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## The Impact of Self-Directedness on the Academic Success and Persistence of Postsecondary Online Learners

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### Abstract

Despite similarities between self-directed learners and successful postsecondary online learners, infrequently has self-directedness been examined in this population. Understanding the impact of self-directedness on online learner academic success and persistence may clarify the profile of a successful online student. Independent samples *t*-tests noted significantly lower PRO-SDLS total scores among learners that had withdrawn from an online course than among those who had not ( $t [184] = 2.66, p < 0.05$ ) and significantly higher PRO-SDLS initiative scores among exclusively online learners than among residential online learners ( $t [187] = 2.32, p < 0.05$ ). These findings, gathered from 189 online learners at a large, private university, may inform the development of effective online learner readiness assessments, targeted advisement strategies, and thoughtfully designed postsecondary online courses.

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### Introduction

Distance education, with its roots in the 18th century, is not a new phenomenon in higher education (Gerber, 2000; Merriam et. al, 2012). This strategy, separating the educator and the learner, was developed to offer educational opportunities to those with limited access to traditional educational settings (Kentnor, 2015). Since this inception, distance education has developed significantly and has utilized various technologies to connect learners and educators. According to Anderson and Dronn (2011), the development of distance learning has passed through three historical periods, each largely based on the medium used for learner-instructor interaction. This model of development includes the postal correspondence period, the mass media period, which relied on radio and television, and most recently, the interactive period, dominated by internet based, real-time experiences (Anderson & Dronn, 2011; Chiraz, 2022; Kaban, 2021; Mecias & Palaoag, 2022; Wiederhoeft, 2022).

Though online learning has developed into a mainstay of the higher education landscape, concerns regarding performance and persistence in this student population linger (Boston & Ice, 2011). Many studies have noted higher student attrition rates in online student populations as compared to their campus counterparts (e.g., Diaz & Cartnal, 2006; Rovai, 2003; Willging & Johnson, 2004). One study reported that online student dropout rate was nearly seven times that of students enrolled in face-to-face courses (Patterson & McFadden, 2009). With a rising online student enrollment and a consensus among chief academic officers that online learning is of strategic value to institutions, understanding factors that influence online student success is critical (Allen & Seaman 2016; Hart,

2012).

The strategic value of online learning and the proliferation of the higher education online student population has spurred a rich academic literature. Although many studies investigating this learning environment have examined best teaching practices and student perceptions, attention has also been given to the factors that influence online student success and persistence (Hart, 2012). The impact of these factors on online student success and persistence has been a complex and elusive issue.

Echoing this difficulty, though the literature collectively points to several factors frequently correlated with online student persistence, studies have fallen short of producing a complete, conclusive, and predictive model of online student success in higher education. Factors shown to be linked to student success and persistence in the online environment include student motivation and determination (Bunn, 2004; Ivankova & Stick, 2007; Park & Choi, 2009), internal locus of control (Parker, 2003), and time management (Stanford-Bowers, 2008). Other factors shown, though not unilaterally, to impact online student success and persistence include comfort with the online environment, academic performance, student gender, and student age (Harrell & Bower, 2011; Morris et al., 2005; Muse, 2003).

The process of self-directed learning incorporates several of the aforementioned correlates to online student success, namely student motivation, determination, and time management (Hiemstra, 1994; Merriam et al., 2012). And, online learners exhibiting independent, self-directed learning characteristics are thought more likely to succeed (Allen & Seaman, 2008; Shapely, 2000). Following suit, there has been a call for post-secondary online programs to consider learner self-directed readiness in course design and as a predictor of student success (Long, 2003). Given (1) the high attrition rates in post-secondary online education (Boston & Ice, 2011; Patterson & McFadden, 2009), (2) the absence of a clear profile of a successful post-secondary online student (Dabbagh, 2007), and (3) that characteristics of highly self-directed students mirror those positively related to post-secondary online student success and persistence, investigating the relationship between learner self-directedness and post-secondary online student success and persistence is warranted. Related findings would be valuable to post-secondary academic leaders, providing insights into the characteristics of an individual more likely to succeed in the online learning context (Dabbagh, 2007).

The purpose of this study was to better understand the characteristics of successful postsecondary online learners and determine the impact learner self-directedness has on the academic success and persistence of postsecondary online learners. This study analyzed potential differences in postsecondary online learner self-directedness

- (1) between learners that have failed at least one online course and those that have not;
- (2) between learners that have withdrawn from at least one online course and those that have not; and
- (3) among learners of different academic grade levels, academic programs, and gender.

This study also examined the presence of a significant relationship between postsecondary online learner self-directedness and academic success, as measured by grade point average.

## Research Questions

1. Is there a significant difference in PRO-SDLS scores (total and factor specific) between online students that have failed an online course and those students who have not?
2. Is there a significant difference in PRO-SDLS scores (total and factor specific) between online students that have withdrawn from an online course and those students who have not?
3. Is there a significant relationship between online students' PRO-SDLS scores (total and factor specific) and their grade point average?
4. Is there a significant difference in PRO-SDLS scores (total and factor specific) between online students examined by demographic groups (gender, academic grade level, academic program)?

## Method

### Research Design

Learner self-directedness was measured using the Personal Responsibility Orientation to Self-Direction in Learning Scale (PRO-SDLS) survey instrument. Postsecondary online learner success was measured by self-reported learner GPA, and persistence the incidence of online course failures and withdrawals. Demographic information on study participants was gathered using questions inserted prior to the PRO-SDLS prompts in the survey instrument.

The PRO-SDLS is a survey instrument designed to measure student self-directedness in learning (Stockdale & Brockett, 2011). This 25-item, Likert-based survey instrument was specifically designed to be used in the postsecondary student population and is based on the PRO (Personal Responsibility Orientation) model of self-directed learning (Stockdale & Brockett, 2011). This survey tool consists of questions representing two components of self-directed learning, the teacher-learning transaction and learner characteristic components.

The PRO-SDLS further granulates the aforementioned components into four factors, self-efficacy/initiative and control/motivation, respectively. Each component factor has as a maximum score of 30, save motivation, which has a maximum score of 35. Therefore, this tool provides researchers with a total score having a maximum value of 125.

### Sampling Procedures

The sample population for this study was undergraduate postsecondary students enrolled in online courses in the fall academic term of 2018 at a large, private university in northeastern United States. Approval was granted by the Institutional Review Board at the target institution prior to participant recruitment. During the fall academic term of 2018, the PRO-SDLS survey tool was administered to all undergraduate students enrolled ( $N = 1718$ ) in at least one online course at the target institution. A SurveyMonkey web link, leading participants to the data collection tool, was distributed to these students via the university email system. An information sheet briefly describing the research study and a consent form was included in the email notification to prospective participants.

## **Data Analysis**

Independent samples *t*-test, Pearson's Product Moment Correlation, and Analysis of Variance (ANOVA) were used in this study. Independent *t*-tests were used to determine if a significant difference in PRO-SDLS scores (total and factor specific) was present between postsecondary online students who have failed or withdrawn from an online course and those students that did not. An independent samples *t*-test was also be used to determine if a significant difference in PRO-SDLS scores (total and factor specific) is present in postsecondary online students of different genders.

ANOVA were used to determine if a significant difference in PRO-SDLS scores (total and factor specific) is present in postsecondary online students of different academic grade levels and academic programs. Pearson's Product Moment Correlation was used to determine if a significant relationship exists between postsecondary online students' PRO-SDLS scores (total and factor specific) and their grade point average. Pearson's Product Moment Correlation analysis was also used to determine if there was a significant relationship between the number of online courses a student has withdrawn from and the number of online courses in which a student had received a failing grade. The alpha level for statistical significance was set at 0.05 for all statistical tests.

## **Results**

### **Participant Demographics**

Completed PRO-SDLS surveys were submitted by 189 undergraduate online students, culminating in an 11 percent response rate. Eighty-seven (46.0 percent) participants classified themselves as residential online students, 100 (52.9 percent) as exclusively online students, while 2 (1.1 percent) participants failed to classify their online student status. Five (2.7 percent) of survey participants identified themselves as a freshman, 33 (17.4 percent) as a sophomore, 53 (28.0 percent) as a junior, and 98 (51.9 percent) as a senior.

Of the 189 PRO-SDLS survey participants, 150 (79.4 percent) were female, and 39 (20.6 percent) were male. Self-reported participant grade point average ranged from 2.00 to 4.00, with a mean of 3.47. Forty-five (23.8 percent) of study participants reported having withdrawn from one or more college-level online course, 141 (74.6 percent) participants reported not having withdrawn from one or more college-level online course, and 3 (1.6 percent) participants did not specify. Twenty-three (12.2 percent) study participants reported having earned a failing grade in at least one college-level online course, 165 (87.3 percent) reported not having earned a failing grade in at least one college-level online course, and 1 (0.5 percent) participant did not specify.

### **PRO-SDLS Scores**

#### *PRO-SDLS Total Score*

The mean PRO-SDLS total score for all study participants was 73.43 (*SD* = 6.33; see Table 1). Mean male PRO-SDLS total score was 73.87 (*SD* = 5.09), while mean female total score was 73.32 (*SD* = 6.63). Participants identifying as exclusively online students had a mean PRO-SDLS total score of 74.20 (*SD* = 5.29) and those

identifying as residential online students had a mean PRO-SDLS total score of 72.60 ( $SD = 7.34$ ). Mean PRO-SDLS total scores for freshmen, sophomores, juniors, and seniors were 70.20 ( $SD = 7.53$ ), 73.82 ( $SD = 4.71$ ), 73.70 ( $SD = 5.71$ ), and 73.33 ( $SD = 7.07$ ), respectively.

#### *PRO-SDLS Initiative Factor Score*

The mean PRO-SDLS initiative factor score for all study participants was 18.23 ( $SD = 3.04$ ; see Table 1). Mean male PRO-SDLS initiative factor score was 19.00 ( $SD = 2.44$ ), while mean female initiative factor score was 18.03 ( $SD = 3.15$ ). Participants identifying as exclusively online students had a mean PRO-SDLS initiative factor score of 18.73 ( $SD = 2.77$ ) and those identifying as residential online students had a mean PRO-SDLS initiative factor score of 17.71 ( $SD = 3.23$ ). Mean PRO-SDLS initiative factor scores for freshmen, sophomores, juniors, and seniors were 16.60 ( $SD = 2.70$ ), 18.55 ( $SD = 2.31$ ), 18.23 ( $SD = 2.97$ ), and 18.21 ( $SD = 3.30$ ), respectively.

#### *PRO-SDLS Control Factor Score*

The mean PRO-SDLS control factor score for all study participants was 19.78 ( $SD = 2.38$ ; see Table 1). Mean male PRO-SDLS control factor score was 19.46 ( $SD = 1.96$ ), while mean female control factor score was 19.86 ( $SD = 2.48$ ). Participants identifying as exclusively online students had a mean PRO-SDLS control factor score of 20.06 ( $SD = 2.00$ ) and those identifying as residential online students had a mean PRO-SDLS control score of 19.44 ( $SD = 2.75$ ). Mean PRO-SDLS control factor scores for freshmen, sophomores, juniors, and seniors were 19.20 ( $SD = 2.17$ ), 19.76 ( $SD = 2.25$ ), 20.15 ( $SD = 2.16$ ), and 20.15 ( $SD = 2.17$ ), respectively.

#### *PRO-SDLS Self-Efficacy Factor Score*

The mean PRO-SDLS self-efficacy factor score for all study participants was 17.89 ( $SD = 1.95$ ; see Table 1). Mean male PRO-SDLS self-efficacy factor score was 17.92 ( $SD = 1.80$ ), while mean female self-efficacy factor score was 17.99 ( $SD = 1.99$ ). Participants identifying as exclusively online students had a mean PRO-SDLS self-efficacy factor score of 18.04 ( $SD = 1.73$ ) and those identifying as residential online students had a mean PRO-SDLS self-efficacy score of 17.89 ( $SD = 2.18$ ). Mean PRO-SDLS self-efficacy factor scores for freshmen, sophomores, juniors, and seniors were 17.60 ( $SD = 2.19$ ), 18.18 ( $SD = 1.45$ ), 17.96 ( $SD = 1.83$ ), and 17.94 ( $SD = 2.15$ ), respectively.

#### *PRO-SDLS Motivation Factor Score*

The mean PRO-SDLS motivation factor score for all study participants was 17.44 ( $SD = 2.07$ ). Mean male PRO-SDLS motivation factor score was 17.49 ( $SD = 2.01$ ), while mean female motivation factor score was 17.43 ( $SD = 2.10$ ). Participants identifying as exclusively online students had a mean PRO-SDLS motivation factor score of 17.37 ( $SD = 1.82$ ) and those identifying as residential online students had a mean PRO-SDLS motivation score of 17.56 ( $SD = 2.35$ ). Mean PRO-SDLS motivation factor scores for freshmen, sophomores, juniors, and seniors were 17.80 ( $SD = 1.48$ ), 17.33 ( $SD = 1.92$ ), 17.36 ( $SD = 1.85$ ), and 17.51 ( $SD = 2.28$ ), respectively.

### Analysis of Research Questions

*Research Question One:* There was not a significant difference in PRO-SDLS total, initiative, control, self-efficacy, and motivation scores between students reporting that they had failed and those that reported that they had not failed a college-level online course.

*Research Question Two:* There was a significant difference in PRO-SDLS total score between students reporting that they had withdrawn ( $M = 71.82$ ) and those that reported that they had not withdrawn ( $M = 74.05$ ) from a college-level online course, ( $t [184] = 2.066, p < 0.05$ ). However, there was not a significant difference in PRO-SDLS total, initiative, control, self-efficacy, and motivation scores between students reporting that they had withdrawn and those that reported that they had not withdrawn from a college-level online course.

*Research Question Three:* There was no significant relationship between online students' PRO-SDLS total score, nor any PRO-SDLS factor scores, and their GPA

*Research Question Four:* There was not a significant difference in PRO-SDLS total, initiative, control, self-efficacy, and motivation scores between female and male students, nor among students of differing academic class standing. There was a significant difference in PRO-SDLS initiative factor score between exclusively online ( $M = 18.73$ ) and residential online ( $M = 17.71$ ) students, ( $t [187] = 2.320, p < 0.05$ ). However, there was not a significant difference in PRO-SDLS total, initiative, control, self-efficacy, and motivation scores between exclusively online and residential online students.

### Additional Findings

A significant relationship between number of online courses a student has withdrawn from and the number of course in which a student receives a failing grade,  $r [13] = 0.540, p < 0.05$  (see Figure 1) was uncovered. Online course withdrawal and failure data collect from students that had both withdrawn and failed one or more college-level online courses were used for this analysis.

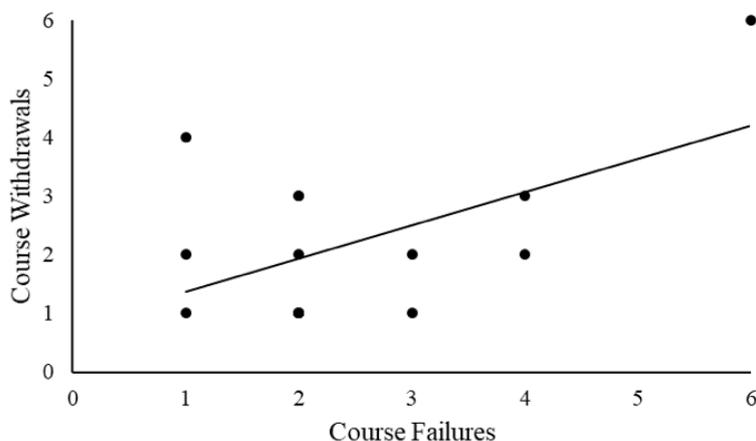


Figure 1. Correlation Plot of Number of College-Level Online Course Withdrawals and Number of College-Online Course Failures ( $r [13] = 0.540, p < 0.05$ ).

## **Discussion and Conclusion**

This study provides, to the author's knowledge, the first PRO-SDLS data collected from an online undergraduate learner population simultaneously spanning multiple academic disciplines and courses. The PRO-SDLS scores, total and factor specific, reported in this study are similar to, although lower, than those of other studies employing this survey tool (e.g., Boyer et al., 2008; Fogerson, 2005; Stockdale & Brockett, 2011). These findings contribute to the existing self-directed learning literature and provide additional support for the use of the PRO-SDLS survey tool in the postsecondary learner population.

### **Research Questions One and Two**

Learners reporting having not withdrawn from a college-level online course scored significantly higher on the PRO-SDLS total score than those reporting having withdrawn from a college-level online course. This finding suggests a link between learner self-directedness and their ability to successfully complete a college-level online course. Especially given the link between online course withdrawals and online course failures (e.g., Wojciechowski & Palmer, 2005; this study) this finding is notable. This finding is particularly valuable when considering readiness assessment of prospective postsecondary online learners.

Readiness assessment of prospective postsecondary online learners has received much attention in the online learning literature (e.g., Bernard et al., 2004; Farid, 2014; Smith, 2005). This interest has been fueled by several issues, namely interest in identifying prospective postsecondary online learners likely to succeed, and the desire to develop an effective postsecondary online learner advising tool (Bernard et al., 2004; Farid, 2014). Academic administrators, online instructors, and instructional designers cite the unique learning environment facing postsecondary online learners as justification for the development of a specialized online learning readiness assessment tool (Ludwig-Hardman & Dunlap, 2003; Watkins et al., 2004). In addition, institutions plagued by low online learner persistence often experience negative financial impacts. Therefore, identifying prospective online learners likely to succeed is tantalizing to academic administrators (Diaz, 2002; Liu et al., 2009), though to date a standardized and well-vetted instrument has yet to be developed (Farid, 2014; Watkins et al., 2004).

Several learner behaviors and characteristics have been incorporated into online learner readiness assessments. This has led to a wide variety of assessment tools lacking consistency that are rarely tested for reliability and validity (Farid, 2014). Though the factors included among these readiness assessments are diverse, they can be distilled into groups of similar learner factors. These groups include learner academic competence, technical competence, motivation, perseverance, and prior experience with online learning (see Farid, 2014). In an attempt to guide online readiness assessment tool development, authors have proposed overarching theories which further refine these groups. One such theory, proposed by Guglielmino and Guglielmino (2003), argues that just two factor groups, learner technical and self-directed learning readiness, can adequately describe the components necessary for effective online learner readiness assessment. As Farid (2014) describes, these factor groups are composed of components related to “[learner] specific knowledge, attitude, skills, and habits” (p. 380).

The finding that PRO-SDLS total score is related to incidence of postsecondary online course withdrawals may point to PRO-SDLS as a valuable stand-alone online learning readiness assessment tool. Alternatively, it may also suggest an opportunity to enhance existing learner readiness assessment tools by incorporating the measurement of learner self-directedness. The implementation of the PRO-SDLS tool may address the lack of consensus regarding the composition of reliable and valid online learner readiness assessments. Echoing this suggestion, Parker (2003) argued for the assessment of learner locus of control, a metric related to learner self-directedness. Therefore, the PRO-SDLS, deployed alone, or as a component of a larger readiness assessment, could serve as an enrollment prerequisite for online learners, providing academic administrators and student support personnel with a powerful indicator of potential academic success in the prospective online learner population.

Self-directedness data gathered from prospective online learners as readiness assessments could be used to enhance online learner academic success and persistence in multiple ways. This information could be used to counsel prospective online learning exhibiting lower self-directedness towards alternatives to online learning. This pre-enrollment counseling may offer student services personnel added assurance that online academic programs are populated with sufficiently prepared students. This intentional alignment of online academic programs with learners more likely to succeed has potential benefits for both learners and institutions. Armed with valuable information regarding their propensity for academic success in the online learning environment, prospective online learners will be empowered to make informed decisions regarding enrollment. And the resulting increase in online learner academic success and reduced attrition will provide institutions with greater stability in their online learner populations, leading to increased profitability and strategic value of their online learning programs.

Pre-enrollment readiness data gathered from the PRO-SDLS tool could also be used to advise prospective online learners of the potential stumbling blocks they may face, should they decide to enroll. The development of customized support tools, informed by readiness assessments, would provide prospective online students with individualized advisement and success strategies, both best paired to their needs (Lee & Choi, 2011). Rolfe (2007) provides evidence that such information provided to pre-enrollment online learners had a positive impact on course withdrawal rates. And multiple studies have reported decreased online course attrition as a result of targeted pre-enrollment advising and orientation (Clay et al., 2008; Taylor, 2015).

### **Research Question Three**

Though this study found that online learner self-directedness was not significantly correlated to their GPA, the debate over the existence of this relationship is far from settled (Hachey et al., 2012). This finding adds to the existing literature refuting such a relationship (e.g., Argon & Johnson, 2008; Hachey et al., 2012) and stands in contrast to those reporting a positive relationship between the two metrics (e.g., Diaz, 2002; Harrell & Bower, 2011; Muse, 2003). Though the relationship between learner self-directedness and GPA is among the most attractive presented in the self-directed learning literature, the current findings further suggest a more complex interaction is at play. For learner self-directedness to be used as a predictive metric of online learner academic success, a more nuanced model may be needed. For example, cumulative GPA may have proven too broad a

metric of academic success, therefore future models may benefit from a more granular view of online learner academic success. Such focus may be achieved by parsing online course or academic program GPA from cumulative GPA. These enhanced models may be better equipped to uncover the complex interactions between learner self-directedness and academic success in the online environment.

#### **Research Question Four**

Among these analyses, only one returned a statistically significant finding. The PRO-SDLS initiative factor score was significantly higher in exclusively online students than in residential online students. Though, in this study, online learner academic success, measured by GPA, was not significantly disparate between these online learner types, this finding remains important. Previous studies have reported learner initiative as positively influencing the academic success and persistence of postsecondary online learners (Dabbagh, 2007; Yukselturk & Bulut, 2007). And postsecondary online learners with greater initiative often display learner behaviors commonly linked to academic success and persistence in the online environment (Mandernach et al., 2006). These learner behaviors include willingness to seek instructor assistance when experiencing academic difficulty, exhibiting interest in course content, and possessing commitment to degree attainment (Mandernach et al., 2006).

Although this study did not uncover a relationship between online learner self-directedness and academic success, it does suggest that learners attracted to an exclusively online degree program display a higher level of initiative. This is noteworthy for academic administrators from two perspectives. Firstly, relative to exclusively online students, academic administrators should recognize and promote the value of initiative in this postsecondary online learner group. Given that exclusively online learners experience complete immersion in the online environment, it would behoove academic administrators to support advising and intervention programs that emphasize the development and promotion of learner initiative in this student population. In fact, Vonderwell and Turner (2005), reported that postsecondary online learners found the control afforded to them by the online environment empowered their initiative. They also noted that postsecondary online learners felt that this student-centered control allowed them to utilize online course resources on an individualized basis to suit their particular situation and their chosen learning strategies (Vonderwell & Turner, 2005).

Secondly, the finding that residential online students demonstrated a lower initiative score suggests that the learners may need particular attention. To best to assist these learners and, likely, all postsecondary online learners, academic administrators should concentrate efforts on thoughtful and intentional online course design aimed at enhancing postsecondary online learner initiative (Hannafin et al., 1997; Song & Hill, 2007). Effective course design and delivery, incorporating effective faculty engagement, are frequently cited as influential factors in postsecondary online student success and persistence (Sun & Rueda, 2012; Volery & Lord, 2000; Wilson & Allen, 2011).

Online learning offers the benefits of flexibility and learner autonomy (Dabbagh, 2007). But, compared to traditional courses, online courses often require enhanced personal planning and self-monitoring (Artino & Ioannou, 2008; Chizmar & Walbert, 1999; Song & Hill, 2007). Intentional online course design aimed at

promoting and nurturing learner behaviors related to initiative, such as personal planning, self-monitoring, and academic exploration may provide autogenous support for vulnerable learners (Bocci et al., 2004; Engelbrecht, 2003; Ivankova & Stick, 2007). With adequate support from academic administration, an online course development strategy following a team approach may, in part, address this issue (Severson, 2004; Vovides et al., 2007). Course development teams, consisting of instructional designers, graphics professionals, assessment experts, and content instructors, are best positioned to develop courses which promote positive learner behaviors and support academic success (Vovides et al., 2007). Online course produced by these diverse teams are especially impactful for learners when they incorporate authentic application, interactive content presentation, and meaningful communication (Carr-Chellman & Duchastel, 2000; Gagne et. al., 2005; Huang, 2002; Mishra, 2002; Morris et al., 2005). Such online learning environments are thought to enhance postsecondary online learner self-regulation and initiative (Vovides et al., 2007; Zimmerman, 2002).

Online courses designed underpinned by a constructivist paradigm are thought to promote learner initiative (Ertmer et al., 1993; Tam, 2000). And, often considered well-suited for online learning (Huang, 2002; Mishra, 2002; Moore & Kearsley, 2011), constructivism espouses a learner-centered learning environment that promotes interpretive knowledge construction (Merriam et al., 2012; Mishra, 2002). Fueled by learner control, constructivism fosters learning as an active, cognitive process framed by the prior experiences of learners (Merriam et al., 2012). In fact, courses which integrate the prior experiences and interests of learners have been shown to reduce postsecondary online course withdrawals (Bocci et al., 2004). Furthermore, a constructivist learning environment supports learner self-direction, given that both have foundations in learner self-evaluation, the development of lifelong learning skills, and independent inquiry (Candy, 1991; Huang, 2002; Ertmer & Newby, 1993; Ruey, 2010).

Particular online course models, notably the community of inquiry model, leverage the constructivism philosophy. Online courses developed in this spirit attempt to enhance both the cognitive presence of learners and the teaching presence of instructors (Engelbrecht, 2003; Garrison et al., 2003; Garrison et al., 2000). Specifically, this model is designed to promote learner control by providing an interactive environment within which students make decisions regarding their learning process (Engelbrecht, 2003; Song et al., 2004). By embracing learner control, these online courses can promote self-regulation, student initiative, and learner collaboration (Garrison et al., 2003). Courses developed with this groundwork also provide learners with a manageable learning environment within which their personal responsibility can be nurtured (Garrison et al., 2003; Tam, 2000).

### **Additional Findings**

In addition to addressing the primary research questions of this study, a significant relationship between the number of college-level online courses a learner had withdrawn from and the number of college-level online courses they had failed was uncovered. This finding suggests that students that withdraw from online courses are more likely to fail them than learners that do not. This is particularly interesting considering the high prevalence of postsecondary online course withdrawals noted by other studies (e.g., Carr, 2000; Diaz, 2002; Levy, 2007).

This finding suggests that the incidence of first online course withdrawal could be used a point of intervention for academic advising. Intervention at this critical point may increase the efficacy of online student advising, thereby decreasing the prevalence of online course withdrawals and failures. In fact, the value and timeliness of academic advising in the online learning population has been considered by many scholars (e.g., Argon & Johnson, 2008; Hachey et al., 2012). The need for timely academic advising for postsecondary online learners can be grounded in the concept of scaffolding, the notion that more finite and intentional structure, be it for instruction or advising, is more necessary for learners at certain points in their development (Ludwig-Hardman & Dunlap, 2003; Wood et al., 1976). This adaptive approach is informed by the achievement of milestones in a learner's development or as intervention points are indicated by a learner's academic progress.

### **Limitations of Study**

Given that participants in this study were undergraduate online learners enrolled at one large, private university, this study did not include learners enrolled at institutions of differing size, nor learners enrolled at institutions of differing geographic regions or Carnegie classifications. Secondly, the sample also contained a significant gender bias, as nearly four times as many completed surveys were submitted by females as were submitted by males. Thirdly, although completed surveys were collected each academic class, upperclassmen represented more than 75 percent of the sample, and only five participants identified as a freshman.

In addition, although 189 participants submitted completed surveys, this represented a response rate of approximately 11 percent. Participants may have chosen to do so because of their interest in or knowledge of the topic. Furthermore, those that submitted completed surveys may have been among the most self-directed, representing a possible confounding variable. Lastly, data collection was cross-sectional in nature, not allow the population to be tracked over time. Given that academic standing was considered in this study, longitudinal data would have presented the opportunity to examine changes in online learner self-directedness and its impact over time.

### **Implications for Future Study**

This study demonstrated a relationship between learner self-directedness, measured as PRO-SDLS total score, and the likelihood of postsecondary online course withdrawal. Given that a positive relationship was also demonstrated between online course withdrawals and failures, investigating this further using a larger and more diverse online learner population is warranted. This may provide greater insight into the question of whether learner self-directedness impacts online course failure rates and, ultimately, online learner success and persistence.

Specifically, future investigation of the relationship between online learner self-directedness and online course withdrawals longitudinally may yield valuable findings. Though measuring these metrics cross-sectionally provided a representation of the relationship, their measurement across the spectrum of academic standing may uncover particularly interesting inflection points. Furthermore, a longitudinal study design may be further enhanced if additional learner factors are integrated into the study design. Lee and Choi (2011), in their review of

online course persistence, constructed three categories of learner factors most linked to online course withdrawals. These categories are learner factors, course/program factors, and environmental factors. Adding dimensionality to the testable model from these factor categories may offer a refined understanding of the relationship that exists between postsecondary online learner self-directedness and online course withdrawals. And, in fact, Lee and Choi (2011) argue that although these factors appear most related to online course withdrawals, additional research is needed to sharpen our understanding of the relationship. Clearly, a more predictive model would assist academic administrators in developing more targeted online program curriculum as well as student support and intervention services.

Although this study suggests that the measurement of learner self-directedness using the PRO-SDLS tool prove valuable in the assessment of online learner readiness, it was conducted in a small learner population. Therefore, future investigation of the PRO-SDLS as an online learner readiness assessment tool is warranted. In particular, future work should focus on determining whether the PRO-SDLS instrument is more predictive of postsecondary online learner academic success and persistence as a stand-alone tool or a component of a larger assessment.

Lastly, the literature investigating the factors influential to postsecondary online learner academic success and persistence is fraught with a jungle of nomenclature (see, Hart, 2012), leading to a tangled collection of valuable, but difficult to aggregate, studies. This study used terminology most common in the academic literature, making its findings transferable to the extant literature. Future studies should place value in standardized terminology when referring to factors such as learner academic success and persistence. This systematic approach will produce findings more salient to the literature at-large and with greater utility to postsecondary online instructors and academic administrators.

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