

Completion Report

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Cleanliness is one of the practices that needs to be emphasized, especially with the Covid-19 disease outbreak that has spread all over the world and its dangerous and deadly effects. Japan is a well-known country in terms of cleanliness and hygiene practice. Therefore, we try to absorb this rich culture into our community in Malaysia.

Previously, the practice of maintaining cleanliness in Malaysian society was not given much attention. Children are one of the high-risk groups because they are easily exposed to and infected with germs and various dangerous diseases. Therefore, they should be given exposure on how to maintain personal hygiene. Augmented reality (AR) technology has also been proven to be an interesting and effective technology in teaching and learning. Therefore, this project developed an AR application and story book to teach children about the practice of keeping clean in their daily lives. Among the important features emphasized in this application are how to wash hands, wear a half face mask, gargle after returning home, and eat healthy food to improve the body's immunity. We have implemented "Ugai" (うがい), which is a traditional Japanese practice of rinsing one's mouth with water. The purpose of Ugai is to purify the mouth and prevent any impurities or bad breath from affecting the environment or the people around. It is also believed to have health benefits such as preventing dental caries and reducing the risk of infections.

Following our discussion with the kindergarten, we have successfully developed an augmented reality (AR) application that is compatible with smartphones. The kindergarten expressed their agreement that smartphone-based AR offers greater accessibility when compared to wearable AR applications. This application was evaluated by kindergarten teachers and 44 children in Malaysia. The results showed that the story books with AR technology successfully attracted the attention of children to learn about hygiene practices and healthy eating. The teacher responses indicated that the design of the application is attractive and suitable for use by children. The children who participated admired the application and said that "the application was fun, and they could learn a lot about healthy practices." Some of them even mentioned specific practices such as "I learned how to gargle, use a face mask, and wash hands properly." Furthermore, we participated in the Teaching and Learning Innovation Congress and Competition (kNovasi) in Malaysia to spread the knowledge that we adapted Japanese hygiene practice in our invention to the community in Malaysia. It was an honor to be awarded first place for the research article and fourth place for the Mobile AR application. Lastly, we reached an agreement with a local kindergarten to adapt the technology we have invented. Thus, the achievements obtained from the implementation of Japanese culture do not just stop here but continue further with the acculturation by children in Malaysia through kindergarten.

Publication of the Results of Research Project

Verbal Presentation (Date, Venue, Name of Conference, Title of Presentation, Presenter, etc.)

1. 6 & 7 September 2022, Teaching and Learning Innovation Congress and Competition (kNovasi), Mobile Augmented Reality Apps to Stimulate Interest Children in Hygiene Practices. Noor Anis Najma Abdul Nasir, Lam Meng Chun, Aznur Aisyah Abdullah, Shinobu Hasegawa, Nur Asyiah Suwadi, Siti Aisyah Zulkifli
2. 13 April 2023. Webinar. Good Practice of Teaching and Learning Series 2/2023. Mobile AR Hygiene Practice Application. Lam Meng Chun

Thesis (Name of Journal and its Date, Title and Author of Thesis, etc.)

1. Noor Anis Najma Binti Abdul Nasir. 2022. Buku Cerita Dan Aplikasi Augmentasi Realiti Amalan Kebersihan Untuk Kanak-Kanak Prasekolah. Dissertation Bachelor of Computer Science with Honours, Faculty of Information Science & Technology, Universiti Kebangsaan Malaysia.

Book (Publisher and Date of the Book, Title and Author of the Book, etc.)

1. Three story books for children with topic: Hygiene Practice, Healthy Food, Sharing and caring
2. One mobile augmented reality application.
3. Teaching and Learning Innovation Congress and Competition (KNovasi) 2022. Aplikasi Augmentasi Realiti Mudah Alih Untuk Merangsang Minat Kanak-Kanak Dalam Amalan Kebersihan. Noor Anis Najma Abdul Nasir, Lam Meng Chun, Aznur Aisyah Abdullah, Shinobu Hasegawa, Nur Asyiah Suwadi, Siti Aisyah Zulkifli (2022). P.p. 112-115.
4. Faculty of Information Science & Technology, Universiti Kebangsaan Malaysia. 2022. Technical Report. Buku Cerita Dan Aplikasi Augmentasi Realiti Amalan Kebersihan Untuk Kanak-Kanak Prasekolah. Noor anis najma abdul nasir, lam meng chun, aznur aisyah abdullahha, hasegawa shinobu.
5. One journal article in the writing.