The Evaluation of Game-based E-learning for Medical Education:
a Preliminary Survey

**Chao-Cheng Lin, M.D.[1,2,3], Yu-Chuan Li, M.D., Ph.D.[1], Ya-Mei Bai, M.D.[3], Jen-Yeu Chen, M.D.[3],
Chien-Yeh Hsu, Ph.D.[1], Chih-Hung Wang, Ph.D.[4], Hung-Wen Chiu, Ph.D.[1], Hsu-Tien Wan, R.Ph.[5]**

[1]Graduate Institute of Medical Informatics, Taipei Medical University, Taiwan
[2]Graduate Institute of Medical Sciences, Taipei Medical University, Taiwan
[3]Department of Psychiatry, Yu-Li Veterans Hospital, Hua-Lien, Taiwan
[4]Department of Guidance & Couseling, National Chunghua University, Chunghua, Taiwan
[5]Center for Biomedical Informatics, Taipei Medical University, Taiwan

ABSTRACT

Game-Based e-learning (GBeL) was a newly designed platform for education of students with higher education, especially for medical students. The purpose of this study was to preliminarily evaluate the attraction of GBeL, the motivation toward GBeL and the learning effect. We found more than 80% of students thought that GBeL was attractive and more interesting than traditional class. However, the percentage of enhancing interest to learn and learning more complete and deep knowledge were less than 50%.

BACKGROUND

A straight-forward approach of e-learning may just convert what's taught in a class into a set of web-based materials. However, the content of Web-based e-learning is often text-heavy with weak interactivity and many users find it boring. On the contrary, the idea of e-learning building upon the attraction of online games may have advantages of both the attraction of online games and the convenience of e-learning. Our aims were to conduct the survey to evaluate the attraction of the GBeL, the motivation for students learning through GbeL and the satisfaction for the learning effect.

METHODS

The GBeL was constructed based on a previous result for the study of attraction and motivation factors of online games in Internet Café. The GBeL platform was build with a free MMORPG "Well of Souls" by Synthetic Reality and e-learning components. One GBeL virology lesson on Japanese Encephalitis was implemented for students of Taipei Medical University who took the courses of computer applications or medical computer applications. The game includes 3 chapters. Each chapter contains learning material and several missions. Players have to response correctly in order to pass through some missions or get equipments. There are some combat components that players have to fight with mosquitoes or other monsters. The knowledge components were constructed to conform the Sharable Content Object Reference Model (SCORM) standard.

A brief self-report Web-base questionnaire for satisfaction of this GBeL lesson was completed anonymously by the students after the end of the class. The questions were designed with five-point Likert-type items. The statistic software used was SPSS 10.0 for Windows.

RESULTS

One microbiology lesson on GBeL platform was implemented for 134 undergraduate students. There were 115 valid responses for the survey. Most of them were first or second year students (80.8%). The percentage of agreement that GBeL class was attractive was as high as 81.2%. About 81.7% of students agreed that GBeL class was more interesting than traditional class, 79.4% of them thought that GBeL enhances interaction, 87.6% of them thought that GBeL provides a free learning tool, 42.6% of them thought that GBeL enhances the interest to learn, 42% of them thought that range and depth of knowledge in GBeL is appropriate, 36.9% of them thought that they learn more complete knowledge through GBeL, and 34.8% of them thought that GBeL is helpful for them to learn more quickly.

CONCLUSION

In the study, more than 80% of students thought that GBeL class was attractive and more interesting than traditional class, which are even higher than our previous result in Internet Café study. However, less than 50% of students thought that the depth and completeness of knowledge in GBeL is appropriate and enhances their interest to learn. We concluded that GBeL is attractive, but the motivation to learn through GBeL, and the knowledge content requires further development to satisfy students' needs.

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