



Adaptive Tutorials versus Web-Based Resources in Radiology: A Mixed Methods Analysis of Efficacy and Engagement in Senior Medical Students

Stuart W.T. Wade^{1,2}, Michelle Moscova², Nicodemus Tedla², Daniel A. Moses^{1,3}, Noel Young⁴, Merribel Kyaw⁵, Gary M. Velan²

¹ Prince of Wales Hospital, ² School of Medical Sciences, ³ Prince of Wales Clinical School, ⁴ Westmead Hospital, ⁵ Royal Prince Alfred Hospital.

Background: Radiology is under-represented in many medical curricula. Adaptive tutorials, a form of e-learning, have the potential to enhance radiology education for medical students.

Methods: A randomised mixed methods crossover trial assessed the effectiveness of adaptive tutorials on knowledge of appropriate use and interpretation of head and chest CT scans compared with peer reviewed web-based resources. 81 volunteer year 5 and 6 students enrolled in the UNSW Medicine program were randomly allocated into two groups. In the first phase, Group A received a head CT adaptive tutorial, while Group B received the web-based resources. Both groups then completed an online assessment. Following cross over, chest CT was studied with Group B receiving the adaptive tutorial and Group A receiving web-based resources. Both groups completed another assessment then a questionnaire evaluating perceived engagement and efficacy of each resource.

Results/Discussion: Groups receiving adaptive tutorials achieved higher mean assessment scores in both phases of the study, statistically significant in the first phase only. Both groups reported higher engagement and overall perceived value of the adaptive tutorials. Our findings suggest interactivity aids student engagement, retention and application of knowledge.

Conclusions: Adaptive tutorials may potentially bridge the current gap in radiology education within medical curricula.