SHORT COMMUNICATION

GRAPHIC (GAMES RESEARCH APPLIED TO PUBLIC HEALTH WITH INNOVATIVE COLLABORATION) - DESIGNING A SERIOUS GAME PILOT FOR DENTAL PUBLIC HEALTH

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Introduction
Educators are looking towards new methods of engaging and motivating students and encouraging self-directed life-long learning in preparing undergraduates to enter the dental profession. Technology enhanced learning (TEL) is becoming more relevant in the delivery of education to undergraduates and in higher demand [1,2]. In healthcare, undergraduate courses of study have a focus on clinical education and the individual patient. In Dental Public Health students focus on population oral health needs and demands, together with strategic planning and delivery of oral health care, prevention and health promotion.

Aim
To develop an online collaborative serious game as an e-learning Dental Public Health resource for dental undergraduates.

Method
GRAPHIC involved the development of a pilot computer game programme. The game was housed within the Moodle environment, an open source course management system which is familiar to the undergraduates and the architecture of the programme was made using Articulate e learning software (Figure 1). In the game students worked collaboratively to consider the views of key stakeholders in the community and individually to explore population oral health, and the evidence base for community initiatives. Students were set the task of improving the oral health of 5-year-olds in a simulated inner city environment. Students were required to deliver a selection of health promotion interventions in the simulated environment.

Figure 1 Screen shot from GRAPHIC

Results
The pilot programme was used by students in January 2012 with positive feedback. The learning outcomes of the game were achieved with all students successfully passing the game. The student's learning outcomes of the game were achieved in programme content and overall structure of the game. However, the software used in the construction of the game had limited the certain aspects of the interaction of the user with the game, which was confirmed by students.

Discussion
The use of computer based games in the education of healthcare undergraduate students can improve the student performance [3]. The

development of a pilot game has demonstrated the effective use of technology enhanced learning in dental public health. The designing of the programme developed a successful framework for delivering the desired learning outcomes. The scoring system for part of the game was rudimentary and a more sophisticated scoring will be developed to better simulate a real dental public health experience. The limitations of the software affected the original design of certain aspects of the interface of the programme. The use of bespoke software for the architecture of future developments of the programme will improve the interface to improve user experience.

Conclusion

The pilot programme demonstrates the potential of using gaming as a teaching tool in dental public health. Learning from the pilot is contributing to further developments including an improved user interface.

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