Identifying Game Variables from Students' Surveys for Prototyping Games for Learning

Authors : N. Ismail, O. Thammajinda, U. Thongpanya

Abstract : Games-based learning (GBL) has become increasingly important in teaching and learning. This paper explains the first two phases (analysis and design) of a GBL development project, ending up with a prototype design based on students' and teachers' perceptions. The two phases are part of a full cycle GBL project aiming to help secondary school students in Thailand in their study of Comprehensive Sex Education (CSE). In the course of the study, we invited 1,152 students to complete questionnaires and interviewed 12 secondary school teachers in focus groups. This paper found that GBL can serve students in their learning about CSE, enabling them to gain understanding of their sexuality, develop skills, including critical thinking skills and interact with others (peers, teachers, etc.) in a safe environment. The objectives of this paper are to outline the development of GBL variables from the research question(s) into the developers' flow chart, to be responsive to the GBL beneficiaries' preferences and expectations, and to help in answering the research questions. This paper details the steps applied to generate GBL variables that can feed into a game flow chart to develop a GBL prototype. In our approach, we detailed two models: (1) Game Elements Model (GEM) and (2) Game Object Model (GOM). There are three outcomes of this research – first, to achieve the objectives and benefits of GBL in learning, game design has to start with the research question(s) and the challenges to be resolved as research outcomes. Second, aligning the educational aims with engaging GBL end users (students) within the data collection phase to inform the game prototype with the game variables is essential to address the answer/solution to the research question(s). Third, for efficient GBL to bridge the gap between pedagogy and technology and in order to answer the research questions via technology (i.e. GBL) and to minimise the isolation between the pedagogists "P" and technologist "T", several meetings and discussions need to take place within the team.