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Chinese university students' acceptance of MOOCs: A self-determination perspective



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ABSTRACT

At the start of a teaching revolution, Massive Open Online Courses (MOOCs) represent the latest stage in distance education, and offer open educational resources to students around the globe. With their growing popularity, this study examines the factors that influence students' decisions to use MOOCs. To integrate the theory of planned behavior (TPB) and the self-determination theory (SDT) as a research framework, 475 university students in China participated in a survey on the five constructs hypothesized to explain their intention to use MOOCs for learning. Data were analyzed using structural equation modeling. The results showed that attitude toward MOOCs and perceived behavioral control (PBC) were significant determinants of intention to use them. Autonomous motivation was an antecedent for all three core constructs of the TPB, while controlled motivation acted as an antecedent only for subjective norms. Implications of the findings are discussed.

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1. Introduction

Higher education today faces a range of challenges, including doubts about its role in society, fragmented functions within universities, concerns about sustainability (Gasevic, Kovanovic, Joksimovic, & Siemens, 2014), and growing diversity of the student population (OECD Publishing, 2013). Massive Open Online Courses (MOOCs) may transform the current situation. As a recent innovation to online learning, these courses represent the latest stage in the evolution of open educational resources (Mazoue, 2014). Such courses are accessible through the Internet and are usually open to registration without prerequisites or limits on the number of students. With their advantages of large scale, openness and self-organization, MOOCs have attracted 160,000 students from more than 190 countries (Wildavsky, 2014). As of 2014, over 400 universities were offering 2400 MOOCs to 18 million registered students worldwide (Koller, 2014). In China, however, MOOCs are still in their infancy in terms of the variety of courses, the participation of universities and institutions, and the enrollment of students (Wu, Hu, & Zhang, 2013). A dozen MOOCs in Chinese have been developed and published on MOOC platforms such as Coursera and edX. However, only certain prominent institutions such as Peking University and Tsinghua University have launched programs to build MOOC courseware and infrastructure, or to promote pedagogical research on this technology (Wu et al., 2013).

The emergence and rise of MOOCs has aroused extensive debates on whether such courses can meet Chinese learners' needs and if these courses can continue the kind of expanding enrollment that has been seen in Western countries. Advocates believe that MOOCs provide an opportunity to everyone who strives for the chance to receive good-quality higher education from highly ranked universities in developed countries, and that these courses can provide the autonomy that learners find

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appealing. Other observers are concerned that MOOC providers may prove unable to simultaneously offer courses that are highly diverse in content that accommodate the diversity of purposes and motivations for learning, differing levels of prior knowledge or available resources (Che, Luo, Wang, & Meinel, 2016). Inflexibility or standardization of the courses would inevitably reduce the learners' enthusiasm for participating in MOOCs. As Rai and Chunrao (2016) noted, MOOCs represent a positive trend in higher education, but the attractiveness of their role in student learning is diminishing.

To date, little systematic research has been done on the factors that affect student decisions to take MOOCs. Some researchers have delved into MOOC users' actual posts in MOOC courses to investigate their learning experiences (Liyanagunawardena, Adams, & Williams, 2013, as cited in Cole & Timmerman, 2015). Such studies provide insight into the views of actively engaged MOOC students, but fail to account for the views of “wanderers,” – students who are still uncertain or are considering whether to register for the courses. On the basis of very limited empirical evidence, some researchers have suggested that MOOCs appeal to students who are self-motivated (Bremer, 2012) and who perceive MOOCs to be useful (Xu, 2015).

This study intends to contribute to the extant literature by analyzing the perceptions that current college students in China have toward this new technology. This investigation extends the ongoing discussion of MOOCs in terms of identifying which factors affect students' decisions to take such courses. Specifically, this study examines the cognitive and psychological factors that influence students' adoption of MOOCs in China.

2. Theory of planned behavior

The theory of planned behavior (TPB) maps the process by which individuals form intentions to carry out behavior that is consistent with their self-determined motives (Sicilia, Sáenz-Alvarez, González-Cutre, & Ferriz, 2015). This theory assumes that an individual's intention to carry out a behavior is a key determinant of its execution (Ajzen & Madden, 1986). According to TPB, intention is determined by three distinct sets of beliefs: (1) beliefs about the likely outcomes of the behavior, which produce favorable or unfavorable *attitudes* toward the behavior; (2) beliefs about the expectations of others and the motivation to fulfill those expectations, which result in perceived social pressures (or *subjective norms*) to carry out a behavior (or not); and (3) beliefs about the factors that may facilitate or impede a behavior, and the perceived power of those factors. These beliefs about perceived power, or *perceived behavioral control* (PBC), concern the ease or difficulty that is associated with executing a behavior (Ajzen, 2002). These three elements jointly determine intention to engage in a behavior.

The TPB has been corroborated by a number of meta-analytic reviews and experimental studies across different behavior including physical activity (Luszczynska, Schwarzer, Lippke, & Mazurkiewicz, 2011), mobile learning in higher education (Cheon, Lee, Crooks, & Song, 2012), cyberbullying (Heirman & Walrave, 2012), internet banking (Nasri & Charfeddine, 2012), and binge drinking (Norman, 2011), showing its effectiveness in explaining intention and behavior across contexts. However, much variance still remains unexplained in the variables of the TPB (Hagger, Chatzisarantis, & Biddle, 2002). Moreover, there are mixed findings on the predictive power of subjective norms on intention (e.g., see Teo, Tan, Cheah, Ooi, & Yew, 2012, for positive prediction, Hsu, 2012 for negative prediction, and Cheung & Vogel, 2013, for a lack of prediction). Even the direct effects are small, suggesting that this factor does not adequately captures social influence (Hagger et al., 2002). This has led researchers to consider other factors that may contribute to predicting intention and behavior, thereby adding to the predictions shown by the constructs of the TPB (Sicilia et al., 2015).

3. Self-determination theory

Several researchers have noted the main limitation of TPB, namely its lack of attention to the origins or drivers of the belief-based antecedents of behavioral intentions (Hagger & Chatzisarantis, 2009; Hagger et al., 2002). Previous research has found that the constructs of self-determination theory (SDT) can be integrated into social cognitive theories of intentional behavior such as the TPB (e.g., Hagger, Chatzisarantis, Barkoukis, Wang, & Baranowski, 2005; Hagger, Chatzisarantis, Culverhouse, & Biddle, 2003). SDT is a well-established theory of motivation that has been widely adopted to investigate how and why a particular human behavior occurs (Deci, Koestner, & Ryan, 1999). Central to this theory is the concept of autonomy, which is defined as “the perceived origin or source of one's own behavior. Autonomy concerns acting from interest and integrated values. When autonomous, individuals experience their behavior as an expression of the self...” (Deci & Ryan, 2002, p. 8). The opposite of autonomy is control. Human behavior may be encouraged not only by internally evoked incentives (known as “autonomous motivations”), but also by externally induced incentives (known as “controlled motivations”). SDT argues for a controlled-to-autonomous motivation continuum, with external regulation being the most controlled type of extrinsic motivation, and introjected, identified, and integrated motivations being progressively more self-determined (Ryan & Deci, 2000). At the far end of this continuum is a fully self-determined type of intrinsic motivation.

SDT distinguishes between these autonomous and controlled motivations in terms of their underlying regulatory processes and their associated degrees of self-determination. In previous literature, external and introjected motivations have been described as controlled motivations whereas identified, integrated and intrinsic motivations have been considered as autonomous motivations (Koestner, Otis, Powers, Pelletier, & Gagnon, 2008; Meyer, Becker, & Vandenberghe, 2004; Sheldon & Elliot, 1998). The literature therefore suggests that behavior may be characterized as self-determined or non-self-determined, according to the degree to which it is stimulated by autonomous or controlled motivations. In general, autonomous motivations are more influential than controlled motivations for inducing a particular behavior (Wang & Hou, 2015).

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