IT's MY CHOICE: HOW PERSONALITY, EMOTIONAL INTELLIGENCE AND DECISION MAKING IMPACT TECHNOLOGY ADOPTION IN THE CLASSROOM

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ABSTRACT

This paper investigates how individual student characteristics such as personality, emotional intelligence and decision making tendencies impact the adoption and use of classroom technologies for informing and technologies for participation. Several hypotheses are proposed based on the literature and a research model is developed that predicts greater adoption of technology for participation (as opposed to in-person participation) by introverts and students with lower emotional intelligence scores. A sample of 234 students at a large university in the Western U.S. is collected and summary statistics are presented with a discussion of preliminary results, conclusions and future research directions.

Keywords: Technology adoption, personality, emotional intelligence, maximizer, education

INTRODUCTION

Student engagement can drive achievement, and approaches such as active learning strategies have been shown to increase performance by as much as 6% in some disciplines [1]. Key to many of these strategies is the use of one or more technologies that support the engagement and learning goals of a particular course. In most college settings, the instructor will choose the technologies to be used in a class and students will be expected to adopt them. However, not all students are equally equipped or inclined to use particular technologies. Further, anecdotal observation suggests some students appear to understand more and better engage in face-to-face group settings, while others excel in providing individual contributions via a technological tool. Thus, technologies for classroom support that an instructor chooses could impact student interaction with the material in positive or negative ways, contingent on students' individual differences that drive this observed behavior. One way to increase engagement with material then, might be to present multiple avenues for engagement, some that rely on technology, and some that do not, so that students can self-select into the engagement modes that they feel best suited for. To create multiple pathways for engagement, however, can be time-consuming and demanding. Among other questions, an instructor that wants to pursue the creation of multiple options will likely have several questions: What individual characteristics drive students' educational technology adoption decisions? Do those driving characteristics vary depending on what the technology will be used for? Which types of technologies are most attractive to students? The purpose of the ongoing study described in this paper is to investigate the research question: Do individual traits such as personality, emotional intelligence, and maximizing tendencies, and student adoption of optional technologies in a post-secondary educational setting?

In this study, we investigate whether personality traits such as extroversion, emotional intelligence, and maximizer decision-making tendencies affect an individual student's decision to use technology as part of their learning experience. We propose investigating which personality traits drive the adoption and actual use of two types of technologies: one for information gathering (an 'informing' technology), and another for participating with their peers (a 'participation' technology). By adopting measures of multiple technologies, the study is designed to disentangle a student's general proclivity to use technology in an educational setting from their decision to use technology for online interactions, especially as a substitute for in-person interactions. Initial data on individual characteristics and technology adoption intentions have been gathered, and we are currently in the process of collecting follow-up measurements of actual use. We also collected data on the influence of social norms, individual comfort with technology, and personal innovativeness. In the following sections, we briefly review related literature and develop initial hypotheses that we would like to test once data collection is complete. A research model and some preliminary descriptive statistics are then presented.

LITERATURE AND HYPOTHESIS DEVELOPMENT

Technology Adoption

Technology adoption is one of the most-studied areas within Information Systems research. Despite this, it is only recently that researchers have begun to investigate the impact of personality on individual technology adoption and use (e.g. [2]–[4]). These investigations have been an extension of the established stream of research investigating how individual characteristics and beliefs influence adoption, most notably through the Technology Adoption Model (TAM). In TAM, an individual's perceptions of a technology's usefulness and ease of use predict a user's intention to use technology [5]. Building on TAM, the Unified Theory of Acceptance and Use of Technology (UTAUT) further includes not just an individual's expectations for technology performance and effort, but also social influence and facilitating conditions that lead to intention to use (moderated by demographics, experience, and voluntariness of use), which then predicts actual use [4].

Personality

According to the American Psychological Association, the Encyclopedia of Psychology defines personality as individual differences in characteristic patterns of thinking, feeling and behaving [6]. In general, personality can be termed as consistency in behavior in an individual relating to his/her thoughts, emotions, and behaviors that distinguishes one individual from another. Learning is a person's thought process that leads to behavior caused by information and experience. Therefore, information seeking becomes extremely acute in the decision making process that is influenced by perception, motivation, personality, attitude and learning. Critical thinking and effective problem solving in today's world depends on one's ability to seek and acquire the right information, at the right time, from the right sources strengthened by the ability to learn. Personality, therefore could have an important role in information seeking behavior, may it be cognitive or emotion based. Technology adoption, as a result, may be the tool that allows an individual to acquire, accumulate, analyze, and assimilate information and consequently enhance decision making behavior.

Personality traits, including extroversion, have been investigated in a limited number of technology-adoption contexts and some traits have been found to influence individual adoption decisions after controlling for social influence and facilitating conditions. For instance, in an educational setting

requiring teamwork, personality traits were found to affect intention to use project management collaboration software via usefulness and subjective norms, and the intention to use the software led to actual use of the software [2]. In an online e-commerce setting, personality factors have been found to predict internet usage and willingness to buy products online, but were not found to affect willingness to sell products online. Finally, in an e-government setting, personality has been used to predict intention to use e-government kiosks in rural India, with extraversion significantly predicting technology use (along with conscientiousness, and openness to experience) after controlling for demographics and general willingness to use IT. To the best of our knowledge, though, this is the first study to investigate the effect of emotional intelligence and maximizer decision-making tendencies on technology adoption.

Extraverts are described as "sociable…., preferring large groups and gatherings… assertive, active, and talkative. They like excitement and stimulation and tend to be cheerful in disposition" [7]. One view of a college classroom is as a could be considered a gathering, turning talkative when interactive participation is called for. If technologies for participation are framed as an optional substitute for participating in these talkative gatherings, extroverted students would be unlikely to adopt those technologies that remove their participation from their preferred environment, while introverted students might flock to them. We thus begin our hypothesizing:

> H1. Students who are more introverted will adopt technologies for class participation at rates higher than students who are more extroverted.

Emotional Intelligence

The concept of Emotional Intelligence (EI) was developed by Mayer and Salovey [8] as a psychological theory. According to Mayer and Salovey "Emotional Intelligence is the ability to perceive emotions, to access and generate emotions so as to assist though, to understand emotions and emotional knowledge and to reflectively regulate emotions so as to promote emotional and Intellectual growth."

Daniel Goleman [9] further conceptualized EI in his model as a wide array of competencies and skills which include self-awareness (knowing one's emotions, strengths, weaknesses, drives, values and goals and recognizing their impacts on others while using gut feelings to guide decisions), self-regulation (managing or redirecting one's disruptive emotions and impulses and adapting to changing circumstances), social skills (managing others' emotions to move people in the desired direction), empathy (recognizing, understanding and considering other people's feelings, especially when making decisions) and motivation (driving oneself and being driven to achieve for the sake of achievement). Goleman added that emotional competencies are not innate talents but rather learned capabilities that must be improved on and can be developed to achieve outstanding performance. Goleman is also of the belief that individuals are born with some general emotional intelligence that determines their potential for learning emotional competencies.

On one hand, utilizing Goleman's elements of social skills, empathy, and self-regulation, we could expect students with higher EI will prefer social settings to non-social settings for participation because they are better equipped for those settings. On the other hand, the elements of self-awareness and motivation suggest that high EI individuals will be more aware and apt to take advantage of their natural personality strengths, moderating personality's impact on technology adoption for participation. In this first study, we adopt the former perspective and hypothesize:

H2. Students with higher emotional intelligence will adopt technologies for class participation at rates lower than students with lower emotional intelligence.

It is also likely that the interactive portions of EI, such as empathy and social skills, will make contextual beliefs such as social norms more salient, leading us to further hypothesize:

H3. Students with higher emotional intelligence will be more influenced by social norms in their adoption decision than students with lower emotional intelligence.

A student's personality and emotional intelligence are not the only traits that could affect their adoption decision. Their approach to choices could also be very salient.

Maximizing and Satisficing

Maximizing is a term coined by Herbert Simon [10] to describe a decision making process that pursued good enough options rather than seeking optimality. This was later regarded as a cognitive limitation, suggesting that individuals maximized because they had restricted capacity to evaluate all of the options [11]. This Nobel Prize winning work identified a clear fallacy in the logic of macro-economic assumptions about how people make choices. In his conception, however, satisficing was caused by a limitation in information processing capability rather than being a propensity of the decision maker. Although it is clear that Simon's proposal was correct, individuals are indeed limited in their abilities to process all information, recent work has identified that individuals vary in their tendency to search for more information as they evaluate options [12]. Therefore, maximizing is actually a trait that can be measured. Maximizers tend to exert more effort and resources to identify the best outcomes when they make decisions. On the other hand, satisficers are more likely to settle for good enough options. Schwartz and colleagues [12] developed a scale to identify three primary dimensions of the maximizing construct: information search, decision making difficulty, and high standards in decision making.

Subsequent research suggests that maximizers reported that they were generally less happy, less optimistic, and less satisfied with their choices [13]. They were also more likely to display regret, perfectionism, and depression after making a decision. Schwartz [13] reasons that maximizers often look at what could have been rather than being satisfied with their current choice. In a study investigating career choices and outcomes, Iyengar et al. [14] found that maximizers search for more jobs after graduation and end up earning starting salaries 20% higher than satisficers [14]. The authors attribute the higher salaries to spending additional time and effort to analyze more options during the job search. However, they tend to be more stressed and less satisfied with their jobs once they are in them. There is a discrepancy in the literature, however, as maximizing has also been correlated with positive life outcomes such as a more optimistic life view, higher need for cognition, desire for consistency, intrinsic motivation and self-efficacy [15].

We measure the tendency to maximize or satisfice using the Schwartz [12] maximization inventory in order to see how the decision making style will impact one's adoption and use of online technology. Understanding this previously unexplored relationship will provide advice to academics and practitioners on ways to more successfully integrate technology into the learning environment. Previous research suggests that maximizers have a higher need for cognition, are intrinsically motivated, and have more self-efficacy [15]. Therefore, it is predicted that maximizers who perceive a technology to be more useful will seek out and use that technology more than satisficers with similar perceptions of

usefulness as they are more inclined to explore alternative means to learn the material and engage with other students. Formally, we hypothesize:

> H4. Students who are maximizers will adopt technologies they perceive to be useful at greater rates than satisficers given similar perceptions of usefulness and ease of use.

RESEARCH MODEL

The research model and hypotheses are presented in Figure 1.

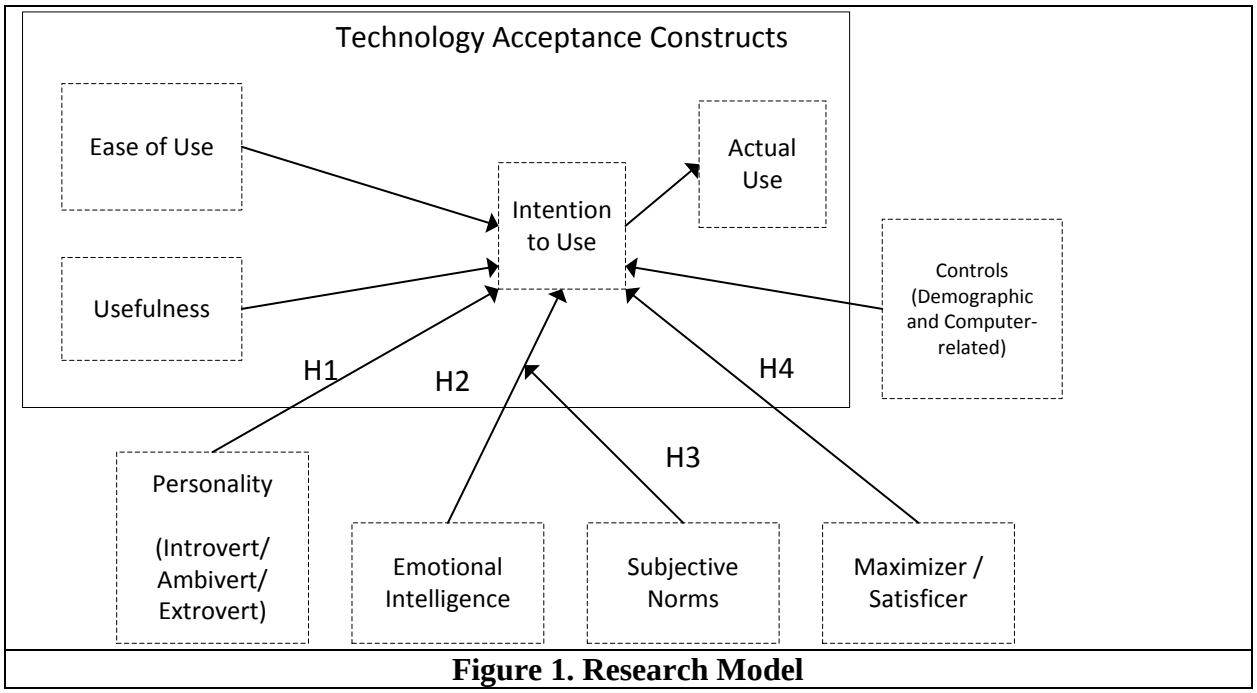

Figure 1. Research Model

CURRENT STATE AND FURTHER RESEARCH

Preliminary data has been collected for personality, emotional intelligence, maximizing decision making tendencies, technology perceptions, and technology adoption intentions. There are 234 finished responses, with 164 responses related to participation technologies, and 84 responses related to informing technologies. A higher proportion of students is willing to adopt informing technologies than participation technologies. Surprisingly, most students identified as ambiverts. Descriptive statistics are given in Table 1. Future work planned after data collection is complete is to fully test the proposed model. By better understanding the interaction of these key variables, we can provide advice to academics and practitioners on how to utilize technology to enhance a learning environment populated with students with diverse personalities, emotional intelligence and decision making approaches.

	n	mean
Personality		
Extrovert	51	N/A
Ambivert	116	N/A
Introvert	66	N/A
Emotional Intelligence	234	124.02137
Maximizer	234	47.799145

Technology Adoption			
Participation		164	
	Adopt	84	N/A
	Unsure	21	N/A
	Do Not Adopt	59	N/A
Informing		84	
	Adopt	64	N/A
	Unsure	14	N/A
	Do Not Adopt	6	N/A

Table 1. Descriptive Statistics

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