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Examination of the factors that influence the technological adoption intentions of tomorrow's new media producers: A longitudinal exploration

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ABSTRACT

In a world awash with digital media, employers in mass communication professions are increasingly searching for and hiring employees with both traditional and new media production skills. As such, post-secondary institutions have, en masse, begun to incorporate instruction on multimedia production into their curricula. Despite this widespread integration of new media into coursework, administrators, instructors, and students are still searching for best practices as they relate to efficient and effective delivery of instruction. In light of such needs, this study used the technological acceptance model and structural equation modeling to explore, on a longitudinal basis, the psychological factors that influence mass communication students' adoption of new media production technologies. Our results demonstrated that subjective, normative influences play an increasingly powerful role in student adoption decisions over time. Furthermore, the data indicated that usefulness perceptions were the strongest predictor of student decisions to adopt new media production technologies.

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1. Introduction

Employers in professional mass communication fields have increasingly identified a need for employees with media production skills in the areas of audio, video, and photography. In an effort to address this need, many post-secondary mass communication schools have made financially burdensome changes to their curricula to better ensure that graduates have competencies in the production and distribution of "new media" content (e.g., Abram, 2009; Atkinson, 2008; Claussen, 2012; Larsen & Len-Rios, 2006; Lewis, 2010; Lowrey, Daniels, & Becker, 2005; Marron, 2013; Stewart, 2007). Despite these rapid changes to student coursework, those charged with curricular design have yet to identify "best practices" as they relate to effective instruction of new media skills (Claussen, 2012; Marron, 2013). According to Marron (2013), mass communication educators are currently coping with both the ongoing emergence of revolutionary digital technologies and a professional world that remains in a seemingly perpetual state of change.

Further complicating matters is a relative lack of empirical research on the social and psychological factors that influence mass communication students' adoption of emergent production technologies. Although technological adoption has been studied widely in occupational contexts (e.g., Schepers & Wetzels, 2007; Wu & Lederer, 2009), researchers have seldom sought to explore user acceptance factors within post-secondary environments. And, with a few exceptions (e.g., Venkatesh & Davis, 2000; Venkatesh & Morris, 2000), research on technological adoption has been cross-sectional in nature. Given the foregoing, the purpose of this study was to examine post-secondary students' adoption of new media production technologies from a longitudinal perspective. Gaining a better understanding of the social and psychological dynamics that underlie technological adoption on the part of post-secondary students will aid post-secondary educators currently in search of finding the most effective means of delivering educational content to tomorrow's professional media producers.

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2. Literature review

2.1. The technological acceptance model

The technological acceptance model (TAM) is one of the most "parsimonious and robust" (Yang, 2007, p. 34) theoretical frameworks used to understand technological adoption. According to Venkatesh and Davis (2000), empirical studies employing TAM have consistently explained upwards of 40% of variance in technology usage intentions. TAM is predicated upon the idea that user acceptance plays a crucial role in determining the overall success of organizational technological initiatives (Davis, 1989). TAM was developed from the earlier theories of reasoned action (TRA) (Fishbein & Ajzen, 1975) and planned behavior (TPB) (Ajzen, 1985, 1991; Ajzen & Fishbein, 1980). The TRA states that a person's behavior is determined by his or her intention to perform the behavior. Behavioral intentions (BI) are influenced by two key antecedents, (1) attitudes toward the behavior and (2) an understanding of key referents' attitudes toward the behavior. TPB added a third key antecedent in the form of perceived behavioral control. The TRA/TPB serve as the conceptual foundation of the TAM, which was specifically developed to explain technological adoption. The TAM has been applied both robustly and diversely, including in advertising (e.g., Huarng, Yu, & Huang, 2010), corporate management (e.g., Ahuja & Thatcher, 2005), healthcare (e.g., Yun & Park, 2010), information management (e.g., Behrend, Wiebe, London, & Johnson, 2011), and marketing (e.g., Lee & Qualls, 2010) contexts.

TAM theorizes that intention to use technology is primarily determined by two factors: perceived usefulness (PU) and perceived ease of use (PEU). PU can be understood as the extent to which a person believes that using a given system or technology will enhance his or her performance on task or series of tasks. For its part, PEU is defined as the extent to which a person believes that using a technology will be free of effort (Venkatesh & Davis, 2000). According to TAM, PEU has both direct and indirect effects. The direct effect suggests that PEU is a catalyst for technological adoption while the indirect effect is explained as "stemming from a situation where, other things being equal, the easier a technology is to use, the more useful it can be" (Venkatesh & Morris, 2000, p. 118).

Based on the available research interrelating TAM and user intentions to use technology, the following hypotheses were proposed:

H1. PEU will predict intentions to use new media production technologies.

H2. PU will predict intentions to use new media production technologies.

H3. PEU will predict PU.

2.2. Technological self-efficacy

Self-efficacy is a key component of social cognitive theory (SCT) (Bandura, 1977a, 1986, 1989). Defined as a person's confidence in his or her ability to execute courses of action necessary for goal attainment (Bandura, 1997), the theory of self-efficacy states that individuals are significantly more motivated to engage in activities in which they feel they have a high probability for success. Within the context of technology use, interactive media, and information systems adoption, a number of variations of self-efficacy have been identified. Two especially well developed typologies of self-efficacy are computer self-efficacy (CSE) and Internet self-efficacy (ISE). According to Eastin and LaRose (2000), ISE describes an individual's internal assessment of their ability to successfully perform Internet-related tasks. Likewise, Yi and Hwang (2003) defined CSE as a user's judgment of his or her efficacy across multiple computer domains.

As it relates to situating self-efficacy in relationship to TAM, several previous studies have identified a relationship between self-efficacy and user acceptance of technology. Yi and Hwang (2003) examined user acceptance of the Blackboard course management system within the context of self-efficacy and TAM. Building upon previous studies positing a relationship between technological adoption and CSE (e.g., Compeau & Higgins, 1995; Compeau, Higgins, & Huff, 1999), the authors found a strong correlation between application specific self-efficacy and PEU. Similarly, in Venkatesh and Davis' (1996) work, the authors studied the relationship between CSE and PEU and concluded that an individual's understanding of a particular system's usability is anchored to their computer self-efficacy levels. Although substantively related, it should be noted that PEU and self-efficacy are discriminable constructs. According to Mathieson (1991), PEU can be understood as an outcome of high levels of self-efficacy.

Despite the fact that researchers have examined the role of self-efficacy strands such as CSE and ISE on technological adoption, a review of the literature failed to identify any measurement items dealing with self-efficacy on a broader *technological* basis. Given Rogers' (1995) contention that early technological adopters are an identifiable group who tend to consistently adopt new technologies and Vishwanath's (2005) identification of static personality features in early technological adopters, it follows that developing a measure of technological self-efficacy (TSE) will allow researchers to identify a stable, individual-level characteristic that is generally present in those who intend regularly adopt emergent technologies. Therefore:

H4. TSE will positively predict college students' PEU.

2.3. Subjective norms

Subjective norms can be defined as social pressures to perform a specific behavior (Ajzen, 1991). Social norms operate on both collective and individual-levels. Collective social norms are those norms attributable to a specified social group or community. In most cases, adherence to understood collective norms is integral to one's ability to maintain group membership as failure to conform can result in ostracism or removal from the group. Individual subjective norms are distinct from collectivist norms because they explicitly refer to one's psychological handling of extant collective norms (Lapinksi & Rimal, 2005).

Previous research (e.g., Kelman, 1961; Venkatesh & Davis, 2000) indicates that there are two psychological mechanisms through which subjective norm perceptions can indirectly influence behavioral intentions: internalization and identification. Internalization refers to the situation in which one perceives that a significant other believes he/she should adopt a course of action. Based upon this belief, the individual thusly incorporates the referent's perceived belief into his/her own belief system. Identification is centered on the individual user's sense of image such that if a user believes that a certain behavior will increase his or her image among significant others, they are likely to see adopt the behavior.

Accordingly, we predicted that social influence attributable to significant others (teachers, employers, and so on) would positively influence PU:

H5. Subjective norms will positively predict to PU.

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