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Examining the usability of an online virtual tour-guiding platform for cultural tourism education

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ABSTRACT

Technology innovation in the tourism industry serves as a vehicle to meet the increasing need for remarkable tourist experiences. This study aims to construct a virtual reality tour-guiding platform and then establish a technology acceptance model based on the Unified Theory of Acceptance and Use of Technology (UTAUT) model. 391 students from a technological university in Taiwan participated in the study. Results indicated their learning effectiveness and technology acceptance within the education system. Interaction was an exogenous variable that has an indirect effect on technology use, implying the importance of interaction between people and devices within a digital tour environment.

1. Introduction

Tourism and education have both undoubtedly encountered challenges in technology transformation in the past decade (Benckendorff, Sheldon, & Fesenmaier, 2014; Kracht & Wang, 2010; Neuhofer, Buhalis, & Ladkin, 2014). International tourism and hospitality constitutes the world's largest service sector (Gnoth & Zins, 2010). An increased emphasis on innovation topics in tourism is found in research (Schegg & Stangl, 2017). Tourism has been revolutionized by tremendous innovation. Technology innovation in the tourism industry serves as a vehicle to meet the increasing need for remarkable tourist experiences (Yovcheva, Buhalis, & Gatzidis, 2013).

Anne-Mette Hjalager (2010) proposed four categories of innovation, including product, process, administration and market. Recently, information and communication technology has become the foundation of process innovation. The tourism industry can improve its productivity through the use of new technology. A company can substantially increase its productivity by combining technology with other strategic and managerial approaches (Blake, Sinclair, & Soria, 2006). A tourist platform can be created to improve the services of a company and simultaneously add to its value proposition (Hjalager, 2010). Technology can result in higher efficiency of an organization by increasing its understanding, attractiveness and accessibility for tourists (Hjalager, 2010; Nielsen & Liburd, 2008).

The development of the Internet has brought never-before seen transformation and unparalleled opportunities to the tourism industry (Buhalis & Law, 2008; Molz, 2012; Rosman & Stuhura, 2013) while changing traveler behavior in many ways (Amaro & Duarte, 2015; Gretzel & Fesenmaier, 2009). Current developments indicate that the Internet is a source of information and travel

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experience sharing (Hjalager & Jensen, 2012). The way tourism-related information is accessed has also fundamentally changed (Xiang & Pan, 2011; Xiang, 2011) and traveling information can be easily and increasingly retrieved on the Internet (Pan, Xiang, Law, & Fesenmaier, 2011). Accordingly, information search technology plays a crucial role in destination promotion, either from the government or private sectors, resulting in a strong influence on certain types of tourist experiences, such as travel planning (Kim & Fesenmaier, 2008; Xiang & Gretzel, 2010). In contemporary tourism innovation, customization is a decisive element for experience-based tourism (Hjalager, 2010) where the tourist or end-user designs and produces a tourism product such as a trip or vacation packages according to their tastes and behaviors.

Higher education institutions worldwide are seeking innovation (Adukaite, van Zyl, & Cantoni, 2016; Ali, Nair, & Hussain, 2016) to prepare students for the fast-changing world and unavoidable technology transformation in both education and industry. Accordingly, the purpose of the study was to construct an online platform, named Cultural Tourism Digital Guiding Platform (CTDGP), and to examine its learning effectiveness. A model based on the Unified Theory of Acceptance and Use of Technology (UTAUT) model (Venkatesh, Morris, Davis, & Davis, 2003) was established to explain the relationships among the various factors that affect its use. The construction and development of the online platform was in cooperation with various Taiwanese businesses implementing public factory tours by customizing their specific content into the platform. By better understanding student perception, the results of this study may help colleges and assist instructors in using this technology more effectively. Moreover, it can help the system designers improve the learning tools to obtain higher levels of learning satisfaction.

2. Literature review

2.1. Cultural tourism

Cultural tourism has been deemed one of the most important forms in the tourism industry. The United Nations World Tourism Organization predicts that it will become a main form of focus by 2020 (Niemczyk, 2013). Records of protected monuments in the European Union and those of buildings of historical interest in the European Commission indicate that the development of cultural tourism underscores the increasing critical position of culture and cultural attractions in modern society (Richards, 2007). While culture has stopped being the main purpose of tourism in the 20th century, Urry (1990) emphasized that tourism is still culture. In “World Decade for Cultural Development 1988–1997,” the United Nations Educational, Scientific and Cultural Organization gave emphasis to conserving cultural heritage, as it promotes identity and cultural diversity in addition to stimulating economic development (Quijano-Caballero, 1996).

Gali-Espelt (2012) claims that it is not easy to define the concepts of culture and tourism and is even more difficult determining what composes cultural tourism and cultural tourists. Richards (2007) defines culture as the result of its democratization and increasing convergence of ways of life. Culture involves a civilization's ideas and ways of life, which is process, as well as the products of those processes, including buildings, artifacts, art, customs and atmosphere. Accordingly, cultural tourism can mean consuming the way of life in the visited destination in addition to the consumption of the cultural products of the past. Hence, cultural tourism covers heritage tourism related to the artifacts of the past and arts tourism related to contemporary production of culture. Richards (1996)'s definition of cultural tourism has reached certain agreement: “Cultural tourism is the movement of people towards cultural attractions, somewhere other than their habitual place of residence, in order to obtain information and knowledge to fulfill their own cultural demands” (Gali-Espelt, 2012, p. 47).

2.2. Digital tour guiding

Tour guiding plays a significant role in determining whether or not tourists obtain meaningful and enjoyable visiting experiences. The quality of tour guiding depends largely on the interpretation delivered by tour guides (Brito, 2012; Hu & Wall, 2012). Tilden (as cited in Gonçalves, 2015) defined interpretation as “an educational activity which aims to reveal meanings and relationships through the use of original objects, by firsthand experience and by illustrative media, rather than simply to communicate factual information” (pp. 101–102). Hu and Wall (2012) provided another definition of interpretation: “the means by which the meanings of cultural and natural resources are conveyed, with the aims of instilling understanding and appreciation of the interpreted environment and to help to develop a strong sense of place” (p. 83). In short, interpretation is not merely providing factual information about the destination visited, but helping tourists gain a deeper understanding of its cultural and natural context and cultivating their appreciation of the local cultural and natural environment. Tilden (as cited in Ham, 2009) nicely summarized the importance of interpretation by saying, “Through interpretation, understanding; through understanding, appreciation; through appreciation, protection” (p. 50).

Recently, a number of studies have been conducted to explore the potential of digital tour guiding. Na and Weihua (2012) applied virtual reality (VR) to tour guide training. The experiment findings indicate that VR is a unique and potential educational tool and it helped improve tour guide candidates communicative skills and professional knowledge. The web-based VR technology was used for tour-guiding training in the study of Tseng, Huang, Liu, Chung, and Chiu (2013) and can be applied to a scenic spot or classroom. The students in the tour guiding course showed effective learning through the training system. Hsu (2012) investigated the perception of eight travel management students on training regarding tourism knowledge and communicative and interpersonal skills in Second Life. They indicated supportive attitudes and developed higher self-efficacy for being tour leaders in the future.

Innovation is the crucial factor in enhancing the service quality of the tourism industry. Chen, Hsu, Huang, Lin, and Hung (2013) also developed a digital tour guiding system named “TelePort” that allowed users to take a virtual tour of the Mogao Caves in Dunhuang City, China with a mobile device. Through this system, users could see the Buddhist cave artwork, including those

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