EVALUATING A MODEL TO INCREASE DOCTORATE PROGRAM COMPLETION RATES: A FOCUS ON SOCIAL CONNECTEDNESS AND STRUCTURE

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ABSTRACT

Aim/Purpose	New models of curriculum and instruction are needed to help increase completion rates of doctoral programs, as only about half of all students who begin doctoral programs complete them. This paper presents preliminary results of an evaluation of a promising new model called the Ewing Model© where the culminating projects of a doctoral program is completed in a series of five sequential courses with a cohort.
Background	The Ewing Model©, a new model for completing a doctoral research project (DRP) in an online Doctor of Education (EdD) program, was implemented and evaluated for two predictors of doctoral program completion – social connectedness and usefulness of the curriculum and instruction. Previous research has shown these are salient factors predicting doctoral student success.
Methodology	This was a cross-sectional, quantitative study. An online survey of students who were in the midst of taking one of five sequential DRP courses was emailed in the middle of a term. Survey question answers were posed as 5-point Likert scale options, and means were calculated.
Contribution	This paper provides evidence that the Ewing Model© for completing a culminating project in a doctoral program that facilitates social connectedness and provides structure might be effective in helping students to complete their doctoral programs.
Findings	Social connectedness and usefulness of the curriculum and instruction were generally high among students going through the DRP process. The frequency of online discussion forums was found to play a role in how connected students felt.

Recommendations for Practitioners	Institutions of higher education could consider using a similar model to achieve improved social connectedness and usefulness of the curriculum and instruction, which may help doctoral students complete their doctoral programs. They might also consider incorporating other teaching strategies into the same model that may intervene on other predictors of doctoral program completion.
Recommendation for Researchers	Researchers should take into account that many other individual and environmental factors besides social connectedness and usefulness of the curriculum and instruction influence doctoral program completion.
Impact on Society	The findings have implications for improving doctoral program completion rates, which also alleviates the economic, social, and emotional strain that results from unfinished doctoral degrees.
Future Research	Future research could focus on evaluating variations of the Ewing Model© depending on the unique requirements of different types of culminating projects in doctoral programs, assessing other known predictors of doctoral program completion besides social connectedness and usefulness of the curriculum and instruction, and assessing student completion rates using this model.
Keywords	retention, attrition, completion, Ewing Model, social connectedness, doctoral research project, applied research project, dissertation, culminating project, usefulness of curriculum and instruction

INTRODUCTION

About half of all doctoral students do not complete their doctoral degrees (Di Pierro, 2007; Lovitts, 2005; Sowell, Bell, & Mahler, 2008, Spaulding & Rockinson-Szapkiw, 2012), often because they do not finish the culminating project required of the degree program (Golde, 2005; Van der Haert, Ortiz, Emplit, Halloin, & Dehon, 2014). Doctoral degree programs can require a variety of culminating projects, a project in which the students must demonstrate the knowledge they have obtained throughout their course of study in the doctoral program. Culminating projects may be dissertations, applied research projects, and capstones. A culminating project such as a dissertation can often require the students to go from consuming knowledge in core courses to creating knowledge in typically more of a one-on-one situation with a faculty advisor, mentor, or committee chair (Lovitts, 2005; Records, 2014). Many students are not able to successfully achieve this transition and do not complete their degree program as a result (Lovitts, 2008).

Doctoral student success is measured with retention, graduation, persistence, and attrition. Generally speaking, high attrition among doctoral students is a problem in many institutions; attrition rates can vary from 40% to 60% (Bair & Haworth, 1999; Cochran, Campbell, Baker, & Leeds, 2014). Furthermore, students in online degree programs are 15-20% less likely to complete their programs compared to students in face-to-face programs (Varney, 2009), with attrition rates being 10-20% higher in online doctoral programs than face-to-face programs (Allen, Seaman, & Sloan Consortium, 2011; Angelino, Williams, & Natvig, 2007). Enrollment in distance education programs continues to grow at a much faster annual rate (10%), however, than traditional, face-to-face programs (1%) (Allen, Seaman, & Sloan Consortium, 2011), making the detrimental economic, social, and personal effects of low doctoral program completion rates (Burkholder, 2012; Gardner, 2009) increasingly problematic. Economically, large amounts of money are spent by institutions to recruit doctoral students, and once doctoral students are admitted institutions often pay for their tuition in exchange for student assistantships (Gardner, 2009). This money is essentially lost if the student does not complete the degree program. Socially, the students who could have become "talented leaders, innovative researchers, prolific scholars, and influential educators" (Gardner, 2009, p. 3) with their doctorates may not if

they do not ever receive their doctorate degree. Personally, "the most important reason to be concerned about graduate student attrition is that it can ruin individuals' lives" (Lovitts, 2001, p. 6), and "the decision to leave can have long-term effects on students' emotional well-being" (p. 201). To prevent these detrimental effects of doctoral student attrition, it behooves institutions to find ways to increase the likelihood they will finish. If students often do not finish because they do not complete their culminating project (Van der Haert, Ortiz, Emplit, Halloin, & Dehon, 2014), then, more specifically, a closer look at ways to increase the likelihood of completing the culminating project is merited.

The culminating project, where the student must apply what they learned to create new knowledge, requires the doctoral student to transition from course-taker to knowledge-creator, and this is a difficult transition (Lovitts, 2008). When this transition must be made without the same level of social connectedness (i.e., "feeling of belonging and acceptance and the creation of bonding relationships"; Rovai, 2002, p. 322) and structured curriculum and instruction (i.e., "a sequential curriculum that guides students through a stepwise series of…courses"; Ewing, Mathieson, Alexander, & Leafman, 2012, p. 37) as was observed in one online doctoral program at the university where the current study was conducted, it is presumed this transition may be even more challenging to achieve. Both a highly structured online course environment and the social connectedness that occurs through a community of practice (i.e., a "learning strategy combining self-directed [learning] with collaborative learning"; Kriner, Coffman, Adkisson, Putman, & Monaghan, 2015, p. 73) are associated with higher levels of doctoral program completion (Ewing et al., 2012; Lloyd, D'Errico, & Bristol, 2016; Rockinson-Szapkiw, Spaulding, & Spaulding, 2016; Terrell, Snyder, & Dringus, 2009). Rockinson-Szapkiw, Spaulding, and Spaulding (2016) found that among 148 doctoral students enrolled in an online Doctor of Education (EdD) program, social integration with faculty and usefulness of curriculum and instruction were significant predictors of student persistence in the EdD program. One model that could be used to try to achieve doctoral degree completion in this way is the Ewing Model© (Ewing et al., 2012).

THE EWING MODEL

The Ewing Model© (Figure 1) was created and implemented in 2010 for the online Doctor of Health Science (DHSc) program at A.T. Still University (ATSU), a private university focusing on health sciences that offers both residential and online programs. The Ewing Model© is "characterized by a highly structured, sequential curriculum; intense facilitation and dialogue; collaborative learning within a cohort model; and performance-based assessment of core research competencies" (Ewing et al., 2012, p. 34). Students complete their culminating project, the applied research project (ARP), through a series of five sequential courses (Figure 2) with a cohort of peers and an instructor. Implementation of the model resulted in a graduation rate of 73% (Ewing et al., 2012), much higher than the national average of about 57% (Council of Graduate Schools, 2008; Sowell, Bell, & Mahler, 2008) and the 36% graduation rate for the online Doctor of Health Education (DHEd) program at the same university.

Since the Ewing Model© had such a relatively high graduation rate, when ATSU decided to replace the online DHEd program with an online Doctor of Education (EdD) program, the program chair of the new EdD and author of this paper looked to the Ewing Model© as a way to increase the low graduation rate previously experienced in the DHEd program. Although the culminating project in the DHEd program was a dissertation, and the culminating project in the new EdD program would be a doctoral research project (DRP), it was presumed that the benefits of the Ewing Model© might mitigate any differences that might contribute to differences in project completion. In other words, the model, and not the type of culminating project, likely contributes to the higher graduation rate. Thus, while the two types of culminating projects differed in length, focus, and depth, with the dissertation being longer, more focused, and more in-depth than the DRP, it was suspected that the Ewing Model© was providing what the dissertation process lacked – more social connectedness and a

curriculum and instruction that is more useful in terms of its structure – that would probably increase degree completion rates.
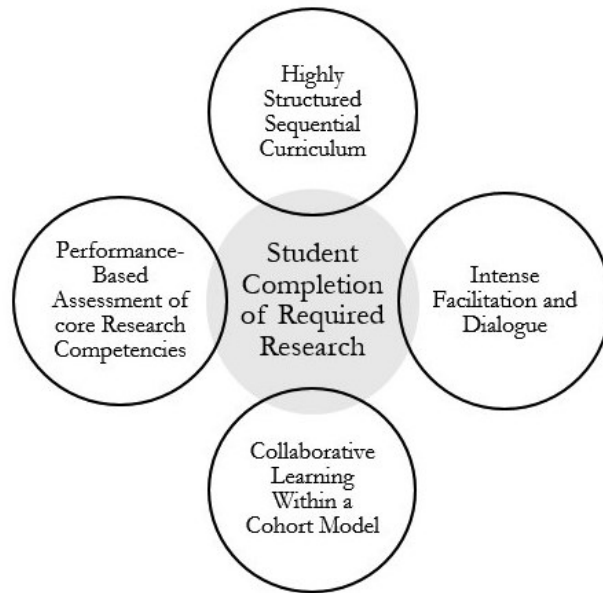

Figure 1. The Ewing Model© for facilitating student research projects.
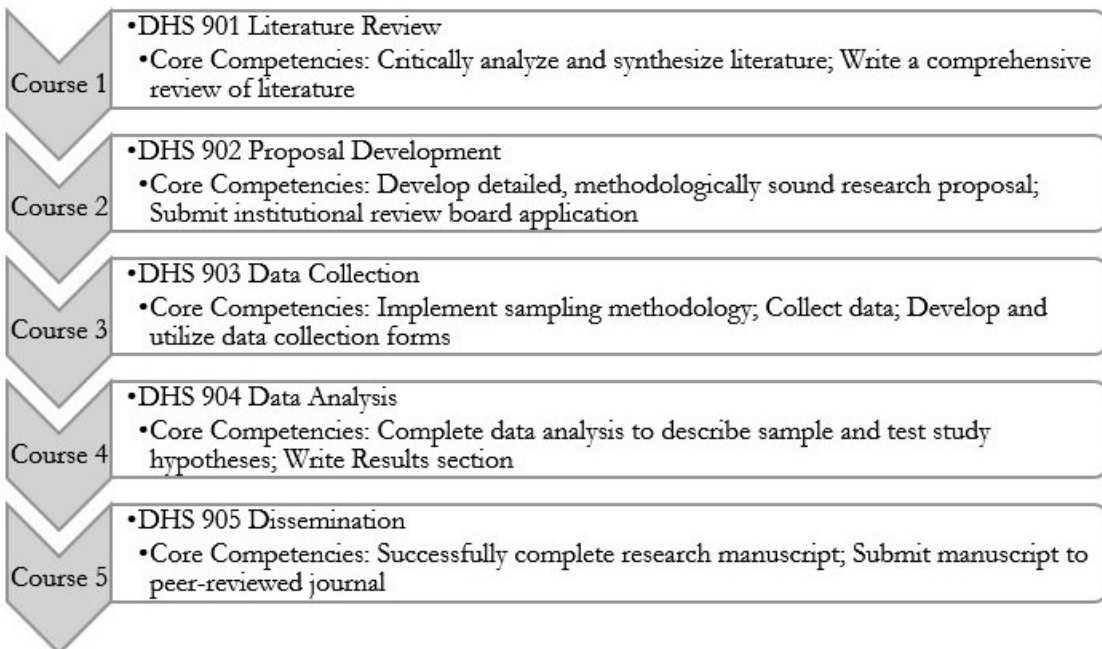Source: Ewing et al., 2012, p. 37

Figure 2. The Ewing Model© for facilitating student research projects.
Source: Ewing et al., 2012, p. 37

The EdD program using the Ewing Model© for DRP completion was implemented in the fall of 2016 with a series of courses modified slightly to fit the EdD program (Figure 3). The purpose of the current study is to provide preliminary results of an evaluation of the social connectedness and usefulness of the curriculum and instruction among students in the DRP process.
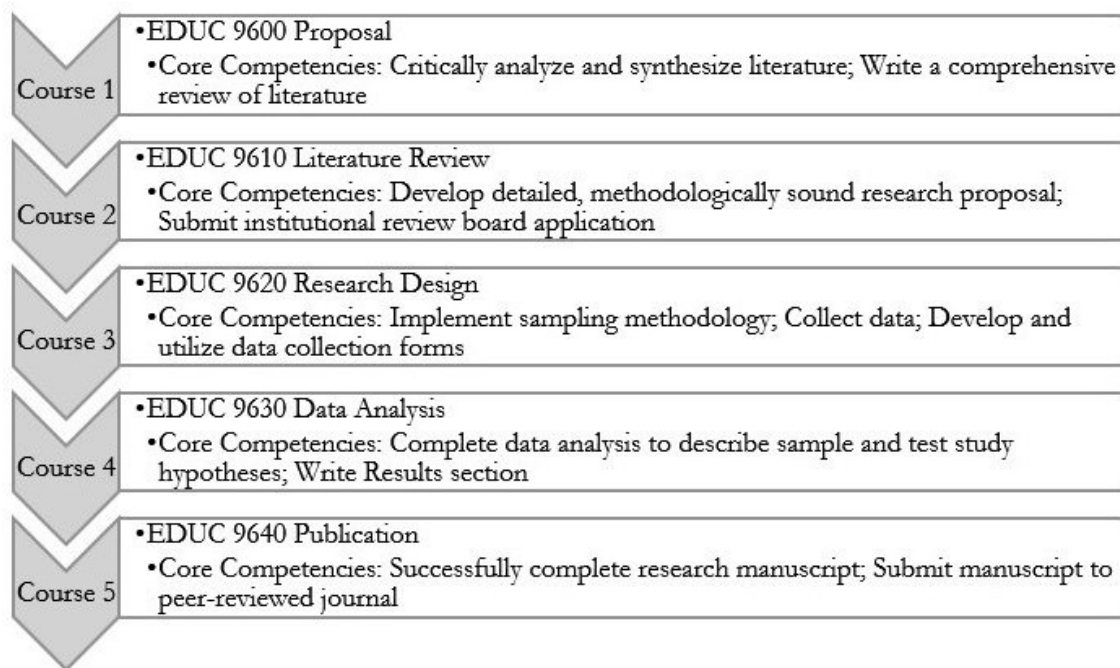
Course 1
- EDUC 9600 Proposal
  - Core Competencies: Critically analyze and synthesize literature; Write a comprehensive review of literature

Course 2
- EDUC 9610 Literature Review
  - Core Competencies: Develop detailed, methodologically sound research proposal; Submit institutional review board application

Course 3
- EDUC 9620 Research Design
  - Core Competencies: Implement sampling methodology; Collect data; Develop and utilize data collection forms

Course 4
- EDUC 9630 Data Analysis
  - Core Competencies: Complete data analysis to describe sample and test study hypotheses; Write Results section

Course 5
- EDUC 9640 Publication
  - Core Competencies: Successfully complete research manuscript; Submit manuscript to peer-reviewed journal

Figure 3. The Ewing Model's highly structure, sequential curriculum modified to fit the EdD program.

LITERATURE REVIEW

As the landscape of doctoral education changes to include more non-traditional students (i.e., working professionals who cannot study full-time on campus, requiring part-time programs that incorporate asynchronous learning; Archbald, 2011), more professional doctorate degrees, and more online doctorate degrees specifically (Black, 2017), the clarion call for innovative and "relevant educational paradigms and instructional strategies" (Black, 2017, p. 2) that better fit the needs of these students while also removing barriers to degree completion is highlighted. Retention-effective strategies have included collaborative cohort learning (Ewing et al., 2012; Holmes, Robinson, & Seay, 2010), a learning environment in which a group of students (i.e., cohort) shares knowledge among themselves and instructors (Vesisenaho et al., 2010) while actively applying rather than passively consuming course material (Brindley, Walti, & Blaschke, 2009), and mentoring training programs to increase effectiveness of faculty mentorship (Brill, Blacanoff, Land, Gogarty, & Turner, 2014).

No single factor causes attrition in doctoral programs, rather it is a multitude of factors (e.g., Rockinson-Szapkiw et al., 2016) that could be playing a part. Two such factors are (1) social connectedness, including that with peers in the program and that with the faculty member who serves as advisor, facilitator, instructor, or committee chair, and (2) usefulness of the curriculum and instruction within which the culminating project is completed. How these factors are related to doctoral student success will be discussed next.

SOCIAL CONNECTEDNESS

Research has found that social isolation contributes to doctoral attrition (Ali & Kohun, 2006, 2007; Bourner, Bowden, & Laing, 2001; Delamont, Atkinson, & Parry, 1997; Stallone, 2004; Sull, 2013;

Vekkaila et al., 2016), especially among online doctoral students (Bourner, Bowden, & Laing, 2001; Canadian Virtual University, as cited in Bates, 2012; Samara, 2006; Wisker, Robinson, & Shacham, 2007). Connectedness with other students as well as with faculty has been found to facilitate doctoral program completion (Terrell, Snyder, & Dringus, 2009), and online collaborative workspaces have been shown to increase student-to-student and student-to-faculty connectedness in online doctoral students (Rockinson-Szapkiw, 2012). Furthermore, interaction between online doctoral students and faculty is not only important (Akarasriworn & Ku, 2013; Bagaka's, Bransteter, Rispinto, & Badillo, 2015; Borup, West, & Graham, 2012; Foronda & Lippincott, 2014; Hoffman, 2014; Newberry & DeLuca, 2013), but mentorship through a doctoral student's supervisor, advisor, chair, mentor, or facilitator is significant for doctoral students completing their doctoral programs (Holsinger, 2008).

One effective strategy for helping students complete their doctoral program has been to build community through student cohorts (Grady, 2016; Holmes, Robinson, & Seay, 2010; Loxley & Seery, 2012; Wellington & Sikes, 2006). It has been found that students who go through a doctoral program with a cohort of other students have a higher graduation rate (Ali & Kohun, 2008; Homes et al., 2010; Nimer, 2009), and collaborative cohorts are believed by doctoral students themselves to be effective in completing a dissertation (Holmes et al., 2010). Holmes et al. (2010) conducted focus groups with 34 doctoral students enrolled in an educational leadership program in which a dissertation was the culminating project; results highlighted the value of the collaborative cohort as a strategy for finishing their dissertation.

The Ewing Model© provides a framework within which these strategies for improving social connectedness could be implemented. In the Ewing Model©, students complete their culminating project with a cohort of other students, and this may provide opportunities for both a community of practice and the social connectedness that have been shown in the literature to facilitate doctoral program completion. Also fundamental to The Ewing Model© is collaborative learning. Strategies for facilitating collaboration may help retain doctoral students because facilitating collaboration between faculty and students can reduce social isolation for students (Bagaka's et al., 2015; Christensen & Lund, 2014; Foronda & Lippincott, 2014). Different online strategies have been shown to improved communication between faculty and doctoral students. Ames, Berman, and Casteel (2018) showed that the use of private online workspaces improved perceptions of more effective communication with dissertation committees among students enrolled in an online doctoral program. Additionally, Maul, Berman, and Ames (2018) found that using video technology by dissertation chairs to advise their students resulted in improvements in the advising process and in student retention. Online discussion forums have also been found to support social connectedness (Swaggerty & Broemmel, 2017) and a sense of community (Trespalacios & Perkins, 2016). In the current study, online discussion forums are the main mode through which collaborative learning can be observed because this is where students and instructors interact asynchronously the most.

CURRICULUM AND INSTRUCTION

Curriculum and instruction that is useful in terms of a relatively high level of structure has been shown to facilitate doctoral program completion (Lloyd, D'Errico, & Bristol, 2016; Ewing et al., 2012) and retention (Jorissen, Keen, & Riedel, 2015). Furthermore, provision of structure is perceived by doctoral students as being a best practice in online doctoral education (Kumar, Johnson, & Hardemon, 2013). However, the lack of structure so often experienced by dissertation students often leads to the All But Dissertation (ABD) status and is reflected in low completion rates among doctoral students. Unstructured curriculum and instruction during the dissertation process, the knowledge creation process (Lovitts, 2005), is a major factor in doctoral attrition (Ali & Kohun, 2007). With the Ewing Model© being "structured with a series of five courses that teach the fundamentals of research in a sequential order while students apply the theory concurrently to student-directed research projects" (Ewing et al., 2012, p. 36), it is a viable framework for providing the structure that has been shown to help students complete their doctoral degrees. The course instructor in

the Ewing Model© provides facilitation through regular feedback to students (Ewing et al., 2012). This type of facilitation has been shown to be integral to student-led research project success (Giddings et al., 2006). Facilitation and other constructs related to the structure provided by the Ewing Model© were evaluated in this study.

METHODS

RESEARCH DESIGN

This cross-sectional study of students involved emailing an online survey to all DRP students who were enrolled in one of the DRP courses (listed in Figure 3) in the online EdD program at ATSU. The survey elicited data about DRP students' connectedness with other students in their cohort and with their DRP instructor as well as data about the usefulness of the curriculum and instruction.

RESEARCH QUESTIONS

Research questions about social connectedness were as follows:

1. How connected to the students in their cohort do current DRP students feel?
2. How connected to their DRP instructor do students feel?
3. How does social connectedness differ between courses with a high frequency of online discussion forums and courses with a low frequency of online discussion forums?
4. How does the level of student-to-student connectedness compare with the level of student-to-instructor connectedness across courses?

Research questions about the usefulness of the curriculum and instruction were as follows:

5. How well do students think the DRP courses prepare them for successfully completing their DRP?
6. How clear do students think expectations and organization have been in detailing what they need to do to be successful in their DRP?
7. How much do students think feedback from their DRP instructor helps them improve?
8. How do students rate the quality of the instruction they have received about their DRP?

INSTRUMENTATION

The survey used in this study was developed by combining two existing surveys that had previously been developed and validated by other researchers, with the final combined survey consisting of 23 questions and statements (see Appendix). And explanation of the origin and purpose of the survey questions and statements is as follows:

- Question 1 asked which DRP course the student was currently in so that results could be separated out by course.
- Questions 2-5 were used to measure the usefulness of the curriculum and instruction and were adapted from questions used by Rockinson-Szapkiw et al. (2016). These authors used these questions to measure *curriculum and instruction*, a predictor of online doctoral persistence, which consisted of four constructs: curriculum for dissertation preparation, clarity of expectations and organization, facilitation, and direct instruction. Each of these four constructs was measured with a single question, and it is these same questions, adapted for the current study, that were used in the survey to measure usefulness of curriculum and instruction. Permission was obtained from Spaulding and Spaulding to use these four survey questions in the current study. The questions had to be adapted to fit the context of the DRP,

which was the culminating project for the current study, whereas the dissertation was the culminating project in Rockinsaw-Szapkiw et al. (2016).

- Statements 6-23 were used to measure overall social connectedness, with nine of these statements measuring student-to-student connectedness and nine measuring instructor-to-student connectedness, and were adapted from the Doctoral Student Connectedness Scale created and validated by Terrell, Snyder, and Dringus (2009). Permission was obtained from Terrell to use the Doctoral Student Connectedness Scale in the current study. The statements had to be adapted to fit the context of the DRP, which was the culminating project for the current study, whereas the dissertation was the culminating project in the context for which the Doctoral Student Connectedness Scale was developed.

All survey questions and statements, except for the first one asking which DRP course the student was currently in, were posed with the same five-point Likert scales used by the aforementioned researchers who had developed these questions and statements (see Appendix). Since the original Likert scales were used, the order of positive to negative Likert scale indicators differed for the items measuring the usefulness of the curriculum and instruction (i.e., 1 to 5 was positive to negative) compared to the items measuring social connectedness (i.e., 1 to 5 was negative to positive).

STUDY PARTICIPANTS

Study participants were recruited only from the students who had completed their core courses and thus were enrolled in one of the series of five DRP courses at the time of this study. This totaled 37 students. All of these 37 students were emailed the survey. The 37 students included 12 in the first DRP course (EDUC9600), 11 in the second DRP course (EDUC9610), five in the third DRP course (EDUC9620), four in the fourth DRP course (EDUC9630), and five in the fifth DRP course (EDUC9640).

Twenty-five students completed the survey, for a response rate of 67%. Of these 25, seven were in EDUC9600, seven were in EDUC9610, five were in EDUC9620, four were in EDUC9630, and two were in EDUC9640. Demographic data were not collected directly from the study participants, but it could be determined from the student database that, of the 37 students to whom the survey was emailed, the average age was 42 years. There were 27 (73%) females, nine (24%) males, and one (3%) of undisclosed gender. Races represented included one (3%) Asian, four (11%) Blacks, 30 (81%) Whites, and two (5%) of unknown race.

DATA COLLECTION

The survey was created in Qualtrics, an online survey software, and a link to the online survey was sent via email to all 37 students enrolled in a DRP course at the beginning of the fifth week of the second of two fall terms in 2018. Email reminders were sent out at the beginning of the sixth and seventh weeks of this same fall term.

DATA ANALYSIS

A mean composite score was determined for each of eight scales, one for each variable and one for each of the constructs that made up each of those variables (Figure 4): social connectedness (student-student and instructor-student connectedness constructs combined), student-student connectedness, instructor-student connectedness, usefulness of the curriculum and instruction (curriculum for DRP preparation, clarity of expectations and organization, facilitation, and direct instruction constructs combined), curriculum for DRP preparation, clarity of expectations and organization, facilitation, and direct instruction. A Mann-Whitney U test was conducted to determine any statistically significant difference in social connectedness between courses that had a high frequency of online discussions forums (EDUC9600, EDUC9620, and EDUC9640) and courses that had a low frequency of online discussion forums (EDUC9610 and EDUC9630). Indeed, asynchronous discus-

sion forums have been found to be beneficial to connecting with graduate student peers in an online course (Swaggerty & Broemmel, 2017) and building a sense of community with graduate student peers in an online course (Trespalacios & Perkins, 2016). A paired t-test was also conducted to determine if there was a statistically significant difference between student-to-instructor connectedness and student-to-student connectedness across all courses combined.
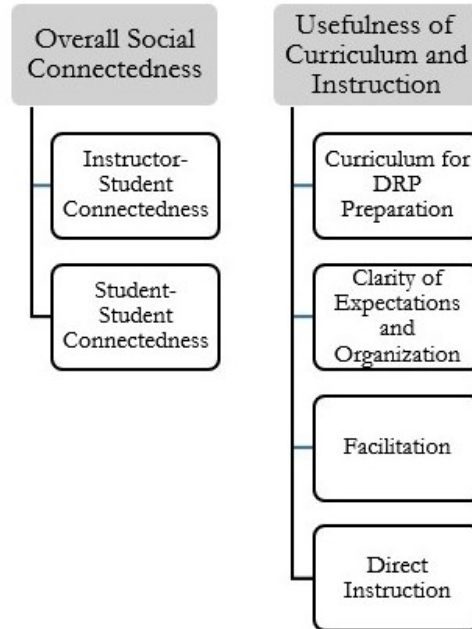

Figure 4. Variables and constructs measured in current study

FINDINGS

Results are presented by course for both social connectedness (Table 1) and usefulness of the curriculum and instruction (Table 2) to highlight variability across courses. While the usefulness of the curriculum and instruction should not have varied much from course to course, social connectedness was presumed to possibly vary with the frequency of online discussion forums providing social connectedness opportunities. Study participants revealed a high level of overall social connectedness (M=4.27, SD=.65) (Table 1) and felt a higher level of social connectedness with their instructor (M=4.48, SD=.50) than with other students (M=4.07, SD=1.09), p=.03. Overall social connectedness varied depending on what course they were in, with the lowest overall social connectedness (M=3.86, SD=1.24) being reported among students in EDUC9610 and the highest overall social connectedness (M=4.89, SD=.23) being reported among students in EDUC9620. Overall social connectedness was also relatively low in EDUC9600 (M=4.00, SD=.85) and EDUC9630 (M=4.25, SD=.83) and relatively high in EDUC9640 (M=4.78, SD=.31). Both student-student connectedness (M=4.9, SD=.48) and student-instructor connectedness (M=4.86, SD=.3) were highest among students in EDUC9620. While student-student connectedness was lowest (M=3.51, SD=1.76) in EDUC9610, student-instructor connectedness was lowest (M=3.43, SD=.56) in EDUC9600.

The first research question set out to answer how connected students felt with the other students in their cohort. The findings show that they felt a high level of connectedness to other DRP students in their cohort. When it comes to research question two asking how connected students felt to their DRP instructor, students felt a high level of connectedness there as well. The third research question asked how social connectedness differed depending on frequency of online discussion forums. The Mann Whitney-U revealed a marginally significant difference (p=.05) between courses with a high frequency of online discussion forums and courses with a low frequency of online discussion fo-

rums. The fourth research question addressed the difference in level of social connectedness with students compared to with instructors. The results indicated that students felt more connected to their instructor than with other students.

Table 1. Social connectedness[1], student-to-student connectedness, instructor-to-student connectedness, and frequency of online discussion forums

DRP Course	Social Connectedness[1] Mean[2]±SD	Student-to-Student Connectedness Mean[2]±SD	Student-to-Instructor Connectedness Mean[2]±SD	Frequency of online discussion forums (number of online discussion forums in the course) Mean
EDUC9600 (*N*=7)	4.00±0.85	3.60±1.14	3.43±0.56	9
EDUC9610 (*N*=7)	3.86±1.24	3.51±1.76	4.21±1.05	3
EDUC9620 (*N*=5)	4.89±0.23	4.90±0.48	4.86±0.30	9
EDUC9630 (*N*=4)	4.25±0.83	4.12±1.29	4.37±0.33	2
EDUC9640 (*N*=2)	4.78±0.31	4.72±0.79	4.83±0.24	6
Mean	4.27±0.65	4.07±1.09	4.48±0.50	

[1]student-to-student connectedness and instructor-student connectedness combined

[2]a higher score reflects higher social connectedness

Scores for the usefulness of the curriculum and instruction, where a lower score reflects a higher level of usefulness, were high overall (*M*=1.99, *SD*=.83) (Table 2). Scores were highest for facilitation (*M*=1.6, *SD*=.75) and lowest for the clarity of expectations and organization (*M*=2.19, *SD*=1.03). Student perceptions of the curriculum for DRP preparation and direct instruction were relatively high as well, though (*M*=1.99 and *M*=2.05, respectively).

Table 2. Usefulness of curriculum & instruction[1], curriculum for DRP preparation, clarity of expectations and organization, facilitation, and direct instruction

DRP Course	N	Usefulness of Curriculum & Instruction Mean[2]±SD	Curriculum for DRP preparation Mean[2]±SD	Clarity of expectations and organization Mean[2]±SD	Facilitation Mean[2]±SD	Direct instruction Mean[2]±SD
EDUC9600	7	2.54±0.95	2.57±0.79	2.57±1.13	2.29±1.13	2.71±0.76
EDUC9610	7	1.78±0.78	1.71±0.76	1.71±0.49	1.57±0.79	2.14±1.07
EDUC9620	5	1.40±0.72	1.40±0.55	1.40±0.89	1.40±0.89	1.40±0.55
EDUC9630	4	2.19±0.83	2.25±0.50	2.25±1.26	1.75±0.96	2.50±0.58
EDUC9640	2	1.88±0.88	2.00±1.40	3.00±1.40	1.00±0.00	1.50±0.71
Total or Mean	25	1.99±0.83	1.90±0.8	2.19±1.03	1.60±0.75	2.05±0.73

[1]include curriculum for DRP preparation, clarity of expectations and organization, facilitation, and direct instruction combined

[2]a higher score reflects lower usefulness of curriculum and instruction

The fifth research question asked how well students think the DRP courses prepare them for successfully completing their DRP. Results show that they do think the DRP courses prepare them well.

In regards to the sixth research question, the findings indicated that students think expectations and organization have been relatively clear in detailing what they need to do to be successful in their DRP. Findings related to the seventh research question, asking how much student think feedback from their DRP instructor helps them improve, show that students find the feedback from their DRP instructor is extremely useful in helping them improve. Finally, the eighth research question asks how students rate the quality of the instruction they have received about their DRP. Findings indicate that students rate the quality of the instruction relatively high.

DISCUSSION

Students in the DRP series of courses indicated a high level of social connectedness and usefulness of the curriculum and instruction. Variation in overall social connectedness from course to course may have been related to the variation in frequency of online discussion forums from course to course. With the exception of the first course (EDUC9600), the courses with the highest frequencies of online discussion forums (EDUC9620 and EDUC9640) also had the highest levels of overall social connectedness (M=4.89 and M=4.78, respectively). While the first course (EDUC9600) had a high frequency of online discussion forums as well, students in this course ranked the usefulness of the curriculum and instruction lower, which may have diminished the effectiveness of the online discussion forums in terms of social connectedness. Or, perhaps since it was their first class in the DRP series, they simply were not feeling as socially connected as they would later on. Regardless, social connectedness was found to be higher in the courses that involved more online discussion forums, which have previously been shown to support social connectedness (Swaggerty & Broemmel, 2017) and a sense of community (Trespalacios & Perkins, 2016). Online discussion forums may be an effective strategy in the Ewing Model© for potentially increasing doctoral program completion, as findings from the current study support those from previous studies that have shown social connectedness facilitates doctoral program completion (Terrell, Snyder, & Dringus, 2009) and online collaborative workspaces increase social connectedness in online doctoral students (Rockinson-Szapkiw, 2012).

Students thought that evaluative feedback from their DRP instructor was very often useful in determining how to improve, that the DRP courses helped them to successfully complete their DRP well, that the quality of instruction they had received about their DRP was high, and that how the instructor and course content detailed what they needed to do in order to be successful in the DRP was clear. These positive results bode well for students, as structure is perceived by doctoral students as being a best practice in online doctoral education (Kumar, Johnson, & Hardemon, 2013). Students in the EDUC9600 course may have ranked the usefulness of the curriculum and instruction higher because they had relatively less experience in the DRP program since it was their first course. They are also still transitioning from knowledge consumer to knowledge creator. This transition from consuming knowledge in classes to creating knowledge by conducting original research can be particularly difficult for many students (Lovitts, 2005). "Very little concrete advice" (Lovitts, 2001, p. 73) is given to students, typically, about how to make this transition. In mainstream doctoral education in the U.S., students are not being prepared to be creative (Montuori, 2011), which is ironically what they are ultimately being tested on in their culminating project – their ability to create original work. Students in the EDUC9620 course may have ranked the usefulness of the curriculum and instruction higher because, perhaps by the time students get to this course, they have made the transition from knowledge consumer to knowledge creator and have a more positive outlook of the usefulness of the curriculum and instruction in general as a result. The fact that most of the usefulness of the curriculum and instruction constructs were ranked highly by students supports the use of the Ewing Model© as a model for success. The regular feedback and facilitation provided by the instructor and the structured curriculum and instruction have been shown to facilitate doctoral program completion (Ewing et al., 2012; Lloyd, D'Errico, & Bristol, 2016) and retention (Jorissen, Keen, & Riedel, 2015).

The social connectedness and usefulness of the curriculum and instruction of the Ewing Model© could potentially help students complete culminating projects in doctoral programs. Modifications

could be made, for example to the length of each course, to accommodate for varying requirements of a dissertation, capstone project, ARP, or DRP. Institutions could modify the model to fit their needs based on length of term and scope of the culminating project. The current study indicates that incorporating online discussion forums and a high level of structure into the curriculum and instruction are an effective strategy for providing the social connectedness and structure that may help ensure that students complete their doctoral program.

LIMITATIONS

This study of social connectedness and usefulness of the curriculum and instruction among students completing their DRP provides only preliminary results, and no associations can be made between these variables and degree completion since the first cohort to go through the series of DRP courses were in their last course in the series at the time of data collection. Additionally, despite the relatively high response rate, the sample size is too low to make strong generalizations about either variable. Varying enrollment numbers and varying survey response rates across the five DRP courses were a limitation also. Despite these limitations, the results of this study provide important insights into the potential effectiveness of a model for increasing historically low graduation rates among doctoral students. Additionally, demographic data were not collected with the survey, so it is uncertain how well the demographic data obtained from the database for the students to whom the survey was distributed reflect the demographic data of the students who completed the survey and were included in the study.

RECOMMENDATIONS FOR FUTURE RESEARCH

The Ewing Model© was previously shown to result in a relatively high graduation rate (73%) among doctoral students in an online DHSc program (Ewing et al., 2012). This model has now been shown to also be effective in terms of facilitating social connectedness and providing a highly structured curriculum and instruction. In addition, these variables have been associated with doctoral degree completion (Ewing et al., 2012; Lloyd, D'Errico, & Bristol, 2016; Terrell, Snyder, & Dringus, 2009). The higher graduation rate coupled with the effectiveness of the model in providing opportunities to intervene on factors known to improve likelihood of doctoral program completion make this model a potential harbinger for completing other types of culminating doctoral projects. This model could be used for doctoral programs at other institutions and evaluated for degree completion as well as other predictors of degree completion in addition to the social connectedness and usefulness of the curriculum and instruction variables that were evaluated in the current study. Of particular interest would be to assess whether this model could be used for dissertation completion. This may require adjustments to account for the greater depth of a dissertation and dissertation committee reviews and approvals, but a similarly useful curriculum and instruction could be used.

CONCLUSION

This study examined doctoral student social connectedness and their thoughts about the usefulness of the curriculum and instruction while they were completing a culminating project. Their project was being completed in a highly structured online course environment that provided many opportunities for social interactions with both other students in their cohort and their instructor. Students felt well connected to other students and their instructor at the time of the survey, presumably as a result of the online discussion forums, which were the central modes for communication. In fact, the courses with more online discussion forums resulted in higher levels of connectedness among students than the courses with fewer online discussion forums. Since both social connectedness and usefulness of the curriculum and instruction used for completing a culminating project predict doctoral program completion (Rockinson-Szapkiw et al., 2016), the results of this study may have implications for improving doctoral program completion rates not only for this program but for other programs that adopt the Ewing Model©.

With the rate of doctoral program completion currently at around 50%, new models are needed to help students complete doctoral programs. The Ewing Model© appears to facilitate doctoral program completion by reducing barriers previously shown to hinder doctoral program completion (Ewing et al., 2012). Two of those barriers are isolation and lack of structure. By reducing isolation through online discussion forums, this model provides opportunities for social connectedness. Additionally, the highly structured curriculum and instruction provides guidance for transitioning from consuming to creating knowledge. While the Ewing Model© may not reduce all potential barriers to doctoral program completion, it may be a potentially effective beginning to solving the problem of low completion rates.

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APPENDIX

STUDY SURVEY

Item number	Question	Answer options	Construct	Variable
1	Which course are you currently in?	1-EDUC9600 Proposal Preparation 2-EDUC9610 Literature Review 3-EDUC9620 Research Design 4-EDUC9630 Data Analysis 5-EDUC9640 Publication	N/A	N/A

Item number	Question	Answer options	Construct	Variable
2	How well do the DRP courses help you to successfully complete your DRP?	1-Very well 2-Well 3-Fair 4-Poor 5-Very Poor	Curriculum for DRP preparation	DRP curriculum and instruction
3	How clear have the DRP instructor and DRP course content been in detailing what you need to do in order to be successful in the DRP?	1-Very clear 2-Somewhat clear 3-Neutral 4-Somewhat unclear 5-Very unclear	Clarity of expectations and organization	DRP curriculum and instruction
4	In general, when you receive evaluative feedback from your DRP instructor how often has it been useful in determining how to improve?	1-Very often 2-Somewhat often 3-Sometimes 4-Rarely 5-Very rarely	Facilitation	DRP curriculum and instruction
5	In general, rate the quality of instruction you have received about your DRP.	1-Very high quality 2-High quality 3-Quality neutral 4-Low quality 5-Very low quality	Direct instruction	DRP curriculum and instruction
6	I feel that students in my DRP cohort care about each other.	1-Stongly disagree 2-Somewhat disagree 3-Neither agree nor disagree 4-Somewhat agree 5-Strongly agree	Student-to-student connectedness	Social connectedness
7	I feel that I am encouraged to ask questions to my DRP instructor about the DRP process.	1-Stongly disagree 2-Somewhat disagree 3-Neither agree nor disagree 4-Somewhat agree 5-Strongly agree	Student-to-instructor connectedness	Social connectedness
8	I feel connected to other students in my DRP cohort.	1-Stongly disagree 2-Somewhat disagree 3-Neither agree nor disagree 4-Somewhat agree 5-Strongly agree	Student-to-student connectedness	Social connectedness

Item number	Question	Answer options	Construct	Variable
9	I feel a spirit of collegiality between my DRP instructor and myself while I am working on my DRP.	1-Stongly disagree 2-Somewhat disagree 3-Neither agree nor disagree 4-Somewhat agree 5-Strongly agree	Student-to-instructor connectedness	Social connectedness
10	I feel like I can easily communicate with other students in my DRP cohort about the DRP.	1-Stongly disagree 2-Somewhat disagree 3-Neither agree nor disagree 4-Somewhat agree 5-Strongly agree	Student-to-student connectedness	Social connectedness
11	When I ask a question or submit work to my DRP instructor, I feel like I receive timely feedback.	1-Stongly disagree 2-Somewhat disagree 3-Neither agree nor disagree 4-Somewhat agree 5-Strongly agree	Student-to-instructor connectedness	Social connectedness
12	I communicate with my DRP instructor about the DRP process on a regular basis.	1-Stongly disagree 2-Somewhat disagree 3-Neither agree nor disagree 4-Somewhat agree 5-Strongly agree	Student-to-instructor connectedness	Social connectedness
13	I feel like fellow students in my DRP cohort are like a family.	1-Stongly disagree 2-Somewhat disagree 3-Neither agree nor disagree 4-Somewhat agree 5-Strongly agree	Student-to-student connectedness	Social connectedness
14	I communicate regularly with other students in my DRP cohort.	1-Stongly disagree 2-Somewhat disagree 3-Neither agree nor disagree 4-Somewhat agree 5-Strongly agree	Student-to-student connectedness	Social connectedness
15	I feel I can trust other students in my DRP cohort.	1-Stongly disagree 2-Somewhat disagree 3-Neither agree nor disagree 4-Somewhat agree 5-Strongly agree	Student-to-student connectedness	Social connectedness

Item number	Question	Answer options	Construct	Variable
16	I feel that I am receiving adequate support from my DRP instructor while I am working on my DRP.	1-Stongly disagree 2-Somewhat disagree 3-Neither agree nor disagree 4-Somewhat agree 5-Strongly agree	Student-to-instructor connectedness	Social connectedness
17	I feel that the feedback I receive from my DRP instructor is valuable.	1-Stongly disagree 2-Somewhat disagree 3-Neither agree nor disagree 4-Somewhat agree 5-Strongly agree	Student-to-instructor connectedness	Social connectedness
18	I feel a spirit of community between other students in my DRP cohort and myself while I am working on my DRP.	1-Stongly disagree 2-Somewhat disagree 3-Neither agree nor disagree 4-Somewhat agree 5-Strongly agree	Student-to-student connectedness	Social connectedness
19	I feel confident that my DRP instructor will support me while I am working on my DRP.	1-Stongly disagree 2-Somewhat disagree 3-Neither agree nor disagree 4-Somewhat agree 5-Strongly agree	Student-to-instructor connectedness	Social connectedness
20	I feel like I can rely on other students in my DRP cohort for support.	1-Stongly disagree 2-Somewhat disagree 3-Neither agree nor disagree 4-Somewhat agree 5-Strongly agree	Student-to-student connectedness	Social connectedness
21	I feel I can trust my DRP instructor while I am working on my DRP (e.g., rely on the DRP instructor to follow through on commitments, keep confidences, treat people with respect and help me learn).	1-Stongly disagree 2-Somewhat disagree 3-Neither agree nor disagree 4-Somewhat agree 5-Strongly agree	Student-to-instructor connectedness	Social connectedness
22	I feel like I can easily communicate with other students in my DRP cohort	1-Stongly disagree 2-Somewhat disagree 3-Neither agree nor disagree 4-Somewhat agree 5-Strongly agree	Student-to-student connectedness	Social connectedness

Item number	Question	Answer options	Construct	Variable
23	I feel like I can easily communicate with my DRP instructor about the DRP.	1-Stongly disagree 2-Somewhat disagree 3-Neither agree nor disagree 4-Somewhat agree 5-Strongly agree	Student-to-instructor connectedness	Social connectedness

BIOGRAPHY

Erin Breitenbach is an Associate Professor and program chair for the Doctor of Health Education (DHEd) and Doctor of Education (EdD) in Health Professions programs in the College of Graduate Health Studies at A.T. Still University. She has chaired dozens of dissertations to completion in the DHEd program. She leads students in completing their doctoral research projects in the EdD program, and is responsible for managing curriculum development. Her research interests include online teaching and learning, doctoral program completion, and doctoral program retention strategies.