Toward a Propensity-Oriented Player Typology in Educational Mobile Games

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ABSTRACT

The pivotal role of identifying types of players is inevitable in the game contexts, and educational games are not an exception. This article aims to present a model of player-game interaction in the mobile game-based learning setting regarding the behavioral propensity. This model comprises five different features inherited from the player typology literature including precision, perfection, punctuality, presence, and pace. To this end, we analyzed the activities of players in a mobile educational game and then tried to classify players based on their preferences in how to deal with the game. Furthermore, as a step toward determining the association of features with each other, multiple linear regression analysis was conducted. The outcome of the investigations resulted in a model representing player interaction with the game in a way that it could be used to classify different types of players in educational mobile games.

KEYWORDS

Game-Based Learning, Gamification, Mobile Learning, Player Engagement, Player Typology

INTRODUCTION

Computer games have been designed to promote learning process of individuals in ways that attract them, bringing about a continued interest in the game for a substantial amount of time and keep them involved in the game environment. The design of educational games could have three purposes, they may be designed to promote learning or to develop cognitive skills, or to take the form of simulation allowing learners to practice their skill in a virtual environment (Deterding et al., 2011). In the field of game-based learning and particularly mobile educational games, studies proved that gamified curricula will become more and more popular as a method to induce engagement in students (Crisp, 2014).

Recent developments in game business have especially elevated the need for distinguishing between types of players and play styles (Hamari et al., 2014) and educational mobile games as a recently appeared branch of the games is not an exception. As using games for educational purposes has gained notable respects among researchers, since it has potentials to promote player-game interaction for education purposes, the need for gaining a broad knowledge of the players and their characters is becoming more essential. Sabourin and Lester (2014) in their study stated that a game-based learning environment has the ability to both uphold learning and boost engagement of players. Therefore, considering types of players and their playing styles in the design of the educational mobile games becomes increasingly essential.

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games is a necessary step toward improving personalization and customization of the games to make players more engaged and fulfilled.

Despite various research which has been conducted to study player typology in the digital games, lack of a model or framework distinguishing different player types in the game-based learning environments and particularly educational mobile games is perceptible. Initially, this study aims to define and present a model representing player-game interaction in the setting of educational mobile games regarding the behavioral propensity of players in dealing with the game. Furthermore, it considers how players could be classified into different groups showing different tendencies toward using an educational game and how the defined features are correlated to each other. This would enable us to gain a perspective about player types and a profound understanding of players’ behavior in the game. This research, in fact, is the next step of our posterior work on player engagement in educational mobile games (Gholizadeh et al., 2017).

The following section presents the theoretical background about player typology literature. Next, the proposed model presented along with a description of each feature in it. The methodology of the study including research design, context, and data collection process will be expressed. A multiple linear regression analysis and results follow. Section five discusses the practical and theoretical contributions regarding the results. The conclusion section reviews the most important findings and expresses the limitations and future directions of the study.

LITERATURE REVIEW

Digital Game-Based Learning

Digital game-based learning is the product of a balance between learning and gaming elements. In the other words, entertaining intrinsic of games has potentials to be coupled with the learning process and improve it. Therefore, two important elements of educational games are entertainment and educational component separating educational games from entertaining games and e-learning applications (Bellotti et al. 2013). Two types of games can be distinguished in educational games: special purpose games which have been developed to promote educational purposes and Commercial-Off-The-Shelf games that have been developed with entertainment objectives, but that are being used in an educational context. Note, however, that this does not mean that special-purpose DGBL games cannot be commercially available (Stewart, 2013).

The design of educational games could have three purposes, they may be designed to promote learning or to develop cognitive skills, or to take the form of simulation allowing learners to practice their skill in a virtual environment (Erhel & Jamet, 2013). Games that are developed with the primary goal of achieving knowledge transfer are typically used in education, in order to teach math (Castellar et al. 2015) or language (Palomo-Duarte et al., 2017), for instance.

Player Engagement

Engagement is a quality of user experiences with technology that is signified by challenge, aesthetic and sensory appeal, feedback, novelty, interactivity, perceived control and time, awareness, motivation, interest, and affect (O’Brien & Toms, 2008). In the process of learning for youth and adults who are using an instructional technology such as an educational game, engagement drives moment-by-moment use, as well as the learning that occurs during play and preferably transfers afterwards. Learners who are engaged in educational activities show involvement through their behaviour (Deater-Deckard, Chang & Evans, 2013).

A usual incentive for using digital games to support learning is a belief that games can operate as useful primers for active and more profound learning engagement with subject matter, by providing an engaging and contextualized setting for authentic problem solving (Gee, 2009). Although there is an increasing number of studies carried out to survey or synthesize the experimental evidences
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