Development and Testing of Games for Medical Education

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Abstract
The gaming industry has seen spectacular growth over the last years. In the IT field it ranks third in terms of revenue. Such growth is due to several criteria. A first criterion is the emergence of new technologies based on virtual, augmented, and/or mixed reality. Another criterion is multidisciplinarity, combining several fields for a particular purpose. The use of certain design principles of 3D games, but also the introduction of the concept of gamification, is another criterion that underpins the growth of the gaming industry. Games may be used not only for fun, but they can also be used in education. Many games use technology and certain gaming principles in medical education to train students or those who are passionate about medicine, but also for training surgeons. To ensure the success of such games, they must be tested according to several criteria and/or methodologies. Testing can be done in a traditional way on a sample of individuals who answer certain questions in which their opinion of the game is sought. Another way to test the game is to use certain software packages which can automatically track the activity of the users in the game. The greatest benefit of this type of testing is objectivity, as the interactivity within the 3D space of the game can be clearly measured. The main metrics of this type of test are: time spent in the game and/or in certain places in the game, the number of accesses to certain parts or levels of the game and the number of game users. Based on such criteria, the users' activity may be easily tracked/monitored and interventions can be made where the users had issues. The above presented concepts and topics related to serious gaming supporting healthcare will be tackled in the paper to follow this abstract.

Keywords: 3D environment; 3D game; Automation test; Virtual Reality