

# **An Experimental Study on Computer-Based Virtual Classroom Learning, and Its Impact on Student Performance Based on Sri Lankan University Students**

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Virtual Reality (VR)-based platforms have the potential to bridge the existing gap between educationalists and students. Computer-based simulators have the ability of Virtual Reality (VR), and it has a potential to take learning beyond the traditional online teaching-learning experience of educationalists and students together in the same room with the aid of online learning tools. VR-based educational applications were introduced to the market recently with the advancements and rapid growth of the pandemic to face 'new normal' ethics. VR-based simulators allow students to visualize or immerse the concepts taught in classroom textbooks, whether the student is at home, the library or anywhere in the world. In the global framework, many student learning reforms are initiated. However, modern VR learning delivery technologies, VR training methods, and gamification technologies are not yet addressed in Sri Lanka. Further, VR technology's influence on student performance is not profoundly studied in the Sri Lankan university context. Therefore, it is important to conduct an experimental study to find the student's mental behaviour, especially with the academic performance in the virtual paradigm. The research was developed via quantitative research techniques as a pre-post experimental study to achieve the research objectives with Quantitative data collection methods. Further, descriptive statistical analysis approach based on paired t-test analysis method was used and data analysis was done via IBM SPSS statistical tool. The main variables identified as Knowledge of Structures, Feedback, Mental Models and the conceptual framework were designed based on literature for the t-test. As pre-test, students were given a questionnaire to fill before the simulator training treatment. The questionnaire was designed based on available literature, while there were three-hypotheses based on the variables. The chosen VR learning platform was 'Unimersiv' ancient Rome visit for the students, and that lesson gives a great knowledge on ancient history. After the simulator learning, the same set of students was given the post-test questionnaire to fill. Significant correlation analysis proved that there is a positive and direct effect of each independent variable mentioned above.

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