An Open Perspective for Educational Games

Ismar Frango Silveira, Universidade Presbiteriana Mackenzie, São Paulo, Brazil
Klinge Orlando Villalba-Condori, Universidad Nacional San Agustín, Arequipa, Peru

ABSTRACT

In the field of computers in education, educational digital games have potential to involve more issues of motivation and involvement, considering their possibilities for higher level of interaction and engagement. However, years of research have shown that the impact of educational games is lower than expected, especially the difficulty to adapt them to different educational contexts, such as with different educational, linguistic, cultural and social aspects. In that sense, this article presents an open perspective on the development of educational games, emphasizing the challenges related to their development and their effective potential for use in education, proposing that they be designed as Open Educational Resources (OER). From this perspective, it is expected to support communities that would aggregate developers (programmers, game designers, media producers, etc.) and users (teachers and students) so they can work collaboratively in creating educational games in an open way.

KEYWORDS

Collaborative Development, Education, Educational Games, Educational Technologies, Learning Objects, Open Educational Resources, Openness, Playful Learning

INTRODUCTION

Technological advancement has the potential to provide large segments of the population the right to education and general right of access to knowledge and culture. In fact, the issue of access to knowledge and culture favored by information and communications technology (ICT) has become very important in recent decades.

In the educational context, many achievements of use of ICT can be verified along the years, but their impact still remains lesser than expected - and as indeed achieved in many areas. Peña-López (2015), in a report to OECD (Organization for Economic Cooperation and Development) indicates that even countries that have invested heavily in ICT for education have not seen significant improvements in its results of PISA (Program for International Student Assessment). This indicates the urgency of an even bigger investment in research on how to make effective efforts to apply ICT in education and also how to involve education process stakeholders in such efforts.

A research field in the context of Computers in education that has gained strength over the last twenty years is the aspect of production of technology-enhanced instructional materials. These materials, for long concentrated under the term “Learning Objects” (LO), impose design

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and production processes that often involve multidisciplinary approaches and development teams, achieving significant production of digital content offered in various forms, such as in the form of digital games.

Games, given their inherent characteristics, are often used in the educational research field as an important tool for teaching and learning processes. Undoubtedly, educational games are among the most attractive learning objects, with a considerable potential of having an important impact both in classroom as in distance learning or autonomous learning. Their main characteristics, which involves questions of motivation, interaction, attractive graphics and fun activities, allow them to be perhaps the most effective kind of educational resources available.

However, reality imposes a completely different scenario: research has shown that the impact of current educational games is far from the expected, as with almost all ICT initiatives in education. Nonetheless, in the specific case of digital games, there are a variety of specific factors that go beyond the common factors affecting all the other computer-based initiatives mentioned above. Among these factors, it can be mentioned that educational games are considered extremely “boring” by students (Stasiienko, 2013; Schäfer et al., 2013).

This perception arises from a variety of items, ranging from inadequate design to the difficulty to adapt an educational game to different educational contexts. It is believed that the application of the principles of openness (Peter & Deimann, 2013) in the process of developing educational games, many of the issues currently faced by conventional educational games could be partially or even completely solved.

Since there are many challenges to overcome in order to achieve this goal, this paper aims to discuss the main perspectives about the development of open educational games for the present and the future. In this sense, the main goal of this paper is to present a study that can support an initiative of Open Educational Games (OEG), designed under a collaborative methodology that involves different actors (developers, journalists, artists, teachers, students and so on) in designing educational digital games. This proposal supports the reuse and repurposing of games’ components and also the construction of digital games from the scratch or by combining or modifying existing games – they also can be re-adapted and re-combined to different contexts or educational purposes.

GAMES IN EDUCATION

Games are, indeed, among the computer software artifacts that most have attracted the attention of researchers, developers, teachers and students along the years, as stated above. This includes educational games - term used when digital games are designed specifically for this kind of purpose, being classified as a subtype of serious games. They can be inserted in formal educational processes as complementary to traditional teaching processes, or even be considered educational materials used for autonomous (formal or informal) learning situations. When used in formal educational contexts, the choice of games and their contextualization into a syllabus or a class plan are usually defined by the teacher, while in informal learning situations, the player / student has free will in choosing the game as well as when and where to play it.

There are innumerable barriers to the full adoption of educational games in formal educational systems; Klopfner et al. (2009) present a list of some of them: first, plans and curricula with little or no flexibility, giving no space to effectively consider games as educational materials. Even if a teacher wants to integrate games in the classroom, there are some logistical problems, ranging from the limited classroom resources, lack of facility to access computer labs – which are often blocked for games, lack of time, the ubiquitous ban of mobile devices, and so on. Added to this, most of the school staff have negative attitudes about the games, many of them pushed by conventional media or by the fact that students normally spend more time than they are supposed to play entertaining games. On the other hand, educational games fail to attract students like pure entertainment games
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