

Evaluation of mobile serious game learning experience from different perspectives

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The most important principle of 21st-century learning is to put the learner at the center of the design of learning environments (OCDE, 2010). From this perspective, the learning experience is important to validate the design of learning environments. Mobile devices seem more and more frequent nowadays, enabling learning and entertainment anytime and anywhere. Serious game (SG), which allows playing while learning, appears to optimize the learning experience. Furthermore, user experience (UX), which refers to users' perceptions and reactions resulting from the use or intended use of the product, system, or service (ISO 9241-210, 2010), is also increasingly important in today's product design. However, although much research about user experience has been carried out on serious game, few studies focus on the learning experience of serious games on mobile devices. Moreover, the studies conducted do not cover all aspects useful for evaluating learning experience sufficiently. Therefore, this research aims to find the essential criteria to evaluate the learning experience of SGs on mobile devices.

Many articles discuss learning experience, but very little research has defined it. Therefore, based on contemporary learning theories (Skinner, 1968; Gagné, Brien et Paquin, 1976; Piaget, 1936; Vygotsky, 1978) and the experiential learning theory proposed by Kolb (1984), which emphasizes learning with concrete experiences, we define learning experience and its characteristics in our research. The learning experience consists of all the perceptions that the learner could experience during the learning process. Besides, some similar notions have been identified in different publications involving the learning process and experience, eleven characteristics are listed in this research that may promote an optimal learning experience.

For this research, we interview some experts from different areas (including instructional engineers, game designers, user experience designers, and learner-players) and an online survey of end-users (students) to identify the key criteria to evaluate the satisfaction of the learning experience of SG on mobile devices. Firstly, we interview 15 people from different areas to select essential evaluation criteria. The preliminary results of the interviews show that people from the same areas tend to choose criteria close to their field. For example, lecturers, professors, and educational engineers pay more attention to learning aspects. At the same time, UX designers focus more on the needs of the players and the usability of the game. Secondly, we will conduct an online survey. The evaluation questionnaire will be developed with the criteria identified in the interviews and online survey. Finally, future work will engage students using a mobile game to experiment.

This research defines the learning experience and its characteristics based on previous research. Then, a questionnaire of the learning experience will be developed, which could help facilitate the design of SG and related games and help educators choose a serious game that fits the needs of students for teaching.

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