] Kompas, "Jumlah Pengguna Harian Snapchat Tumbuh Pesat Dibanding Facebook dan Twitter," Apr. 22, 2022. Accessed: Feb. 10, 2023. [Online]. Available: <https://tekno.kompas.com/read/2022/04/22/15300087/jumlah-pengguna-harian-snapchat-tumbuh-pesat-dibanding-facebook-dan-twitter?page=all>