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# Millennial-aged adults learning online: Factors impacting academic success

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# Millennial-Aged Adults Learning Online: Factors Impacting Academic Success

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**Abstract:** This quantitative study of 118 Millennial-aged learners enrolled in online courses administers a pre and post survey to measure self-directed learning readiness, academic achievement, and other factors related to these variables.

**Keywords:** self-directed learning, online contexts, millennial generation

## Introduction

Over the last decade, higher education has seen an increase in online programs and course offerings (Allen & Seaman, 2014). An annual survey of administrators of private, public, and for-profit institutions revealed that as of 2012, the percentage of higher education students taking at least one course online was 33.5% (Allen & Seaman, 2014). The survey shows nearly 70% of chief academic officers believe online learning will be a part of their long-term strategy (Allen & Seaman, 2014). External pressures, such as access to education and revenue generation are driving higher education administrators to experiment with online learning opportunities (Bacow, Bowen, Guthrie, Lack, & Long, 2012). In response to these external forces, traditionally residential institutions are offering purely online courses to residential students as a complement to the face-to-face curriculum. As institutions incorporate online learning into academic life, adult educators and administrators must consider the readiness of the learners to be academically successful in this context (Song & Hill, 2007).

## Theoretical Framework

Self-directed learning theory postulates self-direction is both an inherent personality trait and can be cultivated as a skill (Brockett & Hiemstra, 1991; Merriam, Caffarella, & Baumgartner, 2007). Self-directed learners take control of their own learning, while using the ability to organize and motivate themselves to accomplish learning goals. The constructivist theory assumes a learner is autonomous and has awareness of their personal power (Brookfield, 1985). In online learning contexts, self-direction is crucial to a student's success because an online course requires students to self-impose structure, exhibit curiosity, and manage deadlines (Song & Hill, 2007). In essence, an online learning context empowers the learner to drive their instruction.

The age demographic of those born after 1977 is the focus of the research because this generation spent their upbringing surrounded by technology, such as video games, computers, and email (Howe & Strauss, 2000). Prensky (2001) deemed this demographic as "digital natives"; research shows these learners to be savvy with technological tools, and, in formal educational environments, as having a desire to co-construct their educational experience (Jagannathan & Blair, 2013; Rickes, 2009). Some scholars, however, are critical that this generation of learners can direct their learning and instead need a high level of guidance from their instructors (Wilson, 2004).

## Self-Directed Learning Readiness (SDLR) and Academic Achievement

Research shows a relationship between SDLR and academic achievement. Hsu and Shiue (2005) administered Guglielmino's (1977) Self-directed Learning Readiness Scale (SDLRS) to 126 undergraduate students enrolled in the same course either online or face-to-face and found SDLR and academic success were correlated in both settings. Similarly, Chou (2012) surveyed 48 undergraduate

students studying engineering, and he found that students who had a higher SDLRS score performed better in the online assessment being used to measure academic achievement ($r = .6$, $p = .00$).

Studies also show pedagogical approach impacts the relationship between the SDLR and academic achievement. Litzinger, Wise, and Sang (2005) administered a pre-SDLRS test and a post-SDLRS test to students enrolled in a problem based learning engineering course and found a problem-based learning approach resulted in higher SDLRS scores. Furthermore, qualitative studies show SDLR can be cultivated as a skill (Yu-Chang, Yu-Hui, Mathews, & Carr-Chellman, 2009) guided by goal setting, organizational tools, and seeking help from the instructor.

## Teacher Presence and Student Collaboration

The literature indicates student interaction and teacher presence are related to SDLR, academic success, and perceived learning within an online course (Lehman & Conceição, 2014). Teacher presence is often defined as the frequency of communication between instructor and the students, and the amount of perceived interaction between the instructor and students in a course (Anderson, Rourke, Garrison, & Archer, 2001; Sheridan & Kelly, 2010). In an online environment, the way in which a student engages in the course material, and the role the instructor plays, is crucial to the self-directed learning that occurs (Brookfield, 1985). For example, Lehman and Conceição (2014) conducted survey research of students and instructors to understand strategies to retain and motivate online learners. The findings indicate strategies keeping students motivated include intentionally designing the learning activities around the content and desired learning outcomes of the course.

## Age and Self-Directed Learning Readiness

In his assumptions of andragogy, Knowles (1973) postulates that in adulthood, there is a natural inclination to self-direct learning as opposed to following the lead of a teacher. The idea that SDLR increases with age is empirically supported in the literature. For example, DiBiase and Kidwai (2010) hypothesized age impacts a student's ability to be academically successful in a self-directed online learning environment. Adopting Knowles' (1973) assumptions of andragogy, the researchers studied older students (median age = 34 years) and younger students (median age = 21 years) who were taking separate but similar online courses with the same instructor. Analysis of course activities and academic performance on assignments indicated older learners were more active participants in the online environment than their younger counterparts.

## Research Purpose and Questions

The research questions shed light on the readiness of Millennial students to engage in the self-directed learning that occurs in formal online learning contexts. The study aimed to understand the readiness of this specific demographic, and the factors influencing their readiness and academic achievement in a course. The findings provide educators some information on the preparedness of this demographic of students to self-direct their learning.
The following research questions were explored:
RQ1: What is the level of SDLR amongst Millennial students enrolled in an online course?
RQ2: Is there a change in level of SDLR after taking the online course?
RQ3: What is the relationship between SDLR and other factors, such as academic achievement, age, and course design?

## Methodology

The research employed a quasi-experimental design to study an intentional sample of 118

participants from two small-sized private liberal arts schools that are part of larger research universities located within the northeastern region of the United States. Both institutions are primarily residential and have grown the summer online course offerings steadily since 2011. Through collecting data via a pre-course and post-course survey, the research investigated SDLR and academic achievement amongst Millennial-aged learners enrolled in six-week online courses. Other variables studied include prior academic success and course design. A pre-course and a post-course survey were sent to the participant pool via email. The data were analyzed using quantitative statistics, including frequencies, the Wilcoxon signed ranks test, and Pearson correlation coefficients.

## Instrumentation

The Self-directed Learning Readiness Scale (SDLRS) (Guglielmino, 1977) was selected to measure self-directed learning readiness. The SDLRS is a 58-item, Likert scale questionnaire measuring participant self-perceptions. The scale is widely used as a quantitative self-directed learning measurement in the literature (Merriam et al., 2007). The validity and reliability of the scale is supported by research: Guglielmino (n.d.) cites the Pearson split-half reliability estimate as .94, and studies verify the instrument's reliability and validity through factor analysis (Brockett & Himestra, 1991). The Cognitive, Affective, Psychomotor (CAP) Perceived Learning Scale total score was used to measure perceived learning (Rovai, Wighting, Baker, & Grooms, 2009). Rovai et al. (2009) define perceived learning as the subjective amount of learning a student self-reports. In initial testing, the 9-item Likert scale had a Cronbach coefficient of .79. Other data collected to measure academic achievement were self-report grade point average (GPA) and self-report grade in the course.

## Participants

One hundred and eighteen (118) participants enrolled in one of 32 undergraduate level online courses during summer 2015 completed both surveys. Participants were 31% male, and 69% female. Ages ranged from 18 to over 35, with 81% between the ages of 18-23; only 4% of the participants were above the age of 35. Seventy-nine percent (n = 93) of the participants were enrolled in an undergraduate degree program at the time of taking the survey.

## Results

RQ1: The mean participant pre-test SDLRS score, 223.47, was high-average on Guglielmino's range. The mean participant post-test SDLRS score, 227.37, was in the above average range. Guglielmino (1977; n.d.) describes learners in the average category to be comfortable directing their own learning, but still needing help with ascertaining needs. Those learners in the above average category prefer to construct and effectuate their own learning. The implication of this finding is this demographic of learner may respond well to approaches inherent to an online learning environment.

RQ2: The assumptions were met for a Wilcoxon signed-rank test. The test showed that a six-week online course did elicit a statistically significant change in SDLR ($Z = -2.726, p = 0.006$). The implication of this finding is an online course may positively impact self-directed learning readiness.

RQ3: See Table 1. Implications of the correlational findings are several; including older Millennial-learners have a higher SDLRS, which could lead to greater success in an online course environment. Also, the relationship between SDLR and academic achievement (as measured by perceived learning) suggests learners who have a higher level of SDLR perceive they learn more than those with lower SDLRS scores. Contradictorily, participants who scored high on the SDLRS reported low self-report grades for the course. Finally, the relationship between academic

achievement (as measured by perceived learning) and number of interactive course activities suggests an instructor can positively impact learning through course design.

Table 1

*Correlation matrix*

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | N |
|---|---|---|---|---|---|---|---|---|---|
| 1. SDLRS pre score | 1 | | | | | | | | 118 |
| 2. SDLRS post score | .781** | 1 | | | | | | | 118 |
| 3. Perceived learning score | .263** | .369** | 1 | | | | | | 110 |
| 4. Age | .213* | 0.169 | 0.048 | 1 | | | | | 118 |
| 5. Undergraduate GPA | -0.004 | -0.036 | 0.043 | 0.014 | 1 | | | | 116 |
| 6. Self-report grade | -0.212 * | -0.047 | 0.12 | -0.094 | .221* | 1 | | | 108 |
| 7. No. interactive activities | 0.053 | 0.074 | .261** | -0.124 | 0.126 | 0.049 | 1 | | 118 |
| 8. No. of online courses taken | 0.138 | 0.158 | -0.015 | 0.145 | -0.101 | 0.002 | 0.022 | 1 | 118 |

*significant at .05 level (2-tailed)

**significant at .01 level (2-tailed)

## Discussion and Implications

### Adult Education

The implications of this study impact the field of adult education. The findings suggest formal online courses prepare students for a different, more autonomous, kind of learning that is often thought to occur after college and into adulthood. The implication is threefold. First, the study provides evidence that millennial-aged students are better prepared for autonomous learning after completing an online course. This readiness has implications for the future coursework, but also this readiness impacts career preparedness. Next, faculty who teach online courses can discuss the benefits of increased SDLR, which can be a learning outcome of an effectively designed online course. Adult learners can potentially hone their SDLR through participating in an online course. The third implication of this finding is the early onset of SDLR implies Knowles' assumptions of andragogy could be extended to include a younger demographic of learners. Knowles (1973) assumes adults develop an intrinsic motivation for learning as they age and gain more experience in life; he postulates that in adulthood, learning is pursued due to interest. The demonstrated correlation between age and the SDLRS pre-score supports the idea self-direction increases with age. However, the high average SDLRS score shows Millennial-aged students have a predisposition for self-directed learning, which is consistent with the literature discussing technology and access to information (Dziuban et al., 2005).

The ability to self-direct at a young age must be tempered by the fact that the current research shows a statistically significant relationship between the number of interactive course activities and level of perceived learning. Caution should be used when considering the Millennial learner's aptitude, and desire, to self-direct. The study supports the idea that structured collaborative activities will enhance student learning, and ultimately, increase the ability to self-direct learning even amongst a group with an already high motivation to learn (Jagannathan & Blair, 2013; Rickes, 2009).

An additional implication for adult education is the suggested finding that as adults age, their SDLR increases, but their self-reported course grade decreases. Further research is necessary to determine if this finding is an issue of self-efficacy. The implication for adult education is older Millennial-aged online learners may need a different kind of instructor attention, feedback, and guidance than their younger Millennial-aged counterparts.

**Higher Education Administration**

An implication for higher education leaders and chief administrators is to thoughtfully consider online learning principles and guidelines for program and faculty development. As mentioned, there are external pressures accelerating the adoption of online learning courses and programs (Bacow et al., 2012). This study provides insight into some of the considerations before forging forth with a new program. For example, faculty should consider the importance of the design of their course before engaging in an online context. Additional implications include the need for higher education administrators to consider their audience when developing online programs. This study provides evidence that SDLR increases with age, and the higher the SDLRS score, the more a student perceives they learn. Right-aging the program, for example, creating graduate programs instead of first-year college student programs, may result in optimal learning. Furthermore, this research implies that additional investigation is warranted to understand if there is a relationship between self-efficacy, self-directed learning readiness, and age. Higher education administrators should be aware of the support and resources faculty and students may need to properly address this possible relationship and others.

## Limitations and Future Research

There are several limitations to the study. First, the sample experienced a six-week summer online course, as opposed to the length of a fall or spring semester. The condensed time frame may have lessened or intensified results. Studies should be conducted during fall and spring semesters. Second, the study could not isolate the variable of SDLR. Over 50% of the participants indicated one reason they enrolled in an online course to have a job outside of school. Working while studying could have a significant impact on SDLRS score, and future research should consider this possibility. Another factor to consider is discipline of coursework; participants were enrolled across 32 unique courses, and research shows (Lehman & Conceição, 2014) pedagogy is most effective when it is tailored to a specific course and area that is being taught. Third, the intentional sample cannot be generalized, as the majority of the participants were enrolled in highly competitive undergraduate higher education institutions, which have rigorous standards for enrollment. The sample is predisposed to be motivated as students, and therefore the SDLRS score could be skewed. Other factors impacting SDLR, such as cultural experiences and writing and problem solving skills, may be important predictors in their predisposition for self-directed learning and ultimate academic success.

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