The Effect of Negative Learning-related Emotions on Higher Education Faculty's Online Professional Development

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Abstract

This research examined how faculty's negative learning-related emotions were associated with their technology acceptance and learning engagement in online professional development. *Keywords*: Negative academic emotions, technology acceptance, online learning engagement, HE faculty's online professional development

Different emotions emerge during adults' online learning and greatly influence their learning experiences (Zembylas et al., 2008). In adult learning, emotions are indispensable for shaping educational experiences (Dirkx, 2001). Learners' emotions and mindsets reflect their expectations, personal bias, social needs, and external contexts, significantly impacting learning (Caine & Caine, 1990). Engaging emotions in adult learning can enhance learners' self-understanding and result in more in-depth learning (Dirkx, 2017). Apart from serving as a motivational factor, the emotions of adult learners also connect with their ability to understand and process information, memorize information, and perform reasoning practices (Merriam & Caffarella, 2020; Damasio, 1994). Given the importance of emotions in adult learning, effective programs for adult learners should attend to their emotional aspects.

Teachers, as adult learners, need professional development (PD) to acquire diverse teaching methods to meet student learning needs and facilitate teaching effectiveness (Soine & Lumpe, 2014; Wynants & Dennis, 2018). As a result of technological progress and the pandemic impact, many professional development initiatives for higher education (HE) instructors have been shifted to the online mode (Powell & Bodur, 2019; Al-Bargi, 2021). A significant advantage of online learning is that learners can seek education without being limited by space and time (Zembylas, 2008). Such flexibility suits adult learners well since they often shoulder multiple responsibilities and find it difficult to attend courses with fixed schedules and locations (Kapur, 2015). Despite scholars' growing interest in the HE faculty's emotions in the PD program, most PD research focuses on the offline context. This research aims to investigate the impacts of HE faculty's emotions in the online context and contribute to enhancing online PD quality in HE institutions from the emotional aspect.

Theoretical Framework

Despite rich online PD resources, there is no guarantee that adult learners can enjoy high-quality learning (Gibson et al., 2008). Previous research suggests that learning engagement is an essential indicator of online program quality (Rajabalee & Santally, 2021). Meanwhile, emotions and technology acceptance are also influential factors in online learning (Zembylas, 2008; Smith & Sivo, 2012; Davis, 1989). Additionally, learners show higher negative emotions in online learning than in traditional learning (Tzafilkou et al., 2021; Stephan et al., 2019). Therefore, this research examines the relationship between the negative learning-related emotions of HE faculty,

technology acceptance, and online learning engagement in the context of online PD. See Figure 1.

A previous study has pointed out some challenges adult learners face online, such as technical difficulties, unstable networks, and barriers to accessing learning materials (Kidd & Keengwe, 2010). Adult learners' different attitudes toward technology lead to varied confidence, which can impact the quality of their online learning experience (Kidd & Keengwe, 2010). Previous research has investigated college students and found a positive relationship between their technology acceptance and online learning engagement (Tseng et al., 2020; Ustun et al., 2021).

Another vital relationship investigated in this study is adult learners' technology acceptance and their negative learning-related emotions in online learning. Many studies have investigated how technology-aroused negative emotions influence their technology acceptance (e.g., Chao, 2019; Venkatesh, 2000). Chea & Luo (2019) suggested that emotional experiences from sources other than technology can also impact learners' acceptance of technology. Wu et al. (2021) found that a group of college learners' academic emotions of boredom and frustration in learning activities and outcomes negatively impacted their technology acceptance. This current research expanded the inclusion of negative emotions to measure a broader range of negative learning-related emotions, including boredom, anger, anxiety, shame, and hopelessness in the context of HE teachers' online PD.

The relationship between learners' negative emotions and learning engagement is the third important focus of this research. Among different types of adult learners, research on how negative emotions impact learning engagement showed diversified results, including positive relationships (Artino &Jones, 2012), negative relationships (Putwain et al., 2013; King et al., 2015), and no relationship (Wu et al., 2021). It is unclear what the relationship is between negative emotions and learning engagement in an online PD environment.

This study seeks to validate previously mentioned concepts in the online PD context. It also investigates whether technology acceptance mediates negative learning-related emotions and learning engagement. Based on the literature review, the study proposes the following hypotheses: (H1) HE teachers' NE negatively predict their TA; (H2) HE teachers' NE negatively predict their LE; (H3) HE teachers' TA positively predict their LE; (H4) HE teachers' TA mediates the effect of their NE on LE. (Note: NE: Negative Learning-related Emotions; TA: Technology Acceptance; LE: Learning Engagement)

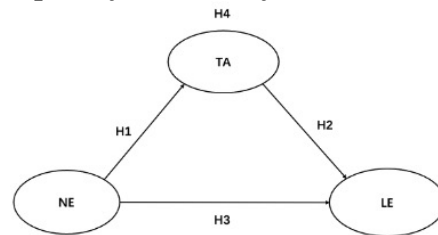*Figure 1 shows the conceptual framework for this research.*

Figure 1: Conceptual Framework

Research Design

This research used three previously validated survey instruments: (1) the short version of Pekrun's (2011) Achievement Emotions Questionnaire (AEQ-S) developed by Bieleke et al. (2021), (2) the technology acceptance questionnaire in Dečman's (2015) research, and (3) the

Learning Engagement Scale developed by Reeve and Tseng. (2011). Modifications are made to reflect the context of this study. The survey was conducted in December 2022 among HE faculty from universities in a southeastern province of China. Two hundred sixty-five faculty members participated in the online survey. Following the exclusion of invalid submissions, the final sample size is 254, with a valid response rate of 95.89%.

Findings and Conclusions

The study used SmartPLS3.3.9 to evaluate the questionnaire's validity and reliability and build the SEM model to test the hypotheses (Hair et al., 2011). Except for H2, all other hypotheses are supported.

The research results show that in online PD, HE faculty's negative learning-related emotions predict lower technology acceptance (H1), which aligns with previous research (Wu et al., 2021). However, the finding does not support that negative learning-related emotions lead to lower online learning engagement (H2). This result is not without grounding. Negative emotions can produce diversified effects. Some research suggests that learners with negative emotions would show less learning engagement as learners place too much focus on failures or threats in learning (Putwain et al., 2013).

Nevertheless, scholars also suggested that negative emotions sometimes would trigger people's agentic efforts to make a difference (Vähäsantanen & Eteläpelto, 2015; Hökkä et al., 2017). Therefore, HE faculty's negative learning-related emotions do not necessarily result in their disengagement. Further research is needed to explore the relationships between negative learning-related emotions and learning engagement among HE faculty and other adult learners by considering individual characteristics.

Furthermore, the findings reveal the value of learners' technology acceptance in promoting online engagement (H3). Also, the mediating effect of technology acceptance between negative emotions and learning engagement was proved to exist (H4). The more negative learning-related emotions HE faculty have, the lesser their technology acceptance becomes, leading to lower online learning engagement. First, the findings show the importance of helping HE faculty develop higher technology acceptance. Even when HE faculty are in negative emotions, greater technology acceptance can enable them to better manage the negative impacts of negative learning-related emotions on learning engagement. Second, it is noticeable that our research found no direct links between HE faculty's negative learning-related emotions and learning engagement. When technology is considered, HE teachers' negative learning-related emotions negatively and indirectly link to online learning engagement.

Discussion on Theory-informed Practice

Delivering education via an online platform is an essential mode of delivery in adult learning (Kidd & Keengwe, 2009). Perceived feelings about using technology affect people's actual use (Agarwal & Karahanna, 2000). Hence, our study offers insights into why HE institutions need to offer emotional capacity training to faculty (Chen, 2018). Our findings show that HE faculty's reduced negative learning-related emotions will increase their acceptance level of technology acceptance. Based on the study findings, the following recommendations are believed to contribute to enhancing online PD in higher education. First, it is crucial to respect the HE faculty's emotions and encourage them to conduct sense-making emotional expressions; such an effort will help them gain better self-awareness in learning (Dirkx, 2017). Second, it is necessary to expand the online PD coverage beyond training on pedagogy. In faculty learning, PD must

include skills training on appropriately handling negative learning-related emotions (i.e., boredom, anger, anxiety, shame, and hopelessness). Third, paying attention to the online PD learning environment is essential. Previous studies have shown that emotions are context-specific (Gu et al., 2022; Dirkx, 2001). One way to create a better learning environment is to facilitate a technology-friendly culture and mindset among HE faculty. For example, an effort can be made to maintain an open and positive attitude toward technology. HE institutions can make efforts to ensure the user-friendliness of technologies. The value of using technologies in online PD programs should be clearly and frequently communicated and demonstrated to HE faculty by sharing successful examples. A technology-friendly and embracing culture can trigger HE faculty's learning motivations, resulting in higher technology acceptance (Venkatesh, 2000) and improved engagement in online PD learning.

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