



REVISTA DE CONTABILIDAD
SPANISH ACCOUNTING REVIEW

www.elsevier.es/rcsar



Is it worth it to consider videogames in accounting education? A comparison of a simulation and a videogame in attributes, motivation and learning outcomes

Jordi Carenys^a, Soledad Moya^b, Jordi Perramon^{c,*}

^a EADA Business School, c/ Aragó 204, 08011 Barcelona, Spain

^b ESADE Business School, Avenida de la Torre Blanca, 59, 08172 Barcelona, Spain

^c Barcelona School of Management – Universitat Pompeu Fabra, Balmes, 132, 08008 Barcelona, Spain

ARTICLE INFO

Article history:

Received 14 January 2016

Accepted 27 July 2016

Available online xxx

JEL classification:

M40

M10

O31

Keywords:

Student learning

Student motivation

Learning outcomes

Learning and teaching

Masters degrees

ABSTRACT

The objective of this study is to assess the effectiveness of videogames in comparison to simulations in a higher education environment and with regard to their attributes, motivation, and learning outcomes, as three of the main dimensions that play a role in the effectiveness of digital game-based learning. Results demonstrate significant differences between the attributes and motivation dimensions, while no significant differences were found for the learning outcomes. This would imply that although both instructional tools lead students to the desired level of knowledge acquisition, the motivation generated, together with the set of features provided by the games complement each other, leading to a superior learning experience. These results support the inclusion of videogames as a complement to simulations in higher education accounting and business environments and allow us to propose a blended approach that provides the learner with the 'best of both worlds'.

© 2016 ASEPUC. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

¿Merece la pena considerar los videojuegos en la enseñanza de contabilidad? Comparación de una simulación y un videojuego respecto a atributos, motivación y resultados de aprendizaje

RESUMEN

El objetivo de este estudio es evaluar la eficacia de los videojuegos en comparación con las simulaciones en un ambiente de educación superior por lo que respecta a sus atributos, motivación y resultados de aprendizaje como 3 de las principales dimensiones que desempeñan un papel clave en la eficacia del aprendizaje basado en juegos digitales. Los resultados revelan diferencias significativas entre los atributos y las dimensiones de la motivación, si bien no se encontraron diferencias para los resultados de aprendizaje. Esto implicaría que, aunque ambas herramientas instructivas dirigen a los estudiantes al nivel deseado de adquisición de conocimientos, la motivación generada junto con las características que facilitan los juegos se complementan entre sí, lo que permite una experiencia de aprendizaje superior. Estos resultados respaldan la inclusión de los videojuegos como un complemento a las simulaciones en estudios superiores de contabilidad y entornos empresariales y permiten que se proponga un enfoque mixto que provee al aprendiz con «lo mejor de ambos mundos».

© 2016 ASEPUC. Publicado por Elsevier España, S.L.U. Este es un artículo Open Access bajo la licencia CC BY-NC-ND (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Códigos JEL:

M40

M10

O31

Palabras clave:

Aprendizaje de los estudiantes

Motivación de los estudiantes

Resultados de aprendizaje

Aprendizaje y enseñanza

Másteres

* Corresponding author.

E-mail address: jordi.perramon@bsm.upf.edu (J. Perramon).

<http://dx.doi.org/10.1016/j.rcsar.2016.07.003>

1138–4891/© 2016 ASEPUC. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Introduction

The enhancement of the use of games in higher education settings is currently promoted by reputable institutions like the Massachusetts Institute of Technology (MIT, 2014), who include as a recommendation in their annual final report the exploration and promotion of game-based learning as part of the extension of new pedagogical approaches. They justify this recommendation with a statement supporting further analysis of the engagement generated by games, which suits the new millennial generation (Prensky, 2007) who are closer to technology and familiar with gamification.

Although the use of games has long been present in higher education classrooms (Faria, Hutchinson, Wellington, & Gold, 2009), there remain many unresolved questions (Carenys & Moya, 2015; Girard, Ecalte, & Magnant, 2012; Henderson, Selwyn, & Aston, 2015) in relation to its effectiveness. In this regard, and although the literature devoted to digital game based learning (DGBL) has developed quite strongly in the last decade, there remains a need for research that answers questions such as: (1) the definition of a conceptual framework for the use and implementation of digital games (Mayer et al., 2014), (2) assessment of the impact of different dimensions of game based learning on effectiveness (Huang, Johnson, & Han, 2013), and (3) the differences evident in the learning process depending on the instructional tool employed (Carenys & Moya, 2015; Faria, 2001).

In this paper, we focus on the effectiveness of DGBL and, in particular, on videogames, as a relatively new instrument for educational use in higher education environments. If we examine the history of game use in higher education, we realize that simulations (Faria, 2001; Faria & Wellington, 2004) have been the most popular instructional tools used thus far. However, videogames have entered the classroom as a complementary tool for learning that may bring additional outcomes, although these outcomes are still in need of validation (Girard et al., 2012).

Regarding the differences between simulations and videogames, it could be said that they sometimes overlap (de Freitas & Oliver, 2006), as there are videogames that include elements of simulations while some simulations are intended to be 'played with'. Additionally, they may present differences regarding educational potential, as simulations have long been considered a support in education and training (in particular in military training and business and medical education) in comparison to videogames. Therefore, the distinction is often blurred and still lacks a proper taxonomy (Tobias & Fletcher, 2012).

Assessing the effectiveness of digital games lies in the definition and measurement of different dimensions that have been considered in the literature. Previous studies have focused on the attributes of games (Bedwell, Pavlas, Heyne, Lazzara, & Salas, 2012; Wilson et al., 2009), on motivation (Huang, Huang, & Tschopp, 2010; Huang et al., 2013), or on learning outcomes (Ranchhod, Gurau, Loukis, & Trivedi, 2014), some from an individual and some from a multidimensional perspective. In our study, we consider these dimensions relevant and useful for the assessment and comparison of the effectiveness of our chosen tools. The inclusion of the attributes is of particular relevance as, based on the literature, it could be the dimension that discriminates and, therefore, supports, the differences between simulations and videogames.

Therefore, the objective of this study is to assess the effectiveness of videogames in comparison to simulations with regard to their attributes, motivation, and learning outcomes, as three of the main dimensions that play a role in the effectiveness of DGBL. To achieve our objective, we have conducted several experiments in an accounting and business education setting where we introduced a simulation and a videogame that tackle the same concepts but from a very different perspective.

To our knowledge, no prior studies have assessed and compared the effectiveness of simulations and videogames except for the study by Merchant, Goetz, Cifuentes, Kenney-Kennicutt, and Davis (2014) where the authors compared the use of different instructional tools in K.12 and higher education environments. However, their research comprised a meta-analysis that compared studies using either simulations or videogames while our study rests on an experiment that combines both tools in the same environment and with an identical purpose.

Our results demonstrate significant differences between the attributes and motivation dimensions of the videogame compared to the simulation, while no significant differences arise for the learning outcomes. This would imply that although both instructional tools lead students to the desired level of knowledge acquisition, the motivation generated, together with the set of features provided by the games as perceived by students, complement each other, leading to a superior learning experience. These results support then the inclusion of videogames as a complement to simulations in higher education accounting business environments. The rationale for such a statement is that, while in some attributes or motivational dimensions, simulations perform better than videogames, in others, videogames are perceived as superior. Thus, a blended approach could provide the learner with the 'best of both worlds'.

The remainder of this paper is structured as follows: Section "Literature review, theory, and hypothesis development" deals with the literature review and the research questions, Section "Data and methodology" explains both the simulation and videogames employed together with the data and methodology, section "Results" presents our results, section "Discussion" includes the discussion and, finally, in section "Conclusions" we summarize our conclusion.

Literature review, theory, and hypothesis development

The literature on DGBL has evolved substantially over time (Faria et al., 2009). In a review of the research presented at the Association of Business Simulation and Experiential Learning (ABSEL) for the period 1974–1999, Faria (2001) identified three main strands of research. The first strand focused on key performance factors; that is, studies that examined the relationship between the performance of participants in a game and participant characteristics. The second strand focused on the learning effectiveness of simulations versus other methods, basically lectures and cases. Finally, the third strand was dedicated to the learning outcomes of simulations.

Initially, we build on this classification of research provided by Faria (2001) and reconsidered in more recent literature reviews (Carenys & Moya, 2015; Gosen & Washbush, 2004) to focus on the second strand, which is devoted to the comparison of methods when a new player enters a DGBL scenario for the particular environment of higher education – in this case, videogames. Research on videogames may be lacking because this group of DGBL tools is newer than simulations. Given the growth in the use of videogames and virtual worlds, however, understanding which attributes make them more or less effective than other digital games is an important question for future research. Videogames and simulations likely have significantly different attributes; therefore, their learning outcomes could also be substantially different but perhaps complementary.

In a thorough revision of the accounting and business literature on DGBL (Carenys & Moya, 2015), the authors identify that the games that have been incorporated into higher education classrooms have largely been simulations, and, to a lesser

متن کامل مقاله

دریافت فوری ←

ISIArticles
مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلید کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات