Chapter 74
Modeling Gameplay Enjoyment, Goal Orientations, and Individual Characteristics

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ABSTRACT

The purpose of this study was to investigate the relationships between gameplay enjoyment, gaming goal orientations, and individual characteristics. A total of 301 participants were surveyed and the data were analyzed using structural equation modeling. This led to an expanded Gameplay Enjoyment Model (GEM) with 41 game design features that influence player enjoyment. Furthermore, a 3x2 Gaming Goal Orientations model was established with six dimensions that describe players' motivations for gaming. In addition, players' individual characteristics were used to predict gameplay enjoyment in the GEM-Individual Characteristics model. The six Gaming Goal Orientations dimensions were the strongest predictors, while the commonly used gender and hours played per week variables failed to predict enjoyment. The results of this study enable important work to be conducted surrounding gameplay experiences and individual characteristics. Ultimately, it is believed that the Gameplay Enjoyment Model, Gaming Goal Orientations, and the GEM-Individual Characteristics model will be useful tools for researchers and designers who seek to create effective gameplay experiences that meet the needs of players.

INTRODUCTION

The gameplay experience can be understood as an interplay that is partially generated by a game and partially generated by a player. In a corresponding perspective, Ermi and Mayra (2005, p. 16) defined the gameplay experience as a "unique interac-

tion process between the game and the player." Similarly, Winn (2008) explained that gameplay is influenced not just by design, but likewise the mindset and sociocultural background of the player. Furthermore, Juul (2010, p. 53) explained that video game researchers tend towards either a "player-centric" or "game-centric" perspective.

A player-centric perspective concentrates on how users play games, while a game-centric perspective concentrates on game design. Juul advises that these viewpoints cannot fully describe games in isolation. Taken together, these perspectives suggest that game and player characteristics are critical to understanding the gameplay experience.

Repeated calls for empirical research that considers the combined effects of game design and player characteristics can be found in the literature. Hartmann and Klimmt (2006b) emphasized the importance of distinguishing between complex and diverse game types. Ryan, Rigby, and Przybylski (2006, p. 362) urged for "more research on individual differences in the appeal of games that differ in theme, content, and styles of play." A survey of 314 gamers cited the importance of competition and challenge to enjoyment, yet the authors noted that research had not yet defined what these terms mean in the gameplay context (Vorderer, Bryant, Pieper, & Weber, 2006). Ke (2008) explained that although games are widely considered engaging, players react differently to games due to individual differences. Meanwhile, Weber and Shaw (2009) highlighted the prominence of game features in players' explanations of why they play. Wilson et al. (2009) noted that there was a lack of understanding in regards to how learning outcomes are impacted by game attributes. Moreover, Magerko, Heeter, and Medler (2010) suggested that the first step in assisting designers to target varied student populations would be to map important individual differences to potential game design features. Similarly, McNamara, Jackson, and Graesser (2010) expressed a need to identify the relationships between specific game features and the motivational aspects of games. After collecting a variety of students' in-game behaviors in and post-play reports of four games, Heeter, Lee, Magerko, and Medler (2011) cited a need for future research on individual differences and cautioned that serious games should consider the needs of avid gamers and non-gamers, males and females, alike. Likewise, a review by Vander-

cruysse, Vanderwaetere, and Clarebout (2012) recommended focusing on game characteristics and individual differences in game-based learning.

In these literature perspectives, many calls are found for research that identifies important game features, while simultaneously considering individual differences. Thus, this research proposes a detailed, empirical approach to examining game design features, individual characteristics, and gameplay enjoyment. In taking this perspective, it is anticipated that a more complete and purposeful understanding of video games and players can be achieved.

Gameplay Enjoyment

There is some belief among game scholars that enjoyment is related to learning outcomes. Fu et al. (2009, p. 362) asserted that "Whether or not a game offers enjoyment to the player is a key factor in determining whether the player will become involved and continue to learn through the game." Heeter, Lee, Magerko, et al. (2011) concluded that the greatest threat to the effectiveness of a serious game is when players do not like the game. Moreover, De Grove, Van Looy, and Courtois (2011) found a strong relationship between the experience of enjoyment in gameplay and perceived learning. These works provide early evidence that enjoyment is not just critical for having a positive gameplay experience, but that it may be essential for games that aim to support learning.

After noting a lack of empiricism, an overreliance on avid gamers, and a narrow range of investigated game types in the development of game design and player taxonomies, Quick, Atkinson, and Lin (2012a) conducted the first of an iterative series of studies examining gameplay enjoyment. They surveyed the video game feature preferences of 293 undergraduate learners (64% female, 36% male) from a variety of majors. Participants rated the importance of 18 features, such as fantasy worlds and online play, to their enjoyment of video games and the data were analyzed

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