Evaluating the Potential of Game-Based Language Learning: an Experimental Study into the Playing and Learning Experiences of Adult Foreign Language Learners

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ABSTRACT

In the academic literature on educational gaming it is often claimed that a positive user experience is a *conditio sine qua non* for producing or enhancing learning effects (Fu, Su, Yu, 2009; Kiili, 2005). While multiple theoretical frameworks have been proposed to illustrate the educational potential of digital games (De Freitas & Oliver, 2005; Becker, 2009), little empirical research has been conducted with actual games and actual learners. An important question thereby is what kind of games to use: existing commercial games or special-purpose educational ones (Van Eck, 2006). The former often boast significantly larger budgets permitting to invest more in the quality of the experience whereas the latter are more directly aimed at predefined learning outcomes. The aim of this study is to measure and compare how adult foreign language learners experience playing two foreign language learning games and one non-educational commercial game in a foreign language. It is hypothesized that the commercial game will evoke a more positive game experience whereas the educational games will be perceived as more instructive.

The study consists of a 3x2 experimental design (N=60) whereby each participant plays all three games. Half have been primed with the message that they will have to take a language proficiency test afterwards. The games are each played for twenty minutes in random order and before the testing session each participant takes a language proficiency test. All participants are Dutch-speaking Belgian adults who are learning German. Based on academic literature concerning game experiences, six constructs are measured: immersion, skill, challenge, frustration, positive affect and negative affect (IJsselsteijn, Nap, de Kort, Poels, Jurgelionis, Bellotti, 2007; Sweetser & Wyeth, 2005). To account for learning effects, two measures are included: productive and receptive language learning skills. Two control variables are used: attitude towards language learning and a

test score on a foreign language test. Game and learning variables are measured by administering a short questionnaire after playing each game.

Our results suggest that different digital games evoke different game- and learning experiences. As expected, the commercial game is experienced as more immersive and evokes less negative affect. However, when taking into account whether the respondent is a gamer, the effect of type of game disappears for negative affect and immersion. Similar findings are obtained for learning experiences. There are significant differences between games for both receptive and productive learning. Pairwise comparisons show that, for receptive learning, differences lie between the language learning games and the commercial game while for productive learning, these differences lie between the text based game on the one hand and the graphical adventure games on the other. However, when controlling for possible influences of attitude towards learning games on productive learning, previous differences disappear. Whereas this effect is significant for receptive learning too, it does not account for all variation between games. When controlling for the effect of German proficiency, no significant effects are found for productive or receptive learning. Finally, no effect is found for priming on either game or learning experience dimension.

The main finding of this study is that there is a significant influence of non-game-related characteristics on the game and learning experience. Despite the variation in the type of games that were used during this experiment, a substantial part of the variation of these experiences is explained by the attitude towards learning with games and being a gamer or not. Considering that the mean age is 21 years this cannot be attributed to the fact that participants were not so-called digital natives. As the learning topics that can be integrated into video games are varied, so is the public of learners. While some authors have enthusiastically embraced the idea of digital-based learning, especially for the digital natives the empirical findings of this study call for some restraint. It appears that a substantial part of learners regard the idea of language learning through video games negatively which affects their potential playing and learning experiences.

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