EFFECTIVENESS OF AUGMENTED REALITY INSTRUCTION IN TEACHING ICT SYSTEMS DESIGN

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<th>PROBLEM</th>
<th>HYPOTHESIS</th>
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<td>Learners in Information and Communication Technology (ICT) classes find the complexities of System design thinking difficult to conceptualise and visualise without a simulated or real world reference model of the system.</td>
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<td>» Giving permission to multitask using mobile computing devices in a controlled fashion could benefit learners to improve learning outcomes, performance, and engagement.</td>
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BACKGROUND

» Technology has altered how learners engage in education activities by assisting them to obtain knowledge and awareness (Gutierrez & Meneses 2014).
» Augmented Reality (AR) can provide instructional content that allows active engagement in the learning process (Wojciechowski & Cellary 2013).
» Through virtual environments, learners can collaborate or work individually towards enhanced learning outcomes in a learning process activity (Wang et al. 2013).

PROPOSED INTERVENTION

» Augmenting practice, using a smartphone/tablet application for a group of students studying Systems Analysis and Design.
» Two modelling concepts: use cases and business process modelling (BPM).
» System Analysis tutorial exercises embedded with and without an AR component.
» Actors and data will be modelled to resemble a physical environment.
» Using AR, students will be able to repeat their experiments to master modelling and design.

OBJECTIVES

» The aim of this proposed study is to assist students who face difficulties in translating and comprehending a system from a traditional theoretical paper based abstraction.
» Assisting ICT learners in understanding Systems Design complexity using an Augmented Reality (AR) visualization intervention.
» Encourage the learner to engage actively in the learning process when designing system diagrams.

EXPECTED RESULTS

» Overall student learning and engagement improvement and success compared to;
» students using non AR embedded learning materials.
» Significant benefits in terms of pedagogical effectiveness and experiential and;
» collaborative learning processes by using AR.

REFERENCES