CREATIONS de UiTM

INTERNATIONAL MEGA INNOVATION CARNIVAL 2023

Fostering Innovation to Global Communities

LET'S CRAFT A BETTER WORLD TOMORROW!

ePROCEEDING

20th MAY 2023

UNIVERSITI TEKNOLOGI MARA
CAWANGAN SELANGOR, KAMPUS DENGKIL
MALAYSIA

ORGANISED BY:

UNIVERSITI TEKNOLOGI MARA
Pusat Asasi

Innovation of File Folder Using the Implementation of Augmented Reality Technology and QR Code

***Muhammad Syawal Zahari, Mastura Omar, Shalida Rosnan, Zuliyanti Hanizan Ainul Azyan, Noor Azly Mohamed Ali**

College of Creative Arts, Department of Printing Technology, Kompleks Alam Bina Universiti Teknologi MARA, Cawangan Selangor, Kampus Puncak Alam, 42300 Bandar Puncak Alam, Selangor, Malaysia

*E-mail: syawalmuhd99@gmail.com

ABSTRACT

According to Fariza Binti Khalid (2017), it proven that the use of technology in education to increase the level of student motivation where the most advanced technology in education is Augmented Reality and QR codes on a file folder. The file folder function as a document repository, which can store multiple sheets of paper renewed with a new concept of folder design and a combination of Augmented Reality technology innovation and QR code, when scanned will display the printing process of the machine and Printing Technology program e-books. Combination Augmented Reality and QR codes to solve problems and advance education in order to encourage more SPM and STPM graduates to enrol in Printing Technology Program courses. A total of 30 students from the Printing Technology course filled out a questionnaire and evaluated the importance of Augmented Reality elements and QR codes. When all the files in this folder are used, it means that it achieves the necessary objectives to meet the needs of lecturers and students. In conclusion, the production of file folders should be combined with the innovation of Augmented Reality and QR code so that students or others can easily get more information in the Printing Technology course.

Keywords: File folder; Augmented Reality; QR code

INTRODUCTION

A file folder, sometimes known as a folder summary, is a type of folder used to organize and protect documents. Working papers are usually stored in file folders, which are usually made from thick sheets of paper stock or thin material. Most of them are sometimes used at home as common storage rather than for formal purposes. In addition, File Folders are often used by core organizational tools of bureaucracy, business administration, and scientific management where many file folders are used to store documents and also for learning purposes in Education. Among Education using the folder file is the Printing Technology course at Universiti Teknologi MARA (UiTM) Cawangan Selangor Kampus Puncak Alam. Printing Technology is a course offered at UiTM Puncak Alam where UiTM is the only public university that offers a Diploma and Bachelor's Degree (Honours) program in the field of Printing Technology in Malaysia. This program course is held in the form of theoretical and practical training where this program emphasizes aspects of administrative management and current printing technology, covering advertising, commercial printing, publishing, packaging, distribution, marketing as well as technology and digital development. In this paper, we examine the use of Augmented Reality and QR code innovation on file folders and identify the advantages of file folder innovation on the academic mission of education.

To create innovation, we must think outside of what we are doing now and develop creative ideas that will increase the level of creativity within us. Innovation requires three main steps which are the idea, the implementation idea, and the results that arise from implementing the concept and producing changes in the folder file design. The folder file to innovate for use in the printing technology course is Augmented Reality and QR codes where global technology advances especially the use of the internet and smartphones. Augmented Reality defines as a direct or indirect real-time view of the physical real-world environment that has been enhanced/augmented by adding virtual computer-generated information to it [7]. AR is interactive and registered in 3D and combines real and virtual objects [7]. A file folder that uses Augmented reality and QR code which is an innovation that can increase student motivation and also help the academic mission. According to Fariza Binti Khalid (2017), Augmented reality technology was created by Morton Heilig in 1962 who defined Augmented reality as a situation where users can see a combination of virtual objects and the real world in real-time [2]. In addition, a quick response (QR) code is a two-dimensional barcode (see opposite) that can be read on a device such as a mobile device (camera phone) or a computer laptop that, once accessed, will allow you to complete an action [9]. QR codes are a technological advancement that brings innovative applications to education as conventional education evolves with new technology joining more students in an active environment. Therefore, the use of Augmented reality and QR codes in education can increase the innovation of student learning methods to advance a more technological learning system. This study aims to identify the combination of file folders with Augmented Reality and QR codes that are suitable for application in education so that the effectiveness of using this material as a delivery of information and reading materials can have a positive and effective effect on users, especially university students, and outsiders who register in the Printing Technology course.

INNOVATION DEVELOPMENT

A file folder is a piece of plastic or cardboard folded down the middle and used for keeping loose papers with a new design as a comprehensive storage material for documents (Cambridge Dictionary). The tool works in storing assignment materials or conveying information when combined with Augmented Reality technology and QR code. AR allows digital information to be superimposed and integrated into our physical environment where AR is a tool that can help us transform our immediate environment into a learning, work, and entertainment space as a novelty, as shown in Figure 3. This storage is designed to facilitate management and storage for a paper that does not exceed 60 sheets of similar 80gsm paper. File folders usually have the same function with various shapes and visual designs but they can innovate with the combination of Augmented Reality and QR Code. Augmented Reality and QR code on the file folder aim to facilitate the delivery of information and academic promotion in the printing technology course about the scope of the program. This file folder is used as an educational strategy to help improve the admission of new students who are doing the academic mission. The attraction of prospective students or students of the Printing Technology course through this innovation file folder will be more effective, and students will be able to understand and receive information about the course more quickly.

Figure 1: Innovation File Folder Technical Drawing

File Folder innovation using The Implementation of Augmented Reality Technology and Qr Code started by using 270gsm paper art cards for printed products that can be used as document storage, especially in education. This file folder innovation can be seen as a set of structured materials for now. Folder file design in printing technology course education can support the purpose of the course in academic mission and use in learning time. prospective SPM and STPM students can also easily read from the file folder. Alternatively, outsiders can find out more clearly the content and background of this program on the e-book provided in the form of QR codes and also Augmented Reality technology. Augmented Reality (AR) uses videos related to learning in printing technology courses to simulate how the printing press process works in a nutshell. In addition, the use of QR codes on file folder elements can make it easier for you to open an e-book about the Printing Technology program without typing on the website by simply scanning it with a smartphone camera. Printing Technology course folder files are almost all used by students and outsiders during academic missions. A total of 30 students of the Printing Technology course filled out a questionnaire and evaluated the use of augmented reality elements and QR codes on file folders which use of these elements was more effective and innovative. The innovation in this file folder makes it important for students to build and increase their motivation. When Augmented Reality and QR codes become a part of human life, education can change with more advanced and technological, so the main goal is to attract the interest of teenagers and promote SPM and STPM teenagers to register for this course. The innovation is focused on the collection and integration of Augmented Reality and QR codes on file folders necessary for education, especially academic missions.

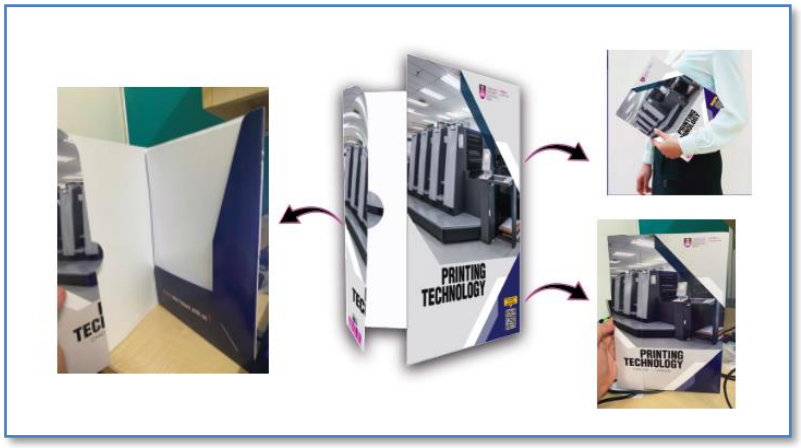

Figure 2: File Folder innovation

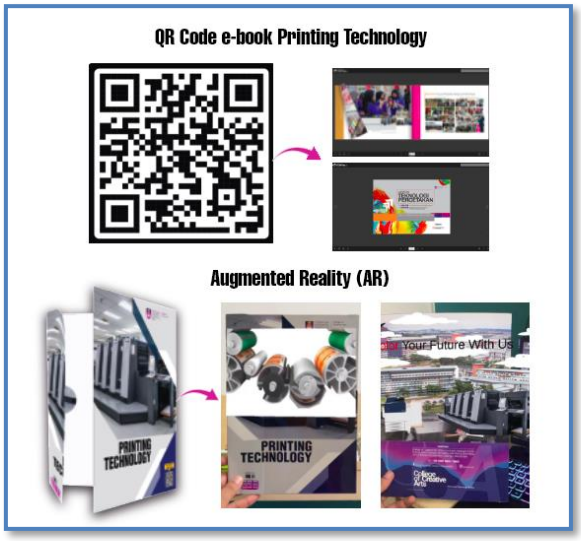

Figure 3: File Folder Innovation with Augmented Reality and QR code

COMMERCIAL POTENTIAL

The commercialization potential of this file folder is quite limited in its use in education due to the use of online learning platforms and educational technology. Nevertheless, the commercialization potential in education is also important, because education is a huge market with many opportunities for companies to provide innovative products and services such as new file folder designs with a combination of Augmented reality (AR) and QR codes in addition to its functionality to organize and store paper-based documents as showing at figure 4. This innovation can develop and market a file folder specifically designed for use among students or lecturers by scanning using a smartphone. The use of file folders will continue to be used when a total of 30 Printing Technology course students give feedback in answering a questionnaire about the use of Augmented Reality (AR) elements and QR codes on file folders as one of the innovative ways to move towards technology. At the same time, it can improve education to encourage more SPM and STPM graduates to follow the Printing Technology Course Program. This folder is not only for storing documents but can also help convey information easily and quickly. Identifying the market to market this file folder, is done when the number of students in the Printing Technology course at MARA University of Technology 220 all the students in this course and all students will use it while learning here.

Figure 4: Innovation Product mock up and prototype

CONCLUSION

In conclusion, the use of this file folder is very helpful for use because it functions as a storage for many paper documents and is able to protect against damage and loss. The production of this folder file can also provide convenience to the field of printing technology in using data storage and easy to manage and organize for more than one paper document not only that this field of Printing Technology file folder has been innovated by incorporating Augmented Reality and QR code so that students or others can find out more information in the Printing Technology course. When all the files in this folder are used, it means that it achieves the necessary objectives to meet the needs of lecturers and students.

ACKNOWLEDGEMENT

Thanks to other author members Ts. Mastura Omar, Dr. Shalida Rosnan, Hjh. Zuliyanti Hanizan Ainul Azyan and Dr. Noor Azly Mohammed Ali together completed this work. This research is also part of the work supported by Universiti Teknologi MARA (UiTM) Kampus Puncak Alam.

REFERENCES

[1] Pozi, F. N. S. M., & Khalid, F. (2017, April). Kesan teknologi augmented reality dalam pendidikan terhadap peningkatan motivasi pelajar. In International Conference on Global Education V “Global Education, Common Wealth, and Cultural Diversity (Vol. 2, No. 29, pp. 1200-1209).
[2] Ong, S. W., & Kutty, F. M. (2022). Potensi Penggunaan Augmented Reality dalam Meningkatkan Motivasi dan Penglibatan Murid Pemulihan dalam Aktiviti Penulisan. Malaysian Journal of Social Sciences and Humanities (MJSSH), 7(3), e001366-e001366.
[3] Srinounpan, B., Srinounpan, C., Sumethokul, P., & Patwary, A. K. (2020). The application of qr code technology to create the value-added products for the baan klong peek neur beehive community enterprise group at tambon suankhan, nakhon si thammarat province. Systematic Reviews in Pharmacy, 11(7), 519-528.
[4] Yang, X., & Yang, M. (2021). Application of visual elements in product paper packaging design: An example of the “squirrel” pattern. Journal of Intelligent Systems, 31(1), 266-280. https://doi.org/10.1515/jisys-2021-0195
[5] Widiyanto, A., & Rifa’i, A. (2014). User manual with augmented reality to support packaging products.
[6] Billinghurst, M. (2002). Augmented reality in education. New horizons for learning, 12(5), 1-5.
[7] Berryman, D. R. (2012). Augmented reality: a review. Medical reference services quarterly, 31(2), 212-218.
[8] Murugesan. (2023, January 9). Folder Design | Presentation Folder Design | Folder Design Ideas. All Time Design. https://alltimedesign.com/folder-design/
[9] Ramsden, A. (2008). The use of QR codes in Education: A getting started guide for academics. Accesible desde< http://zabdulkhaaliqcapstone. yolasite. com/resources/getting_started_with_QR_Codes. pdf, 28(10), 2014.