SELF-DIRECTION IN LEARNING OF EDD CANDIDATES AT A SMALL, PRIVATE INSTITUTION

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ABSTRACT

Aim/Purpose	Many researchers have investigated factors related to why doctoral candidates do or do not persist in a doctoral program, yet, literature was not found where researchers investigated the relationship between self-directed learning and currently enrolled EdD candidates. The authors sought to understand EdD candidates' self-direction in learning at the onset of their EdD program. The findings informed program and course instructional strategies of the EdD Program and helped to determine what could be done to help candidates be more successful in the program.
Background	The purpose of this study was to investigate the self-directed learning of doctoral candidates in one EdD program in a private university in a southeastern state. Adults are by nature self-directed individuals and it would be reasonable to assume that adult doctoral candidates might exhibit some level of self-directed learning.
Methodology	The PRO SDLS (Stockdale, 2003) was employed to measure self-directed learning among a population of 110 EdD candidates currently enrolled in a private university in a southeastern state. The following variables were also included in the analysis: year of enrollment, program concentration, hour of enrollment, age, and gender. A series of one-way ANOVAs were used to compare the differences of each independent variable on each measure of the dependent variable.
Contribution	The findings informed program and course instructional strategies of the EdD Program and helped to determine what could be done to help candidates be more successful in the program. The findings not only benefitted this individual EdD Program, but also additionally will add to the body of knowledge on encouraging self-directed learning among EdD candidates.

Findings	The researchers found that all candidates, regardless of variables investigated, had similar levels of self-directed learning, above average for adults, which is typical of doctoral students. While no specific variable was statistically significantly different, a few variables neared the significance level of 0.05, in exhibiting even higher levels of self-directed learning. It was found that females demonstrated slightly higher control, a sub-factor of self-directed learning, and candidates in the higher education program demonstrated higher motivation, another sub-factor of self-directed learning.
Recommendations for Practitioners	Practitioners would benefit by incorporating the following steps to increase self-directed learning among doctoral candidates in education: facilitating the dissertation process earlier, gradual release into dissertation hours, writing competency based curriculum for earlier writing skills, and fostering collaborative grouping within the program for social connection.
Recommendations for Researchers	Self-directed learning is only one possible reason for whether or not students may or may not complete a doctoral degree in education. Other variables may influence, possibly even stronger, the candidate's ability to complete the doctoral degree.
Impact on Society	Adults are self-directed individuals. Adults returning to school are found to have higher readiness for self-directed learning. Fostering this self-directed learning through social collaboration in a doctoral program can help doctoral candidates be more successful.
Future Research	Additional factors may exist that influence the completion of a doctoral degree: life circumstances, job change, health, relationships with faculty, etc. These factors could be measured in conjunction with self-directed learning to gain a more comprehensive picture as to why some students do not finish their doctoral degrees in education.
Keywords	doctoral candidate, education, self-directed learning

INTRODUCTION

Adults are, by nature self-directed (Houle, 1961). Adults return to school for a variety of reasons. The researchers are faculty at a private institution in the southeast United States offering an Educational Doctorate in the school of education. The program is run in a cohort model, meeting once monthly on the weekend. The program has undergone tremendous turnover, and candidates in the program were struggling to complete degree requirements. Though this university had a completion rate of over 50%, candidates were getting caught in the dissertation phase and not making it through. Research has been done on many aspects of doctoral completion, yet, this particular study focused only on self-directed learning, an area that the faculty took into consideration when reforming programming requirements for the candidates over the course of their time at the university, as the faculty noticed that when candidates moved into the self-directed task of the dissertation, some were unable to make it through. This paper offers an investigation into one aspect of a candidate's journey in an EdD program, self-directed learning, which comes from the research on self-directed learning. Though this research is not inclusive of all EdD programs, it provides a glimpse into the experience of this unique cohort of doctoral students.

SELF-DIRECTED LEARNING

Self-directed learning is a concept involving adult learning in various forms and includes learning activities that adults perform at will, such as projects, continuing education, and voluntarily returning to school. Self-directed learning accounts for roughly 70-80% of adult learning (Brockett, 2008). The

characteristics of a person who has high levels of self-directed learning are "1) the features that allow individuals to be in control of their own learning, 2) to seek learning tasks that fit their needs, and 3) to understand the importance of learning" (Guglielmino, 1977, p. 73). According to Knowles (1975), adults are self-directed in areas of their lives outside of learning, for example, in the workplace, family life, and maintaining a home.

The personality characteristic of self-directed learning, or learner autonomy (Knowles, 1980; Merriam & Caffarella, 1999), is based upon the individual's will to pursue something the learner perceives is of value (Ponton & Carr, 2000). More specifically, a self-directed learner who has the autonomy to enroll in a program of higher learning may pursue a doctoral degree in his or her area of interest. According to Ponton (2018) and Ponton and Carr (2016), the higher one's degree, beginning above the bachelor level, the higher is that individual's self-directed learning readiness. A doctoral program then, specifically an Educational Doctoral (EdD) program, is the environment where an autonomous or self-directed learner may pursue higher learning in education. Within the EdD program investigated for this study, a dissertation is required. A dissertation is normally a self-directed endeavor, with consultation from a chair and committee.

In 1961, Houle found that adults who continued to learn "all had goals they wished to achieve, they all found the process of learning enjoyable or significant, and they all felt that learning was worthwhile for its own sake" (p. 15). Houle divided adult learners into three categories: goal oriented, activity oriented, and learning oriented. He found that all adult learners had a stimulus, either internal or external, which led them to want to continue to learn, and that it was stronger in some than in others. Tough (1971) conducted a study in which 66 adults were interviewed regarding their high desire to learn in a self-directed manner and discovered that adults spend roughly 10% of their life learning something, or 700 hours per year. In this percentage of time, adults preferred to plan and direct their own learning activities. Tough found that 68% of the adults he surveyed self-planned their learning activities and the average number of self-planned projects these adults completed in their lifetime was 82. In 1979, Tough updated his study and found 80% of adults were involved in self-planned learning activities.

Self-directed learning was further defined by Knowles (1975) as "a process in which individuals take the initiative, without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and integrating appropriate learning strategies, and evaluating learning outcomes" (p. 18). The control of the learning situation is the theme of self-directed learning. Merriam and Brockett (2007) provided a more simplistic and practical definition when they claimed self-directed learning was "adults assuming control of their learning" (p. 137), referring to the structure, the method, and sometimes the content of the learning. In these two definitions, the main focus of self-directed learning was on the control individuals had on their learning agenda and content.

From another angle, Brookfield (1985) stated that self-directed learning was a method by which adults learned that focused on the content of their choice and the manner of their choice, but included social resources as well. Self-directed learners have "control over the planning and execution of learning" (p. 9). Brookfield reminded us, however, that self-directed learning or any learning could not be completed in solitude. Following Brookfield's work, Long (1989) asserted that self-directed learning incorporates three dimensions: the sociological dimension, which includes the learner and society; the pedagogical dimension, which includes the activities in which the learner chooses to participate; and the psychological dimension, which includes the learner's mental state at the time of learning.

Brockett and Hiemstra (1991) suggested further that self-directed learning is both an intended teaching technique and an internal, personal characteristic that one can possess. They asserted that self-directed learning is "a combination of forces both within and outside the individual that stress the learner accepting ever-increasing responsibility for decisions associated with the learning process"

(p. 9). To explain the characteristics of a self-directed individual further, Guglielmino (1977) provided a very detailed explanation in her work on the Self-Directed Learning Readiness Scale (SDLRS):

> A highly self-directed learner is one who exhibits initiative, independence, and persistence in learning; one who accepts responsibility for his or her own learning and views problems as challenges, not obstacles; one who is capable of self-discipline and has a high degree of curiosity; one who has a strong desire to learn or change and is self-confident; one who is able to use basic study skills, organize his or her time and set an appropriate pace for learning, and to develop a plan for completing work; one who enjoys and has a tendency to be goal-oriented. (p. 73)

Taking the work on self-directed learning a step further, Brockett and Heimstra (1991) created the Personal Responsibility Orientation (PRO) model. This model emphasized personal responsibility as the connection, or central concept, for understanding self-direction. They stated "by personal responsibility we mean individuals assume ownership for their thoughts and actions" (p. 26). Additionally, the focus of the PRO model was on the social context that existed with the learner and the teaching-learner relationships. In 2012, Hiemstra and Brockett updated their PRO model to the Person Process Context (PPC) model. Hiemstra and Brockett stated "the optimal situation for self-directed learning to be most effective is when the person, process, and context are in balance" (p. 159). The reason for the shift overall was to incorporate the social context of self-directed learning, a relatively unexplored area (Heimstra & Brockett, 2012). For the purpose of this study, self-directed learning was analyzed as both a characteristic of the adult learner and as it relates to the teaching – learner relationship.

SELF-DIRECTED LEARNING & DOCTORAL STUDENTS

Very little literature exists regarding self-directed learning and education doctoral students. However, some literature exists regarding self-directed learning and doctoral students in other fields. Premkumar et al. (2018) conducted a study to measure self-directed learning of students in medical school in India. In the study, the researchers measured self-directed learning of medical students at admission and of students at different stages/years of medical school. A total of 453 students participated in the study. Statistical analyses revealed that there was a significant difference in self-directed learning between students' different stages in medical school. There was a statistically significant decrease in students' self-directed learning as they progressed through medical school. In other words, students had higher self-directed learning at the admission stage compared to year four of medical school. Self-directed learning scores decreased each year from admission stage to year one to year two to year three and to year four.

Premkumar et al. (2018) also looked to see if there were differences in self-directed learning based on students' gender and age. Based on their findings, there was not a statistically significant difference between males and females. Gyawali et al. (2011) found similar results with no differences in gender. Though the researchers focused on undergraduate students, Yuan et al. (2012) also found no differences in self-directed learning based on gender. However, Cadorin et al. (2015) did find differences in self-directed learning between males and females. In their study, females had higher self-directed learning scores compared to males. Yet, Kar et al. (2014) found males had higher self-directed learning compared to females. It should be noted that Kar et al. (2014) and Cadorin et al. (2015) analyzed undergraduate students, not doctoral students.

Premkumar et al. (2018) also discussed age and self-directed learning readiness. Based on their study, the researchers found medical students' self-directed learning decreased as the students got older, hence confirming the decrease in scores as they progressed through medical school. When studying nursing students, Klunklin et al. (2010) found nursing students' self-directed learning increased with age. As students were older, their self-directed learning was higher. Yuan et al. (2012) found similar

results. Phillips et al. (2015), however, determined there were no significant differences in self-directed learning based on age.

STATEMENT OF THE PROBLEM

Understanding that adults often prefer to learn in a self-directed manner, it should then be reasonable to assume that adult doctoral candidates might exhibit some level of self-directed learning; however, roughly 50% of doctoral candidates do not complete their doctoral program (Ivankova & Stick, 2007). Many researchers have investigated factors related to why doctoral candidates do or do not persist in a doctoral program, including: demographics, personality, motivation, responsibility/job, program or institutional factors, and social integration or isolation (Spaulding & Rockinson-Szapkiw, 2012); yet, though some literature was found that discussed self-directed learning with medical students, no literature was found investigating the relationship between self-directed learning and currently enrolled EdD candidates. Thus, the purpose of this study was to investigate the self-directed learning of doctoral candidates in one EdD program in a small, private university in a southeastern state. The EdD program at this university uses an adult learning cohort model of one weekend per month for course work.

SIGNIFICANCE OF THE PROJECT

The primary significance of this project was to inform program and course instructional strategies within the EdD Program at this private, southeastern university. Completing a doctoral dissertation and doctoral degree require strong self-directed learning to be successful; however, the self-directed learning of doctoral candidates has never been assessed at this particular EdD program. The goal of this study is to inform program and course instructional strategies of the EdD Program and to determine what could be done to help candidates be more successful in the program. The secondary significance of this project is to add to the body of literature related to self-directed learning and doctoral candidates.

INSTRUMENTATION

There are several instruments used today that measure self-directed learning among individuals in various learning environments. One of the first instruments developed to measure self-directed learning, and still the most widely accepted is Guglielmino's (1977) SDLRS. Oddi's (1986) Continuing Learning Inventory (OCLI), which measures self-directed continued learning, has not been employed as widely since the early 1990s. Additionally, Confessore and Confessore (1994) developed the Learner Autonomy Profile (LAP), a multi-scale instrument that focuses on a learner's behavioral intentions. Finally, Stockdale (2003) developed the Personal Responsibility Orientation to Self-Direction in Learning Scale, PRO-SDLS, based on Brockett and Hiemstra's (1991) PRO model, which was revised in 2011 by Stockdale and Brockett. The PRO-SDLS was designed specifically for use in the higher education classroom. All of these instruments have their place in the field of self-directed learning; however, the instrument used in this study was the PRO-SDLS (Stockdale, 2003; Stockdale & Brockett, 2011).

The PRO-SDLS is a 25-question Likert scale survey. The title has been changed to A Learning Experience Scale to avoid swaying participants to answer in a certain way (see the Appendix). The PRO-SDLS measures self-directed learning in two components, the Teaching–Learning Transaction and Learner Characteristics. Within the teaching–learning transaction component, initiative and control are subcomponents. Within the learner characteristics component, self-efficacy and motivation are subcomponents. Components are incorporated together for a total score measure as well. The questions are a 5-point Likert scale ranging from strongly agree to strongly disagree. Questions 2, 9, 10, 15, 17, and 25 represent the initiative subcomponent, and questions 4, 5, 6, 13, 19, and 23 make up the control subcomponent. The total scores of initiative and control form the teaching-learning transaction component. Questions 1, 7, 12, 21, 22, and 24 make up the self-efficacy subcomponent,

and questions 3, 8, 11, 14, 16, 18, and 20 make up the motivation subcomponent. The total scores of self-efficacy and motivation comprise the learning characteristics component. Through her work, Stockdale (2003) proved the instrument is highly valid and reliable (coefficient alpha = .92).

RESEARCH QUESTIONS

The following research questions were created to guide this study:

1. What difference, if any, was there in the self-directed learning of doctoral candidates between candidates' year of enrollment?
2. What difference, if any, was there in the self-directed learning of doctoral candidates among the different program concentrations?
3. What difference, if any, was there in the self-directed learning of doctoral candidates among the 33-, 48-, and 63-hour programs?
4. What difference, if any, was there in the self-directed learning of doctoral candidates based on age?
5. What difference, if any, was there in the self-directed learning of doctoral candidates' gender?

POPULATION

The population for this study was 110 students, or candidates, currently enrolled in an EdD program at a private university in a southeastern state. These candidates were enrolled in various stages of progression, from first year to all but dissertation (ABD), in the EdD program during the 2017-2018 school year. This EdD program operates using an adult cohort model of one weekend of class meetings per month for coursework. Following coursework, 15 hours of dissertation are required beyond coursework to complete the individual dissertation, which is the culminating project of this program. The program offers three tracks based on previous degrees or credits earned: 33-hour, 48-hour, or 63-hour. Additionally, there are four concentrations from which candidates may choose: instructional leadership, curriculum and instruction, higher education, and executive leadership.

Of the 110 candidates enrolled, 64 candidates responded to the survey, a 60% response rate. Of the sample, 76.6% of the participants were female. Related to age, 32.8% were between 30 and 39 years old, 39.1% were 40 to 49 years old, 21.9% were 50 to 59 years old, and 4.7% were 60 years or older. Only one person identified as being 21 to 29 years of age. Thirty-nine percent were in the curriculum and instruction concentration, 34.4% were in the instructional leadership concentration, 17.2% were in the higher education concentration, and 9.4% were in the executive leadership concentration. Of the participants, 46.9% were enrolled in a 33-hour program, 28.1% were enrolled in a 48-hour program, and 25% were enrolled in a 63-hour program of study. Additionally, 96% of the participants identified as Caucasian, and the remaining 4% identified as African American.

METHODOLOGY

The researchers used a descriptive nonexperimental, quantitative research design by employing a survey to measure students' self-directed learning. Self-directed learning was precisely measured and had assigned numerical values to these variables, which necessitated the utilization of quantitative methodology (Field, 2013). There was no manipulation of variables or treatment to a group of participants, and the researcher questions pertained to non-causal relationships between variables; therefore, the researchers used a nonexperimental research design. In addition, the researchers employed a survey research design by asking candidates to complete a one-time survey in the summer of 2018. According to Creswell (2014), a survey can be used to measure trends, attitudes, behaviors, or opinions and then generalize or draw inferences based on the results.

The researchers administered the PRO-SDLS survey (Stockdale, 2003: Stockdale & Brockett, 2011) to all 110 enrolled candidates in the EdD Program. All candidates enrolled in the EdD program were

sent an invitation to participate in the study as the desire was to have as many candidates as possible complete the survey. The survey took typically 10 – 15 minutes to complete. The web-based survey platform, Qualtrics, was used to distribute the surveys to candidates enrolled in the EdD program. Data security was maintained as no identifying information was collected such as IP addresses, email addresses, or names. The researchers collected data over a four-month period between March 2018 and June 2018. This date range was selected to have an optimal amount of time to recruit as many participants as possible. Data collection began after IRB approval, which occurred in March of 2018. Electronic consent was obtained at the beginning of the survey link. Participants had to read the informed consent information and provide electronic consent before accessing the survey. After the data collection period, the researchers downloaded the data from Qualtrics and used IBM's Statistical Package for Social Sciences (SPSS) for data analysis.

ANALYSIS

As stated above, the PRO-SDLS scale measures self-directed learning by providing a total score and a score for each subcomponent—Initiative, Control, Self-efficacy, and Motivation. One-way analysis of variances (ANOVA) was used to compare the differences of each independent variable on each measure of the dependent variable. The researchers wanted to test the total score of each subcomponent measured (dependent variables). Thus, multiple one-way ANOVAs were used to answer research question one through four. Because there were only two levels of the independent variable, gender, a series of independent sample t-tests were used to answer research question five.

Prior to data analysis, data screening was conducted to check for normality, outliers, missing data, and assumptions of statistical procedure (Mertler & Reinhardt, 2017). Normality was checked using graphical and statistical approaches. Graphically, histograms were used, as well as the Kolmogorov-Smirnov test and observed significance. The assumption of normality was met for all variables, except for Control and Self-efficacy; however, the one-way ANOVA is robust to the violation of this assumption (Field, 2013). Only two outliers were identified and were excluded from data analysis. Missing data was not present in the data set.

RESULTS

The results of data analysis are presented for each research question below to provide a clear display of the results. For the study, the researchers tested null hypotheses by using hypothesis testing of inferential statistics. The F statistic provided in one-way ANOVAs is used to help determine whether or not the null hypothesis is rejected or not. In other words, it helps determine whether a significant difference exists or not. F statistics less than one generally indicate there is not a statistically significant difference, and the greater the F statistic is above one, the more likely the null hypothesis is rejected, indicating a statisticsally significant difference (Field, 2013). The researchers used the alpha level of .05 in relation to the significance p-values to determine statistically significant differences.

RESEARCH QUESTION 1

What difference, if any, was there in the self-directed learning of doctoral candidates between candidates' year of enrollment? H_0: There was no significant difference in the self-directed learning of doctoral candidates between candidates' year of enrollment. The participants' year of enrollment in the EdD program ranged from 2009 to the most recent cohort in 2017. The different years of enrollment were analyzed to determine if there was a difference in the candidates' self-directed learning. To answer this research question, a separate one-way ANOVA was conducted to test each measure of self-directed learning—total score, initiative, control, self-efficacy, and motivation. For each analysis, the assumption of homogeneity of variance was met using the Levene's test of equal variances. Based on the one-way ANOVA, the effect of year of enrollment was not statistically significant on self-directed learning total score, $F = .603$, $p = .750$. The assumption of homogeneity of variances was met for subcomponent initiative. The effect of year of program enrollment was not statistically significant

on student initiative, $F = .630$, $p = .729$. The effect of year of program enrollment was not statistically significant for student control, $F = 1.301$, $p = .267$. The effect of year of enrollment was not statistically significant for self-efficacy, $F = .757$, $p = .607$. The effect of year of enrollment was not statistically significant for motivation, $F = 1.464$, $p = .208$. The results indicate no statistical difference exists in the self-directed learning based on a candidate's year of enrollment into the EdD program. Results are presented in Table 1.

Table 1: Self-Directed Learning by Candidate's Year of Enrollment

Construct	F	P	M	N
Total Score	.603	.750		63
2009			92.50	
2011			97.33	
2012			95.50	
2013			90.67	
2014			95.50	
2015			99.57	
2016			94.10	
2017			97.47	
Initiative	.630	.729		63
2009			21.00	
2011			23.00	
2012			21.75	
2013			21.67	
2014			22.50	
2015			20.00	
2016			21.45	
2017			21.47	
Control	1.301	.267		63
2009			22.50	
2011			22.33	
2012			24.25	
2013			20.67	
2014			23.00	
2015			25.00	
2016			22.15	
2017			22.94	

Construct	F	P	M	N
Self-Efficacy	.757	.607		61
2011			21.17	
2012			21.75	
2013			19.67	
2014			20.00	
2015			21.29	
2016			20.20	
2017			21.71	
Motivation	1.464	.208		61
2011			26.50	
2012			23.25	
2013			24.33	
2014			26.50	
2015			29.14	
2016			26.10	
2017			27.00	

RESEARCH QUESTION 2

What difference, if any, was there in the self-directed learning of doctoral candidates among the different program concentrations? H_0: There was no significant difference in the self-directed learning of doctoral candidates among the different program concentrations. The EdD program had four different concentrations at the time of this study—curriculum and instruction, instructional leadership, higher education, and executive leadership. Separate one-way ANOVAs were conducted to determine if there was a difference in candidates' self-directed learning based on their program concentration. The assumption of homogeneity of variance was met in each analysis. The effect of program concentration was not statistically significant on total score of self-directed learning, $F = 1.676$, $p = .182$. Program concentration was not statistically significant for student initiative, $F = .321$, $p = .810$. Candidates' program concentration was not statistically significant for control, $F = 1.995$, $p = .124$. The effect of program concentration was not statistically significant for self-efficacy, $F = 2.052$, $p = .116$. A statistically significant difference was detected among at least one of the program concentrations for motivation, $F = 3.431$, $p = .023$. Tukey HSD post hoc tests determined a statistically significant difference existed for motivation between candidates in higher education concentration and executive leadership concentration, $p = .012$. Candidates in the higher education concentration (M = 28.18) displayed significantly higher motivation related to self-directed learning than candidates in the executive leadership concentration (M = 22.17). Though a statistically significant difference was not detected between the other concentrations and executive leadership concentration, curriculum and instruction candidates (M = 26.44) and instructional leadership candidates (M = 26.32) still had slightly higher motivation than executive leadership candidates. Results for research question two are provided in Table 2.

Table 2: Self-Directed Learning by Candidate's Concentration.

Construct	*F*	*P*	*M*	*N*
Total Score	1.676	.182		64
Curriculum & Instruction			95.84	
Instructional Leadership			97.59	
Higher Education			94.91	
Executive Leadership			88.83	
Initiative	.321	.810		64
Curriculum & Instruction			21.80	
Instructional Leadership			21.41	
Higher Education			20.82	
Executive Leadership			21.33	
Control	1.995	.124		64
Curriculum & Instruction			22.60	
Instructional Leadership			23.82	
Higher Education			21.55	
Executive Leadership			22.33	
Self-Efficacy	2.052	.116		64
Curriculum & Instruction			20.80	
Instructional Leadership			21.77	
Higher Education			20.00	
Executive Leadership			19.33	
Motivation	3.431	.023		64
Curriculum & Instruction			26.44	
Instructional Leadership			26.32	
Higher Education			28.18	
Executive Leadership			22.17	

RESEARCH QUESTION 3

What difference, if any, was there in the self-directed learning of doctoral candidates among the 33-, 48-, and 63-hour programs? H_0: There was no significant difference in the self-directed learning of doctoral candidates among the 33-, 48-, and 63-hour programs. Separate one-way ANOVAs were used to examine if a difference existed between candidates in the 33-, 48-, and 63-hour programs of study in their self-directed learning. The assumption of homogeneity of variances was met for each analysis. The effect of program of study was not statistically significant on self-directed learning total score, $F = .727$, $p = .488$. A statistically significant difference was not detected on initiative between the different programs of study, $F = 1.60$, $p = .210$. The different programs of study was not statistically significant on control, $F = .242$, $p = .785$. The effect of programs of study was not statistically significant for self-efficacy, $F = .565$, $p = .571$. No statistically significant difference existed between the programs of study for motivation, $F = .976$, $p = .383$. There was not a statistical significant difference in the self-directed learning on total score, initiative, control, self-efficacy, or motivation between those in the 33-, 48-, or 63-hour programs of study. Results are presented in Table 3.

Table 3: Self-Directed Learning by Candidate's Program Hours.

Construct	F	P	M	N
Total Score	.727	.488		64
33-Hour			94.90	
48-Hour			97.72	
63-Hour			94.62	
Initiative	1.60	.210		64
33-Hour			20.93	
48-Hour			22.39	
63-Hour			21.38	
Control	.242	.785		64
33-Hour			23.07	
48-Hour			22.56	
63-Hour			22.63	
Self-Efficacy	.565	.571		64
33-Hour			21.07	
48-Hour			21.06	
63-Hour			20.25	
Motivation	.976	.383		64
33-Hour			25.70	
48-Hour			27.33	
63-Hour			26.25	

RESEARCH QUESTION 4

What difference, if any, was there in the self-directed learning of doctoral candidates based on age? H_0: There was no significant difference in the self-directed learning of doctoral candidates based on candidates' age. Candidates' age was measured by those between 21–29, 30–39, 40–59, 50–59, and 60 years of age and above. Again, several one-way ANOVAs were used to examine the differences between candidates' age and their self-directed learning. The assumption of homogeneity of variances was met for each analysis. The effect of age was not statistically significant for self-directed learning total score, $F = .582$, $p = .629$. A statistically significant difference was not detected between ages for initiative, $F = 1.13$, $p = .343$. The effect of candidate age was not statistically significant for control, $F = .273$, $p = .844$. No statistically significant difference existed among candidate ages on self-efficacy, $F = .547$, $p = .652$. The effect of candidate age was not statistically significant for motivation, $F = .604$, $p = .615$. Based on the analyses, there was not a statistically significant difference in self-directed learning based on candidates' age. Results for research question four are presented in Table 4.

Table 4: Self-Directed Learning by Age Range.

Construct	F	P	M	N
Total Score	.582	.629		63
30-39			95.33	
40-49			94.28	
50-59			97.14	
60 or older			100.00	
Initiative	1.13	.343		63
30-39			21.29	
40-49			21.04	
50-59			22.43	
60 or older			23.00	
Control	.273	.844		63
30-39			22.38	
40-49			22.72	
50-59			23.14	
60 or older			23.33	
Self-Efficacy	.547	.652		63
30-39			20.43	
40-49			20.64	
50-59			21.43	
60 or older			21.67	
Motivation	.604	.615		63
30-39			27.05	
40-49			25.68	
50-59			25.93	
60 or older			26.28	

RESEARCH QUESTION 5

What difference, if any, was there in the self-directed learning of doctoral candidates' gender? H_0: There was no significant difference in the self-directed learning of doctoral candidates based on candidates' gender. Because there are two levels of the independent variable gender, a series of independent sample t-tests were used to analyze the data. The assumption of equal variances was met for each analysis. The effect of gender was not statistically significant for self-directed learning total score, t = -1.592, p = .116. No statistically significant difference existed between males and females on initiative, t = .447, p = .657. The effect of gender was not statistically significant for control, t = -1.783, p = .079. Though it was not statistically significant, the significance level was close to alpha of .05. Females (M = 23.14) demonstrated slightly higher control in their learning process compared to males (M = 21.73). The effect of gender was not statistically significant for self-efficacy, t = -1.112, p = .271. A statistically significant difference was not detected between males and females for motivation, t = -1.795, p = .078. Like control, motivation significance level is close to alpha .05. Though not significant, females (M = 27.78) had higher levels of motivation compared to males (M = 24.73). Results for research question five are presented in Table 5.

Table 5: Self-Directed Learning by Gender.

Construct	t	P	M	N
Total Score	-1.592	.116		64
Male			92.53	
Female			96.57	
Initiative	.447	.657		64
Male			21.73	
Female			21.37	
Control	-1.783	.079		64
Male			21.73	
Female			23.14	
Self-Efficacy	-1.112	.271		64
Male			20.20	
Female			21.06	
Motivation	-1.795	.078		64
Male			24.73	
Female			26.78	

FINDINGS & DISCUSSION

The purpose of this study was to investigate the self-directed learning of doctoral candidates in one EdD program in a private university in a southeastern state. The EdD program at this university uses an adult learning cohort model of one weekend per month for course work.

Overall, the literature has argued that individuals holding a graduate degree, in addition to just a bachelors degree, are more self-efficacious in terms of autonomous learning (Ponton, 2018), or self-directed, which aligns with our findings here. In reviewing the results presented above, the researchers expected there to be more differences in self-directed learning among candidates. For example,

candidates who have been enrolled in the program since 2009, or long-term ABDs, still remain in the dissertation phase, while newer candidates, even from as recent as the 2016 cohort, have already reached the end of their dissertation work at the draft of this paper; yet no significant difference in self-directed learning was found related to year of enrollment. These non-statistically significant findings of candidates' year of enrollment differed from Premkumar et al.'s (2018) findings as they found medical doctoral students' self-directed learning decreased as students progressed through medical school. In medical school, students do not have to complete a dissertation or individual research study. For EdD candidates, the dissertation phase is an individual research project that requires motivation, control, initiative, and self-efficacy. Because of this, the researchers expected to see higher levels of self-directed learning in candidates who have more quickly reached the end of their dissertation work, or more recent cohort groups. Since there were no statistically significant differences, additional opportunities for contact with dissertation chairs and outreach from program administration should be available to help nurture and increase self-directed learning of candidates who have been enrolled in the program longer to hopefully initiate the process of graduating.

Candidates who are in the 48- and 63-hour program of study are in coursework longer and have more time to develop skills necessary for the dissertation phase compared to students in the 33-hour program of study, who are only in coursework for one year before beginning dissertation. Because of this, the researchers expected to see a more significant difference among the hour program in which candidates are enrolled. The researchers expected that perhaps candidates who were enrolled in a shorter program length, or 33-hour, due to already completing credits elsewhere, would have higher self-directed learning, but that was not the case.

Candidates in the higher education concentration had statistically significant differences in the motivation component of self-directed learning compared to candidates in the executive leadership concentration. Though not statistically significant, candidates in curriculum & instruction and instructional leadership concentration had slightly higher motivation compared to candidates in the executive leadership concentration as well. The executive leadership concentration had the smallest number of students. Near the end of data collection, it was announced that the executive leadership concentration would no longer be offered at the university for future years, but it would be taught out for the remaining candidates. This could potentially explain the lower levels of motivation for the candidates in the executive leadership concentration. Additionally, several of the higher education candidates were employees of the university and were receiving tuition discount for the program. The tuition discount was only for a certain time frame so this could have been significant motivation for the higher education candidates to complete their dissertation more quickly.

Results of this study also found no statistically significant differences in self-directed learning based on gender. Though it was not statistically significant, in this study, females did have slightly higher scores for motivation and control, which aligns with their results. These results add to the body of literature as there are mixed findings about these areas. Premkumar et al. (2018), Gyawali et al. (2011), and Yuan et al. (2012) found there were no significant differences in self-directed learning based on gender. However, Cadorin et al. (2015) found females had higher self-directed learning compared to males, and Kar et al. (2014) determined males had higher self-directed learning. Again, these studies dealt with students in medical doctoral programs, not educational doctoral programs. Additional research should be conducted to add to the body of literature regarding self-directed learning and gender, specifically in education doctoral programs.

Similar to Phillips et al.'s (2015) findings, the researchers found no statistically significant differences in self-directed learning based on age. This differs from other literature as Yuan et al. (2012) and Klunklin et al. (2010) found self-directed learning increased as the age of the student increased. However, Premkumar et al. (2018) found self-directed learning decreased as students got older. Additional research should be conducted to add to the body of literature regarding self-directed learning and age.

IMPLICATIONS AND LIMITATIONS

As a result of this study, the researchers have identified implications for self-directed learning both within the program as well as to contribute to future research. Within the EdD program at this university, the following steps are being implemented or investigated to enhance the program and to increase self-directed learning among our candidates. The faculty has created a dissertation homeroom to facilitate the dissertation process at an earlier time in the candidate's program career, as more of a gradual release to the self-directed portion of the dissertation hours. The faculty created a writing competency-based curriculum that was integrated into the core coursework to foster stronger writing skills for candidates. The writing competency-based curriculum was added in courses earlier in their time in the program to assist in more confidence during the dissertation writing process. Finally, the faculty is currently investigating how to better foster more collaborative grouping within the program to tackle the social constructs which may be prohibited by the one weekend per month model of the existing cohort. Considering the finding that females had slightly higher, though not significantly higher, control for learning, the faculty are investigating ways to increase control for male candidates.

There are several limitations to the current study. First, the study only measured candidates' self-directed learning at one point in time—providing only a snapshot of candidates' self-directed learning. No manipulation of variables was done, and it did not measure self-directed learning over an extended period of time. The study was limited to one EdD program at one institution, and the candidates in this EdD program may not be representative of all EdD candidates. Though a large portion of potential candidates completed the survey, the sample size is still relatively small compared to the large number of candidates enrolled in education doctoral programs.

CONCLUSION

Based on the results, no statistically significant differences were found in self-directed learning based on candidates' year of enrollment, program of study, age, or gender. Though not statistically significant, females had slightly higher control and motivation compared to males, with significance levels very close to alpha level of .05. There was a statistically significant difference in motivation between the different program concentrations. Candidates in the higher education concentration were significantly more motivated compared to candidates in the executive leadership concentration.

The researchers have also identified areas for future research. Self-directed learning might be one component of whether or not a candidate may be successful in completing his or her doctoral degree in education. Additional factors may exist as well, including life circumstances, job change, health, relationships with faculty, et cetera. These additional factors could be measured in conjunction with self-directed learning to gain a more comprehensive picture of why some students do not finish their doctoral degrees in education. This research took place at a small, private institution in the southeastern United States. Future research should be conducted on self-directed learning of doctoral candidates at different institutions and institution types. Additionally, the EdD program studied was designed for working adults with courses held one-weekend a month. Future research could be done on different program types that may be online, more face-to-face instruction, or not designed for working adults. Only 64 participants were included in the sample; future studies should include larger, more diverse sample sizes to examine doctoral candidates' self-directed learning.

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APPENDIX - A LEARNING EXPERIENCE SCALE

Name:_____ **Date:**_____ **ID#**_____

A Learning Experience Scale (PRO-SDLS)

Please check one answer for each statement. There are no "right" answers to these statements, which pertain to your recent learning experiences in college-not just those experiences from this class (although they may be the same).

ITEM	Strongly Disagree	Disagree	Sometimes	Agree	Strongly Agree
1. I am confident in my ability to consistently motivate myself.					
2. I frequently do extra work in a course just because I am interested.					
3. I don't see any connection between the work I do for my courses and my personal goals and interests.					
4. If I am not doing as well as I would like in a course, I always independently make the changes necessary for improvement.					
5. I always effectively take responsibility for my own learning.					
6. I often have a problem motivating myself to learn.					
7. I am very confident in my ability to independently prioritize my learning goals.					
8. I complete most of my college activities because I WANT to, not because I HAVE to.					
	Strongly Disagree	Disagree	Sometimes	Agree	Strongly Agree
9. I would rather take the initiative to learn new things in a course rather than wait for the instructor to foster new learning.					
10. I often use materials I've found on my own to help me in a course.					
11. For most of my classes, I really don't know why I complete the work I do.					
12. I am very convinced I have the ability to take personal control of my learning.					
13. I usually struggle in classes if the professor allows me to set my own timetable for work completion.					
14. Most of the work I do in my courses is personally enjoyable or seems relevant to my reasons for attending college.					
15. Even after a course is over, I continue to spend time learning about the topic.					
16. The primary reason I complete course requirements is to obtain the grade that is expected of me.					

ITEM	Strongly Disagree	Disagree	Sometimes	Agree	Strongly Agree
17. I often collect additional information about interesting topics even after the course has ended.					
18. The main reason I do the course activities is to avoid feeling guilty or getting a bad grade.					
19. I am very successful at prioritizing my learning goals.					
20. Most of the activities I complete for my college classes are NOT really personally useful or interesting.					
21. I am really uncertain about my capacity to take primary responsibility for my learning.					
22. I am unsure about my ability to independently find needed outside materials for my courses.					
23. I always effectively organize my study time.					
24. I don't have much confidence in my ability to independently carry out my student plans.					
25. I always rely on the instructor to tell me what I need to do in the course to succeed.					

BIOGRAPHIES

Dr. Julia Kirk has served as both an adjunct and Assistant Professor at Lincoln Memorial University. She teaches courses in the Instructional Leadership and Curriculum and Instruction concentrations. Dr. Kirk earned her Doctor of Philosophy in Educational Psychology and Research with a major in Adult Education, a cognate in Instructional Technology, and a certification in Educational Admininstration from the University of Tennessee, Knoxville in 2012. Dr. Kirk has worked for 15 years in K-12 education as a classroom teacher, instructional coach, building level administrator, and district level administrator. Dr. Kirk also holds a Masters in Business Education from Middle Tennessee State University and a Bachelors in Accounting from the University of Tennessee, Knoxville. Dr. Kirk has presented at conferences such as the International Self-Directed Learning Symposium and the Appalachian College Association conference on self-directed learning.

Dr. Andrew Courtner serves as the Director of the EdD program and is an Associate Professor of Education. Andrew has served in different administrative and faculty positions at public and private higher education institutions related to academic advising, student retention and success, student engagement, educational research, and program planning and development. He eared his Ph.D in Exceptional Learning in Program Planning and Evaluation from Tennessee Tech University and his Ed.D. in Educational Leadership in Higher Education from Union University. He also has an MEd in Evaluation and Measurement, MBA in Marketing, and BS in Business Administration.