

Well Begun Is Half Done: Using Online Orientation to Foster Online Students' Academic Self-Efficacy

M'hammed Abdous
Old Dominion University

Abstract

Past research suggests that the use of an online learning orientation is an effective proactive strategy to ease online students' transition into online learning. Based on a sample of 3,888 online students from an urban public university, we used ordinal logistic regression to understand the influence of students' satisfaction with an online learning orientation (OLO), their prior level of online learning experience, and their demographics on their academic self-efficacy (ASE). Consistent with prior research, our findings confirmed the influence of students' satisfaction with OLO, their prior online learning experience, and their gender on their ASE. Unsatisfied students were 85% less likely than satisfied students to express a high level of self-efficacy. In contrast, students' age and enrollment status proved not to be significant. Overall, our findings provide strong evidence about how the use of an OLO as proactive support strategy can boost online students' academic self-efficacy.

Keywords: orientation, survey, academic self-efficacy, higher education

Abdous, M. (2019). Well begun is half done: Using online orientation to foster online students' academic self-efficacy. *Online Learning*, 23(3), 161-187. doi:10.24059/olj.v23i3.1437

Well Begun Is Half Done: Using Online Orientation to Foster Online Students' Academic Self-Efficacy

Given the individual, institutional, and social costs associated with student attrition in online courses (Simpson, 2013), it is becoming crucial, for the future of online education, to develop an understanding of what factors drive students to persist. Just as it is for students in face-to-face courses, persistence among students in online courses is a complex phenomenon shaped by an interaction of academic, nonacademic, and socio-individual factors (Hart, 2012; Lee & Choi, 2013). While both academic and nonacademic factors (such as course design, faculty expertise, and work and family responsibilities) influence online students' persistence and success (Glazier, 2016; McGee, Windes, & Torres, 2017; Park & Choi, 2009), socio-individual factors also seem to weigh heavily on online students' decisions to persist (Cochran, Campbell, Baker, & Leeds, 2014). More specifically, students' characteristics, such as their high school GPA (Harrell & Bower, 2011),

their satisfaction (Levy, 2007; Müller, 2008; Park & Choi, 2009), their academic preparedness and experience (Aragon & Johnson, 2008; Cochran et al., 2014), and their self-efficacy (Müller, 2008; Park & Choi, 2009), play a decisive role in students' persistence and success.

Indeed, the role played by students' characteristics is amplified by the fact that most online students are nontraditional students who juggle family, work, and study obligations. In support of this idea, Bocchi, Eastman, and Swift (2004) and Rovai and Downey (2010) attribute attrition, in part, to students' inability to embrace a self-directed learning approach, misconceptions about course difficulty and workload, and lack of experience and preparedness for online learning. Students' unpreparedness to take courses online hampers their ability to cope with the demands of their new learning environment.

In an attempt to mitigate these individual attrition rates, higher education institutions (HEIs) are increasingly offering a self-paced online learning orientation (OLO) as a proactive support strategy to build students' self-confidence and preparedness, to clarify course expectations and requirements, and to help to dispel student misconceptions about online learning (Bawa, 2016; Clay, Rowland, & Packard, 2008; Gilmore & Lyons, 2012; Russo-Gleicher, 2014). By offering an early positive encounter with the online learning environment, an OLO can lessen online students' anxiety and increase their confidence and readiness (Gilmore & Lyons, 2012; Kanuka & Jugdev, 2006; Motteram & Forrester, 2005; Cho & Heron, 2015).

However, despite the fact that OLO is positively associated with improving students' preparedness and self-efficacy, and even reducing their likelihood of dropout (Brewer & Yucedag-Ozcan, 2013; Scheitler, 2015; Shen, Cho, Tsai, & Marra, 2013), only a handful of studies have examined the influence of an OLO on ASE. Even researchers who have explored self-efficacy have focused on its computer- and technology-related dimensions (Jan, 2015; Shen et al., 2013; Zimmerman & Kulikowich, 2016). While computer self-efficacy is undoubtedly important, this narrow focus misses the opportunity to explore the multidimensional facets of ASE, such as student confidence, both in completing course tasks and in interacting with their instructor and their classmates.

Taking this into account, this paper attempts to fill the gap in the literature by examining the influence of an embedded OLO on online students' ASE. More specifically, our study, unlike most of the earlier studies, explores the impact of an OLO on five ASE dimensions: confidence to complete online course activities, interaction with classmates, interaction with the instructor, use of a learning management system (LMS), and socialization with classmates. The outcomes associated with ASE, such as students' self-regulation and achievement, are not explored in this study.

Given the positive role played by prior online learning experience in influencing students' success (Hachey, Wladis, & Conway, 2014), it is critical to examine the interplay of an OLO with online students' ASE. As one of the strongest predictors of success in online learning (Prior, Mazanov, Meacheam, Heaslip, & Hanson, 2016), self-efficacy plays an influential role in online students' success and retention. Hence, exploring the influence of an OLO on students' ASE is likely to support institutional efforts to bolster their retention and, ultimately, their success.

In light of this, this paper is divided into four sections. First, we present the theoretical framework underpinning this study. We follow it by a literature review of studies associated with various factors influencing ASE. Next, we describe the context of our study and our

methodological approach. Finally, we present and discuss our findings and limits, and we conclude by offering a few recommendations.

Theoretical Framework

Informed by Bandura's social cognitive theory, this study is framed around the interaction of students' ASE with an OLO, prior online learning experience, and demographics. Defined as "belief in one's own capacity to perform tasks successfully" (Bandura, 1977), self-efficacy is based on the interplay of cognitive, motivational, affective, and selection processes. The cognitive process drives students' goal setting and commitment, while motivational factors guide students' actions and shape their beliefs as to what they can accomplish. The affective processes touch students' perceived efficacy to manage feelings such as anxiety and depression, whereas the selection processes influence students' choices and decision-making process (Bandura, 1993, 2012).

Applying this framework, Wäschle, Allgaier, Lachner, Fink, and Nückles (2014) argued that an increase in self-efficacy has a positive impact on students' motivation to tackle new tasks. Students' self-confidence to complete tasks will enhance their self-efficacy, which in turn will increase their motivation, and will reduce their feelings of anxiety. In contrast, a low level of self-efficacy is associated with negative emotions, such as anxiety, and with lower performance (Marchand & Gutierrez, 2012). By influencing students' judgment about their own ability to succeed, self-efficacy predicts and mediates students' achievement, motivation, and learning (Elias & MacDonald, 2007; Shea & Bidjerano, 2010; van Dinther et al., 2011). Students with a higher level of self-efficacy are more motivated to perform well academically than those with a lower level of self-efficacy. Therefore, self-efficacy is a powerful construct capable of exerting considerable influence on students' motivation, as well as on their willingness to learn, to persist, and to succeed. From this perspective, exploring the influence of OLO on students' ASE, as a narrower form of self-efficacy focusing on one's perceived ability to perform given academic tasks, can inform and guide support efforts aiming to boost their confidence, motivation, and success.

Review of Literature

While ASE has been widely investigated in the literature, very little research exists on the influence of OLO on ASE. Similarly, except for a few descriptive and anecdotal studies, there are virtually no studies on the influence of past online learning experience on ASE. For this reason, we expanded our literature review to include traditional face-to-face learning studies. Organized around five themes, this review explores the interplay of various factors influencing online students' ASE, including the use of OLO, ASE, computer self-efficacy, past online learning experience, and students' demographics.

Online Learning Orientation

The use of an OLO is widely viewed as one of the most effective proactive support strategies for easing students' transition into online learning. Intended to prepare students to take online courses and clarify expectations, OLOs are also used to lessen support needs during course implementation (McGee, Valdes, & Bullis, 2016). By enhancing students' study skills, such as their motivation, time management, self-discipline, and technical skills, OLOs have the potential to increase students' preparedness, retention, and success.

Bozarth, Chapman, and LaMonica (2004) proposed that all online students complete a mandatory one-credit orientation as a preparedness tool. To ease students' transition, reduce their misconceptions, and increase their chances of success, the authors proposed an orientation focused on developing students' technical skills, knowledge, and attitudes (such as time management and personal commitment).

As a retention strategy, completion of an OLO increases students' likelihood to persist by reducing their confusion and by addressing their misconceptions early in the process (Morris & Finnegan, 2008; Smyth & Lodge, 2012). To this end, Russo-Gleicher (2014) recommended the inclusion of an online orientation as a powerful retention strategy, offered alongside the screening of students and the support and empowerment of the faculty. Using qualitative data from semi-structured, in-depth faculty interviews, Russo-Gleicher (2014) suggested using a mandatory orientation not only to clarify students' online learning misconceptions but also to provide a realistic purview of course expectations and to discuss time-management skills. In the same way, Lee and Choi (2011) suggested the offering of an online orientation as one of the institutional strategies designed to improve students' persistence. This recommendation was later reiterated by Shen, Cho, Tsai, and Marra (2013), who suggested the offering of an orientation to enhance students' self-efficacy to handle tools in a content management system. For their part, Ali and Leeds (2009), Lee and Choi (2011), and Cho (2012) argued that a freshman orientation improves online students' retention, while Cho and Heron (2015) recommended using a course orientation as one of the strategies to help students succeed in remedial online mathematics courses.

Dupin-Bryant (2004) argues that, as a student success strategy, orientation programs focused on advancing students' technological skills are likely to help students gain the experience that they need to succeed in online courses. Likewise, Wojciechowski and Palmer (2005) identified orientation completion as the "second greatest factor," following a student's GPA, in predicting his or her success in an online course. Hachey et al. (2014) contended that offering targeted support to students who are taking their first online course is a critical factor in their success in future online courses. However, to soften this conclusion, we must note, along with Dray, Lowenthal, Miskiewicz, Ruiz-Primo, and Marczyński (2011), that student success in online programs hinges partially on the complex mesh of their learning characteristics and their level of engagement with the technology.

In conclusion, it is clear from the literature that the use of an online orientation increases students' preparedness, retention, and success. By easing students' transition into online learning, by dispelling their misconceptions, and by clarifying course expectations and requirements, an online orientation is likely to boost their ASE and to help them progress successfully. However, we caution that an OLO is not a magic recipe to resolve either the students' lack of motivation and preparedness, the faculty's lack of presence, or the institution's lack of support. While the value of an online orientation in easing students' apprehension and preparing them for online learning is undeniable, its impact does not single-handedly address the developmental and social issues that can impede students' learning (Tinto, 2010).

Having looked at the some of the benefits of an OLO on fostering students' preparedness, retention, and success, let's turn our attention to the influence of ASE on students' motivation and academic performance.

Academic Self-Efficacy

As another specific domain of self-efficacy, ASE refers to a student's perception regarding his or her competence in learning and in performing academic tasks (Schunk & Pajares, 2002). Building on Bandura's seminal framework regarding the role of self-efficacy in regulating human behavior (Bandura, 1977), several studies have examined the influence of academic self-efficacy on traditional students' motivation and academic performance.

With respect to motivation, Pajares and Usher (2008) argued that "in school, self-efficacy beliefs provide the foundations for academic motivation, well-being, and achievement" (p. 396). As an outcome of this interaction, Wäschle et al. (2014) concluded that an increase in self-efficacy has a positive impact on students' motivation to tackle new tasks. Students' self-confidence to complete tasks enhances their self-efficacy, which in turn increases their motivation. The authors describe this positive feedback loop as the "virtuous circle of self-efficacy." Likewise, Tseng and Tsai (2010) uncovered a reciprocal relationship between self-efficacy and motivation on the one side and learning and performance on the other side. In other words, a stronger self-efficacy is likely to foster online students' intrinsic motivation, which, in turn, will lead to better performance and better learning.

Indeed, in terms of performance, several studies have confirmed the predictive nature of the ASE on students' achievement, as measured by their GPA. The conclusions, from a meta-analysis of 109 studies, found ASE to be the best predictor of GPA and a moderate predictor of student retention (Robbins et al., 2004). Backing this finding, evidence from another meta-analysis of 13 years of research showed that performance self-efficacy has a strong correlation with student performance, followed closely by the student's high school GPA (Richardson et al., 2012). More recently, Honicke and Broadbent (2016) concluded in their meta-analysis that ASE is moderately correlated with academic performance. In this relationship, self-efficacy exerts a strong positive effect on students' performance through goal setting, effort, and persistence (Hixon et al., 2016). Moreover, even perceived self-efficacy in an academic setting will positively affect students' quality of studying and performance (Caprara et al., 2008; Wäschle et al., 2014).

In online learning settings, the influence of an OLO on students' self-efficacy has not yet been the focus of scholarly research. Among the very few studies we uncovered, Brewer and Yucedag-Ozcan (2013) argued that a well-structured and timely OLO improves students' ASE and preparedness while reducing their likelihood of dropout. Along the same lines, after reviewing 26 orientation programs used by community colleges in the United States, Scheitler (2015) concluded that students' participation in an online orientation positively influenced their self-efficacy.

Bearing in mind the correlation of ASE with student learning and achievement, let's examine the influence of computer self-efficacy on students' learning.

Computer Self-Efficacy in Online Learning Settings

In online learning settings, much of the literature is focused on computer and technology-related self-efficacy. Defined as the user's perception of efficacy in performing computer-related tasks, computer self-efficacy (CSE) is closely associated with a "wide range of cognitive, attitudinal and behavioral outcomes," including computer use, skills, and attitudes toward computers (Rex, Atul, & Dennis, 2012). As a result, CSE is credited with positively influencing students' confidence and abilities to use and learn with technology, (Celik & Yesilyurt, 2013). More specifically, students with a high level of Internet self-efficacy not only outperformed

students with lower self-efficacy on the final exam but also expressed a higher confidence in their ability to complete an online course (Chang et al., 2014). In this way, CSE has also been reported to play a significant role in online students' learning (Simmering, Posey, & Piccoli, 2009), satisfaction (Jan, 2015; Shen et al., 2013), performance and persistence (Wu, Tennyson, & Hsia, 2010), grades (Wang, Shannon, & Ross, 2013), and achievement (Joo, Lim, & Kim, 2013). Because of this positive influence, Wu et al. (2010) recommended, among other things, that institutions work to support students' efforts to enhance their computer literacy. In their review of research on online course dropout, Lee and Choi (2011) identified "computer skills confidence" as one of the psychological attributes that influence students' retention, along with self-efficacy, motivation, and satisfaction. Correlated with this, Wilfong (2006) and Saade and Kira (2009) concluded that CSE had a significant impact on computer anxiety.

In opposition to these conclusions, Hodges (2008) cited studies that refute a positive correlation between self-efficacy and online students' performance (DeTure, 2004; Wang & Newlin, 2002). However, this negative relation is attributed, by the author, to a self-selection bias introduced by the use of self-selected online students as subjects. With these nuanced conclusions about the influence of CSE on students' performance, let's turn our focus to the relationship between students' prior online learning experience and ASE.

Prior Online Learning Experience

While ASE is not a mere reflection of past online learning experience, Jan (2015) showed a positive relationship between ASE and any prior experience with online learning. This relationship between ASE and past learning experience was emphasized by Shen et al. (2013) who reported, along with Zimmerman and Kulikowich (2016), that students with prior online learning experience express a high online learning self-efficacy. This conclusion is aligned with the underlying assumption that self-efficacy is shaped by students' interpretation of and reflection on past experiences (Shea & Bidjerano, 2010). Correlatively, online students with past online experience are likely to use more effective learning strategies, which in turn can lead to a higher level of motivation and better grades (Wang et al., 2013). Indeed, Hachey et al. (2014) reported that prior online experience is strongly correlated with students' success and retention, regardless of their GPA. After reviewing 26 OLO programs, Scheitler (2015) concluded that participation in online programs boosted students' self-efficacy for online classes. By improving the skills and attributes needed for online learning, online students gain self-confidence—a confidence that transforms their disposition toward online learning.

By and large, self-confidence and the belief in one's ability to succeed are critical in students' ability to self-regulate their online learning study habits. In addition to influencing students' cognitive processes and actions, academic self-efficacy fuels students' motivation and their ability to succeed. Students with a higher ASE are more motivated to perform academically than those with a lower level of ASE. For this reason, ASE is a powerful construct capable of exerting a significant influence on students' motivation, as well as on their willingness to learn, persist, and succeed. Understanding the interaction of an OLO with students' ASE can inform and guide support efforts that aim to boost students' confidence, motivation, and success. In the same manner, students' demographic factors are crucial in unpacking the intricacies of the online student experience.

Demographics Factors: Age, Gender, Academic Year, and Enrollment Status

Age. Online students' learning experience is shaped by various factors, including age, gender, academic year, and enrollment status. Cochran, Campbell, Baker, and Leeds (2014) argued that individual characteristics of students are strongly related to student retention in online classes. Following Stratton et al. (2007), Cochran et al. (2014) used demographic variables to explain the variance in student retention in institutions of higher education. According to these authors, cumulative GPA and being a senior are the strongest determinants of students' retention.

With regard to age, Vella, Turesky, and Hebert (2016) identified older age and gender as two of the predictors of both higher course grades and successful course completion. Along with this line, Carbanaro, Dawber, and Arav (2006) showed that older online students outperformed their younger counterparts. However, Ekwunife-Orakwue and Teng (2014a) reported that age did not predict student learning outcomes and satisfaction.

In related research Chu (2003) claimed that age influenced preservice teachers' CSE, while Wyatt (2005) contended that age influenced online students' satisfaction. Contrary to these conclusions, Ke and Xie (2009) stated that age did not predict online "adult students' self-reported time or effort spent on learning tasks" (p. 140). Chung, Park, Wang, Fulk, and McLaughlin (2010) pointed out that age did not influence either perceived ease of use and usefulness or intention to take part in online learning communities. It is clear that age plays some role in student self-efficacy, satisfaction, learning, and related constructs of interest. The nature of these relationships requires additional study.

Gender. Regarding the influence of gender on self-efficacy, past research findings are nuanced and mixed. While it is well established that female students outnumber male students, their online learning experience is different, since they often juggle multiple roles and responsibilities (e.g., employee, mother, and/or wife). Exhibiting stronger self-efficacy and confidence than their male counterparts (Chyung, 2007; Shen et al., 2013), female students are not only more receptive to online learning (Selwyn, 2007) but also more engaged with its content (Ekwunife-Orakwue & Teng, 2014b). Moreover, female students are more active and more satisfied with the online learning process than their male counterparts (González-Gómez, Guardiola, Martín Rodríguez, & Montero Alonso, 2012). Consequently, Vella et al. (2016) suggested that female students are more likely to earn higher grades in online courses than their male counterparts.

Against these conclusions, Zembylas (2008) argued that females taking online courses struggle to respond adequately to the demands and pressures exerted by these multiple roles and responsibilities. For their part, Cai, Fan, and Du (2017) and He and Freeman (2010) argued that female students are more anxious when using computers and present a lower level of CSE, mainly when using specific Web 2.0 applications. These findings are corroborated by Chang et al. (2014), who reported that online male students exhibited a higher degree of Internet self-efficacy and confidence than female students.

Between these two opposing views, Hung, Chou, Chen, and Own (2010) concluded that gender did not influence online students' learning readiness, as measured by self-directed learning, motivation for learning, computer/Internet self-efficacy, learner control, and online communication self-efficacy. In the same manner, the Chu (2003) study did not reveal any significant relationship between gender and computer self-efficacy among preservice teachers.

These mixed findings about the influence of gender on computer self-efficacy are reflective of the inconsistent findings reported about the interplay of gender and technology (Cai, Fan, & Du, 2017).

Academic year. Research on the influence of academic year on ASE is scarce. One of the few studies, conducted by Hung et al. (2010), suggested that junior and senior students are more prepared in terms of self-directed learning and learner control than are freshman and sophomores. Building on this common-sense conclusion, Cochran, Campbell, Baker, and Leeds (2014) claimed that, because of their academic experience, seniors are less likely to withdraw from online courses than non-seniors. According to Hung et al. (2010), junior and senior students demonstrate a greater preparedness for self-directed learning, online communication self-efficacy, motivation for learning, and learner control than freshman and sophomore students do.

Enrollment status. With a renewed interest in part-time students as a potential source for expanding access to higher education, it is valuable to understand the relationship between students' enrollment status and their achievement. Part-time online students are typically confronted with competing family and professional priorities (MacCann, Fogarty, & Roberts, 2012; Ortagus, 2017; Shea & Bidjerano, 2014). Despite these challenges, Cummings, Chaffin, and Cockerham (2015) suggested that online part-time students' ratings on social work practice skills were significantly higher than those of traditional campus students. In a similar vein, Vella et al. (2016) argued that part-time students earned higher grades and rates of course completion than full-time students. In contrast, drawing from face-to-face research, we maintain that part-time students are more prone to attrition (O'Keeffe, 2013). The Stratton et al. (2007) study suggested that part-time students (37%) face a more serious risk for attrition than full-time students (13%) do. Related to this, MacCann et al. (2012) argued that part-timers' GPAs are firmly connected with their time-management skills.

In sum, although some of the findings are inconclusive, past research has provided a substantial body of evidence to show that demographic factors influence online course experience, hence their inclusion in this study. In the next section, we discuss the purpose of, as well as the questions raised in, this study.

Purpose of the Study

By building students' sense of efficacy and their confidence in their ability to complete online courses, the use of an OLO is likely to reduce students' (particularly new online students') frustrations and apprehensions and promote their academic persistence and success. Yet the influence of an OLO on students' ASE has rarely been a topic of scholarly research. Most of the studies, when not descriptive and anecdotal, have been limited to one semester in length, with small samples. Also, none of the previous studies explored the influence of satisfaction with an OLO on students' ASE.

Taking these gaps into account, this study attempts to examine the influence of students' satisfaction with an OLO, their prior level of the online learning experience, and their demographics on their ASE. To address these aims, we asked the following three research questions (RQ):

RQ1. How does students' satisfaction with the OLO predict their ASE?

RQ2. How does students' prior online course experience (i.e., the number of online courses taken before) predict their ASE?

RQ3. How do students' demographics (age, gender, academic year, and enrollment status) predict their ASE?

Figure 1 summarizes the different variables under study.

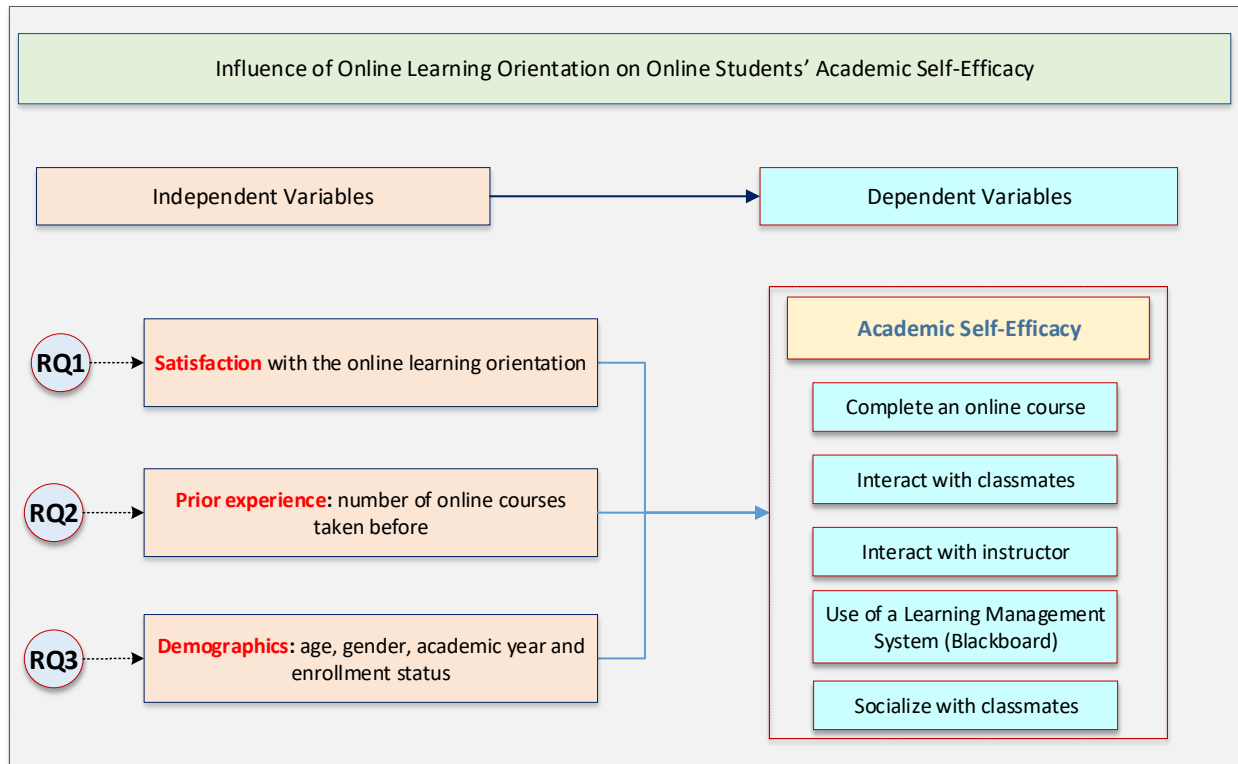


Figure 1. Summary of study variables.

In line with past research conclusions, we expected that students' satisfaction with the OLO would predict their level of ASE. A higher level of satisfaction will yield a stronger sense of ASE. Second, we anticipated that a student's past online learning experience, measured by the number of online courses taken previously, would be positively related to their ASE. Third, we believed that students' demographics were likely to be predictive of their ASE. We anticipated that older students would be more apt to have a higher ASE than younger students. In contrast, we expected that younger students would be likely to have a lower ASE. Regarding gender and status, we expected that freshman (first-year) male students would be more likely to have a lower ASE than freshman (first-year) female students. As for the enrollment status, we anticipated that nontraditional students (part-time students) would be more likely to have a higher ASE than traditional full-time students, even as they juggled course requirements with work and family. Because of their workplace experience, we anticipated that part-time students would be most likely to exhibit a strong self-efficacy.

By conducting this study, we aimed to accomplish three goals: (1) to explore the role of an OLO in fostering various facets of students' ASE (by including multiple dimensions of ASE, we aimed to transcend the narrow focus of past studies on technology-related self-efficacy); (2) to offer an in-depth understanding of the importance of an OLO in encouraging students' preparedness and readiness to take responsibility for their learning (as stated before, engaging students early in the course builds their self-confidence and their readiness to persist and to

succeed); and (3) to share our successful experience with other HEIs interested in designing effective online learning orientations. We aimed to show that a custom-based online learning orientation, as part of an integrated support approach, is an effective proactive strategy in advancing online students' confidence and ASE.

Methods

Background

This study was conducted in a moderate-sized, urban, public university that has been involved in technology-delivered distance learning since the mid-1980s. Between fall 2016 and summer 2017, more than 1,300 courses were offered in an online format. Of these courses, 28% were offered through its Personal Learning Environment (PLE), a proprietary learning management system designed to provide a student-centered learning environment.

Recognizing the need to engage online students early in the process of their coursework, we developed an online learning orientation to enhance students' readiness and confidence in taking online courses. Designed and positioned as the first assignment and embedded as a part of each course offered via the PLE, the orientation's intent is to ease students' transitions into becoming self-directed learners by clarifying the expectations, roles, and responsibilities of online learning. To this end, the orientation offers students multiple opportunities to (1) acquire online study and time-management skills; (2) familiarize themselves with the learning environment (both PLE and Blackboard); (3) assess their computer and technology skills in a risk-free environment; and (4) learn how to seek help and to access resources, all while reflecting on their online learning readiness. Furthermore, the orientation addresses many of the commonly reported misconceptions associated with online courses, such as easiness, low faculty expectations, and low time requirements (Li & Akins, 2005; Mortagy & Boghikian-Whitby, 2010; Waldman, Perreault, Alexander, & Zhao, 2009).

After several iterations of feedback and testing from students, faculty, and staff, the online orientation's content was grouped into topics that contain learning resources, checklists, testimonials from prior students, and videos that describe ease of use. More specifically, the content was organized into two main topics with subtopics:

- Succeeding in an Online Class: Learn how to study online, manage your time, complete assignments and tests, participate and collaborate online, and update technology; and
- Familiarizing Yourself With the Course: Know your faculty, review the syllabus, stay organized, make the most of each module, ask for help, and complete the readiness checklist.

Unlike traditional orientations, our orientation is task oriented, mimicking the online student learning experience. Grounded in effective design practices, such as chunking, diversifying, and highlighting content relevance, the orientation's activities are designed to expose students to the different instructional materials that they will encounter in their online courses. These activities range from simple tasks (such as navigation) to complex tasks (such as time management, planning, and studying techniques). While these activities' authenticity levels might be lower than those in an actual online course regarding expectations and time to completion, they provide students with an opportunity to familiarize themselves with ways to access course content while they acquaint themselves with the use of the online learning environment.

As part of this orientation, students complete a summary checklist to assess their level of preparedness, to determine their ability to use the course's technology appropriately, and to ascertain whether they possess the self-discipline needed to succeed in an online course. This checklist includes seven items on how to succeed in an online class (e.g., "I have reviewed the time management tips and am ready to develop a study routine") and on how to get familiar with the PLE course (e.g., "I can locate each module's assignment instructions"). Taking the time to gain self-awareness and reflect on their readiness strengthens students' time-management skills and their commitment to and engagement with the course. This type of self-assessment is reported to have a positive influence on students' self-regulated learning strategies and self-efficacy (Panadero, Jonsson, & Botella, 2017).

As they conclude the orientation, students rate their satisfaction with its usefulness and design. To maintain the orientation's relevance and effectiveness, respondents' feedback is reviewed and integrated each semester.

Instrument

Our instrument includes the following sections:

1. Demographics information about gender (i.e., male or female), age (i.e., ≤ 21 , 22–34, 35–44, 45–54 or 55 & over), academic year (i.e., freshman, sophomore, junior, senior, and graduate), and enrollment status (i.e., traditional or nontraditional).
2. Online course experience. The number of online courses taken before, with the options of 0, 1–5, 6–10, and more than 10.
3. OLO satisfaction. Adapted from past surveys used to measure online students' satisfaction (Waldman et al., 2009; Parkes, Stein, & Reading, 2015; Dray, Lowenthal, Miszkiewicz, Ruiz-Primo, & Marczyński, 2011), this section includes six questions. Using a five-point Likert scale that ranges from 1 (*strongly disagree*) to 5 (*strongly agree*), the questions ask the students how useful, comprehensive, easy, and worthy of their time they deemed the orientation; whether the orientation clarified some of their misconceptions about online learning; and overall, how satisfied they were with the orientation. To measure the student satisfaction scale items' homogeneity, we conducted an internal consistency analysis. With a Cronbach's alpha coefficient of (0.932), this analysis confirmed the reliability of the OLO satisfaction scale.
4. Academic self-efficacy. This section on ASE was adopted from the self-efficacy survey referenced by Shen et al. (2013) and Cho (2012). Reused by Prior et al. (2016), this well-established and validated survey includes five dimensions. Using a 10-point Likert scale ranging from 1 (*not at all confident*) to 10 (*totally confident*), participants are asked to report their confidence on five different self-efficacy subcategories: student's confidence to complete an online course (eight questions), to interact with his or her classmates (six questions), to interact with the instructor (six questions), to use an LMS (six questions), and to socialize with his or her classmates (five questions).

To measure the ASE subcategories items' homogeneity, we performed an internal consistency analysis for each subcategory. The total scale internal consistency of Cronbach's alpha coefficients ranged between 0.976 for using an LMS to 0.921 for social interaction. The Cronbach's values were equally high for students' confidence to complete an online course (0.972) and for students' interaction with both their instructor and their classmates (0.969). (See Table 3 for more details.)

In addition to validating the reliability of the survey scale items, a peer group of professional educators, actively involved in designing, facilitating, and supporting online courses, reviewed our survey. Their feedback cross-validated our survey and led to some minor tweaking of the survey's questions.

Data Analysis

With an alpha level set at .05 for all significance tests, we used IBM SPSS Statistics 25 to analyze our data. For open-ended questions, we used QDA Miner 5, a qualitative data analysis tool, to identify the words most frequently used by the students. To analyze the data, we first conducted a descriptive analysis to describe the demographic profile of the respondents, after which we used multiple response frequencies to characterize the factors associated with self-efficacy. Second, we used cross-tabulation to explore the interaction of our dependent variable with various independent variables. Third, we conducted an ordinal logistic regression to examine the influence of each predictor on its own, followed by a full model that included only significant predictors.

Participants

Between fall 2016 and summer 2017, a total of 4,333 students from six different colleges at the university completed a survey about (a) their satisfaction with the completion of their online learning orientation and (b) their sense of self-efficacy in completing various online learning tasks. Of this diverse population, 3,880 cases with complete data were included in our analysis. Among these respondents, there were more female students ($n = 2,518$, 64.9%) than male students. Half of the students were between 22 and 34 years of age ($n = 1,959$, 50.5%) and self-identified as nontraditional part-time college students ($n = 2,006$, 51.7%). Participants were typically seniors ($n = 1,581$, 40.7%), followed by juniors ($n = 1,172$, 30.2%), and then graduate students ($n = 452$, 11.6%). As to their online learning experience, 45.4% of the students reported having taken from one to five prior online courses ($n = 1,763$), while 16.8% ($n = 650$) of the respondents reported that they had never taken an online course before taking this one. More detailed background information is presented in Table 1.

Table 1
Participant Demographics

Variable	<i>n</i>	%	Variable	<i>n</i>	%
Gender			Enrollment status		
Male	2,518	64.9	Traditional	1,832	47.2
Female	1,308	33.7	Nontraditional	2,006	51.7
Age			Number of online courses taken before		
21 & under	993	25.6	0	650	16.8
22–34	1,959	50.5	1–5	1,763	45.4
35–44	509	13.1	6–10	776	20.0
45–54	270	7.0	11 & over	691	17.8
55 & over	85	2.2			

Academic year		
Freshman	126	3.2
Sophomore	340	8.8
Junior	1,172	30.2
Senior	1,581	40.7
Graduate	452	11.6

Note. ($N = 3,880$)

Results

Descriptive Statistics

As shown in Table 2, with a mean of 4.08 on a 5-point Likert scale, participants expressed a high level of satisfaction with the OLO, particularly with the content usefulness ($M = 4.21$), and ease ($M = 4.21$). These findings were confirmed by the open-ended questions related to students' satisfaction. Students conveyed their satisfaction with the OLO content's helpfulness, ease, and organization. They particularly appreciated the short videos offering self-study strategies presented by past online students. These students' testimonies reinforced the authenticity and the relevance of the OLO content.

Table 2
Descriptive Statistics for Students' Satisfaction With OLO

Satisfaction with OLO and sense of preparedness survey questions	<i>n</i>	<i>M</i>	<i>SD</i>	Min.	Max.
The orientation content is useful.	3,878	4.21	0.748	1	5
The orientation content is comprehensive (answered all my questions).	3,864	4.15	0.783	1	5
The orientation content is easy to complete.	3,874	4.21	0.789	1	5
The orientation content clarified some of my misconceptions about online learning.	3,869	3.94	0.884	1	5
It was worth my time to complete this online orientation.	3,872	3.93	0.95	1	5
Overall, I am very satisfied with the online learning orientation.	3,867	4.08	0.84	1	5

Note. ($N = 3,888$)

In the same vein, students revealed a high level of ASE and confidence. As shown in Table 3, the students' overall ASE mean was 8.46. Among the five aspects of academic self-efficacy, participants felt most confident in using the LMS tools ($M = 9.03$), followed by feeling confident in interacting with their instructor ($M = 8.77$) and with their classmates ($M = 8.46$). Students felt slightly less confident in socializing with classmates ($M = 7.53$), although this confidence level was still high, given the 10-point Likert scale of relevant survey items.

Table 3
Descriptive Statistics of Research Variables: OLO and ASE

Variable	Measure	No. of questions	Min. and max. values	<i>M</i>	<i>M/NofQ*</i>	<i>Mdn</i>	<i>SD</i>	Cronbach's alpha
OLO satisfaction	(Waldman et al., 2009; Parkes, Stein, & Reading, 2015)	6	6, 30	24.27	4.08	24	4.33	0.932
Complete an online course	(Shen et al. 2013; Cho, 2012)	8	8, 80	67.25	8.41	71	13.1	0.972
Interact with classmates	(Shen et al. 2013; Cho, 2012)	6	6, 60	50.80	8.46	54	10.87	0.969
Interact with instructor	(Shen et al. 2013; Cho, 2012)	6	6, 60	52.62	8.77	57	9.86	0.969
Use of an LMS	(Shen et al. 2013; Cho, 2012)	6	6, 60	54.21	9.03	60	9.17	0.976
Socialize with classmates	(Shen et al. 2013; Cho, 2012)	5	5, 50	37.63	7.53	40	10.57	0.921
Overall ASE		37	8, 80	262.92	8.46	276	46.83	

Note. ($N = 3,888$). OLO satisfaction is based a 5-point Likert scale (*strongly disagree* to *strongly agree*). ASE is based a 10-point Likert scale (*not at all confident* to *totally confident*).

*M/NofQ: Mean divided by the number of questions.

Contingency Tables

To provide initial insights into our data, we conducted a 2x2 contingency table analysis to look for associations between the self-efficacy and the explanatory variables: satisfaction with the online learning orientation, prior online learning experience, and gender, age, academic year, and enrollment status.

Table 4
Self-Efficacy by Gender, Age, Academic Year, Enrollment Status, Online Learning Experience, and Satisfaction: Cell Counts and Percentages

		1–3 (1 = <i>not at all confident</i>)		4–7 (5 = <i>moderately confident</i>)		8–10 (10 = <i>totally confident</i>)		Total	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Online students' satisfaction with the online learning orientation	Strongly disagree	4	9.10	7	15.9	33	75.00	44	100
	Disagree	3	2.90	46	45.10	53	52.00	102	100
	Neither agree nor disagree	9	1.00	277	32.10	577	66.90	863	100
	Agree	6	0.40	239	15.40	1,309	84.20	1,554	100
	Strongly agree	0	0.00	26	3.20	778	96.80	804	100
	Total	22	0.70	595	17.70	2,750	81.70	3,367	100
Online learning experience	0 courses	9	1.70	144	27.00	381	71.30	534	100
	1–5 courses	9	0.60	295	19.60	1,203	79.80	1,507	100
	6–10 courses	3	0.40	86	12.40	604	87.20	693	100
	> 10 courses	1	0.20	70	11.00	564	88.80	635	100
	Total	22	0.70	595	17.70	2,752	81.70	3,369	100
Gender	Male	3	0.30	244	22.10	856	77.60	1,103	100
	Female	16	0.70	338	15.20	1,865	84.00	2,219	100
	Total	19	0.60	582	17.50	2,721	81.90	3,322	100

Age	21 and under	5	0.60	197	23.20	646	76.72	848	100
	22–34	11	0.60	273	16.10	1,416	83.30	1,700	100
	35–44	3	0.70	65	14.40	383	84.90	451	100
	45–54	1	0.40	31	13.00	207	86.60	239	100
	55 & over	1	1.30	13	17.30	61	81.30	75	100
	Total	21	0.60	579	17.50	2,713	81.90	3,313	100
Academic year	Freshman	2	2.00	30	30.30	67	67.70	99	100
	Sophomore	3	1.00	52	17.30	246	81.70	301	100
	Junior	3	0.30	168	16.50	847	83.20	1,018	100
	Senior	9	0.70	245	17.8	1,123	81.60	1,377	100
	Graduate	1	0.30	67	17.10	323	82.60	391	100
	Total	18	0.60	562	17.60	2,606	81.80	3,186	100
Enrollment status	Full-time student	12	0.80	307	19.50	1,254	79.70	1,573	100
	Part-time student	9	0.50	277	15.70	1,476	83.80	1,762	100
	Total	21	0.60	584	17.50	2,730	81.90	3,335	100

As we read Table 4 horizontally, we noted the following points:

- Only 3.2% (86) of self-confident students were strongly dissatisfied or dissatisfied with the online learning orientation. In contrast, 75.9% (2,089) of strongly satisfied and satisfied students were highly self-confident. Between these two groups, 21% (577) of strongly satisfied and satisfied students expressed a moderate level of self-efficacy.
- Unsurprisingly, with a result of 71.3%, inexperienced online students (those who have taken zero online courses) were the least self-confident group. In contrast, 88.80% of the students who had completed more than 10 courses felt self-confident. In between these two groups were the 87.7% of students who had completed between six and 10 courses, followed by students who had completed one to five courses (79.8%).
- Regarding gender, female online students showed a somewhat stronger self-efficacy (84%) than their male counterparts (77.6%). Otherwise, the majority of respondents (81.9%, 3,322) felt entirely confident in tackling online course tasks, while only 17.5% of the students felt moderately confident.
- The expression of self-efficacy fluctuated slightly among age groups, between 86.6% for 45–54 years old to 76.72% for students aged 21 and younger. The rest of the age groups expressed the same level of self-efficacy.
- With 67.7%, first-year students expressed the lowest level of self-efficacy among the academic-year group. Sophomore students (81.7%), junior students (83.2%), senior students (81.6%), and graduate students (82.6%) conveyed nearly the same level of confidence in their self-efficacy.
- With 83.8%, the percentage of part-time students' self-efficacy was higher than full-time students (79.7%). In contrast, more full-time students (19.50%) were moderately more confident than part-time students (15.7%).

In summary, descriptive analysis and the two-way tables show a strong relationship between the feelings of self-efficacy and the various explanatory variables. In the next section, we use ordinal logistic regression to examine more closely the influence of each predictor on online students' academic self-efficacy.

Multivariate Analysis: Ordinal Logistic Regression

Since the dependent variable (ASE) is measured at the ordinal level, we used ordinal logistic regression (OLR) to identify which independent variable had a statistically significant effect on our dependent variable (see Figure 1). Deemed as a suitable procedure to analyze the influence of categorical predictors on an ordinal dependent variable, OLR requires two main assumptions: (1) absence of multicollinearity and (2) proportional odds (Osborne, 2016). For the absence-of-multicollinearity assumption, we verified that our predictors were not correlated with each other, by dummy coding our categorical variables (experience, satisfaction, age, and academic year) and by running a linear regression including all the independent variables. The variance inflation factor (VIF) values ranged between .368 and 2.71, which is far below the accepted level of 10. For the proportional odds assumption, we used SPSS's PLUM "Test of parallel lines" procedure to ensure that the effect of each independent variable would be constant across all groups. This assumption was validated for all the predictors except for gender ($p = .010$). The rejection of this assumption for gender is likely due to the large size of our data set (Osborne, 2016).

Unadjusted effect of predictors. To examine the unadjusted effect of each predictor, we began by including one explanatory variable at a time into the model (Landau & Everitt, 2004). For the sake of brevity, the individual models are summarized in Table 5. Our findings are reported in terms of an odds ratio, $\text{Exp}(B)$, which denotes the factor change in the odds of an outcome associated with a one-unit change in the independent variable.

Table 5

Ordinal Logistic Regression Models for the Online Students' Self-Efficacy by Gender, Age, Academic Year, Enrollment Status, Online Learning Experience, and Satisfaction

		B	SE	Wald	df	Sig.	Exp(B)
Online student satisfaction	Strongly disagree–disagree	-1.735	0.1786	94.338	1	0.000	0.176
	Neither agree nor disagree	-1.338	0.0969	190.670	1	0.000	0.262
	Agree–strongly agree	0*					1
Online learning experience	0 online courses	-1.170	0.1580	54.813	1	0.000	0.310
	1–5 online courses	-0.698	0.1414	24.337	1	0.000	0.498
	6–10 online courses	-0.160	0.1696	0.888	1	0.346	0.852
	> 10 courses	0*					1
Gender	Male	-0.410	.0926	19.607	1	0.000	.664
	Female	0*					1
Age	21 and under	-0.297	0.3062	0.941	1	0.332	0.743
	22–34	0.142	0.3024	0.221	1	0.638	1.153
	35–44	0.263	0.3233	0.663	1	0.416	1.301
	45–54	0.404	0.3511	1.323	1	0.250	1.498
	55 & over	0*					1

Academic year	Freshman	-0.835	0.2521	10.963	1	0.001	0.434
	Sophomore	-0.069	0.1999	0.118	1	0.731	0.934
	Junior	0.041	0.1577	0.068	1	0.794	1.042
	Senior	-0.076	0.1505	0.256	1	0.613	0.927
	Graduate	0*					1
Enrollment status	Full-time	-.273	.0900	9.220	1	0.002	.761
	Part-time	0*					

0*: Reference group.

As reported in Table 5, the odds ratio for unsatisfied students (*strongly disagree–disagree*) to feel self-efficacious was 83% less than that of satisfied students ($OR = 0.176, p = .000$). Likewise, neutral students' (*neither agree nor disagree*) odds of feeling self-efficacious were 0.26 times the odds of satisfied students ($OR = 0.262, p = .000$).

Similarly, our data suggested the strong influence of online students' experience on their self-efficacy. Inexperienced online students were 69% less likely to express a high level of self-efficacy than experienced online students who had taken more than 10 online courses ($OR = 0.310, p = .000$). On a similar note, the odds of feeling self-efficacious among students who took one to five courses was 0.49 times less than that of experienced students ($OR = 0.489, p = .000$). In contrast, the result of students who had completed six to 10 courses was not significant ($OR = 0.852, p = .346$).

The influence of gender on students' self-efficacy was found to be significant ($OR = .664, p = .000$). When compared to online female students, the odds of a student expressing a high level of self-efficacy were 34% lower for online male students. In contrast, when compared to the age group 55 and over, none of the age groups was significant. Overall, online students' age did not predict their academic self-efficacy.

For the academic year, results indicated that freshman students ($OR = 0.434, p < .001$) were less likely to express a high level of self-efficacy. Contrasted against graduate students, freshman were 57% less likely to feel self-efficacious in completing their online course activities. The remaining students' groups were not significant.

The influence of the students' enrollment status was very significant, as well ($OR = .761, p = .002$). The odds of expressing a high level of self-efficacy decreased by 26% for full-time students in comparison to part-time students. Hence, part-time students were more prone to express a high level of self-efficacy than their full-time counterparts.

In sum, the individual models reveal that satisfaction, online learning experience, gender, academic year, and enrollment status significantly contribute to the probability of students' expressing a higher level of self-efficacy. Satisfaction appears to firmly influence students' self-efficacy ($OR = 0.176, p = .000$), followed by experience ($OR = 0.310, p = .000$) and enrollment status ($OR = 0.761, p = .002$). In contrast, only the freshman category ($OR = 0.434, p = .001$) influenced ASE, while none of the age categories exerted any influence on online students' self-efficacy.

Full model. As a follow-up to the individual models, we built a full OLR model with all of the significant predictors (satisfaction, experience, gender, academic year, and enrollment status). The deviance goodness-of-fit test indicated that the ordinal logistic regression model was a good fit to the observed data, $\chi^2(200) = 160.770, p = .981$; however, 35.8% of the cells had zero frequencies (although the Nagelkerke R-square shows that this model explains 15% of the dependent variable variation).

Table 6

Full Logistic Regression Model for Online Students' Self-Efficacy by Gender, Academic Year, Enrollment Status, Online Learning Experience, and Preparedness

		B	SE	Wald	df	Sig.	Exp(B)
Online student satisfaction	Strongly disagree–disagree	-1.854	0.1933	91.911	1	0.000	0.157
	Neither agree nor disagree	-1.371	0.1030	177.162	1	0.000	0.254
	Agree–strongly agree	0*					1
Online learning experience	0 online courses	-1.295	0.1847	49.159	1	0.000	0.274
	1–5 online courses	-0.778	0.1569	24.579	1	0.000	0.459
	6–10 online courses	-0.189	0.1836	1.059	1	0.303	0.828
	> 10 courses	0*					1
Gender	Male	-0.282	0.1012	7.741	1	0.005	0.755
	Female	0*					1
Academic year	Freshman	-0.633	0.2737	5.348	1	0.021	0.531
	Sophomore	0.054	0.2174	0.061	1	0.804	1.055
	Junior	-0.073	0.1700	0.184	1	0.668	0.930
	Senior	-0.205	0.1630	1.582	1	0.208	0.815
	Graduate	0*					1
Enrollment status	Full-time	-0.028	0.1054	0.072	1	0.788	0.972
	Part-time	0*					1

0*: Reference group.

To flesh out these findings further, let's examine the coefficients reported in Table 6, following the order of our research questions.

RQ1: How does students' satisfaction with the online learning orientation predict their academic self-efficacy? Students' satisfaction with the OLO was predictive of their ASE, thus supporting our first assumption. With all variables held constant, the odds of expressing a high level of self-efficacy by unsatisfied students (strongly disagree and disagree) were .15 times greater than online students who expressed a high level of satisfaction with the OLO (strongly agree and agree). Expressed differently, unsatisfied students were 85% less likely than satisfied students to express a high level of self-efficacy ($OR = 0.157, p = .000$). Likewise, students who remained neutral about their satisfaction with the OLO (*neither agree nor disagree*) were 75% less likely to express a high level of self-efficacy.

RQ2: How does students' prior online course experience (i.e., the number of online courses taken before) predict their academic self-efficacy? As a whole, students' prior online learning experience predicted their ASE (see Table 6), hence confirming our second research assumption. The full-model data showed a strong influence of online students' experience on their self-efficacy. The greater the number of online courses taken before, the higher the students' academic self-efficacy. Inexperienced online students were 73% less likely to express a high level of self-efficacy than experienced online students who had taken more than 10 online courses ($OR = 0.274, p = .000$). Similarly, the odds of feeling self-efficacious among students who had taken one to five courses were 0.45 times less than experienced (more than 10 courses taken) students

($OR = 0.459, p = .000$). In contrast, the result for students who had completed six to 10 courses was not significant ($OR = 0.828, p = .303$).

RQ3: How do students' demographics (age, gender, academic year, enrollment status) predict their academic self-efficacy? As stated previously, the influence of age and enrollment status on student's academic self-efficacy was not statistically significant. Age was excluded from the full model, while enrollment status was found to be not significant ($OR = 0.972, p = .788$).

Gender

As reported in Table 6, gender was found to be statistically predictive of the students' overall academic self-efficacy. For male online students, the odds of having a higher self-efficacy were .755 lower than for female students, a statistically significant effect ($OR = 0.755, p = .005$). In line with our initial assumption, the odds of a male student having a high self-efficacy were 25% less than those odds for a female student.

Academic year

In general, students' academic year predicted their overall self-efficacy. The full-model results showed that freshman students ($OR = 0.531, p = .021$) were less likely to express a high level of self-efficacy. Contrasted against graduate students, freshmen were 47% less likely to convey a high level of ASE. Findings for sophomore, junior, and senior students were not significant.

Discussion

Considering the role of an online learning orientation in fostering students' readiness, confidence, and ASE, this study examined the predictive utility of three items—students' satisfaction with an OLO, their prior level of online learning experience, and their demographics—on their ASE.

The first question explored the predictive utility of students' satisfaction with the OLO for their ASE. Our findings echo previous studies on the influence of an OLO on ASE (Bawa, 2016; Brewer & Yucedag-Ozcan, 2013; Russo-Gleicher, 2014; Scheitler, 2015; Wäschle et al., 2014). As indicated by both the full and the individual models, students who felt highly satisfied with the online learning orientation conveyed a strong sense of ASE. More specifically, satisfaction with the OLO strongly predicted students' self-confidence to use the LMS online tools ($OR = 0.144, p = .000$), followed by their self-confidence to interact with their classmates and instructor ($OR = 0.179, p = .000$), and to socialize with their classmates ($OR = 0.190, p = .000$). Students' confidence to complete the online learning tasks registered a slightly higher ratio ($OR = 0.218, p = .000$). These findings validate the full model as well as the descriptive statistics displayed in Table 3.

Otherwise, the stronger the students' satisfaction with online learning, the stronger their ASE in completing various tasks associated with online learning. These findings emphasize the role of an OLO in preparing and engaging online students to progress successfully in their online courses (Bawa, 2016; Wozniak et al., 2012). Therefore, the use of a learner-centered OLO, with authentic learning activities that mimic course activities, is crucial to online students' success. Offering students multiple opportunities to clarify their course expectations and to become familiar with the online learning course environment, logistics, and technology should increase their

confidence in completing their course successfully. To sum up, we contend that the inclusion of an OLO is one of the best strategies to build students' ASE and to avoid thwarting their initial enthusiasm for online learning (Motteram & Forrester, 2005; Scheitler, 2015).

Our second question examined the influence of prior online course experience (i.e., the number of online courses taken before) on students' ASE. Again, our conclusions support past studies in underlining the role of experience in fostering ASE. In line with Dupin-Bryant (2004), Shea and Bidjerano (2010, 2014), and Zimmerman and Kulikowich (2016), our results indicate that prior experience with online learning mediates students' ASE. The higher the number of online courses taken previously, the higher the ASE, particularly for completing online course activities. In fact, the odds of having a higher self-efficacy for completing online course activities are .26 times lower for inexperienced students ($OR = 0.268, p = .000$). The remaining ASE dimensions had similar odds, ranging between .344 for confidence in using the LMS tools to .404 for socializing with classmates. Again, the predictive utility of the prior experience for ASE categories shows a positive relationship between prior online course experience and ASE. Online students seem to use their experience as a booster for their confidence and their ASE. These conclusions are consistent with past research that underscores the role of prior learning experience in expressing a high ASE (Scheitler, 2015; Shen et al., 2013; Zimmerman & Kulikowich, 2016); hence, there is a need to ensure a positive and satisfying first online learning experience.

Our third question explored the influence of students' demographics (age, gender, academic year, and enrollment status) on their ASE. While our findings corroborate past research about the influence of gender on ASE (Chyung, 2007; Shen et al., 2013), academic year revealed that only the freshmen category influenced students' ASE. On the contrary, our full model's findings failed to provide evidence for the influence of age and enrollment status on ASE. While the coefficient was not significant for age, the odds ratio values showed that students aged 21 years and younger were .74 times less likely to feel self-efficacious, when compared to students older than 54 years old. As for the student type, full-time students expressed almost the same level of self-efficacy as part-time students ($OR = 1.098, p = .431$).

In sum, the descriptive and multivariate analysis provides additional evidence reinforcing the use of an OLO as a proactive support strategy that fosters students' confidence and academic self-efficacy. Given the active role played by ASE in students' success and persistence, it is safe to contend that use of an OLO could increase the odds of students' success and persistence as well.

Limits and Future Research

Despite our research findings, we must acknowledge at least two limitations. First, by relying exclusively on self-reported data, we run the risk that participants are likely to overestimate their ASE and confidence. Thus, students may be prone to overestimate their ASE and their technological skills. Nevertheless, objective testing of ASE is onerous and burdensome to implement. Also, self-reports are widely used and trusted in institutional research if the instruments used are designed according to research standards (Gonyea, 2005).

Second, while ASE is a strong predictor of students' academic success and persistence, an exploration of the relationship between OLO and ASE does not inform us about students' persistence and success. While past research confirms the existence of a positive correlation between ASE and students' performance and success (Honicke & Broadbent, 2016; Richardson et

al., 2012), the relationship between OLO and students' performance and persistence remains unexplored.

To address this second limitation, further research exploring the influence of OLO on students' learning outcomes and persistence is needed. More specifically, researchers should conduct a longitudinal study to gain an in-depth understanding of the way in which the use of an OLO affects students' learning outcomes and persistence. Using data from various online learning programs, future research should track the way in which this relationship changes over time. These studies should provide empirical evidence that the inclusion of an OLO can be a significant driver in the success of online students.

Seen from another angle, future research will benefit from following up with the students surveyed in this study and asking them specifically how the orientation helped them to learn how to learn online. Such follow-up will also allow us to adjust the orientation to students' needs and learning experience.

Conclusion and Recommendations

This study was conducted to assess the predictive utility of the students' satisfaction with the OLO, their level of prior learning experience, and demographic factors on online students' ASE. By reinforcing past evidence about the role of an OLO in preparing online students to persist and succeed, our study reiterates the need for designing an effective and student-centered OLO. Our findings highlight the importance of an OLO in strengthening ASE and students' self-directed learning abilities, while it provides additional evidence about the role of prior learning experience and gender. To this end, we offer the following recommendations:

- Provide students with a well-designed and timely OLO to ease their transition to online learning and to foster their preparedness, persistence, and success. As a proactive strategy intended to build students' confidence, motivation, and skills, the OLO should focus on clarifying course expectations while clearing out misconceptions and helping students develop the habit of self-regulated study skills. Together, these elements should enable students, particularly newcomers, to learn how to learn online, and eventually to be able to use these skills in future online courses.
- Use analytics to track students' interaction with the OLO from one semester to another to detect patterns in study habits, and then use the data gathered to provide responsive, targeted, and ongoing support throughout the semester. Using students' feedback to refine the OLO is likely to strengthen the relevance and the usefulness of the orientation while helping students to develop self-regulatory learning strategies.
- Design course content and activities with clear guidelines and instructions, both to clarify course expectations and to ease students' apprehensions and worries. Doing this should help HEIs avoid thwarting students' initial enthusiasm for online learning, which often leads to students' dissatisfaction and attrition. Answering simple questions, such as "what do I do now?" can go a long way toward helping an online student persist and succeed.

References

- Ali, R., & Leeds, E. (2009). The impact of classroom orientation in online student retention. *Online Journal of Distance Learning Administration*, 12(4). Retrieved from <https://www.westga.edu/~distance/ojdla/winter124/ali124.html>
- Aragon, S. R., & Johnson, E. S. (2008). Factors influencing completion and non-completion of community college online courses. *The American Journal of Distance Education*, 22(3), 146–158.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191.
- Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist*, 28(2), 117–148.
- Bandura, A. (2012). On the functional properties of perceived self-efficacy revisited. *Journal of Management*, 38(1), 9–44.
- Bawa, P. (2016). Retention in online courses. *SAGE Open*, 6(1), 1–11.
- Bocchi, J., Eastman, J. K., & Swift, C. O. (2004). Retaining the online learner: Profile of students in an online MBA program and implications for teaching them. *Journal of Education for Business*, 79(4), 245–253.
- Bozarth, J., Chapman, D. D., & LaMonica, L. (2004). Preparing for distance learning: Designing an online student orientation course. *Journal of Educational Technology & Society*, 7(1), 87–106.
- Brewer, S. A., & Yucedag-Ozcan, A. (2013). Educational persistence: Self-efficacy and topics in a college orientation course. *Journal of College Student Retention: Research, Theory & Practice*, 14(4), 451–465.
- Cai, Z., Fan, X., & Du, J. (2017). Gender and attitudes toward technology use: A meta-analysis. *Computers & Education*, 105(Supplement C), 1–13.
- Caprara, G. V., Fida, R., Vecchione, M., Del Bove, G., Vecchio, G. M., Barbaranelli, C., & Bandura, A. (2008). Longitudinal analysis of the role of perceived self-efficacy for self-regulated learning in academic continuance and achievement. *Journal of Educational Psychology*, 100(3), 525.
- Carbanaro, M., Dawber, T., & Arav, I. (2006). A comparison of students' performance under full-time, part-time, and online conditions in an undergraduate nursing microbiology course. *Journal of Distance Education*, 21(1), 51–61.
- Celik, V., & Yesilyurt, E. (2013). Attitudes to technology, perceived computer self-efficacy and computer anxiety as predictors of computer supported education. *Computers & Education*, 60(1), 148–158.
- Chang, C.-S., Liu, E. Z.-F., Sung, H.-Y., Lin, C.-H., Chen, N.-S., & Cheng, S.-S. (2014). Effects of online college student's Internet self-efficacy on learning motivation and performance. *Innovations in Education & Teaching International*, 51(4), 366–377.
- Cho, M.-H. (2012). Online student orientation in higher education: A developmental study. *Educational Technology Research & Development*, 60(6), 1051–1069.

- Cho, M.-H., & Heron, M. L. (2015). Self-regulated learning: The role of motivation, emotion, and use of learning strategies in students' learning experiences in a self-paced online mathematics course. *Distance Education, 36*(1), 80–99.
- Chu, L.-L. (2003). The effects of web page design instruction on computer self-efficacy of preservice teachers and correlates. *Journal of Educational Computing Research, 28*(2), 127–142.
- Chung, J. E., Park, N., Wang, H., Fulk, J., & McLaughlin, M. (2010). Age differences in perceptions of online community participation among non-users: An extension of the Technology Acceptance Model. *Computers in Human Behavior, 26*(6), 1674–1684.
- Chyung, S. Y. Y. (2007). Age and gender differences in online behavior, self-efficacy, and academic performance. *Quarterly Review of Distance Education, 8*(3), 213.
- Clay, M. N., Rowland, S., & Packard, A. (2008). Improving undergraduate online retention through gated advisement and redundant communication. *Journal of College Student Retention: Research, Theory & Practice, 10*(1), 93–102.
- Cochran, J. D., Campbell, S. M., Baker, H. M., & Leeds, E. M. (2014). The role of student characteristics in predicting retention in online courses. *Research in Higher Education, 55*(1), 27–48.
- Cummings, S. M., Chaffin, K. M., & Cockerham, C. (2015). Comparative analysis of an online and a traditional MSW program: Educational outcomes. *Journal of Social Work Education, 51*(1), 109–120.
- DeTure, M. (2004). Cognitive style and self-efficacy: Predicting student success in online distance education. *American Journal of Distance Education, 18*(1), 21–38.
- Dray, B. J., Lowenthal, P. R., Miskiewicz, M. J., Ruiz-Primo, M. A., & Marczyński, K. (2011). Developing an instrument to assess student readiness for online learning: A validation study. *Distance Education, 32*(1), 29–47.
- Dupin-Bryant, P. A. (2004). Pre-entry variables related to retention in online distance education. *American Journal of Distance Education, 18*(4), 199–206.
- Ekwunife-Orakwue, K. C. V., & Teng, T.-L. (2014). The impact of transactional distance dialogic interactions on student learning outcomes in online and blended environments. *Computers & Education, 78*, 414–427.
- Elias, S. M., & MacDonald, S. (2007). Using past performance, proxy efficacy, and academic self-efficacy to predict college performance. *Journal of Applied Social Psychology, 37*(11), 2518–2531.
- Gilmore, M., & Lyons, E. M. (2012). NURSING 911: An orientation program to improve retention of online RN-BSN students. *Nursing Education Perspectives, 33*(1), 45–47.
- Glazier, R. A. (2016). Building rapport to improve retention and success in online classes. *Journal of Political Science Education, 1*–20.
- Gonyea, R. M. (2005). Self-reported data in institutional research: Review and recommendations. *New Directions for Institutional Research, 127*, 73.
- González-Gómez, F., Guardiola, J., Martín Rodríguez, Ó., & Montero Alonso, M. Á. (2012). Gender differences in e-learning satisfaction. *Computers & Education, 58*(1), 283–290.

- Hachey, A. C., Wladis, C. W., & Conway, K. M. (2014). Do prior online course outcomes provide more information than G.P.A. alone in predicting subsequent online course grades and retention? An observational study at an urban community college. *Computers & Education*, 72, 59–67.
- Harrell, I. L., & Bower, B. L. (2011). Student characteristics that predict persistence in community college online courses. *American Journal of Distance Education*, 25(3), 178–191.
- Hart, C. (2012). Factors associated with student persistence in an online program of study: A review of the literature. *Journal of Interactive Online Learning*, 11(1), 19–42.
- He, J., & Freeman, L. A. (2010). Are men more technology-oriented than women? The role of gender on the development of general computer self-efficacy of college students. *Journal of Information Systems Education*, 21(2), 203.
- Hodges, C. B. (2008). Self-efficacy in the context of online learning environments: A review of the literature and directions for research. *Performance Improvement Quarterly*, 20(3-4), 7–25.
- Honicke, T., & Broadbent, J. (2016). The influence of academic self-efficacy on academic performance: A systematic review. *Educational Research Review*, 17, 63–84.
- Hung, M.-L., Chou, C., Chen, C.-H., & Own, Z.-Y. (2010). Learner readiness for online learning: Scale development and student perceptions. *Computers & Education*, 55(3), 1080–1090.
- Jan, S. K. (2015). The relationships between academic self-efficacy, computer self-efficacy, prior experience, and satisfaction with online learning. *American Journal of Distance Education*, 29(1), 30–40.
- Joo, Y. J., Lim, K. Y., & Kim, J. (2013). Locus of control, self-efficacy, and task value as predictors of learning outcome in an online university context. *Computers & Education*, 62, 149–158.
- Kanuka, H., & Jugdev, K. (2006). Distance education MBA students: An investigation into the use of an orientation course to address academic and social integration issues. *Open Learning*, 21(2), 153–166.
- Ke, F., & Xie, K. (2009). Toward deep learning for adult students in online courses. *Internet & Higher Education*, 12(3/4), 136–145.
- Landau, S., & Everitt, B. S. (2004). *A handbook of statistical analyses using SPSS*. Boca Raton: Chapman & Hall/CRC.
- Lee, Y., & Choi, J. (2011). A review of online course dropout research: Implications for practice and future research. *Educational Technology Research and Development*, 59(5), 593–618.
- Lee, Y., & Choi, J. (2013). A structural equation model of predictors of online learning retention. *Internet and Higher Education*, 16, 36–42.
- Levy, Y. (2007). Comparing dropouts and persistence in e-learning courses. *Computers & Education*, 48(2), 185–204.
- Li, Q., & Akins, M. (2005). Sixteen myths about online teaching and learning in higher education: Don't believe everything you hear. *TechTrends*, 49(4), 51–60.
- MacCann, C., Fogarty, G. J., & Roberts, R. D. (2012). Strategies for success in education: Time management is more important for part-time than full-time community college students. *Learning and Individual Differences*, 22(5), 618–623.

- Marchand, G. C., & Gutierrez, A. P. (2012). The role of emotion in the learning process: Comparisons between online and face-to-face learning settings. *The Internet and Higher Education, 15*(3), 150–160.
- McGee, P., Valdes, E., & Bullis, D. (2016). Blended/online learner orientations: Recommendations for design. *International Journal on E-Learning, 15*(2), 215–241.
- McGee, P., Windes, D., & Torres, M. (2017). Experienced online instructors: Beliefs and preferred supports regarding online teaching. *Journal of Computing in Higher Education, 1*–22.
- Morris, L. V., & Finnegan, C. L. (2008). Best practices in predicting and encouraging student persistence and achievement online. *Journal of College Student Retention: Research, Theory & Practice, 10*(1), 55–64.
- Mortagy, Y., & Boghikian-Whitby, S. (2010). A longitudinal comparative study of student perceptions in online education. *Interdisciplinary Journal of E-Learning and Learning Objects, 6*(1), 23–44.
- Motteram, G., & Forrester, G. (2005). Becoming an online distance learner: What can be learned from students' experiences of induction to distance programmes? *Distance Education, 26*(3), 281–298.
- Müller, T. (2008). Persistence of women in online degree-completion programs. *The International Review of Research in Open and Distributed Learning, 9*(2). Retrieved from <http://www.irrodl.org/index.php/irrodl/article/view/455/1042>
- O'Keeffe, P. (2013). A sense of belonging: Improving student retention. *College Student Journal, 47*(4), 605–613.
- Ortagus, J. C. (2017). From the periphery to prominence: An examination of the changing profile of online students in American higher education. *The Internet and Higher Education, 32*, 47–57.
- Osborne, J. W. (2016). *Regression & linear modeling: Best practices and modern methods*. Thousand Oaks, CA: SAGE Publications.
- Pajares, F., & Usher, E. L. (2008). Self-efficacy, motivation, and achievement in school from the perspective of reciprocal determinism. *Advances in Motivation and Achievement, 15*, 391–423.
- Panadero, E., Jonsson, A., & Botella, J. (2017). Effects of self-assessment on self-regulated learning and self-efficacy: Four meta-analyses. *Educational Research Review, 22*, 74–98.
- Park, J.-H., & Choi, H. J. (2009). Factors influencing adult learners' decision to drop out or persist in online learning. *Educational Technology & Society, 12*(4), 207–217.
- Parkes, M., Stein, S., & Reading, C. (2015). Student preparedness for university e-learning environments. *The Internet and Higher Education, 25*(Supplement C), 1–10.
- Prior, D. D., Mazanov, J., Meacheam, D., Heaslip, G., & Hanson, J. (2016). Attitude, digital literacy and self-efficacy: Flow-on effects for online learning behavior. *The Internet and Higher Education, 29*, 91–97.
- Rex, K., Atul, M., & Dennis, S. (2012). Computer self-efficacy: A meta-analysis. *Journal of Organizational and End User Computing (JOEUC), 24*(4), 54–80.

- Richardson, M., Abraham, C., & Bond, R. (2012). Psychological correlates of university students' academic performance: A systematic review and meta-analysis. *Psychological Bulletin*, *138*(2), 353–387.
- Robbins, S. B., Lauver, K., Le, H., Davis, D., Langley, R., & Carlstrom, A. (2004). Do psychosocial and study skill factors predict college outcomes? A meta-analysis. *Psychological Bulletin*, *130*(2), 261–288.
- Rovai, A. P., & Downey, J. R. (2010). Why some distance education programs fail while others succeed in a global environment. *The Internet and Higher Education*, *13*(3), 141–147.
- Russo-Gleicher, R. J. (2014). Improving student retention in online college classes: Qualitative insights from faculty. *Journal of College Student Retention: Research, Theory & Practice*, *16*(2), 239–260.
- Saadé, R. G., & Kira, D. (2009). Computer anxiety in e-learning: The effect of computer self-efficacy. *Journal of Information Technology Education*, *8*(1), 177–191.
- Scheitler, J. A. (2015). *Orientation programs for online learning in community colleges and the impact on student self-efficacy* (Doctoral dissertation). Retrieved from <https://repository.library.northeastern.edu/files/neu:rx915h17t>
- Schunk, D. H., & Pajares, F. (2002). The development of academic self-efficacy. In A. Wigfield & J. S. Eccles (Eds.), *Development of achievement motivation* (pp. 15–31). San Diego, CA: Academic Press.
- Selwyn, N. (2007). The use of computer technology in university teaching and learning: A critical perspective. *Journal of Computer Assisted Learning*, *23*(2), 83–94.
- Shea, P., & Bidjerano, T. (2010). Learning presence: Towards a theory of self-efficacy, self-regulation, and the development of a communities of inquiry in online and blended learning environments. *Computers & Education*, *55*(4), 1721–1731.
- Shea, P., & Bidjerano, T. (2014). Does online learning impede degree completion? A national study of community college students. *Computers & Education*, *75*, 103–111.
- Shen, D., Cho, M.-H., Tsai, C.-L., & Marra, R. (2013). Unpacking online learning experiences: Online learning self-efficacy and learning satisfaction. *The Internet and Higher Education*, *19*, 10–17.
- Simmering, M. J., Posey, C., & Piccoli, G. (2009). Computer self-efficacy and motivation to learn in a self-directed online course. *Decision Sciences Journal of Innovative Education*, *7*(1), 99–121.
- Simpson, O. (2013). Student retention in distance education: Are we failing our students? *Open Learning: The Journal of Open, Distance and e-Learning*, *28*(2), 105–119.
- Smyth, E., & Lodge, J. (2012). Orientation online: Introducing commencing students to university study. A practice report. *International Journal of the First Year in Higher Education*, *3*, 83–90.
- Stratton, L. S., O'Toole, D. M., & Wetzel, J. N. (2007). Are the factors affecting dropout behavior related to initial enrollment intensity for college undergraduates? *Research in Higher Education*, *48*(4), 453–485.

- Tinto, V. (2010). From theory to action: Exploring the institutional conditions for student retention (pp. 51–89). In J. Smart (Ed.), *Higher education: Handbook of theory and research*. New York: Springer.
- Tseng, S.-C., & Tsai, C.-C. (2010). Taiwan college students' self-efficacy and motivation of learning in online peer assessment environments. *The Internet and Higher Education, 13*(3), 164–169.
- van Dinther, M., Dochy, F., & Segers, M. (2011). Factors affecting students' self-efficacy in higher education. *Educational Research Review, 6*(2), 95–108.
- Vella, E. J., Turesky, E. F., & Hebert, J. (2016). Predictors of academic success in web-based courses: Age, GPA, and instruction mode. *Quality Assurance in Education, 24*(4), 586–600.
- Waldman, L., Perreault, H., Alexander, M., & Zhao, J. (2009). Comparing the perceptions of online learning between students with experience and those new to online learning. *Information Technology, Learning, and Performance Journal, 25*(2), 20.
- Wang, A. Y., & Newlin, M. H. (2002). Predictors of web-student performance: The role of self-efficacy and reasons for taking an on-line class. *Computers in Human Behavior, 18*(2), 151–163.
- Wang, C.-H., Shannon, D. M., & Ross, M. E. (2013). Students' characteristics, self-regulated learning, technology self-efficacy, and course outcomes in online learning. *Distance Education, 34*(3), 302–323.
- Wäschle, K., Allgaier, A., Lachner, A., Fink, S., & Nückles, M. (2014). Procrastination and self-efficacy: Tracing vicious and virtuous circles in self-regulated learning. *Learning and Instruction, 29*, 103–114.
- Wilfong, J. D. (2006). Computer anxiety and anger: The impact of computer use, computer experience, and self-efficacy beliefs. *Computers in Human Behavior, 22*(6), 1001–1011.
- Wojciechowski, A., & Palmer, L. B. (2005). Individual student characteristics: Can any be predictors of success in online classes. *Online Journal of Distance Learning Administration, 8*(2), 13.
- Wozniak, H., Pizzica, J., & Mahony, M. J. (2012). Design-based research principles for student orientation to online study: Capturing the lessons learnt. *Australasian Journal of Educational Technology, 28*(5), 896–911.
- Wu, J. H., Tennyson, R. D., & Hsia, T. L. (2010). A study of student satisfaction in a blended e-learning system environment. *Computers & Education, 55*(1), 155–164.
- Wyatt, G. (2005). Satisfaction, academic rigor and interaction: Perceptions of online instruction. *Education, 125*(3), 460–468.
- Zembylas, M. (2008). Adult learners' emotions in online learning. *Distance Education, 29*(1), 71–87.
- Zimmerman, W. A., & Kulikowich, J. M. (2016). Online learning self-efficacy in students with and without online learning experience. *American Journal of Distance Education, 30*(3), 180–191.