

Original Research Paper

## AR Technology Educational Game for Inspiring Students to Implement Zero Waste Management

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**Abstract:** Alongside Malaysia's population expansion, the amount of waste being thrown away has continuously increased, with the majority of it ending up in landfills. AR bridges the gap between abstract ideas and real-world experiences by allowing students to see and interact with virtual objects and information in the actual world. 5Rs-AG (AR Technology Educational Game for Inspiring Students to Implement Zero Waste Management) app is a mobile application that has AR technology in it to assist target users like students, local communities also UPSI students to learn and as for teachers to use as a learning aid in the learning process in school. The objective of this research is to identify significant elements of creating an effective learning aid by developing an AR mobile game about the 5Rs of zero waste management, develop the prototype in the mobile application AR Game also evaluate the usability of the developed prototype AR Game. The method that is being used is the Evolutionary Prototyping model. The evaluation is conducted using the System Usability Scale (SUS). Random 18 respondents are participated answering the Evaluation Form. From the analysis finding, the mean from all the statements is 3.84 which represents all the respondents are Agree and the SUS Final Score is 71.80 that represents as Good. Thus, using AR technology is the best way for students to learn interactively about waste management.

**Keywords:** 5Rs Concept, Augmented Reality (AR), Educational Game, Mobile Application, Zero Waste Management.

