Mentoring Through the Structured-Seminars: Student Progression in the Online Ed.D. Program

Guofang Wan[1,*], Francis E. Godwyll[2], Rashmi Sharma[3], Wisdom Mensah[3],
Hongwei Yang[3], Mark Malisa[3], and William Crawley[3]
[1]Loyola University Chicago
[2]Western Illinois University
[3]University of West Florida

Abstract

Retention and graduation continue to be topics of discussion for online doctoral programs within academia. Focusing on the post-coursework, dissertation proposal stage, this study examines whether students progress differently with two different mentoring approaches: the innovative structured-seminars versus the traditional unstructured mentoring. This study, using a quantitative approach and an extant data of 116 doctoral students, measures students' progression by the number of years enrolled in the program and number of credit hours earned while engaged with the two different mentorings. The results indicate that students engaged in the new structured-seminars on average spent significantly less time and needed significantly fewer credits than their peers in the unstructured mentoring. The innovative structured-seminar approach shows potential as an effective curriculum for online doctoral programs.

Keywords: online Ed.D. program, structured-seminars, online Ed.D. students, retention and graduation, doctoral post-coursework phase

---

*Corresponding author: Guofang Wan. E-mail: gwan1@luc.edu

Introduction

The online Ed.D. program (the Program) under discussion offered by a gulf coast university in Florida is a terminal and the highest degree in the discipline of Education. As only 1.77% of the American adult population holds a doctorate degree (U. S. Census Bureau, 2014), students in the program are pursuing membership into a small elite class. The doctorate degree carries with it both a sense of intellectual mastery and of moral responsibility (Shulman, 2008). However, retention and graduation continue to be concerns for online doctoral programs within academia. High attrition rates in Ed.D. programs have negative consequences for stakeholders of higher education (Spaulding & Rockinson-Szapkiw, 2012) and lead to concerns among college educators and administrators. In educational institutions where high rates of attrition occur, students suffer from emotional and financial losses while affected institutions lose funding, ranking among peers, and prestige (Spaulding & Rockinson-Szapkiw, 2012; Vaughn, 2018). Attrition is defined here as the complete departure from an educational institution without the successful completion of a degree program (Stallone, 2011 as cited in Vaughn, 2018).

Numerous factors contribute to the 50% attrition of doctoral candidates internationally (Ali & Kohun, 2006; Holmes et al., 2010). The Ed.D. program under discussion is no exception and experiences similar challenges. Thus, there is an urgence to explore effective strategies that will address the common challenges of program completion for doctoral programs. In 2016, to enhance the opportunity for student success in the online doctoral journey, the Program designed and implemented an innovative practice, the systematic and structured doctoral seminars to mentor students. The structured online doctoral seminars include a series of credit-bearing seminars, i.e. doctoral seminars I, II, III, and IV. Students enroll into these seminars and work with professors and peers starting from the end of their second year in coursework through the comprehensive examination to pre-proposal, proposal, and dissertation fieldwork and write up.

In this study, the unstructured mentoring refers to the traditional face-to-face, student with a professor or with a committee one-on-one mentoring. The unstructured traditional mentoring program differs from the structured doctoral mentoring seminars as it does not provide the formal credit-bearing cohort class meeting structure nor the peer group support that the structured doctoral seminars provide.

This study seeks to determine whether

the mentoring of the online Ed.D. students through the structured-seminars increases their progression with a reduced number of years in the Program and fewer credit hours than those engaged in unstructured mentoring. The intended outcomes are to investigate whether the instructor supported credit-bearing mentoring and interactive environment among peer groups are conducive to learning and post-coursework progression for the online Ed.D. program; to share innovative practices among the doctoral education community; and to address common challenges of attrition and increase the progression of doctoral students at the post-coursework phase.

Literature Review

According to a longitudinal study conducted by the Council of Graduate Schools (Council of Graduate Schools, 2008), the cumulative ten-year Ph.D. completion rate was 56.6% while the attrition rate was 30.6%. Research has shown that the vast majority of doctoral students possess the academic ability to complete the degree (Council of Graduate Schools, 2008). About 40% to 60% of doctoral students do not persist to graduation (Cochran et al., 2014, p. 29). Key factors influencing the likelihood that a student will complete a Ph.D. program include "selection processes, mentoring, financial support, processes and procedures, program environment, and research mode of field" (Council of Graduate Schools, 2008, para. 3).

Supportive Learning Environment

Promising strategies that promote student success include "doctoral admissions paying a greater attention to the 'fit' or 'match' between a particular student and a specific program, alongside considerations of traditional measures of student quality" (Council of Graduate Schools, 2010, p. 2). Mentoring and advising are also identified as promising practices because they (a) provide a comprehensive orientation to prepare students for graduate school, (b) clearly articulate program expectations/academic milestones, (c) develop/enhance online mechanisms so students and faculty can track progress and communicate with one another, (d) implement regular advisor/advisee meetings and progress reports; (e) offer workshops for faculty on mentoring and mini-grants for faculty to develop initiatives aimed at improving the quality of mentoring (Council of Graduate Schools, 2010). Creating a supportive learning environment is also believed to be a key to

assure retention and graduation rates. According to Bollinger and Halupa (2012), when learning environments of online doctoral students were not interactively supported by instructors, the rate of attrition increased. Mentor-mentee communication and the relationship developed between a student and his/her graduate advisor are pivotal to the student's success in doctoral studies (Ives & Rowley, 2005; Lee, 2008; Maher et al., 2004). Other effective practices include providing support during the dissertation phase such as offering a dissertation retreat/dissertation boot camp/ dissertation writing institute for students to learn writing strategies; receiving feedback and building peer support; and creating an environment where doctoral students could engage in project development, research, and writing through collaboration with others (Council of Graduate Schools, 2010).

Models of Doctoral Mentoring

Several studies reviewed focus on the unique characteristics of doctoral mentoring. Yob and Crawford (2012) classified the attributes of doctoral mentoring into two primary domains: academic and psychosocial. The academic attributes refer to the challenge, induction, competence, and availability of the mentoring whereas the psychosocial domain assesses the emotion-al support, communication, and personal qualities. Baker et al. (2014) study on mentoring focused on comprehending the doctoral student's identity and identified the following: student's professional identity, relational identity, and personal identity.

Parker et al. (2015) designed a unique framework to facilitate doctoral students' smooth transition into academia. A three-stage mentorship program was proposed: professional development courses, residency mentorship, and mentorship through an annual review process. Practically, the professional development mentorship is facilitated through advanced graduate seminars that focus on theoretical foundations and research methods in collaborative settings. The residency mentorship does not refer to the locale of the student but to the coursework requirement, a full-time status, which permits the students to immerse themselves fully into the academic process and to apprentice with faculty. The third stage refers to the advanced graduate seminar where students create a portfolio that reflects their research, teaching, and service experiences.

Sugimoto (2012) applied Kram's mentoring framework to a Library and Information Science doctoral program and divided the mentorship process into four steps: Initiation, cultivation, separation, and redefinition. The author claimed that

advisers as primary mentors provide career support while fellow doctoral colleagues provide mentoring as role models and idea sharers. Additionally, this model implements a cohort-based positive learning environment, which encourages peer support and mentor and mentee interactions.

Innovative Virtual Mentoring

Although online doctoral programs are on the rise, studies on online mentoring are scant. Online mentoring conducted via cyberspace differs from face-to-face mentoring as it is independent of time and distance. Through Husserlian phenomenology, Welch (2017) allowed online doctoral nursing education students to offer insight into the nature of their virtual mentorship. Three major functions of virtual mentoring emerged from this study: Confirmation of mentoring (receiving academic and personal support), building communities (getting to know mentors and importance of relationships, and learning the role of doctoral students (balancing time and learning technology).

A few studies on innovative online mentoring programs called for virtual mentor preparations for educators (Brannagan & Oriol, 2014; Rand & Pajarillo, 2015). Researchers believe that for virtual mentoring programs to be successful,

virtual mentors must become comfortable using online environments to mentor others (Rand & Pajarillo, 2015) and must have the tools to offer the necessary guidance, feedback, and the intellectual capacity to assist their virtual mentees (Brannagan & Oriol, 2014).

Schichtel (2010) synthesized the existing findings and opinions from research about core-competence skills for e-mentoring in medical education. As both the medical world and educational field request hands-on experience, Schichtel's (2010) core-competence skills for e-mentoring are equally applicable to both fields. These include

1. Online developmental competence to facilitate online learning in the context of educational development, professional development, and psychosocial development.
2. Social competence to facilitate social presence and community in the online environment and overcome challenges related to distance, time, and lack of social signals.
3. Cognitive competence to foster an intellectual environment of critical analysis and reflective practice.
4. Teaching competence to facilitate reflective learning and educational and professional development.

5. Communication competence to decrease distance online by choosing and communicating in various formats and media.
6. Managerial competence to set and meet expectations related to the administration and organization of activities.
7. Online technical competence to use relevant virtual environments to mentor (as cited in Kumar et al., 2013, para 6).

Research on mentoring for doctoral education is abundant in terms of various models that focus on different aspects of mentoring and effective characteristics that provide best practice guidelines. The three key concepts that describe an effective mentor for many students are support, guide, and facilitate (Abiddin & Hassan, 2012). As cited in Abiddin and Hassan (2012, p. 76), "The important elements have to do with listening, questioning (Brown & Krager, 1985; Carter & Lewis, 1994; Fisher, 1994), and enabling, as distinct from telling, directing and restricting (Parsloe, 1999)". The current study explores mentorings that focus on the learning practices within communities of practices (Lave & Wenger, 1991) and the social-cultural learning environment created by the structured-seminar approach, and seeks to contribute to the literature of promising and effective strategies for the success of doctoral students in both traditional and online programs.

Theoretical Framework

Social learning theories reveal how external and internal factors can affect learning and explore how the environmental and cognitive factors interact in human learning. The current study is guided by Vyogsky's (1978) social-cultural learning theory and supported by a more recent theory, the situated learning theory (Lave & Wenger, 1991) that has roots in Vyogsky's learning theory.

Vygotsky (1978) argues that cognitive abilities are socially guided and constructed, and cognitive development requires social interaction. Further, Vygotsky's social development theory describes that social interaction precedes development; and consciousness and cognition are the end product of socialization and social behavior. Vygotsky (1978) also asserts: "All the higher functions originate as actual relationships between individuals" (p. 57). Vygotsky's (1978) social cultural learning theories with its three main principles, Zone of Proximal Development (ZPD), and More Knowledgeable Other (MKO) and Social Interactions, support and guide the current study in various

ways. Framed by social-cultural theory, the structured-seminars create a learning community of practice where doctoral students interact and collaborate in their learning efforts. Scaffolding is made possible in this learning community when students are supported by a faculty mentor and by their peers in the process of learning. ZPD and MKO play seminal roles in this structured-seminars. ZPD (Vygosky, 1962) introduces the range of abilities an individual can perform with the guidance of an expert but cannot yet perform on their own. MKO (the faculty mentors) provide supportive activities, known as scaffolding that help guide the learners. Social interactions among doctoral students allow the learners to gain and sharpen their skills and abilities for dissertation research. Vygotsky's social model of learning will also inform the researchers and help interpret the data.

The Situated Learning Theory (SLT) emerged in the 1990s, is rooted in the theories of Vygotsky (1978), Dewey (1916), and others who believe learning appears when students are actively participating in the learning experience within a community of practices (Lave &Wenger, 1991). Community of practice refers to a group of people who share common interests or goals, and regularly interact and coordinate their efforts, in pursuit of their interests and goals. Communities of practice tend to adhere to certain standards of actions and interactions (Ormrod, 2015). The structured-seminars form communities of practices where students experience the apprenticeship of the dissertation process.

To SLT, learning is situated socially, in an authentic, natural real-life situation, and knowledge is situated in the practices of the community of practice rather than in books (Lave & Wenger, 1991). Lave and Wenger's SLT (1991) supports theoretically the learning community, the design of the structured-seminars in this case, and its potential impact on learning. In sum, many aspects of the study, the research questions, research design, and the interpretations are grounded in the social-cultural learning theory (Vygotsky, 1978) as well as the related SLT (Lave & Wenger, 1991).

Methodology

Context of the Study

Located in the gulf coast area of Florida, the online Ed.D. Program under discussion is in Curriculum and Instruction with the following specializations: Curriculum

and Assessment; Instructional Design and Technology; Physical Education and Health; Administration and Leadership Studies; Science and Social Sciences; Curriculum and Diversity Studies; and Teacher Education.

We realized that attrition occurred more frequently and in larger numbers after coursework when students are alone, with very little structure, flexible deadlines and very little peer support. The intervention was to provide structure, peer support, a fairly controlled time frame expectations related to deadlines and simulate as closely as possible the coursework environment through seminar styled courses, workshops for capacity building to enhance cohesion among students and faculty (Bair & Haworth, 1999; Lovitts, 2001; Tinto, 1993; Rocha-Singh, 1992). Thus, 12 credits out of the 18 minimum dissertation credit hours were structured into the structured-seminars as described below.

Understanding the importance and roles played by mentoring and advising, the stakeholders of the program created and implemented a series of structured online doctoral seminars with the hope to improve the progression of students and the ultimate goal for increased completion rates and reduced attrition rates among its students. The structured-seminars are in the form of online doctoral seminars, namely, Doctoral Seminars I, II, III, and IV that are offered every semester.

The Doctoral Seminar I focuses on the review of the literature and understanding of the relevant theoretical framework (Grant & Osanloo, 2014). It assists students in identifying a topic, developing appropriate research questions, and stating a problem. In addition, the online seminar seeks to assist students to develop an outline of a literature map for a literature review related to an identified phenomenon. The seminar strengthens students' scholarly writing capabilities; improves synthesis skills; and assists in critiquing research, reviewing literature, mastering APA citation style, examining the role of theoretical and/or conceptual frameworks in framing research studies, and exploring issues of alignment across topic, problem, research questions, theoretical framework and methodology in research studies. Students enroll in this seminar after they have accrued at least 33 credit hours.

Doctoral Seminar II focuses on the following: demonstrating synthesis across ideas, content areas, and courses; demonstrating specialization of knowledge within a particular domain; demonstrating in-depth competency within program areas; integrating content from program courses with professional/experiential knowledge; and supporting initial work efforts toward

the dissertation. In addition, students in this seminar complete their comprehensive examination. In general, students would complete about 48 credit hours by Doctoral Seminar II.

Doctoral Seminar III serves as the online doctoral students' pre-proposal phase. Additionally, this doctoral seminar introduces students to the process of formulating ideas in ways directly related to critical aspects of their dissertation proposal. This online seminar guides doctoral students in addressing issues relating to the introductory, literature review and methodology chapters of the dissertation proposal. During the seminar, students complete the Pre-proposal Document, which is designed to be a guiding document for the committee in order to provide them with a sufficient roadmap about what the student intends to study. Students defend the "Pre-proposal Document" to the Doctoral Dissertation Committee and receive comprehensive feedback from the committee.

Doctoral Seminar IV serves as the online doctoral students' dissertation proposal phase. This semester-long seminar focuses on student readiness and competence for pursuing education research. Additionally, this online seminar guides students in demonstrating their ability to integrate and apply the knowledge and skills developed through formal coursework by designing

and writing an original research proposal on a researchable topic or phenomenon. Students should successfully defend their proposals orally to their Doctoral Dissertation Committee. Doctoral Seminar IV is also the course where the students have their research proposal undergo the Institutional Review Board (IRB) process. This course begins with the proposal introduction, literature reviews part 1 and 2, methodology, and then concludes with dissertation questions.

Site Selection

The online Ed.D. program offered in Florida is selected as the site for the study as it meets several basic criteria of site selection determined by Warden et al. (2012): access to the study population, ability to identify a site Principal Investigator and research team, and lack of competing demands. As the structured-seminar was newly designed and implemented to meet the challenge of student progression, the Program provides the researchers with the opportunity to study the intervention in action and access to participants. The researchers, being administrators and professors teaching in the Ed.D. program, are interested in exploring whether the structured-seminar approach will support the students' learning. The doctoral students

in different specializations had been enrolled in the Program for a period ranging from three to 17 years. Some of the doctoral students had received structured-seminars while others were mentored in a traditional or unstructured way, and some of the students are enrolled for online courses while others are registered for face to face classes.

The potential bias of the researchers is controlled and addressed through strategies such as member checking of the results, duplication of the study with future students, and longitudinal observations of the implementation of the structured-seminars.

Participants

One hundred and sixteen online doctoral students in the post-coursework phase formed the sample of the study. Among the 116 students, 72 received structured-seminars while 44 received unstructured-mentoring. As the population is relatively small (N=100 or fewer), we decided to include the entire population (Leedy & Ormrod, 2016) in the study. At this stage, the focus of this study is student progression at the post-coursework phase. Data for all 116 students were purposively sampled and included in the analysis for the study.

Research Question

The main research question: How does the structured-seminar for Ed.D. students affect their progression in the program?
Sub-questions:

a) Is there a statistically significant difference between students attending structured- seminars and their peers attending unstructured mentoring with regard to the number of years spent at the post-coursework stage? If there is, which group is higher, and which is lower?

b) Is there a statistically significant difference between students attending structured-seminars and their peers attending unstructured mentoring with regard to the number of credit hours earned at the post-coursework stage? If there is, which group is higher, and which is lower?

Procedure

To address the research questions, the study primarily used inferential statistical analyses of an extant data provided by the record keeping office of the Ed.D. program. In general, extant data refers to the use of historical and contemporary data to identify and analyze facts or trends within

already existing data (Witkin & Altschuld, 1995). This approach best addresses the research questions and allows the flexibility of non-random sampling of the population.

Extant data studies (Ferguson & Ketchen, 1999; Jacob et al., 2014; Scheddler & Mudde, 2010) works well with quantitative designs. Among the advantages of the extant data studies is a preliminary analysis followed by reflection and interpretation. The level of completeness and degree of availability of the data might vary partly because the researchers are using existing data.

The extant data were collected about a total of 116 doctoral students, admitted to the program between 2001 and 2015, during their post-coursework, dissertation proposal stage.With 42 engaged in unstructured seminars and 72 structured-seminars, the data provided two measures of program progression: 1) number of years spent in the program, and 2) number of credit hours earned. The two program progression measures served as the outcome measures (i.e., dependent variables or DVs) of interest for this study. Comparisons were made of the two groups of students receiving different mentorings regarding their outcomes of program progression. Since each student in the dataset engaged in one and only one type of mentoring, the two groups were specified by a between-subjects factor of

grouping (i.e., independent variable or IV) and were thus independent in the sense of statistics (Field, 2013; Knapp, 2018).

Therefore, statistical methods for comparing two independent groups were used in each comparison. Primarily, a parametric, independent-samples t test was selected to compare the two groups of students. During the process, typical statistical assumptions of an independent-samples t test were assessed to evaluate if the selected methodology was appropriate for the data and the interpretation of the results from the methodology was justified: 1) homogeneity of variance, 2) normality and 3) sample size quota (Knapp, 2018). Notably, without conducting any statistical analysis, the sample size quota assumption was already satisfied in both comparisons because each of the groups had more than 30 participants. The remaining two assumptions for each comparison were assessed during the analysis of the data. Should there be any assumption violation, a non-parametric, Mann-Whitney U test was utilized to cross-validate the results from the parametric, independent-samples t test. Notably, the inferential statistical analyses outlined above were conducted using a statistical significance level of .05.

Finally, besides inferential statistics, the study also used descriptive statistics for a full picture of the research context. Both

sets of inferential and descriptive statistical results are presented in Figures 1 through 5 and Tables 1 through 3 in the next section..

Results

Table 1 presents a breakdown of the number of doctoral students by year in the sample. As is observed, about 106 students (91.4%) completed their coursework within three to seven years, and 8.7% spent as many as 10 years to 17 years. The official length of time allowed for the online doctoral program is seven years. During the process, there is a three-year coursework requirement where, ideally, each student follows the same course rotation and takes six (6) credit hours each semester before taking the comprehensive examination at the end of the three-year period. If the student defends their comprehensive examination papers with success, the dissertation proposal stage starts. Unfortunately, not all students can follow the outlined program progression. From time to time, some students request extensions and, based on extenuating circumstances, are mostly granted the permission to continue beyond the regular seven-year program progression plan. Therefore, it is not surprising to see from Table 1 that students could take more than seven years to complete the program.

Table 1

Number of Years Students Spent in the Program

No of Years in Program	No of Students	Percentage	Cumulative Percent
3	36	31.0	31.0
4	27	23.3	54.3
6	14	12.1	66.4
5	10	8.6	75.0
7	10	8.6	83.6
2	9	7.8	91.4
8	5	4.3	95.7
9	3	2.6	98.3
13	1	.9	99.1
17	1	.9	100.0
	116	100.0	

Figure 1 presents a breakdown of the number of students by the seven specializations all of which are under the umbrella name for the Ed.D. Program: Curriculum and Instruction. The Curriculum and Assessment and Teacher Education specializations represent 44% of the sample; Curriculum and Diversity Studies, Administration and Leadership Studies, and Social Sciences represent 33.6% of the sample; Instructional Design and Technology represents 17.2% and the specialization of Physical Education and Health forms 5.2% of the sample.

Figure 1

Ed.D. program specializations and student population
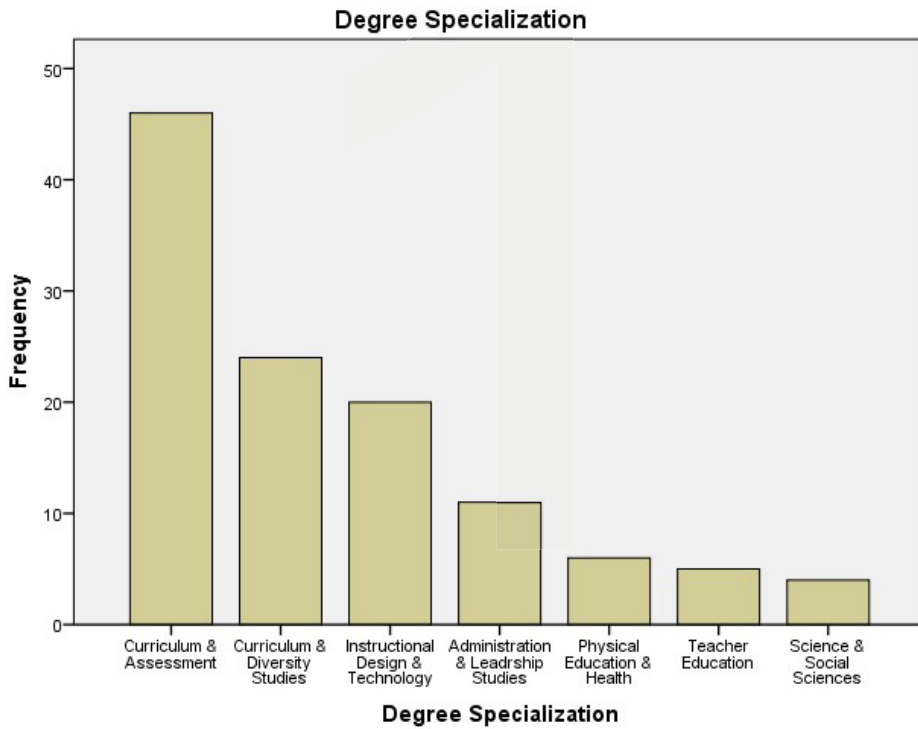
Figure 2 shows yet another breakdown of the number of students by the year of enrollment in the Ed.D. during the post-coursework period. There are more than 30 students (out of 116) who enrolled in 2015 and are in the post-coursework stage. As is indicated earlier in the study, the online structured-seminar program started in 2014.

Figure 2

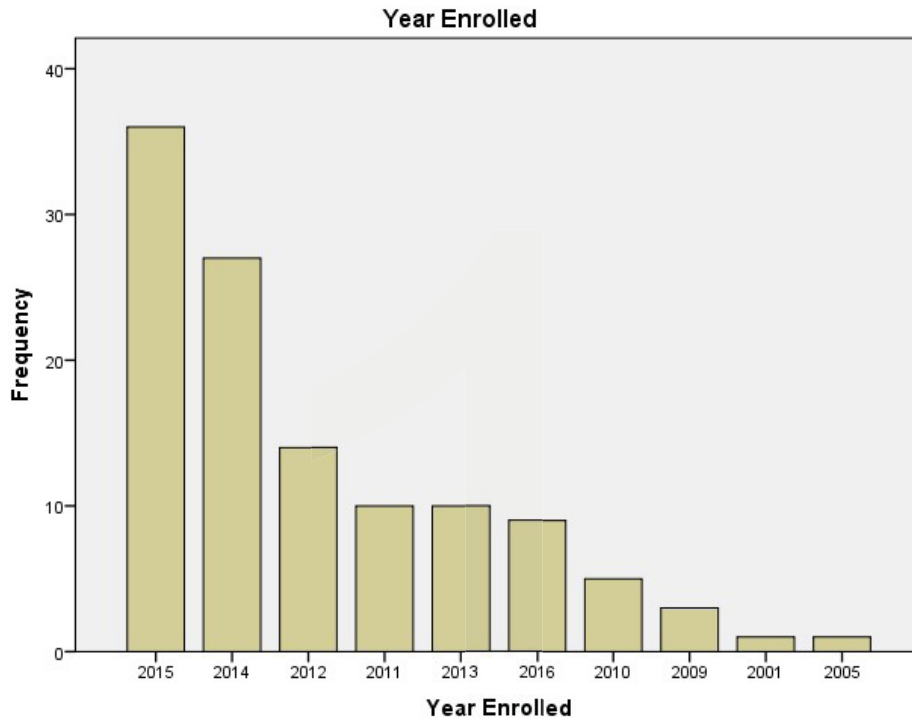*Online Ed.D. program student post-coursework enrollment*

Figure 3 represents a breakdown of the number of years spent in the program where the number of years is plotted against mentoring types and this is done separately for the seven program specializations. Figure 3 indicates that, for each specialization, students mentored by structured-seminars spent fewer years in the Program than their peers mentored by unstructured mentoring. Due to the fact that the introduction of structured-seminars occurred in 2014, it is understandable the structured-seminars allow students to spend fewer years in the program than the unstructured-mentoring. All of the students reached the post-coursework stage within a relatively short period of time.

Figure 3

Number of years spent in Ed.D. program and type of mentoring
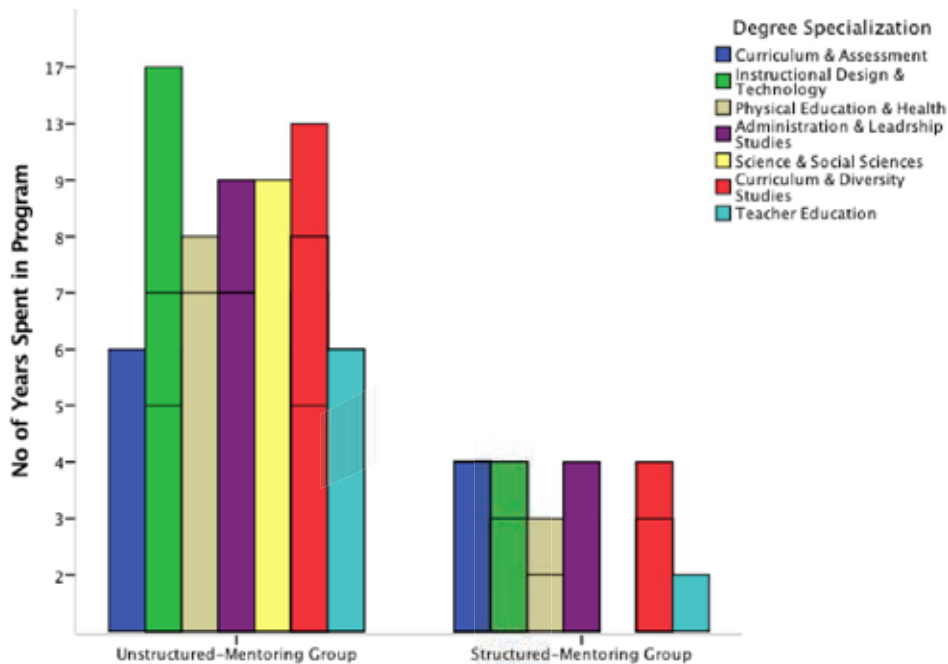

Figure 4 represents a breakdown of the number of credit hours earned where the number of credit hours is plotted against seminar type and this is done separately for the seven program specializations. Figure 4 shows that the two groups of students who are at approximately the same phase in the online Program carry significantly different numbers of earned credit hours. Whereas the unstructured-mentored group ranges from 57 to 90 credits, the structured-seminar group has credit hours ranging from 57 to 66. The average minimum credit hours a student could earn at this phase of the doctoral journey is 57, which consists of 48 credits of coursework, 3 credits for Comprehensive Examinations, 3 credits for Pre-Proposal, and 3 credits for Proposal, totaling 57 credits.

Thus, whereas the structured-seminar sample has on average nine credits over the minimum (57), those who did not receive structured-seminar have an average of 33 credits over the minimum (57). Out of the four specializations with students bearing 75 credits and above, three are face-to-face and one (Instructional Design and Technology) is fully online. It is, therefore, safe to deduce that simply having students in close proximity

through face-to-face weekly interaction cannot replace structured-seminars. It is assumed that online students may have a higher tendency to feel isolated and unsupported, but the data indicate that the mode of instructional delivery did not make a difference.

Figure 4

Types of mentoring and credits earned in the Ed.D. program
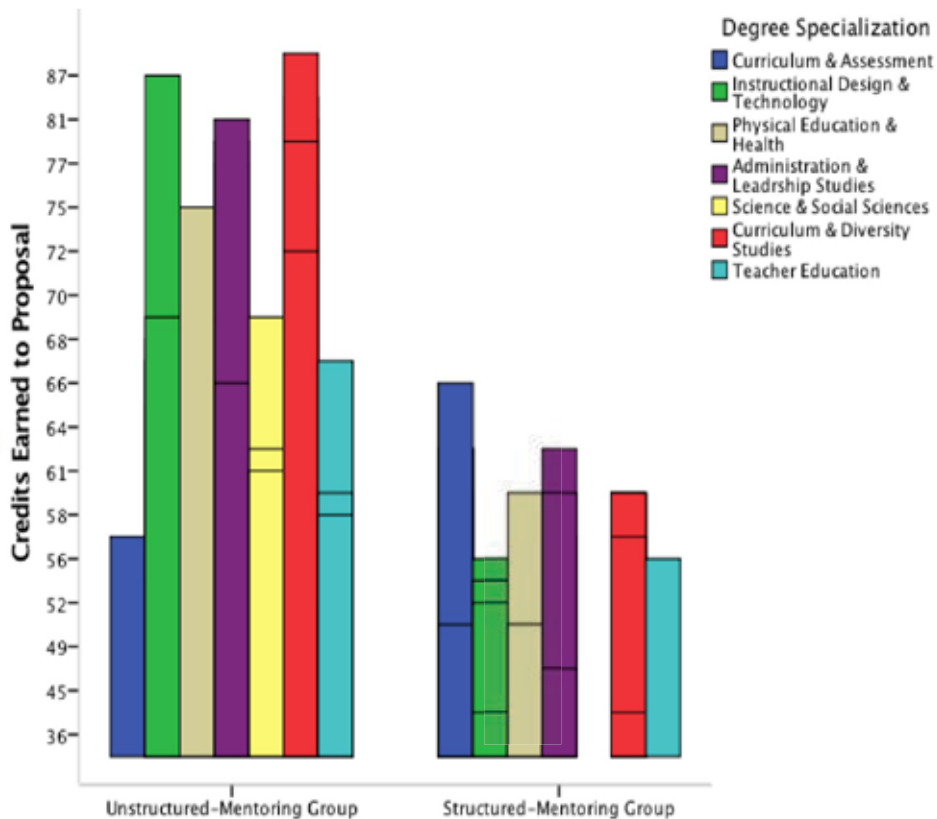
Tables 2 and 3 show the descriptive statistics for the two groups with regard to the two outcomes: 1) number of years spent in the Program and 2) credits earned up to the proposal stage. For each outcome, the sample statistics are used together with the results of a non-directional independent-samples t test to draw a directional conclusion for addressing each research question.

Table 2 demonstrates that, in the sample, the average number of years students spent in the Program under the structured-seminars (M = 3.25, SD = 0.67) is lower than that under the unstructured mentoring (M = 6.84, SD = 2.19). In the independent-samples t test, as the

Levene's Test for Equality of Variances is statistically significant, the t test was conducted without assuming the population variances are equal across the two groups. The test is statistically significant, t (47.92) = -10.59, p < .05. Since the normality assumption for the t test is violated here in both groups (details not provided here in the interest of space but available upon request), a second non-parametric, Mann-Whitney U test was run to cross-validate the results of the t test and it turns out that the Mann-Whiteney U test led to the same conclusion as the t test. Therefore, it is concluded that, in the structured-seminar, students on average spent significantly less time in the Program than their peers in the unstructured mentoring.

Table 2
Number of Years Students Spent in the Program

Groups	N	Mean	Std. Deviation	Std. Error Mean
1: Structured	72	3.25	.666	.078
0: Unstructured	44	6.84	2.188	.330

Table 3 shows that, in the sample, the average number of credit hours students earned under the structured-seminar (M = 52.68, SD = 5.79) is lower than those earned under the unstructured-mentoring approach (M = 67.75, SD = 10.45). In the independent-samples t test, as the Levene's Test for Equality of Variances is statistically significant, the t test was conducted without assuming the population variances are equal across the two groups. The test is statistically significant, t(59.40) = -8.78, p < .05. Since the normality assumption for the t test is violated in one of the two groups (details not provided here in the interest of space but available upon request), a second non-parametric, Mann-Whitney U test was run to cross-validate the results of the t test and it turns out that the Mann-Whitney U test led to the same conclusion as the t test. Therefore, it is concluded that, in the structured-seminar, students on average needed significantly fewer credits than their peers in the unstructured-mentoring.

Table 3
 Number of Credit Hours Earned

Groups	N	Group Mean	Std. Deviation	Std. Error Mean
1: Structured	72	52.68	5.792	.683
0: Unstructured	44	67.75	10.446	1.575

Figure 5 adds to the picture of a clear distinction between students who received structured-seminars and those who did not. Whereas 74 students (63%) needed 66 credits to be at a comparable stage in their post-coursework, only 16 (13.8%) of those who did not receive structured-seminars reached the same stage of progression in the post-coursework phase.

Figure 5

Number of Ed.D. students and credits earned post-coursework phase
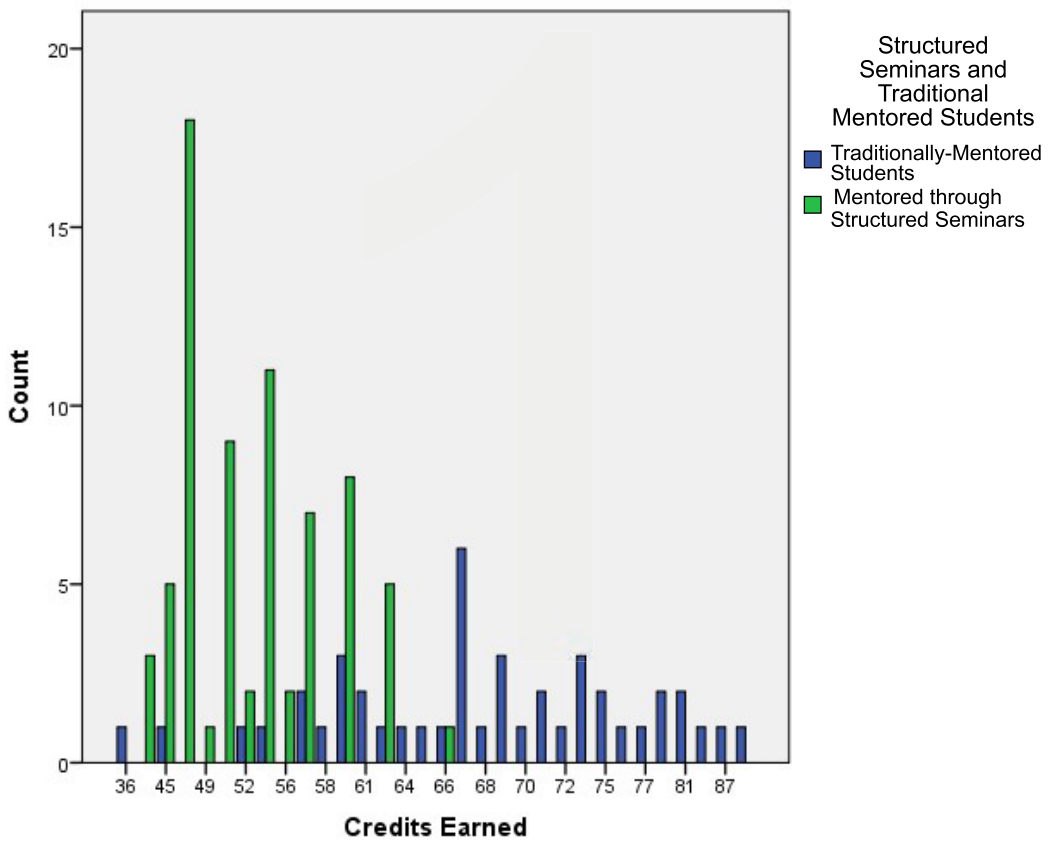
Discussion and Conclusion

The results of the preliminary study indicate that structured-seminars make a significant difference in student progression between doctoral students who receive

mentoring through structured-seminars and those who do not. The results demonstrate that the online doctoral students receiving mentoring through structured-seminars have shown faster progression through the program. On the other hand, students with unstructured-mentoring stay longer in the program, accumulating more credit hours with a slower pace of progression.

The results validate the effective features that previous studies found about doctoral mentoring programs: building communities (Welch, 2017), hands-on experiences (Schichtel, 2010); support, guide, and facilitate (Abiddin & Hassan, 2012) and listening, questioning and enabling (Brown & Krager, 1985; Carter & Lewis, 1994; Fisher, 1994). These are key features of the social learning environment created by the structured-seminars operating within the community of practices. Besides, two of the promising strategies proposed by CGS's study (Council of Graduate Schools, 2008) to increase the likelihood of student's completion include mentoring and program environment, which are the target areas of the structured-seminars.

The online structured-seminars organizes students into cohorts in similar stages of their program and supports them with interactions among mentors and peers. Vygotsky's (1978) social-cultural learning theory and its three main tenets, Zone of Proximal Development, More Knowledge-able Other, and Social Interactions could be used to shed light on why students progressed better with structured-seminars. Through interactions with their peers in the structured-seminars which provide a ZPD environment, students support and learn from their peers. The mentors/instructors are MKO who support students via hands-on learning experience in writing comprehensive exams, dissertation designing and proposal writing.

According to situated learning theory (Lave & Wenger, 1991), learners' cognitive ability grows naturally and socially through authentic experiential practices in the community of practices. The structured-seminars provide learning experiences in the community of practice where students participate in authentic writing tasks, socially negotiate and make meanings of readings in philosophies and theories, and naturally gain skills and knowledge through the process of dissertation topic selection, research design, data collection and analysis. All this process is completed with the support of peers and mentors within the community of practice of structured-seminars. The results of the study are supported by SLT (Lave & Wenger, 1991).

The results of the preliminary study also echo other research findings. The learning environment created by the struc-

tured-seminars meets some of the fundamental cognitive and psychosocial needs of the online doctoral students. Yob and Crawford (2012) described two primary functions of doctoral mentoring: academic and psychosocial. Structured-seminar provides not only the academic induction with knowledge and skills for dissertation research, but also the psychosocial support and sense of community that meet the emotional, communication, and personal needs of students. Thus, structured-mentoring is more conducive to learning and success for the online doctoral program. Bolliger and Halupa (2012) reported that instructors' interactions with doctoral students help reduce the rate of attrition. The positive relationship developed between mentor-mentee is pivotal to the student's success in doctoral studies (Ives & Rowley, 2005; Lee, 2008; Maher et al., 2004). Support during the dissertation phase where doctoral students could engage in project development, research, and writing through collaboration with others (Council of Graduate Schools, 2010) assists with the completion of dissertation and graduation.

Limitations and future studies. The current study shows the potential role of structured-seminars in students' progression in the Program. The extant data used for the preliminary report had some inherent limitations beyond the control of the researchers. The historical data used did not record all the variables that the researchers would like to include; thus, the data narrowed the scope of the study in some way. Future studies exploring the impact of other variables (such as GPA, writing skills, and family background) that may play a part in the mix of the mentoring, and influence the progression and graduation rates will be valuable.

Follow-up studies providing a more in-depth look at the effectiveness of the online structured-seminars and exploring why it is effective from the perspectives of mentees and mentors will also add to the discussion. In this case, a study using a mixed method will produce both quantitative and qualitative evidence on the topic. It will also enhance triangulation of the preliminary results of this study. At the time of the study, there was not adequate data to compare program completion rates of students taking structured-seminars as the program was implemented in 2014. A longitudinal study including both program progression and completion will be meaningful.

To conclude, based on the results of the preliminary study, the structured-seminar shows positive impact on the learning of doctoral students in the post-coursework stage, and potential to increase their program progression. The researchers will

continue to explore the structured-seminars as a strategy and contribute to the literature and curriculum for doctoral programs in general, thus to help alleviate issues related to retention and attrition of doctoral students.

References

Abiddin, N. Z., & Hassan, A. (2012). A review of effective mentoring practices for mentees development. *Journal of Studies in Education, 2*(1), 72-89. https://doi.org/10.5296/jse.v2i1.1226

Ali, A., & Kohun, F. (2006). Dealing with isolation feelings in IS doctoral programs. *International Journal of Doctoral Studies, 1*, 21-33. https://doi.10.28945/58

Bair, C. & Haworth, J. (1999). *Doctoral student attrition and persistence: A meta-synthesis of research.* Association for the Study of Higher Education. San Antonio: University of Northern Iowa.

Baker, V. L., Pifer, M. J., & Griffin, K. A. (2014). Mentor-protégé fit: Identifying and developing effective mentorship across identities in doctoral education. *International Journal for Researcher Development*, *5*(2), 83-98. https://doi.org/10.1108/IJRD-04-2014-0003

Bolliger, D., & Halupa, C. (2012). Student perceptions of satisfaction and anxiety in an online doctoral program. *Distance Education, 33*(1), 81-98. https://www.learntechlib.org/p/111288/

Brannagan, K., & Oriol, M. (2014). A model for orientation and mentoring of online adjunct faculty in nursing. *Nursing Education Perspectives*, *35*(2), 128-130. https://doi.org/10.1097/00024776-201403000-00013

Cochran, J. D., Campbell, S. M., Baker, H. M., & Leeds, E. M. (2014). The role of student characteristics in predicting retention in online courses. *Research in Higher Education, 55*(1), 27-48. http://doi.org/10.1007/s11162-013-9305-8

Council of Graduate Schools. (2008). *Ph.D. completion and attrition: Analysis of baseline program data from the Ph.D. completion project.* https://bit.ly/3cL2fU6

Council of Graduate Schools. (2010). *Ph.D. completion and attrition: Policies and practices to promote student success.* https://bit.ly/35E9cTb

Dewey, J. (1916). *Democracy and education.* MacMillan.

Field, A. (2013). *Discovering statistics using SPSS* (4th ed.). Sage.

Ferguson, T., & Ketchen, D. (1999). Organizational configurations and performance: The role of statistical power in extant research. *Strategic Management Journal, 20*(4), 385-395.https://doi.org/10.1002/(SICI)1097-0266(199904)20:4<385::AIDSMJ24>3.0.CO;2-X

Grant, C., & Osanloo, A. (2014). Understanding, selecting, and integrating a theoretical framework in dissertation research: Creating the blueprint for your "house." *Administrative Issues Journal: Connecting Education, Practice, and Research, 4*(2), 12–26.

Holmes, B. D., Robinson, L., & Seay, A. D. (2010). Getting to finished: Strategies to ensure completion of the doctoral dissertation. *Contemporary Issues in Education. Research, (CIER),3*(7), 1-8. https://doi.org/10.19030/cier.v3i7.215

Ives, G., & Rowley, G. (2005). Supervisor selection or allocation and continuity of supervision: Ph.D. *students' progress and outcomes. Studies in Higher Education, 30*(5), 535-555. https://doi.org/10.1080/03075070500249161

Jacob, R., Goddard, R., & Kim, E. (2014). Assessing the use of aggregate data in the evaluation of school-based interventions: Implications for evaluation research and state policy regarding public-use data. *Educational Evaluation and Policy Analysis, 36*(1), 44-66. https://doi.org/10.3102/0162373713485814

Knapp, H. (2018). *Intermediate statistics using SPSS.* Sage.

Kumar, S., Johnson, M., & Hardemon, T. (2013). Dissertations at a distance: Students' perceptions of online mentoring in a doctoral program. *The Journal of Distance Education, 27*(1). http://www.ijede.ca/index.php/jde/article/view/835/1481

Lave, J. & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation.*Cambridge University Press.

Lee, A. (2008). How are doctoral students supervised? Concepts of doctoral research supervision. *Studies in Higher Education, 33*(3), 267-281. https://doi.org/10.1080/03075070802049202

Leedy, P. D., & Ormrod, J. E. (2016). *Practical research: Planning and design* (11th ed.).

Pearson Education, Inc.

Lovitts, B. (2001). *Leaving the ivory tower: The causes and consequences of departure from doctoral study*. Rowman and Littlefield.

Maher, M. A., Ford, M. E., & Thompson, C. M. (2004). Degree progress of women doctoral students: Factors that constrain, facilitate, and differentiate. *The Review of Higher Education, 27*(3), 385-408. https//doi.org/10.1353/rhe.2004.0003

Parker, A. K., Schneider, J. J., & Berson, I. R. (2015). Intentionality of preparation: Systematic mentorship in doctoral education. *The Journal of Faculty Development, 29*(3), 51-59.

Rand, M., & Pajarillo, E. (2015). A robust social and professional connection between master educator and Doctor of Nursing Practice (DNP) student instructor: Virtual mentoring and preceptorship via distance education. *Nurse Education Today, 35*(5), 696-699. https://doi.org/10.1016/j.nedt.2015.01.009

Rocha-Singh, I. (1992). *Doctoral students' perceptions of stress and social support: Implications for the retention of targeted students of color*. ProQuest Dissertations Publishing.

Tinto, V. (1993). *Leaving college*: *Rethinking the causes and cures of student attrition.* The University of Chicago Press.

Schedler, A., & Mudde, C. (2010). Data usage in quantitative comparative politics. *Political Research Quarterly, 63*(2), 417-433. https://doi.org/10.1177/1065912909357414

Schichtel, M. (2010). Core-competence skills in e-mentoring for medical educators: A conceptual exploration. *Medical Teacher, 32*(7), e248-262. https://doi.org/10.3109/0142159X.2010.489126

Shulman, L. S. (2008). Forward. In G. E. Walker, C. M. Golde, L. Jones, A. C. Bueschel, & P. Hutchings (Eds.), *The formation of scholars: Rethinking doctoral education for the twenty-first century.* Jossey-Bass.

Spaulding, L., & Rockinson-Szapkiw, A. (2012). Hearing their voices: Factors doctoral candidates attribute to their persistence. *International Journal of Doctoral Studies, 7,* 199-219. https://doi.org/10.28945/1589

Stallone, M. (2011). Factors associated with student attrition and retention in an educational leadership doctoral program. *Journal of College Teaching & Learning, 1*(6), 17-24. https://doi.org/10.19030/tlc.v1i6.1952

Sugimoto, C. R. (2012). Are you my mentor? Identifying mentors and their roles in LIS doctoral education. *Journal of Education for Library and Information Science, 53*(1), 2-19. https://www.jstor.org/stable/23249093?seq=1#metadata_info_tab_contents

Sugimoto, C. R. (2012). Initiation, cultivation, separation and redefinition: Application of Kram's mentoring framework to doctoral education in information and library science. *Journal of Education for Library and Information Science, 53*(2), 98-114.

U. S. Census Bureau. (2014). Educational Attainment in the United States: 2014. https://www.census.gov/data/tables/2014/demo/educational-attainment/cps-detailed-tables.html

Vaughn, S. D. (2018). *Online doctoral student satisfaction as influenced by personality and transactional distance.* ProQuest Dissertations Publishing.

Vygotsky, L. (1962). *Thought and language* (E. Hanf-mann & G. Vakar, Trans.). MIT Press. (Original work published 1934)

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes.* Harvard University Press

Warden, D., Trivedi, M.H., Greer, T.L., Nunes, E., Grannemann, B.D., Horigian, V.E., Somoza, E., Ring, K., Kyle, T., and Szapocznik, J. (2012). Rationale and methods for site selection for a trial using a novel intervention to treat stimulant abuse. *Contemporary Clinical Trials. 33*(1), 29–37. https://doi.org/10.1016/j.cct.2011.08.0111

Welch, S. (2017). Virtual mentoring program within an online doctoral nursing education program: A phenomenological study. *International Journal of Nursing Education Scholarship, 14*(1), 128-130. https//doi.org/10.1515/ijnes-2016-0049

Witkin, B. R., & Altschuld, J. W. (1995). *Planning and conducting needs assessments: A practical guide.* Sage.

Yob, I., & Crawford, L. (2012). Conceptual framework for mentoring doctoral students. *Higher Learning Research Communications, 2*(2), 34-47. https://doi.org/10.18870/hlrc.v2i2.66