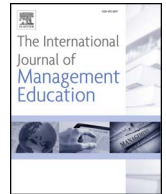




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Determining students' behavioural intention to use animation and storytelling applying the UTAUT model: The moderating roles of gender and experience level



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ABSTRACT

This study aims to examine the determinants of students' behavioural intention to use animation and storytelling by applying the Unified Theory of Acceptance and Use of Technology model as a guiding principle. In addition, the moderating effects of both gender and level of experience with animation and storytelling on these relationships are also inspected. Findings using the Partial Least Square-Structural Equation Modelling (PLS-SEM) approach reveal that performance expectancy featured as the most prevailing determinant of students' behavioural intention to use animation and storytelling within lessons. What's more, the relative influence in this respect was higher among females, and those groups of students who were more experienced in the use of animation and storytelling, than their counterparts. The findings suggest that university managements and academics of business schools should recognise the use of animation and storytelling as an effective and efficient educational approach, and actively embed this strategy within lessons in order to produce business students who are more creative in their communication of stories, ideas and concepts with peer groups both inside the classroom, and when using other learning media such as online videos.

1. Introduction

The acclimatisation to the use of new technology like animation and storytelling within lessons is extremely important in this digital age. Indeed, over 8 billion videos were watched daily via social networking sites like Facebook in 2016, meaning that 100 million hours were spent by individuals in this use of interactive animation and storytelling, and that this should be seen as a logical avenue by which to promote activities concerned with any kind of learning, and/or business (TechCrunch, 2016). Moreover, it is forecasted that by the year 2020, more than 80% of all Internet traffic will be represented by online video-watching (Cisco, 2016). This positive growth is of interest to the data-driven economies, since it brings with it the opportunities for a range of instructional delivery methods within the education industry, in particularly, the use of online videos that can be advantageous within the classroom by incorporating animation and storytelling into lessons, and promoting greater engagement by students as they connect, play, and share ideas (Boucheix & Forestier, 2017; Carlotto & Jaques, 2016; Garber, Hyatt, & Boya, 2017; Lowe & Boucheix, 2016; Shapley, Sheehan, Maloney, & Caranikas-Walker, 2011).

Animation is related to cross-disciplinary and inter-disciplinary art and craft, embracing drawing, sculpture, model making, performance, dance, computer science, social science and much more (Berney & Betrancourt, 2016; Luzon & Leton, 2015). The

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Anim8or tool has utilised 3D animations to ease the learning of algebraic and calculus functions among students, and to impart an array of useful computer skills (Glanville, 2017). Likewise, Zimmer Twins has designed a website for use in schools with class management tools built in for teachers (Lost The Plot Productions, 2017). Additionally, the Go Animate 4 Schools website enables students to polish and strengthen their presentation skills in developing slide shows to visually describe concepts, and thus connect efficiently with their audience (GoAnimate, 2016).

Storytelling is defined by the National Storytelling Network (2017) as “the interactive art of using words and actions to reveal the elements and images of a story while encouraging the listener's imagination”. Educational software tool known as “Aprendiendo” incorporates storytelling to encourage learning and engagement in the communication process among children with special needs (Lopez-Menc'ia, Pardo, Herna'ndez-Trapote, Herna'ndez, & Relano, 2010). In a different context, Karimi and Lim (2010) developed a 3D digital narrative that integrates education, entertainment and social commitment in order to measure children's time engagements and facial expressions during storytelling sessions. Another application of storytelling within lessons is the development of digital storybooks using touch screens and audio by Chang and Breazeal (2011), and Troseth and Strouse (2017), aimed mainly to inculcate better understanding of the relations among different words.

Earlier studies in this area have been skewed towards examining technologies, including animation and storytelling, that enhance students' social, communication, language and cognitive skills, and have adopted a qualitative approach and been largely undertaken in Western countries (Carlotto & Jaques, 2016; Lowe & Boucheix, 2016; Stebner, Kühl, Höffler, Wirth, & Ayres, 2017). Consequently, there is a dearth of quantitative research works being paid to social processes and the emergent behaviour of learning communities that adapt to new technologies like animation and storytelling (Zhang, Fang, Wei, & Wang, 2012). Moreover, it is considered that new empirical research on the effect of demographic characteristics on students' behaviour in this respect, using the Unified Theory of Acceptance and Use of Technology (UTAUT) model should be conducted (Wong, Russo, & McDowall, 2012). To date, however, no such attempts have been made, nor has there been an exploration of behavioural intention to use animation and storytelling among business students in a developing nation. Consequently, this study aims to examine the determinants of students' behavioural intention to use animation and storytelling by applying the UTAUT model as a guiding principle, and furthermore by examining the moderating effects of gender and level of experience with animation and storytelling.

The empirical results of this study of behavioural intention together with the findings relating to the moderating effects, will help to plug the gap in the prevailing body of literature with reference to the determinants of students' behavioural intention to use animation and storytelling among business students in a developing nation. The study will also furnish new perspectives on the findings of earlier research. The proposed model could aid university managements and academic administrators in their identification of the specific influences determining the acceptance of the new technology within lessons.

2. Theoretical background: unified theory of acceptance and use of technology

The UTAUT model, as illustrated in Fig. 1 was developed by Venkatesh, Morris, Davis, and Davis (2003), and identifies performance expectancy, effort expectancy, social influence, and facilitating conditions as direct determinants of behavioural intention and use behaviour. This model has been scrutinised in wide-ranging educational environments such as virtual learning technologies (Sumak, Polancic, & Hericko, 2010), cloud-based virtual learning environments (Hew & Sharifah Latifah, 2016), desktop web-conferencing (Lakhal & Khechine, 2016), and interactive whiteboards (Sumak & Sorgo, 2016; Tosuntas, Karadag, & Orhan, 2015). Additional usage of the model is seen in enterprise resource planning (ERP) software training (Chauhan & Jaiswal, 2016), tablet-PC in classroom instruction (Ifenthaler & Schweinbenz, 2013), and Moodle learning management system (Hsu, 2012). Hence, the model has proven to be successful in a wide range of educational situations, and hence it is used in this study as a guiding principle in the examination of students' behavioural intention to use animation and storytelling. It brings the benefit of being “a useful tool for managers needing to assess the likelihood of success for new technology introductions and helps them understand the drivers of

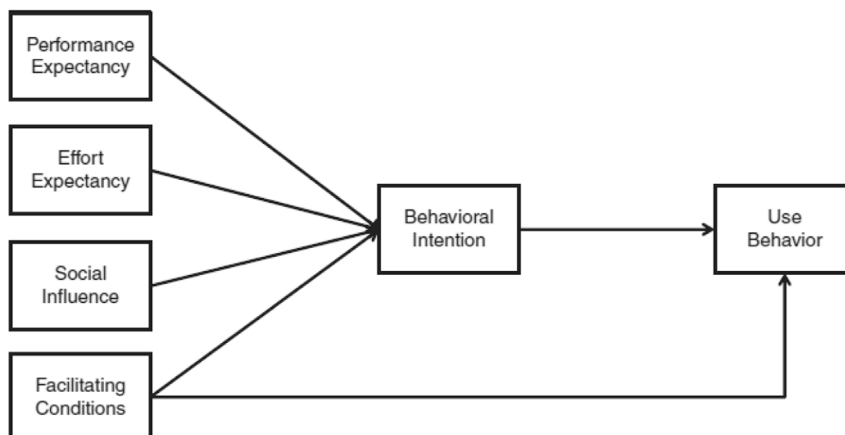


Fig. 1. The unified theory of acceptance and use of technology (UTAUT) model.

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