

## ABSTRACT

This study focuses on the development of a prototype supplementary learning and teaching material for Hajj procedures and steps. From the results of previous and current preliminary studies, Hajj supplementary materials and learning methods are less effective in giving clear understanding to the users, particularly the pilgrims, whether the youngster or the elder. Most of the supplementary materials are based on passive learning. In providing a better supplementary learning material to support active learning and self-directed learning, this study incorporates virtual environments (VE) and Multimedia (MM) technologies to develop Virtual Hajj (V-Hajj) prototype. In addition, to produce a material that can persuade users particularly the elder to use computer technology as their supplementary learning material, this study adapted the persuasive design guidelines. Furthermore, theories and principles of the VE and the MM were also considered in producing a better and effective courseware. These include the constructivist theory of VE, MM principles, Cognitive Theory of MM Learning (CTML) theories and persuasion technology (PT) principles. Each MM elements has been used in the V-Hajj development. Some experts from VE and MM fields have evaluated the usability of the developed prototype before being assessed by the end users. For the user evaluation, two groups of respondents were involved, youngster (19 - 39 years old) and elder (40 years old and over). A set of questionnaires which was adapted from the Technology Acceptance Model (TAM) was used. It comprises of four attributes; Perceived ease of use (PEOU), Perceived Usefulness (PU), Attitude Towards Using (ATTITUDE) and Intention to Use (ITU). Overall, the statistical results of the evaluation showed that there is no significant difference between youngster and elder in terms of acceptance of the V-Hajj prototype. Furthermore, there was a good persuasive effect among the elder after using V-Hajj, compared with the earlier results from the preliminary study. Besides that, there were positive changes in term of acceptance among the elder compared to the results of the preliminary study which indicated that the elder did not prefer to use computer based for Hajj learning. This probably due to the persuasive effect of the V-Hajj prototype. As for the conclusion, this study supports the integration of multimedia, virtual environment and persuasive technology in designing and developing a supplementary Hajj learning materials.