

## Improving learners' self-efficacy in a learner-controlled online learning environment: a correlational study

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Online learning is gradually being adopted by higher institutes and becoming much more common in higher education worldwide, but some learners still find it challenging. Though they are familiar with computer and technology usage, they are still uncertain of their ability to perform well in online classes. A review of studies focused on how these learners gain more confidence and success shows a link between self-efficacy and learners' outcomes. Efficacious learners tend to adapt and cope well when faced with obstacles. Moreover, learners who were given control over their learning environment performed better, were more satisfied, and had higher self-efficacy than control groups. It is theorised that embedding learner control into online learning programmes might help inefficacious learners gain more self-efficacy but few studies have investigated this relationship in the real online class setting. Therefore, this study in progress is an attempt to fill in this research gap.

Keywords: Learner control, online learning, self-efficacy, online learner

### Research background

Many tertiary institutes now perceive online learning as an educational trend for the future. Online learning is cost effective and can reach more learners. In some sense, it is seen as more creative ways in teaching as well as a sustainable way for learning. Though many studies report success stories of online learning in terms of retention and effectiveness (e.g., Means, Toyama, Murphy, Bakia, & Jones, 2009), findings still show online learners have difficulties in dealing with their learning environment (Cavanaugh, 2005; Cook & Jenkins, 2010; Levy, 2007). Despite using computers and technology in their daily life, they might feel less confident about enrolling in online classes, especially at the tertiary level. They might not have enough of the necessary learning and technology skills for the combination of university and online learning such as skills to compose essays, prepare presentations, analyse data, and do research work (Kennedy, Judd, Churchward, Gray, & Krause, 2008; Mandernach, Donnelly, & Dailey-Hebert, 2006; Ratliff, 2009). Many students still find it hard to adapt and perform well in university online classes because of the demands and stress of the transition from secondary schools to tertiary education. Some students struggle to cope with the complexity of an online environment and often have doubts about their learning performance (Saadé & Kira, 2009). Thus, more technical and psychological support is often needed for online students.

### Self-efficacy in online learning environment

In online learning, self-efficacy is considered to be a key psychological contributing factor to students' success (Pajares, 1996) because it can alter students' perceptions of their learning environment (Multon, Brown, & Lent, 1991). Consequently, students might perceive their learning environments either positively or negatively. Self-efficacy is not only a good predictor of learners' academic outcomes but it helps learners well adjust and handle with the unfamiliar learning environment (Alivernini & Lucidi, 2011), even when they have little prior online experience (Swan, 2004).

According to Bandura's self-efficacy theory, *self-efficacy* is defined as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3). It is a judgment of confidence about the performance of a specific task (Lorsbach & Jinks, 1999). Self-efficacy is not the same as ability or motivation, but they are strongly related (Chowdhury & Shahabuddin, 2007; Vancouver & Kendall,

2006). Indeed, self-efficacy is the personal determination of one's own ability to deal with a certain task. Notably, this determination is not based entirely on actual past experience or existing ability and skills but also on students' perceptions of their own knowledge and ability relative to the task or situation (DeTure, 2004). Self-efficacy is specific to the context of a situation but, once established, is generalized to other situations with the strongest effect taking place in activities that are closest to those in which self-efficacy has been improved. Therefore ensuring that online learners develop self-efficacy within a course means that they should continue to be successful online learners into the future.

Aligned to Bandura's sources of efficacy information (1977), self-efficacy in online contexts is influenced by previous success with online learning systems, online learning technology anxiety, instructor feedback and pre-course training, the factors enactive mastery experience, social persuasion, and affective states (Bates & Khasawneh, 2007). In addition, self-efficacy can be improved by giving learners' control over their learning environment (Lawless & Brown, 1997; Luskin & Hirsén, 2010). Thus, an online course embedded with learner control should help support and enhance learners' efficacy.

### **The concept of learner control**

The concept of *learner control* was firstly introduced by Mager and his colleagues to technology-assisted instruction (1961; 1963; 1962) as a way to improve learning performance. Later on, the concept was applied to distance and online learning by many theorists in this field (Candy, 1991; Dron, 2006; M. Moore, 1997; M. G. Moore, 1973). Learner control can differ depending on the technique used and background theory applied since it is multidimensional (DeRouin, Fritzsche, & Salas, 2005). In general, learner control is the extent to which students can choose what, when, where, and how to learn (Kraiger & Jerden, 2007).

Previous studies have shown that the sense of control students have gained while interacting with instructional media and content can turn into satisfaction, enjoyment, and confidence (Luskin & Hirsén, 2010). Research also found that high levels of learner control can improve students' performance (e.g., Chou & Liu, 2005) because students are engaged in greater levels of interaction. These interactions, especially with their classmates and instructors, can make students feel more efficacious through the activities they and their classmates have accomplished, along with the feedback they receive from peers and instructors and emotional states such as satisfaction and a sense of belonging (Piccoli, Ahmad, & Ives, 2001).

However the effects of learner-controlled online environments on students' self-efficacy are not consistent. On the one hand, findings show no differences in students' self-efficacy between non-interactive multimedia and interactive multimedia classes. For example, Maag (2004) found that students in an interactive multimedia online lesson showed no knowledge and self-efficacy gain compared to the control group but they were more satisfied with the interactive tools.

On the other hand, other research has reported an improvement of students' self-efficacy in learner-controlled online environments. Ebner and Holzinger (2007), for instance, found that games enhanced learning, motivation and self-efficacy with a factor called joy. Likewise, Chang and Ho (2009) found that students with the learner control version had higher test scores and self-efficacy levels than those in the programme-controlled version. In the same way, Jaffe's findings (1997) showed that a greater degree of interaction increased students' self-efficacy. However, these effects were not significantly different. This discrepancy in findings may occur because the online learning environment is complex, and the increase of students' self-efficacy can be caused or influenced by many factors other than levels of learner control. Nevertheless self-efficacy is an important factor that teachers can encourage in sustaining students' participation and effort throughout their study.

### **This study and its implication**

As an attempt to fill this research gap, this study in progress centres the attention on the link between learner control, self-efficacy, and other factors such as previous experience in online learning programme and computer skills. In addition, literature in this area shows a few studies that have investigated experiencing levels of learner control in a real online class setting (Jaffe, 1997). Most learner control research has compared outcomes between learner control embedded in web-based learning and those in traditional learning environments (e.g., Chang & Ho, 2009; Chou & Liu, 2005). Therefore, this study focuses on learners in the formal setting of online learning programmes designed to encourage learner control in higher educational institutions.

Building on previous research this study uses a quantitative approach framed by Bandura's self-efficacy theory (1977). The population frame is online learners in an online programme at a tertiary institution in New Zealand.

The purposive sample group is learners in an online programme where levels of learner control were embedded within the course design which learners are encouraged to do a group project in their own ways or they are allowed to complete different tasks choosing their own order within a flexible time frame. To measure learners' perceived confidence toward their online learning programme, the self-efficacy scales are constructed, piloted and validated. Hypothetically, if the correlation between learner control and learners' self-efficacy does exist, learners who are studying in high learner-controlled online programme should have high self-efficacy toward their learning environment.

The questionnaire was constructed by items generated from the reviewed literature and previous validated tools. After reviewed by scholars and experts in the fields, the initial questionnaire comprised four sections: (1) demographic data, (2) a self-report of learners' computer skills, previous online learning experience, and experience with learner control, (3) an online learning self-efficacy scale (OLSE), and (4) open-ended questions for qualitative data.

Then, a pilot study was conducted to test validity of the research instrument and to establish preliminary findings. Thirty-two students, seven males and 22 females, participated in this online survey. About 75% of participants were 25 to 45 years old. About 80% had some to a lot of online learning experience. Seventy-five percent reported themselves having intermediate computer skills, and the rest were advanced users.

The preliminary findings showed a positive relationship between learner control and online self-efficacy. Pearson's product-moment correlation coefficient was calculated  $r(32) = 0.393$  at a significant level of 0.05. This coefficient meant that students' self-efficacy increased along with the level of learner control they had experience. The more in-depth study is planned for a larger and more diverse sample group in term of learner control after the questionnaire was adjusted and validated. Qualitative data, then, is analyses and used to triangulate the quantitative findings.

It is hoped that the results of this study may prove useful for educators and developers in shedding some light on how to make future online students more comfortable and confident in unfamiliar and complex online environments. Novice and inexperienced online students who possess low confidence in their ability might find it easier to interact, collaborate, and thus succeed in online courses when learner control is integrated into the online learning environment from the beginning as part of the course design.

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