

Augmented Reality-Based Approach to Improve Learnability of Sri Lankan History

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Augmented Reality (AR) being one of the most trending technologies in the world has offered many possibilities to improve existing traditional approaches in day to day tasks. In Sri Lanka, the existing model of education is mostly based on a passive learning system. But as the technology is growing, all the education systems are moving towards digital. The low-cost tablet PCs would replace textbooks soon. In Sri Lanka, there are some schools where the tablet PCs are already using as a learning element. However, there is not enough learning material to be used with these high-end devices and the curriculum of the local education is not optimized to take full advantage out of these devices. This study is focused on how AR-related applications can be used to improve the learnability of students, allow students to learn in an active learning environment in history, and archeological education using AR and evaluate the feasibility of implementing an active learning environment. In this study, the evaluation has been done using two main areas in archeological history education in Sri Lanka. Which are archeological places and arts and crafts that have an archeological value? The evaluation has been done using a mobile AR application-HistoriaAR. The researchers select a group of students to study a given lesson that covers the history and archeological aspects using textbooks and AR-based mobile application in two instances. After that, students were evaluated with a paper-based questionnaire and an in-built evaluation component in the mobile AR application, respectively. According to the results, the mean score of performance (7.13) using textbooks has been improved to mean score of (8.10) using AR related to archeological places. And mean score of performance (6.92) using textbooks has been improved to mean score of (7.63) using AR for to arts and crafts section. At the end of the study, results have proven that the performance of the learning of students can be improved using AR.

Keywords: Augmented reality (AR), Sri Lankan education, History & Archeological studies, Active learn