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The influence of individual espoused cultural values on self-directed use of technology for language learning beyond the classroom

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ABSTRACT

Students' use of technology for learning beyond the classroom is critical to maximizing the educational potential of technology, and understanding factors that affect learners' adoption of technology is critical. This study examined the influence of individual espoused cultural values on learners' voluntary technology adoption in informal learning contexts. Structural equation modeling was used to test a model of the direct and moderating effects of espoused cultural values on learners' self-directed use of technology for learning beyond the classroom, based on the survey responses of 661 foreign language learners from three countries/regions. The study found strong direct effects but weak moderating effects of cultural values. It further found that long-term orientation and uncertainty avoidance were two individual-level cultural value orientations that played important roles in the voluntary adoption of technology for self-directed learning beyond the classroom.

1. Introduction

Enhancing self-directed use of technology for language learning outside the classroom is critical to realizing the educational potentials of technology (Collins & Halverson, 2009). Self-directed language learning with technology beyond the classroom has been found to be associated with positive affective outcomes and language gains (Lai, Zhu & Gong, 2015; Inozu, Sahinkarakas, & Yumru, 2010; Sundqvist & Wikström, 2015). But great variation exists in students' self-initiated technology use (Lai & Gu, 2011; Winke, Goertler, & Amuzie, 2010). Understanding the factors that contribute to the variation helps identify issues that educators need to take into account when enhancing and supporting such behaviors. This study combined Ajzen's (1985) Theory of Planned Behavior and Hofstede's (1989) cultural typology to explore how cultural values interact with psycho-social factors to influence language learners' technology use beyond the classroom.

The Theory of Planned Behavior by Ajzen (1985) is acclaimed for explaining individual behavioral intentions. According to this theory, human behavioral intentions are predicted by three key psycho-socio components: (a) user attitudes towards the given behavior; (b) user perceived control on performing the behavior; and (c) user perceived social influence and pressure on the behavior. Current literature has identified a list of psycho-socio factors that influence language learners' technology use beyond the classroom, including perceived educational potentials of technology and perceived abilities to capitalize on the potentials, perceived compatibility between technology use and learning expectancies, and social influences and support (Lai, 2013, 2015; Deepwell & Malik, 2008; Jones, Ramanau, Cross, & Healing, 2010; McLoughlin & Lee, 2010). However, an important factor that is closely intertwined with technology use and language learning – cultural values (Leidner & Kayworth, 2006; Loewen et al., 2009; Parrish & Linder-VanBerschot, 2010) – remains unexplored. Cultural values are the fundamental forces that shape human identity, purpose and ways of thinking and underlie human attitudes and behaviors (Cutler, 2005; Markus & Kitayama, 1991), and are found to influence various work-related and non-work-related attitudes/perceptions and behaviors (Taras, Kirkman, & Steel, 2010). Cultural values are closely intertwined with individuals' preferences for and use of information and communication technologies (Ford, Connelly, & Meister, 2003; Leidner & Kayworth, 2006), and influence people's decisions concerning technology adoption through affecting their trust in technologies and their affective commitment

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to technology use (Fagih & Jaradat, 2014; Lee, Trimi, & Kim, 2013; Zhou, Jin, Fang, & Vogel, 2015). Im, Hong, and Kang (2011) claimed that "[t]echnology adoption is as much a cultural issue as a rational decision-making process" (p. 1). Thus, this study integrated cultural typology into the TPB framework to gain a more comprehensive understanding of factors that influence language learners' technology use. Understanding how cultural values may interact with psycho-socio factors to influence self-directed use of technology for language learning could inform the development of culturally-responsive support to enhance students' technology use for language learning.

There have been studies examining the interrelationship between culture and technology. However, the majority of existent studies have conceptualized cultural value orientations at the national level. National cultural values lack precision, thus are inappropriate, in explaining individual-level behaviors, such as technology adoption (Hoehle, Zhang, & Venkatesh, 2015; Srite & Karahanna, 2006), due to substantial variations in cultural values across individuals even within the same country (Fang & Gopinathan, 2009; Fang, 2012; Ford et al., 2003). To avoid the ecological fallacy of using country scores on cultural values to predict individual behaviors, scholars advocate treating cultural value orientations as individual difference variables (Fagih & Jaradat, 2014; Srite & Karahanna, 2006). In this study, individual espoused cultural values – cultural value orientations at individual levels – were used to explore their interaction with psycho-socio factors in influencing language learners' technology use. Although a small body of research literature has started to utilize Hofstede's (1989) cultural framework to examine the direct and moderating effects of individual espoused cultural values on user technology adoption (Baptista & Oliveira, 2015; Fagih & Jaradat, 2014; Ford et al., 2003; Hwang & Lee, 2012; Shiu, Walsh, Hassan, & Parry, 2015), no studies have examined the context of technology adoption for informal learning. Since cultural influence and the interactions among the predictive variables might be context and domain specific (Briley, Morris, & Simonson, 2000; Chen, 2011; Straub, 2009), there is a need to explore cultural influence in informal learning contexts.

In summary, there is a scarcity of studies exploring the influence of cultural values at the individual level on technology adoption, none in the context of technology use for informal language learning. Thus, this study contributed to the technology adoption literature by adding to the limited few studies that examine the influence of cultural value orientations at the individual level and extending our investigation into the informal learning contexts. It also contributed to the language learning literature by conceptualizing and testing a framework that predicts the influence of cultural values on students' self-directed use of technology for language learning beyond the classroom. The generated framework would advance our understanding of individual variation of technology adoption in informal language learning and guide the development of culturally-sensitive approaches to fostering self-directed learning with technology.

2. Literature review

2.1. Technology adoption model

Venkatesh, Morris, Davis, and Davis (2003) have used the TPB (Ajzen, 1985) as the theoretical foundation to construct an influential model, the Unified Theory of Acceptance and Use of Technology (UTAUT), that highlights the influence of attitudinal beliefs on individual decision making on technology adoption (Oliveira & Martins, 2011; Straub, 2009). UTAUT has been validated in reference to a range of technologies in various organizational contexts, including instructional contexts (Taiwo & Downe, 2013; Williams, Rana, & Dwivedi, 2015). The UTAUT model consists of four endogenous variables: *performance expectancy* (PE, i.e., users' expectations of the technological solution in enhancing the performance), *effort expectancy* (EE, i.e., users' expectations concerning the efforts needed in utilizing the technological solution), *social influence* (SI, i.e., users' perceptions of the social pressure in adopting the technological solution) and *facilitating conditions* (FC, i.e., users' perceptions of the availability of support in using the technological solution). FC is hypothesized to influence usage behaviors directly, and PE, EE and SI are hypothesized to influence users' intention to adopting technological solutions, which in turn predict usage behaviors.

Considering that the main goal of this study was not to verify the UTAUT model but to explore the moderating effects of cultural values on the predictive paths of various psycho-socio factors on technology adoption, we chose not to include the moderating variables in the original UTAUT model but kept the four core constructs only. Since self-directed use of technology for learning is an individual consumer behavior, we further considered the two constructs Venkatesh, Thong, and Xu (2012) argued to be critical to individual consumer technology adoption contexts: *hedonic motivation* (HM, i.e., user perceived enjoyment of technology use), and *price value* (i.e., user evaluation of the worthiness of the monetary costs) since hedonic benefits and costs affect consumer actions. As self-directed technology use for language learning beyond the classroom often involves free technological resources and does not always incur financial costs, we decided not to include price value in this study. Hedonic motivation was hypothesized to predict usage behaviors via users' intention of adoption. Venkatesh et al. (2012) further conceptualized that in the consumer technology adoption context, facilitating conditions act more like perceived behavioral control and influence both intention to use and technology use.

2.2. Influence of individual espoused cultural values

Values signify espoused beliefs of what is deemed important to a particular cultural group, define the rules for social interaction through which people act and communicate, and thus are a "powerful explanation of and influence on human behavior" (Homer & Kahle, 1988, p. 638; Keesing, 1974). Karahanna, Evaristo & Srite (2005) argued that behaviors that involve the value-based decision making are influenced by national and supranational cultures. Cultural values influence individual behaviors in response to the perceived conflict between the values embedded in the behavior and the cultural values. In respect to technological behaviors, the culture-behavior conflict might arise from the contradictions among culture values, the IT values and the embedded value of a specific IT system (Leidner & Kayworth, 2006). The higher the conflict is, the less likely the users are going to engage in the technological behavior. Thus, Leidner and Kayworth (2006) argued that it is important to analyze potential IT-culture conflicts or compatibilities in conceptualizing the influence of culture on technology. As for the direction of the influence, values are conceptualized to influence human behaviors directly and indirectly through attitudes (Carman, 1977; Homer & Kahle, 1988; Taras et al., 2010; Willimas, 1979). Values further interact with situational conditions to moderate the attitude-behavior link (Ajzen & Fishbein, 2005; Sherman & Fazio, 1983).

Thus, this study examined the influence of cultural values as antecedents (both direct and mediated influence) and as moderator on learners' technology use for language learning beyond the classroom. This study adopted Hofstede's typology of the five dimensions of national culture to conceptualize individual espoused