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AN EFFECTIVE DOCTORAL STUDENT MENTOR WEARS MANY HATS AND ASKS MANY QUESTIONS

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ABSTRACT

Aim/Purpose	Doctoral student completion rates are notoriously low; although statistics differ depending on which study one consults, a typical completion rate is about 50%. However, studies show mentors can use strategies to improve students' graduation rates. Our purpose was to learn from effective mentors about the processes they believe are most important in guiding doctoral students to the successful completion of a dissertation and, specifically, the strategies they implement to help students with writing and research methods. The study was confirmatory and exploratory; we posed several hypotheses and we were attentive to emergent themes in the data.
Background	This paper addresses the problem by providing practical strategies mentors can use to help students succeed.
Methodology	We conducted semi-structured interviews of 21 effective mentors of doctoral students representing highly ranked educational programs at universities across the United States. We conducted conventional and summative content analysis of the qualitative data.
Contribution	This research showed that effective mentors provide students with technical support (e.g., scholarly writing and research methods), managerial support (e.g., goal-setting and time management), and emotional support in the form of encouragement. This research goes beyond prior studies by providing specific strategies mentors can apply to improve their practice, particularly regarding support with research methods.

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Findings	The data showed that encouragement, help with time management, and timely communication were key strategies mentors used to support students. Mentors also provided resources and directed students to use skills learned in previous coursework. Many mentors spoke about the importance of writing a strong research question and allowing the question to guide the choice of methods rather than the other way around. Mentors also said they pushed students to conform to APA style and they used Socratic methods to help students develop the logical organization of the manuscript. Many mentors referred students to methodologists and statisticians for help in those areas.
Recommendations for Practitioners	Individual mentors should conduct a self-assessment to learn if they need to improve on any of the technical, managerial, and interpersonal mentoring skills we identified. Moreover, doctoral programs in educational leadership and related areas are advised to conduct careful assessments of their faculty. If they find their faculty are lacking in these mentoring skills, we recommend that they engage in professional development to increase their capacity to provide effective mentoring.
Recommendations for Researchers	We recommend that future researchers continue to explore strategies of effective mentors. In particular, researchers should interview mentors who specialize in quantitative methods to learn if they can offer clever and innovative approaches to guide doctoral students.
Impact on Society	We conclude this paper with practical strategies to help mentors become more effective. We also make some policy recommendations that we believe can improve the mentoring process for doctoral programs in education. We believe better scholarship at the doctoral level will provide new knowledge that will benefit society at large.
Future Research	This research was a springboard for some new research questions as follows. We recommend future researchers to study how often effective mentors meet with students, how quickly they provide feedback on written drafts, and their strategies for delivering tough feedback in a caring way (i.e., feedback that the student's work did not meet expectations).

Keywords	doctoral student mentoring, writing support, research methods support, best practices, empirical paper

PROBLEM

"I cannot teach anybody anything. I can only make them think (by asking questions)."
Socrates

Doctoral education has a serious problem; many students in the United States begin the degree, but never finish. One study by the Council of Graduate Schools (2010) indicates that seven years after finishing the humanities coursework, only about 41% had completed the doctoral program. Other studies show the average completion rate for EdD and PhD programs is 50% (Craft, Augustine-Shaw, Fairbanks, & Adams-Wright, 2016; Golde, 2005; Gonzalez, Marin, Figueroa, Moreno, & Navia, 2002; Gonzalez et al., 2001; Grant, Hackney, & Edgar, 2014; Ibarra, 1996; Lovitts, 2001, 2005; Most, 2008; Nettles, 1990; Nettles & Millet, 2006; Solorzano, 1993; Vaquera, 2007). This problem is clearly in need of attention. The good news is that *effective mentors can help doctoral students succeed* (Council of Graduate Schools, 2016; Curtin, Stewart, & Ostrove, 2013; Golde, 2005; Grant et al., 2014; Luna, 1998; Welton, Mansfield, Lee, & Young, 2015; Woolderink, Putnik, van der Boom, & Klabbers, 2015). The Council of Graduate Schools (2010) reported that the most important factor working against program completion was financial. Conversely, the most important factor boosting the com-

pletion rate was the availability of an effective dissertation advisor or mentor early in the doctoral program. This fact caused us to ask the following questions: What do effective mentors do to support their doctoral students with writing and research methods and what do they feel is the most important thing they do to help doctoral student succeed?

PURPOSE AND RESEARCH QUESTIONS

Our purpose was to find the answers to these questions by going directly to the source. We interviewed effective mentors from highly ranked graduate education programs to learn the strategies they used to help their students with writing and research methods and to learn their most important processes to help doctoral students succeed. The specific conceptual research questions for this study were as follows:

1. What is the most important thing effective mentors do to help doctoral students succeed?
2. What do effective doctoral student mentors do to support students in the writing process?
3. How do effective doctoral student mentors help students in research methods?

In the next section, we present processes and strategies mentors have applied to help protégés succeed. We expected the mentors in this study would mention some of the themes from prior literature on best practices. As this was an exploratory study, we were also open to emergent themes that we had not considered before.

BACKGROUND LITERATURE

This study was part of a larger inquiry into best practices in doctoral student mentoring. In prior write-ups, we focused on mentors' interpersonal skills and processes mentors used to nurture relationships with students (Roberts & Bandlow, 2018; Roberts, Ferro Almeida, & Bandlow, in press). In this study, we collected data on mentors' processes for supporting students in dissertation writing and research methods. Hyatt and Williams (2011) provided an important foundational study for this work. They asked 10 faculty in a leadership doctoral program to identify and prioritize the importance of competencies for leading doctoral education into the heart of the 21st Century. Faculty generally ranked knowledge in research methods as "critical," guiding students' quality writing as "critical" or "very important," and taking responsibility for dissertation advisement as "very important." In this literature review, we have presented a list of mentor processes that are essential to protégés' success. We focused, specifically, on a set of competencies that have been empirically linked to protégés' success.

Hyatt and Williams (2011) sorted faculty competencies into several bins as follows: competencies pertaining to teaching role, advising role, research role, service role, and collegial role. The three roles most relevant for the current study were teaching role, advising role, and research role. Within the teaching role, faculty identified and prioritized the following competencies: a) communication and facilitation skills, b) teach theory and practice (the median priority level for both was "critical") c) use of technology, d) model and teach ethics, e) knowledge of and experience with organizational trends, e) pedagogical understanding, and f) model lifelong learning (the median priority level for each was "very important"). Within the advising role, faculty identified and prioritized the following competencies: a) knowledge about research methods, tools, and technologies (median priority level was "critical"), b) guide quality written work (median priority between "critical" and "very important"), c) be available to students, d) engage students as co-researchers, e) coaching skills, f) responsible for dissertation advisement (for all mean priority level was "very important"), and g) teach research ethics (mean priority level was important). Within the research role, faculty identified and prioritized the following competencies: a) able to view issues from multiple perspectives (median priority level was

"critical"), b) understand the role of faculty research in teaching and learning, c) continuous development of scholarly skills, d) innovative and adaptive, e) contribute to the field through publications and presentations (median priority level was "very important"), f) understand and promote the role of faculty research to increase program and university prestige, and g) use of technology for research (median priority level for both was between "very important" and "important").

Because faculty considered communication competence a top priority in their teaching role, we organized part of our review around key communication competencies as follows: a) question-asking or Socratic Method, b) the ability to communicate strategies to students pertaining to goal-setting, c) the ability to communicate strategies to students pertaining to time management. We also reviewed literature on mentors' ability to embody a role model for students in the context of a) modeling ways to think about research methods, tools, and technologies, and c) modeling ways to think about and create a written manuscript. Finally, we reviewed the literature on the competency Hyatt and Williams (2011) labelled "being available to students."

Communication Competence Pertaining to Question-Asking: Socratic Method

Socrates taught his students by asking probing questions. We believe the key to being a great mentor is asking great questions. And, the key to asking great questions is asking lots of questions. We believe great mentoring requires lots of questioning and communication between mentor and protégé. *Question-asking* is useful for several reasons, a) it is a method to help the mentor understand what the student knows and also where his lacuna are and b) it is a way to push the student to become an independent scholarly thinker.

While the educational field indicates little on the impact of Socratic method in a mentoring relationship, Martindale, McClave, Heyland, and August (2010), in a paper from the field of medicine, claimed Socratic method is essential in a mentoring relationship. In applying this method, the mentor must use probing questions to challenge preconceived beliefs and dogmatic ideas the student may hold, a key mentoring competency according to Hyatt and Williams (2011). In this process, the mentor is also engaging in cognitive modeling, showing the student how to challenge his ideas on his own. In other words, question-asking starts as a process that takes place between mentor and student, but gradually becomes internalized within the student's own mind, so that he learns to engage in an internal dialog of questioning and answering as a way to move his thinking forward.

Communication Competence Pertaining to Goal-Setting

There are communication competencies mentors can learn to help protégés set and meet goals. For a counter example, the mentor should not set the goals *for* the student. Goal-setting theory asserts protégés will be more successful if the mentor and protégé create the goals as a team. This way, the protégé is more likely to take personal ownership of the goal. (To avoid confusing language, we have used the female pronoun to refer to the mentor and the male pronoun to refer to the protégé. The exception is the Carmel and Paul study [2015] in which the protégé was female.)

According to goal-setting theory, protégés will be motivated to work harder when their mentor draws attention to the gap between their current status and their goal status, i.e., where they would *like* to be (Locke, 1964; Locke & Latham, 1990). So, it is not enough to simply *have* a goal; it is also important for the mentor to direct the protégé's attention to the *gap* between his current status (in our study, his current status would be A.B.D. [All But Dissertation]) and his goal status (i.e., completing a PhD or an EdD).

Empirical data show that protégés with specific, challenging, attainable goals were more motivated, tried harder, persisted longer and were more likely to complete their degree (Earley, Wojnaroski, & Prest, 1987; Donovan & Williams, 2003; Hollenbeck, Williams, & Klein, 1989). A parallel line of research has examined the impact of goal-setting in the context of a mentoring relationship between

two faculty members. More specifically, Carmel and Paul (2015) conducted a case study of a faculty member and a protégé in a university setting. They concluded that mentor help with goal-setting was one of the most important processes for success. Although Carmel and Paul studied a mentoring relationship between a senior faculty member and a junior faculty member, their findings were consistent with research that showed help with goal-setting is important in the success of *doctoral students*. Similarly, a study by Sorrentino (2006) showed undergraduates who participated in a mentoring program with goal-setting were more likely to graduate than those in a control group. According to Sorrentino, goal-setting inspired students to action; action brought about greater performance; performance, in turn, brought about a greater probability of graduation. According to Carmel and Paul (2015) a mentor's responsibility is to help the protégé identify a meaningful target for change and then, to help him design and commit to a set of actions to bring about change. Haughey (2014) used the helpful acronym, SMART goals, to define goals that are Specific, Measurable, Achievable, Realistic, and Time-bound. We will address what it means for goals to be time-bound in the next section.

Communication Competence Pertaining to Time Management

We believe mentors must develop communication competencies that will allow them to help protégés with time management. American writer, Napoleon Hill, said, "A goal is a dream with a deadline." Goal-setting and time management go hand-in-hand. Without a clear timeframe and deadlines, goals are unhelpful. Setting a goal with a deadline is the first step to managing one's time. The next steps are to break the larger goal into smaller sub-goals, organize the sub-goals in a logical order, and set a deadline for each sub-goal. Additional aspects of time management are the ability to prioritize tasks, manage competing demands on one's time, and resist the urge to procrastinate when tasks seem daunting. Thus, proper goal-setting subsumes the process of time management.

Deadlines and time management are important for productivity in academia, (Carmel & Paul, 2015; Straus, Johnson, Marquez, & Feldman, 2013) just as they are in every professional field. We concur with Chase and colleagues (2013) and Conn (2014) that doctoral students must develop time-management and priority-setting skills. And, we also argue that protégés benefit when mentors help with goal-setting and time management. Lepp and her colleagues (2016) and Lee (2008) provided evidence to support this claim. In addition, Deshpande (2017) presented a review of the literature on best doctoral mentoring practices concluding that protégés thrive when mentors help with time management. Moreover, research by Straus and her colleagues (2013) found that when mentors and protégés communicated well regarding time management and deadlines, protégés were more successful in their degree program.

Communication Competence Pertaining to giving feedback

Research shows effective mentors know how to give respectful, detailed, and timely feedback on protégés written drafts (Woolderink et al., 2015). Similarly, Rose's 2003 survey research showed doctoral students claimed two of the most important mentoring skills were (a) honest feedback—good and bad—about students' work and (b) effective interpersonal communication skills.

How do mentors learn to gauge the timing of feedback? We would assume quicker is better. Research shows *prompt* feedback helped students stay on task in their writing (Council of Graduate Schools, 2010; Heath, 2002; Holley & Caldwell, 2012; Jacks, Chubin, Porter, & Connolly, 1983; Lovitts, 2001; Shaw, Blyler, Bradley, Burrus, & Rodriguez, 2015). Moreover, doctoral students in the Netherlands claimed an important mentoring competency was for mentors to manage their own time in such a way that they could deliver *prompt* feedback to students' drafts (Woolderink et al., 2015).

Role Modeling

Mentors are role models who help socialize protégés to the role of a scholar. According to Weidman, Twale, and Stein (2001) socialization in academia takes place in stages: (a) by observing mentors as

role models, protégés take on the expected values and behaviors; (b) in the formal stage, protégés "try on" the normative roles, which may feel uncomfortable in the beginning; (c) in the informal stage, protégés begin to feel the role of scholar in a more natural way; and finally, (d) the protégé moves to the personal stage in which his personal and professional identity become one and the role of a scholar is fully internalized. According to Weidman and his colleagues (2001), the transformation from dependent student, a receiver of knowledge, to independent scholar, a creator of knowledge, occurs gradually as the protégé internalizes a set of specific behaviors and values that define the scholar role. Hyatt and Williams (2011), identified some specific areas of importance for faculty role modeling. For example, their empirical study showed faculty in a leadership doctoral program identified role modeling strong ethics and lifelong learning to be "very important."

Role modeling is important in the context of cognitive role modeling. Although the impact of cognitive modeling between dissertation mentors and doctoral students has not been studied, a body of literature shows the impact of cognitive modeling on protégé learning in other professional contexts such as teaching, nursing, police work, and business. In a review of empirical literature, Hezlett (2005) showed that mentors in these areas have been effective at transferring knowledge to protégés through modeling. In particular, mentors' modeling has helped protégés learn the following concepts and skills: organizational culture, technical concepts, technical skills, time management, interpersonal skills, work persistence, self-regulated learning, and confidence. We believe some of these findings may generalize to the context of doctoral mentoring.

The role modeling competencies are closely aligned with the communication competencies. As noted above an effective mentor models competencies by managing her own time well and also by communicating with the student about techniques he can use to manage his time. We also noted an effective mentor models competencies by setting goals for her own work and also by communicating with the student about techniques he can use to set goals in his work. And, perhaps most important from our perspective, an effective mentor can model question-asking and we believe the student becomes transformed to an independent scholar when he internalizes this competency and begins his own internal dialog of question-asking and answering; this process, we believe, provides a royal road to clarity in the student's writing.

Being Available to Students

Hyatt and Williams (2011) identified *being available to students* as one of the key competencies of effective mentoring. However, they did not explain what is meant by the phrase "being available to students." Surely, this phrase can be interpreted many ways. Does "being available" mean being emotionally available to the student, to help him through a rough spot when his confidence is flagging, when he loses heart and faith in himself? Being available to provide moral support and encouragement is certainly consistent with research that shows students are more successful when mentors are encouraging (Kram, 1985; Pifer & Baker, 2016; Vekkaila, Pyhältö, & Lonka, 2013; Woolderink et al., 2015). Does "being available" mean being intellectually available when the student just cannot seem to bring his logic model to heel? Or, does "being available" simply mean the mentor should make a space in her calendar, to make time available for the student and then stay in the moment with the student and let him reveal what kind of support he needs at that time. A growing phenomenon in our culture is the practice of mindfulness and this philosophy is consistent with the idea of simply being present with the student, staying in the moment, and asking, "How can I be supportive to you?"

In a prior section, we presented the idea that mentors and protégés need to spend lots of time together engaged in question-asking. What is needed to allow that questioning to take place? The mentors and protégés need to spend a lot of time together, either face-to-face or electronically. Thus, we believe one of the key competencies for an effective mentor is a willingness to give lots of her time to her protégés. It could be argued the ability to make oneself available to students is not really a *competency* so much as it is a willingness and commitment to be responsive to students. However, we ar-

gue that mentors' commitment to be available to students is an ethical competency in the spirit of showing respect and compassion toward students. According to research, some of the simplest strategies outstanding mentors used were *frequent and regular meetings* with students (Woolderink, Putnik, van der Boom, & Klabbers, 2015).

How much time is the right amount of time? And, how can mentors discern the right amount of time that will propel a protégé toward independent scholarship? A study by Roberts and Bandlow (2018) suggested that when mentors spend too little time, protégés fail to thrive. On the other hand, if mentors give too much time, protégés may become too dependent. Mentors need to develop the ability to discern how much time is ideal. There is little research to show mentors how to develop this ability. We believe it is both an intrapersonal competency and an interpersonal competency. Perhaps the findings from this study can shed some light on these questions.

In the next section, we present the methods and findings. We expected the mentors would mention some of the themes from prior literature on best practices. But we were also open to new and emergent themes in the data.

Method

We secured ethics approval and interviewed 21 doctoral student mentors (chairs) who had been nominated by colleagues as "excellent" mentors. Our purpose was to learn their strategies for supporting students in writing and research methods. Our first invitations were sent to colleagues who had a reputation for excellence in doctoral student mentoring. Next, we applied a snowball sampling technique; we concluded each interview by asking each respondent to nominate additional mentors they considered excellent. We sent an e-mail invitation to each nominee and interviewed those who gave a positive response. We sent 32 invitations and 21 participated in the study (response rate = 65%). Interviews were conducted from September 2017 to May 2018. The questions for the interview are included in Appendix A. The responses to Questions 1–3 are included in this paper. One of the limitations of the study is the subjective nature of the designation "excellent mentors." We provided general guidelines by asking for names of mentors who had a high graduation rate and who had students who produced quality dissertations. However, each person may have a different interpretation of these qualifications.

Background Characteristics

This section contains a description of the mentors' background characteristics. At the time of the interview, 18 people were professors at U.S. universities in the United States, two were retired professors from U.S. universities, and one had taught in a U.S. university, but had left for a job in basic education. Seven universities were represented in the sample: three were in the Mid-Atlantic area (11 mentors); two were in the south (five mentors); and two were in the western region of the United States (five mentors). Sixteen mentors taught in educational leadership programs, two taught in school psychology programs, and one mentor came from each of the following disciplines: educational and psychological studies, literacy and technology, educational policy and evaluation. The *U.S. News and World Report Rankings of Best Graduate Programs in Education for 2019* indicated six of the seven schools within the top 105 programs in the country. The seventh program was a relatively new program and had not yet been ranked. The six programs were 69th in average ranking. The median enrollment of all the graduate programs in education was 1,153. We conducted three interviews face-to-face, 17 by phone, and one via Skype. Eleven mentors taught PhD students, seven taught EdD students, and three taught PhD and EdD students.

With regard to years of experience, mentors had served in their role between 3 years and 38 years (M =13.98, SD = 9.86). We did not collect data on the gender and racial identities of the mentors or mentees. Although we recognize that the influences of gender and race on effective mentoring relationships are likely complex and meaningful ones, an exploration of those influences go beyond the

scope of this study. We asked mentors how many students they had mentored (currently and in the past); responses ranged 4–109 students (M = 29.14, MDN = 18, SD = 31.35); and the mean completion rate was 90.83% (SD = 14.92); this rate much higher than the national average, which is about 50% (Craft et al., 2016; Golde, 2005; Gonzalez et al., 2002; Gonzalez et al., 2001; Grant et al., 2014; Ibarra, 1996; Lovitts, 2001, 2005; Most, 2008; Nettles, 1990; Nettles & Millet, 2006; Solorzano, 1993; Vaquera, 2007). We asked each mentor what percentage of his or her mentees were full-time and part-time students. On average, 60.29% mentored were part-time students (SD = 41.64) and 39.71% were full-time students (SD = 41.64). We also asked about selectivity of the various programs represented; the average acceptance rate for doctoral student applicants was 55.85% (SD = 31.05). We asked each mentor if any of their students had received dissertation awards. A "yes" response was followed with a question about what level award they had received. Eleven of the mentors had students who had received dissertation awards. Table 1 shows the number of awards for each level. Our purpose for presenting the graduation rate and the number of students who had received awards was to show that the students were generally successful and the respondents had demonstrated a high degree of effectiveness as mentors. A discussion of whether these metrics actually measure excellence in mentoring is a philosophical and subjective issue that goes beyond the scope of this study.

Table 1. Number of dissertation awards won by students of respondents

AWARD LEVEL	*f*
University awards	19
National awards	17
International awards	2
Total	38

Analysis and Findings

We applied conventional and summative content analysis to identify and count the themes revealed in the respondents' comments (Trochim, 2006). With conventional content analysis, the researchers read the transcripts and identified themes in the subjects' responses. Each author served as a coder and read each subjects' transcript, making notes to record the themes that emerged. We then compared notes to determine whether we both identified the same themes. After a process of discussion, we came to a consensus on some themes (the emergent themes) and discarded the ones on which we could not agree. Using summative content analysis, each coder counted the number of respondents who mentioned each emergent theme. We then organized the themes in order of priority from most important to least important and presented them in Tables 2, 3, and 4. This method was based on our assumption that the most important themes were the ones that were mentioned most often and the least important themes were the ones that were mentioned least often. Of course, this assumption could be questioned, and some readers would prioritize the themes other ways and with, perhaps, a different order. But if the reader accepts our assumption, the logic of our method will, hopefully, make sense. The conventional content analysis step entails each coder identifying the themes. The summative content analysis step entails counting the number of mentions of each theme and organizing them from most "important" to "least important." In order to check our biases and improve confirmability of the themes, we compared our notes to determine if we had agreement on each mention of each theme. For example, consider Table 2. Both coders identified the same 9 subjects who mentioned "emotional support-encouragement," and identified 12 subjects who did not mention this emergent theme, so we had 100% agreement. However, for "help with goal setting and time management," we agreed on 20 subjects, but, disagreed on one subject. So, percent agreement was only 95%. If we had less than 95% agreement, we dropped that theme from the analysis. The number of mentions for each theme by each coder, the percent agreement between coders, and the mean percent of respondents who mentioned each emergent theme are shown in Tables 2, 3, and 4. The findings for each question are presented next.

Research Question 1: What is the most important thing effective mentors do to help doctoral students succeed?

The primary investigator asked each respondent, "What is the most important thing you do to help doctoral students succeed?" The coders identified five themes as shown in Table 2. We had 95% agreement or higher on all themes. The confirmability analysis is presented in Table 2.

Table 2. Confirmability analysis for Research Question 1

THEME	CODER 1	CODER 2	AGREEMENT	RESPONDENTS
			%	
Emotional support - encouragement	9	9	100	43
Help with goal setting and time management	7	6	95	31
Provide timely and regular communication	6	7	95	31
Help focus their research question	4	4	100	19
Provide resources and net-working opportunities	4	3	95	17

Note. Research Question 1: What is the most important thing effective mentors do to help doctoral students succeed?

Emotional support–encouragement. Some of the mentors (43%) said the most important thing they did to help student succeed was to provide encouragement. This kind of support was unique because it is an example of emotional support. In contrast, most of the other types of support pertained to processes that helped students develop cognitive skills and find resources. Some comments about encouragement were as follows:

Peter: *I am committed to be a responsive advisor, even if it's just to give some encouragement ("attaboy" or "attagirl") . . . I provide emotional support. I've seen students unsuccessful because the advisor lost touch with them, they lost hope and purpose, they needed someone to tell them just keep plugging away. My research on communication and trust and competence in leaders shows that a communicatively competent person fosters trust in those they are leading.*

John: *I am the student's biggest champion. A doctoral program is intense, students lose momentum and they have lots of time conflicts, they don't see the light at the end of the tunnel, I help them keep going and keep them focused on the pot of gold at the end of the rainbow.*

Goal setting and time management. About a third of the mentors said the most important thing was help with goal-setting and time management. These two strategies are intimately linked; goals without deadlines are useless. Some of the comments for this theme were as follows:

Bob: *I help them structure their time and tasks within a given time . . . keep them focused, help them set goals for themselves, work through challenges, time management, organization, identify goals. Trying to facilitate the way they structure their time, identify goals and work towards their goals.*

Helen: *I helped him with time management and accountability. I said send me x number of pages by this date; we would go over things on the phone.*

Timely and regular communication. Another common response was providing timely and regular communication. Some of the respondents (31%) made comments along these lines. Peter and Donna were especially forceful about this theme:

Peter: *I provide timely communication. When my advisor was not responsive it was challenging, when he was, it was amazing . . . I let the student know we are still connected, advisors and mentors sometimes drop off the radar and don't respond to e-mails and communication. Mentors are not obligated to provide specific information but it is important to be responsive, to provide timely communication that shows the student that I am competent and can be trusted, it shows I am "other-centered," I am centered on them, on the student.*

Donna: *I will force at least a monthly communication at the beginning.*

Help focus their research questions. Some of the mentors (19%) said the most important process was to help the student craft a strong research question. In some cases, the emphasis was on feasibility.

Alan: *It's the idea of how to pare down information, how to focus their ideas into a workable dissertation question, how to revise research questions.*

Another mentor emphasized that the research question must be original, that is, it must fill a gap that has not yet been addressed in the scholarly literature. Her comment was as follows:

Helen: *The qualifying exam is a take-home in which students work on their lit review (Chapter 2). This helps them identify the gaps in the literature and this leads them to their scholarly research question.*

Another mentor said his most important job was to help the student find a topic he was passionate about:

Zeke: *Find a topic they have a passion for and help them acquire the skills necessary to study their question. It centers around topic selection and their passion for that topic.*

Provide resources and networking opportunities. Some of the respondents (17%) said it was most important to provide resources and networking opportunities. Some examples are as follows:

Alan: *Helping your* students *with resources, where to go, who to talk to.*

Walt: *I make sure I introduce them to the network of scholars at . . . literacy and reading conferences . . .*

Peter: *In contrast to the lore and legend of dissertations is that you're left to figure things out for yourself and my mentor showed me exemplars in two ways: articles and dissertations. Providing exemplars gives a student a sense of purpose and destination.*

Research Question 2: In what ways do mentors support students in the writing process?

Help with style and logical organization. The primary investigator asked each respondent, "In what ways do you support students in the writing process?" Although no one asked for clarification on this question, it seems some mentors assumed an important pre-step before writing was to help the student organize his thoughts in his head in a logical and coherent way. This thought process included making logical connections between related ideas. Next, the student had to express his thoughts "on paper" in a standard scholarly *style*. So, the mentors' ideas regarding help with writing pertained to coherent, logical scientific thought *and* conforming to a particular writing style. Bob articulated the dual focus of writing support, as follows:

Bob: *I talk to them before they start writing and help them begin to organize their thoughts, review outlines, review multiple drafts . . . there are two pieces or aspects that I look at and evaluate . . . there is (a) the scientific content/coherence of thought process and there is (b) the writing style, syntax, APA style, grammar, spelling, etc., the things an English teacher would look at.*

The themes for this question and the confirmability analysis are presented in Table 3.

Help with style. Ten mentors (48%) said they read drafts and provided feedback to help students with scholarly writing, including, syntax, grammar, and APA style. Bob summed up these writing elements as "things an English teacher would look at." Some mentors worked closely with the student on the details of scholarly style, so closely, in fact, that they were using track changes to do line editing. For example, consider this comment from Lisa:

Lisa: *Once a student is my student, we are shoulder to shoulder through the whole writing process; I do close editing and comment regarding content and those drafts go back and forth on a very regular basis. Track[ing] changes helps a lot. Prior to that, I was doing this work on the page . . .*

Table 3. Confirmability analysis for Research Question 2

THEME	CODER 1	CODER 2	AGREEMENT %	RESPONDENTS %
Help with Style. Providing feedback on standard scholarly writing style	10	10	100	48
Help with Logical Organization. Help with organizing thought, scientific thought, coherent thought	9	9	100	43

Note. Research Question 2: In what ways do mentors support students in the writing process?

However, Gina said helping with grammar actually distracted her from her larger role of helping the student see the bigger picture and how all the parts were linked. Consider her comment:

Gina: *I started by editing for grammar, but that doesn't help me or them. In the past, I focused too much on grammar. Once I gave that up, I focused on how the story is told and the bigger picture . . . how they were making the case for their story . . . getting behind the barriers of the grammar problems and having a conversation about what they were saying.*

John had a similar comment:

John: *I'm not their editor. They should know how to write when they get to the doctoral level. I'm a content person; I help in that area, with their ideas. I make sure they conform to APA style and I refer them to the APA manual. I am strict with APA guidelines.*

Mentors who felt stylistic editing was not part of their role would recommend that students either (a) study the APA manual and learn the proper style; (b) go to the university writing center for support, or (c) hire a professional style editor.

In addition, mentors claimed that students needed to grasp some principles of rhetoric in scientific writing. For example, consider these comments:

Ellen: *My colleague says scholarly writing should be clear, concise, cogent, correct, and compelling. No more donkey dust. He was one of the most difficult instructors I had and I always remember him for it. Some come from a novice perspective and students from a writing background have trouble with scholarly writing. This type of writing is not flowery; take out all the superlatives and adjectives. I don't edit. I'll give assistance. I tell them the lit review is a funnel going from broad, overarching topic areas of research to their narrower question. If they get stuck, I ask them to send me a flushed outline and I will give feedback. I don't care what it looks like, just send it to me. I had one who had two trains of research coming and she couldn't bring them together and she needed help bringing them together.*

Peter: *I help them connect all the sections and how the intro and lit review and methods and results connect; how does it all align?*

Help with logical organization. Nine mentors (43%) mentioned this theme. Help with logical organization typically began before the student actually started writing. A planning step occurred first in which the mentor helped the student think through a clear, coherent, logical outline. Then, mentors read drafts, discussed ideas, provided verbal or written feedback, and continued to help students with coherent, scientific expression of ideas. Some of the ways mentors helped students with the logical organization of writing were as follows:

Bob: *I talk to them before they start writing and help them begin to organize their thoughts, review outlines, review multiple drafts . . .*

Lisa mentioned that she saw thoughtful planning and writing as an iterative process that moved the student forward gradually.

Lisa: *So, it's just a time- and labor-intensive process, but really rewarding in the growth that I observe in a lot of the students who just don't know how to write, were never taught to write, they don't edit their own work, it gives the message that if you can't write it, you probably haven't thought it. And, also the writing process helps you think it. If you write it, it forces you to get clearer, it's a back and forth thing. It is rewarding to see their growth. Writing helps you think and thinking like a scholar helps you write.*

Programmatic approach to writing proposal. Although this was not a theme in the data, one mentor, Zeke, described his programmatic approach to writing support that is worth highlighting:

Zeke: *I have a programmatic approach. First, they outline Chapter 1. They are overwhelmed with writing a dissertation when they are at the beginning stages and they look at it as a total package . . . they panic. I help them break it down into pieces. They start with heavy duty reading, then outline Chapter 1. I review the outline, give feedback, ask them to write 1 or 2 sections from Chapter 1 to see if they need help from the writing center or if they are ready to go, if they are ready to go, I ask them to do a first draft of Chapter 1 and we get it to the point where it is done, I give feedback (5–6 drafts), then they go on to Chapter 3, write Chapter 2 after Chapter[s] 1 and 3. I break it into bite-sized chunks and give feedback along the way and direct them to supports they may need (editors, writing center, etc.).*

Research Question 3: How do mentors help students in research methods?

The two coders conducted independent thematic analysis of the transcript data; then we compared notes and discussed the areas of disagreement. Eventually, we arrived at consensus on four themes as shown in Table 4, including the confirmability analysis.

Table 4. Confirmability analysis for Research Question 3

THEME	CODER 1	CODER 2	AGREEMENT	RESPONDENTS
			%	
Coursework	13	12	95	59
Start with research question; design method around the question	10	11	95	50
Use Socratic method	9	8	95	40
Recommend expert statisticians and methodologists	5	5	100	24

Note. Research Question 3: How do mentors help students in research methods?

Coursework. Some of the respondents (59%) said they directed students to coursework for help with research methods. For example, some of these comments were as follows:

Lisa: *When we get to Chapter 3, they take courses in qualitative methods, quantitative methods, and program evaluation. In their last course, they wrote a draft for Chapter 3.*

Bob: *They come prepared by coursework they have done . . . they have completed a doctoral qualifying project and coursework related to research methodology.*

Inge: *Students take research methods courses to prepare them for their dissertation research methods.*

Start with research question and design a method around the question. This theme was voiced best by Peter, as follows:

Peter: *Methodologically, I help them align everything. Most doc students want to start with the methods and that's wrong. They should start with the question. They should choose the method that matches that question. I challenge students in a respectful way to find the method that best answers their question.*

The student can choose from many kinds of qualitative methods and many types of quantitative methods. The first decision the student needs to make (after deciding on the research question) is whether to pursue qualitative or quantitative methods (or mixed methods, a combination of the two). A good decision rule in this regard is whether the purpose of the study is to test a hypothesis (quan-

titative) or generate a new theory or hypothesis (qualitative). Some students want to do both, so mixed methods would be appropriate. Once that step is decided, the student can brainstorm with the mentor about the specific method to choose within qualitative or quantitative.

Socratic Method. Some of the mentors (40%) said they used Socratic Method to guide students in research methods. Some examples are as follows:

Chris: *I ask, "How will you define your population, sampling method, how will you gather the information? What will you have them do to get your information?"*

Fran: *I ask them to think about the research question, what are the methodologies available to them, think . . . broadly and specifically. For example, thinking broadly, I ask, "What is your area and what are the ways you can answer that question? And specifically, if you choose this, what is the way you need to tailor your question and attach it to the research methods?"*

Gina: *(I help with research methods) by asking questions . . . : What do you expect to be able to tell about what you've discovered? What are you looking for? Working backwards about what is the best method to get there?*

Lisa: *I ask them to think critically: Is this example applicable to my research question or not? And it goes back and forth and back and forth (between the student and me) until we get it right.*

Rita: *Useful aspects of our ongoing conversations are how you think about different designs, how you think the limitations and strengths of different designs are going to impact your findings. I ask students, "How do you think about different designs? What are the costs and benefits of the different designs?" This helps with logic development.*

Recommend experts. Some of the respondents (24%) said they would refer students to experts if they did not have the expertise for the student's particular research methodology. In almost every case, this was a qualitative researcher who did not have the expertise needed in quantitative methods. For example, consider the following quotes:

Alan: *I lean toward the qualitative side. If the method is quantitative, I steer them to experts in those areas. At this point in our program, students should be able to figure this out . . . we don't want them to lean too much on others, such as chairs and methodologists. We need to give them a firm foundation in their coursework. Too many students, when they get to the dissertation, feel lost. They need to ask do I have the time, will, ability to carry out the study. It is incumbent on us in our program to prepare students. We are too content heavy, and have too few courses on writing and methods. We have courses on how to write the intro, how to write the lit review, then you have your stats, qualitative, quantitative, but we have too few courses on stats. We are finding out now, we can cut some content courses and a little more on research methods and stats. We have a qualitative research course. We have few advanced qualitative courses . . . it is just an 8-day course and is not enough to get the method across.*

Alan pointed out a dilemma in his program. Although students are expected to know how to design and carry out the research methods part of the dissertation, if they choose a quantitative study, they have not been prepared with enough statistics through their coursework. He also said, they should not lean too much on chairs and methodologists. So, where are the students supposed to acquire this expertise? High expectations without coursework preparation and without expert help by chairs and methodologists sets students up for failure. Surely, an 8-day course in qualitative methods is inadequate. All doctoral programs must take a careful and critical look at possible methodological and statistical inadequacies and address them.

Other comments pertaining specifically to programmatic weaknesses in methods (especially quantitative methods) are as follows:

Bob: *I'm not a statistician but I have decent knowledge of stats but refer to colleagues if needed.*

Fran: *Research methods are my Achilles Heel. If needed, I refer the students to colleagues . . . So, I will get a general plan with the student and then have her or him check in with a methodologist to make sure everything is right, so we don't get too far into it without checking to make sure it is right.*

Tom: *It depends, occasionally I can't help them, a current one is using methods I never heard of, I'm weak in current methods because I'm older, I've talked them through the stats and make sure it makes sense, mostly they've been independent in this area. If I'm worried that I don't know the statistical method well, I have them consult a statistician.*

Zeke: *I have an outstanding consultant that I work with. I know my strengths and my weaknesses . . . I refer to people who have expertise if I can't provide that expertise for them. I will prime the pump with those consultants to make sure they are ready to assist.*

Programmatic approach to writing the research methods section. Although this was not a theme, one respondent, Nathan, had a programmatic approach to writing the research methods section. His method was as follows:

Nathan: *Chapter 1 is the toughest . . . they have to conceptualize the research question, then decide: "Is my study descriptive or relational? If it is relational, what are the variables? What are the predictor, independent variables? What are the outcome, dependent variables?" Also, they need to draw from the literature to justify their choice for their variables. They have to explain how they will operationalize, measure their variables, for example, if they pick "teacher expectations" . . . I ask, "How did you get to the definition of the variable 'teacher expectations?'" . . . Then, they have to answer the research question with data, they need to say, for a relational study, whether the relationship was significant. What was the effect size?*

Discussion and Conclusion

Summary of main findings

An effective doctoral student mentor wears many hats and asks many questions. According to our findings, her most important role is to provide emotional support in the form of encouragement to keep students moving forward when the journey gets tough. An effective mentor also helps students with goal-setting, time management, setting deadlines, providing timely feedback, regular communication, and generally, keeping the "trains running on time." So, it appears there is a managerial aspect to being an effective mentor. Several mentors said their most important task was helping the student craft a strong *research question*. Different people described a strong research question in different ways: one focused on feasibility (i.e., Can this question be studied in a reasonable time frame? Can the student get the necessary permissions to collect the data? etc.); one focused on originality (i.e., Has the student conducted a thorough search of the literature to find a gap that needs to be filled?); and one focused on finding a topic that the student was passionate about. We have an additional definition of a strong research question; we believe a strong research question is one that has far-reaching implications for growth and enlightenment in the field of education. But, this was not a definition that emerged spontaneously from our respondents. Some of the respondents (17%) said their most important task was to refer students to resources, which included networking with other scholars.

With regard to the writing process, the most common strategies respondents mentioned were (a) to help with the mechanics and APA standards of writing style and (b) to help students map out a coherent, logical plan of thought before they began writing. We would take a pause here to caution mentors and students to hold that plan lightly…to think of it as a flexible blueprint; often, when the student starts writing, new ideas and new branches and connections emerge in the process of the writing. We urge mentors and students to remain willing to revise the logical plan as new ideas emerge. In this sense, the process of writing is, itself, part of the process of thinking and creating new meaning.

With regard to research methods, about half of the respondents noted it was essential for students to begin with the research question and design the method to fit the question, not the other way around. Most mentors said the most important thing they did was point the student back to his coursework. Several mentors implied the details of the research methods had been covered in prior coursework and thus, the mentors did not have to make detailed recommendations as to the steps of methodology. Some mentors also directed students to consult with statisticians and methodologists

for help with methods. Several of the mentors noted they specialized in qualitative methods and were able to work on the specifics of that method with the student. Several also mentioned they used Socratic questioning to guide the students in research methods. Instead of telling students what to do and giving them all the answers, many mentors used strategic questioning to guide students to deeper understanding. However, these comments generally pertained to providing support with *qualitative* methods. In fact, only two of the mentors claimed they had the expertise to provide guidance on the details of a *quantitative* study. In fact, several specifically said they did *not* have this expertise and routinely referred students to consultants (statisticians, quantitative methodologists, and other experts) for this kind of guidance. One exception was Nathan, who was clear about his detailed process for guiding students through the steps of developing a quantitative research methods section.

We wondered why most mentors seemed to "dodge" our *quantitative* research methods question. Most pointed students to prior coursework and outside resources. We wondered why they did not want to jump right in and get involved with detailed question-asking to guide students with quantitative research methods. We have a hunch that some consider the methods a bit static, boring, and stale. Or perhaps, they did not have strong quantitative methods mentoring models in their own doctoral days; perhaps they did not have mentors who knew how to mentor effectively in the area of quantitative research methods. We would like to urge mentors to begin to think of quantitative research methods as a creative, even artistic endeavor. We would like to put forth the idea that quantitative research methods are exciting and enlightening aspects of dissertation writing and that mentors and students can work together in exciting partnerships to create new ways to think about how to write a dissertation that integrates their abstract thoughts and burning questions with evidence from the material world. Moreover, they can help students to think creatively using mathematical ideas based in probability and logic as helpful tools to be used and enjoyed rather than as pesky tasks to be outsourced to a consultant. Certainly, this finding suggests that doctoral programs in education may be in need of enlightened and effective experts who have competencies for mentoring in the field of quantitative research methods. If we can teach students to greet chi-squares and regression models as friends and if we can teach students to love the little numbers, we will be doing something right.

Providing resources and networking. Some mentors directed students to APA editors, written sources, scholarly sources, exemplars (articles and dissertations), and statistics consultants. Moreover, several mentors said they increased protégés' visibility by introducing them to other professionals who could help them grow. Networking was identified as part of the larger theme that also included providing resources, more generally. Several scholars have identified networking as an important task of a mentor. For example, Carmel and Paul (2015) claimed one of the essential roles of a mentor is to help the protégé with networking. A subject of their case study (a mentor) was active in introducing the protégé to other people who could help his professional development. Moreover, Shunk and Mullen (2013) defined a mentoring relationship as a professional social learning opportunity that can help the protégé grow in many ways, including developing his professional social network. Baker and Pifer (2011) also found mentors helped protégés develop connections with a larger network of professional contacts.

Help with logical organization-cognitive modeling. A substantial number of mentors felt their role included cognitive modeling. We believe one of the most important cognitive skills mentors can model is question-asking. Indeed, as the student becomes able to integrate the process of question-asking, he begins to create an internal mental model of what it means to *be* a scholarly thinker. This is to say, when a student begins to ask and answer his own questions, he is another step along the path to becoming an independent scholar. And, we believe when he begins to *fall in love* with the process of question-asking, when the question-asking becomes enjoyable to him and, dare we say, even enchanting, then he wants to ask more and more questions; this is how he gets to the great question that provides the springboard for his work. But, then the questions keep coming and he uses them to create the logic model for his thesis, like a frog moving from one lily pad to the next as he moves across the pond. He does not have to be able to visualize the entire journey all at once (as we imagine

Einstein did), he just has to have faith that the next lily pad (question) will appear and keep moving across the pond one lily pad (question) at a time. We have a hunch this is how independent scholars are *born*. Thus, *question-asking* is a critical competency for both mentors and students. And, we believe the way students learn to be great question-askers is by spending time with a mentor who is a great question-asker. How does a mentor become a great question-asker? That is a question for another paper and another day.

Helping students view issues from multiple perspectives. There is a logical connection between the competency of question-asking and the competency of developing perspective taking skills. For example, some possible questions mentors can ask to improve students' perspective-taking skills are as follows: a) Is your perspective the only way of looking at this issue? b) Do other people see this issue differently? c) Is it possible for two seemingly different perspectives to both be true? d) Is it possible for two seemingly *opposite* perspectives to both be true? And so on. Sometimes, when the student internalizes perspective-taking competency, he learns to see things from a new perspective and he may decide the new perspective is more useful than the old and he may decide to reject the old perspective. Alternatively, he may develop the competency to integrate the old and new perspectives. Although it is a time-intensive and sometimes an inefficient teaching method, in the end, it is more effective than simply giving answers. In the process of asking questions, the student is motivated to clarify his knowledge base and to think critically about whether his assumptions are valid. With Socratic Method, students become more independent in their thinking and more self-directed in their learning, separating the mental "wheat from the chaff." We believe the goal of doctoral education is for the mentor to be the catalyst who brings about the transformation of protégé from dependent student to independent scholar. Thus, question-asking and perspective-taking are critical competencies.

Links to social learning theory. Social learning theory and social cognitive theory include insights into the transmission of knowledge from mentors to protégés (Bandura, 1986, 2001; Hezlett, 2005). These theories indicate that protégés can learn by observing social behaviors and cognitive processes of the mentors. The protégé does not have to learn cognitive and social behaviors by trial and error; he can learn by observing the rewards (or punishments) received by the mentor. For the protégé to "observe" the cognitive thought process of the mentor as she thinks through the feasibility of a particular research design, for example, the mentor must "think aloud" to give the protégé a cognitive model of her thinking. This, we believe, is why discussion, conversation, interaction, and the mentor acting as a sounding board are essential in the mentor–protégé relationship. We also believe the back and forth that takes place with Socratic Method, through probing questions, will be helpful for the protégé to grow. Thus, we expect that mentors can teach protégés coherent, scientific thinking through the process of interaction and discussion in which the mentor models her thought process with the student. The student can then internalize these thinking skills and, eventually, he can perform them independently. Moreover, social learning theory can also be applicable to learning social skills. In the context of doctoral student mentoring, then, it can be used to socialize the student into the life of a scholar that includes attending conferences, making presentations, and socializing with other scholars.

Find a research question that is feasible, original, and compelling. A key goal for a mentor and protégé is to identify a scholarly research question. The mentors used discussion, questions, and interaction to help students identify a research question that was feasible, original, and compelling. With regard to feasibility, a wise and seasoned mentor can prevent a student from choosing a question that, although fascinating, may take him down a long road and cost a great deal of money to answer. Although different programs have different timelines, a reasonable timeline for the dissertation is one to three years. If the question will require more than three years to answer, the mentor and student should consider paring it back in some way. With regard to originality, a dissertation is supposed to answer a new and novel question that has not yet been answered in the scholarly literature. Finally, the mentor must help the student identify a topic and a question that the student finds

to be intrinsically stimulating and energizing. A large project of this type requires sustained energy and commitment over several years. We believe the scholarly research question should be intrinsically motivating for the student. If the student's only motivation is extrinsic reward (such as the promise of a better job or an increase in salary) he may find it challenging to maintain his passion and commitment for the long duration of the project. On the other hand, we believe the student will be able to sustain his level of commitment if he chooses a research question that is intrinsically rewarding, a question that inspires his imagination and lights up his best thinking.

Integrate with Prior Literature

Emotional support and encouragement

Our data showed encouragement was one of the most important things mentors do to help students succeed. This finding is consistent with prior literature, which shows good mentors maintain an encouraging tone (Kram, 1985; Pifer & Baker, 2016; Vekkaila, Pyhältö, & Lonka, 2013; Woolderink et al., 2015). However, there is some controversy in the literature about the value of encouragement as a tool to spur students on to good work. In particular, research has shown that encouragement in the form of praise that is ego-focused ("attaboy" and "attagirl," you're very talented, you're smart enough to do this) has little positive impact and may have a negative impact in the long run. If the mentor directs her attention to the student's ego, the student may become too ego-focused. Research by Dweck (1986) has shown when students are ego-focused, they tend to choose simpler, easier goals so they can obtain praise more quickly. In contrast, Dweck showed when feedback is focused on learning a task, students become more motivated and take on bigger challenges. Feedback that is task-focused could point out how the research may serve the greater good in the field of education. More specifically, a mentor might say something like, "This is a really strong design to study identification of gifted children in minority populations. I think a lot of children will benefit from this work." This kind of feedback is more likely to inspire motivation and excellent work than if the mentor focuses on how smart and capable her student is.

When encouragement is lacking, the dissertation can be a brutal process for students. Emotional support and encouragement should come from the mentor, but it can come from other sources as well. Mentors can encourage doctoral students to form emotional support groups and writing groups to help each other. In addition, mentors can strengthen their suggestion by directing protégés to research that shows peer support is linked to greater doctoral student persistence and motivation (Pifer & Baker, 2016).

Goal-setting

The findings were consistent with Carmel and Paul's research (2015) that showed effective mentors helped protégés with goal-setting. We believe mentors can help protégés by teaching them to craft goals that are SMART, which stands for *specific*, *measurable*, *achievable*, *realistic*, and *time-bound*, a concept believed to be written by George T. Doran in 1981 (Haughey, 2014). SMART goals help students stay on track by: including appropriate timelines (time-bound); being broken down into reasonable "chunks" (specific); matching a students' ability level (realistic); and being doable given a students' access to resources (achievable). The measurability of a goal is important as one must be able to determine whether or not a given goal is reached, before moving on to the next step in the process.

Carol Dweck's research (1986) also included insight about goal-setting. Although the focus of her work was on the social-cognitive processes of *children*, we believe similar principles pertain to *adult* learning. According to Dweck, mentors would do well to focus the protégé on *learning* goals instead of *performance* goals. For example, a learning goal would draw the protégé's attention to developing mastery and competence in the many skills required to write a dissertation. In contrast, a performance goal would draw the protégé's attention to his ability and would encourage him to outperform others in his cohort. Dweck further emphasized that students who focus on learning goals, instead

of performance goals, are more likely to persist when the task becomes more difficult and are also more likely to take on greater challenges. This research has relevance to a practice that many graduate programs use, ostensibly, to motivate students: offering competitive awards for excellent research, for example, a "dissertation of the year" award. Based on Dweck's logic, this kind of award may do more harm than good. Competitive awards may draw students' attention to their ability compared to those of their peers; moreover, as Dweck showed, this ego-focused attention may dampen motivation and persistence in the long run. We feel a bit hypocritical because this was one of the background variables we used when we collected data for this study. In future research, we might ask ourselves if it is necessary to include this bit in our question-asking.

Edit for coherent, scientific, organized thought (cognitive modeling)

Thought organization is a pre-step to the actual writing. Students, with mentors' help, need to generate ideas, organize them in a logical way, and make logical connections between their main ideas. This organization can be done with outlines and graphic organizers prior to fleshing out the details in each chapter. This step, which includes discussion and Socratic interaction with the mentor, can be most helpful. During these discussions, the mentor can provide a "window" into her thought process and her thinking process can serve as a cognitive model to help the student learn to think in a more strategic, organized, and logical way. Cognitive modeling will help mentors achieve competence in guiding students to write quality, scholarly prose, a "critical" or "very important" skill according to Hyatt and Williams (2011).

Part of thinking in a coherent, scientific, and organized way is understanding the big picture in scientific writing. There is strategy involved. Students often are unaware of the "strategy" of writing a dissertation. The strategy is to find a gap in the literature and show how the study will fill that gap. Discovering a "gap" in the literature can entail (a) pointing out a weakness in other scholars' work or (b) identifying a topic that has not yet been explored. The strategy has to do with venturing into new, unexplored territory. This can be an exciting prospect for some people or a daunting prospect for others. In particular, if students are interested in theory building, they need to find a body of scholarly work that has not been well-organized. Theory-building is, essentially, taking diverse and fragmented ideas and pulling them together in a logical and coherent way; taking a complex, messy set of findings and simplifying them using logic and intuition.

Directions for Future Research

Regular communication

Regular communication was one of the tasks effective mentors mentioned. This spurs the question, "How often should the mentor meet with the student?" Is once a week enough? Every other week? Once a month? Certainly, there are individual differences from one mentor–protégé dyad to another. However, it would be helpful if mentors had some guidelines to advise students on a reasonable schedule of meetings. In addition, it would be helpful to have guidance about where to meet. Should they meet in the mentor's office? One respondent said she had "walking" meetings with students; another met the student for coffee. With so many online doctoral programs popping up, another question that arises is whether mentors and students can be effective without face-to-face communication? Is electronic communication as effective as in-person communication for student success? Alan mentioned that it took longer to get to know the "overseas" students and, consequently, it took longer for them to become independent. This may seem ironic, but it makes sense if we imagine his thinking implied it was important to nurture a relationship with a student as a pre-step to that student moving onto independence. This observation is consistent with research by Roberts, Ferro Almeida, and Bandlow (in press). Future researchers are encouraged to explore the differential success of students who maintain residence on campus throughout their doctoral program versus those who complete their work at a distance. A question for future researchers might be, "Do students move toward

independence quicker if they have face-to-face meetings with their mentor versus all electronic communication?"

Timing of feedback. Students have reported advisors taking months to return chapters with feedback, and sometimes the feedback was as trivial as circled typos and misspellings (Aitchison, Catterall, Ross, & Burgin, 2012). Mentors need to pay attention to the timing and the quality of feedback. This spurs the question, "Which is more effective for learning, quick feedback or delayed feedback?" Kulik and Kulik (1988) reviewed 53 empirical studies on the effects of the timing of feedback. They concluded that immediate feedback has a more positive effect on student learning than does delayed feedback. However, they studied a context different from the one we are studying. For example, in the review of Kulik and Kulik (1988), delays in feedback were measured in seconds, not months. In contrast, a delay of a month or more was common for doctoral students, as they waited for feedback on drafts of their dissertation chapters (Aitchison et al., 2012). Research is needed to understand the impact of quick feedback versus slow feedback for doctoral students' learning. Furthermore, defining quick feedback is essential in a way that is reasonable for mentors. Is 24 hours reasonable? Is a week reasonable? Is two weeks reasonable? Chiappetti-Swanson and Watt (2011) claimed turnaround time should not exceed three weeks. Several variables, such as the mentor's workload at the time the student submits his chapters, should be taken into consideration. However, holding aside the natural ebb and flow of the mentor's work and personal life, it would be helpful to provide some guidelines about a reasonable timeframe to respond to students' work and an ideal timeframe to optimize his learning.

Quality of feedback. According to Aitchison and colleagues (2012), mentor feedback during the dissertation writing process can be a source of hurt and disillusionment for many students. Moreover, faculty admitted frustration about their inadequacies as writing coaches. There is an old adage, "good writing is re-writing." However, Aitchison et al. (2012) showed faculty did not know how to tactfully tell students that their work did not meet expectations. Moreover, faculty often were unable to explain the needed changes to meet expectations. Often, situations involved a process of trial and error, until the student got it right. In these situations, trial and error sometimes deteriorated into trial and terror, and students were miserable.

The literature includes little, concrete, practical information about how mentors can deliver bad news effectively: news that the student's writing did not meet expectations. This gap in the literature spurred the question, "What can mentors do to deliver tough feedback in a way that students can really *hear* it?" According to John Hattie (1999), effective feedback unquestionably improves performance. But what is "effective" feedback? In future research, there is a need to clarify this question and to provide micro-strategies on how to deliver tough feedback in a way that is effective and not hurtful.

Research shows that trust is an essential component in a mentor–protégé relationship (Gearity & Mertz, 2012; Roberts, Ferro Almeida, & Bandlow, in press). We believe that once trust is established, mentors and students will be able to be open and honest with each other. Tough feedback can still hurt, but trust softens the sting. When trust is present, the student knows the mentor has his best interest in mind and he knows tough feedback is not meant to hurt, but to help his learning process.

Socratic Method. An interesting follow-up study could explore the role of Socratic questioning and the ways in which mentors can challenge and empower the learner and facilitate the dissertation process. How can mentors make the best use of question-asking? What are some of the micro-strategies that make Socratic questioning optimally effective? We would like to explore these questions in future research.

The following is a concrete example of a mentor using a Socratic method of questions and answers to help the protégé create a time management plan to complete the dissertation in time for a graduation deadline. First the mentor and protégé can outline all the sub-goals needed to complete the dissertation in time for a May graduation. It can be helpful to set a deadline for the larger goal first and

then work backward setting deadlines for each of the smaller sub-goals. The mentor may begin by asking, "How can you determine when you need to turn your dissertation into the graduate school in order to walk in the May procession?" Hopefully, the protégé will know to go to the university website to find this date. Then, the mentor can ask, "What date will you need to defend in front of your committee, in order to make the graduate school submission deadline?" The student can then estimate the time he may need to make revisions after the defense. The mentor can then ask, "How far in advance of the defense should you send the dissertation to your committee?" The questions and answers can proceed this way until the mentor and student have worked out a detailed set of subgoals and deadlines that will take the student from his current status all the way to graduation. The mentor and protégé should create a realistic timeline for completion and, if necessary, the mentor can remind the protégé that he is ultimately responsible to keep himself accountable to the timeline.

Implications for Practice

Professional development for mentors

This research suggests that effective mentors have technical skills in scholarly writing and research methods (both qualitative *and quantitative)*, managerial skills in goal-setting and time management, and interpersonal skills in providing students with encouragement and emotional support. Doctoral programs in educational leadership and related areas are advised to conduct a careful assessment of their faculty to learn if they possess these skills. If they find their faculty are lacking in these areas, we recommend that they engage in professional development to increase their capacity to provide effective mentoring.

Programmatic weaknesses in quantitative methods

Most mentors relied on coursework and some referred students to outside experts and other resources for help with quantitative methods. Several problems arise with these approaches. With regard to referring students to outside methodology experts, the question arises: Is this support the kind that should be outsourced? We think this practice is unwise, because designing the methodology is entirely integrated with the development of the research question; the mentors should be intimately involved with this task. Instead of outsourcing this task, doctoral programs should create tenure track positions specifically for research methodologists and statisticians.

Furthermore, there are problems with reliance on coursework for research methods help. Students often learn methods in courses in the abstract and generic sense; their learning is not in the context of their specific research question. Once they get to the methods for their dissertation, students struggle to apply the methods they learned for their specific research context. Only Nathan offered a specific customized strategy for fleshing out the quantitative research methodology needed to answer a particular research question. Another customized strategy was provided by Roberts (2016). Her Right Angle Research Alignment (RARA) Tool can guide students through the steps of aligning the research questions, data sources, and analysis plan. An example of one student's work using this tool is in Table 5.

Table 5. Exemplar for an alignment tool for research questions, hypotheses, data sources, and analysis plans

RESEARCH QUESTION AND HYPOTHESIS	DATA SOURCE	ANALYSIS PLAN
1. In American-sponsored overseas schools in Africa, what percentage of teachers report leadership at Levels 0, 1, 2, 3 and 4? This question was exploratory; no hypotheses were proposed.	Teacher leadership questionnaire (TLQ) assessment of teacher leadership phase.	Frequency and percentage of teachers at each phase of teacher leadership (0–4)
2. What is the average number of leadership activities reported by American-sponsored overseas school teachers in Africa? This question was exploratory; no hypotheses were proposed.	TLQ assessment of intensity of teacher leadership.	Mean and standard deviation of the intensity teacher leadership score.

This alignment tool can also be useful for students to structure their time. The tool can help them to create goals and sub-goals and set realistic deadlines. We should also note our gratitude to our colleague, George White, as some of the ideas for the research alignment table were inspired by discussions with him (personal communication, 2004).

Most of the mentors specialized in qualitative methods and seemed to lack the detailed expertise needed to help students with quantitative research methods. We do not know if this weakness is typical in doctoral programs in education; however, we recommend that these programs conduct careful self-analyses to determine whether their faculty possesses sufficient quantitative methodological depth. If they find this depth is missing, we recommend that they recruit faculty who can provide this depth. For doctoral programs in education to be successful, they must have the capacity to support students in qualitative and *quantitative* research methods (Hyatt & Williams, 2011). Thus, we recommend that all doctoral programs have at least one tenure-track position dedicated to an expert in quantitative research methods and statistics. This faculty member should provide quality control for the methodology section on all dissertations with quantitative methods.

APA style. Mentors consistently noted that it was important for students to conform to a standard scholarly style of writing; in educational research, that is typically APA style. Nonetheless, there was inconsistency about the mentor's feelings of responsibility regarding style. Some were adamant that their role was *not* to edit for style; some suggested that students could outsource that part of the project to a professional editor. Some claimed that their department had a writing center that students could turn to for help. This brings up a point of discussion and a new question: How important is it for students to master all the details of APA style? Some faculty may feel there is value in learning the details of APA style and in disciplining oneself to conform to a particular style of writing. However, it is time-consuming and tedious work. Perhaps, the mentors' and students' time would be better spent on the substantive aspects of the dissertation. And, perhaps, it is understandably acceptable for students to hire someone to make sure their writing conforms to APA style. Different programs may have different policies about this decision and there is not one correct way. It is recommended that faculty make a policy decision about this issue so all students are clear on the rules. We believe it would be helpful for doctoral programs to have an APA editor and style editor to support students in this area. Although some mentors are willing to provide this supportive service, it seems a better use of mentors' time to outsource this job to an expert in this area.

Time management. Some mentors may feel that students should already have this skill, but based on these data, time management is still an area where students benefit from support. Even people, who may have good time management skills in regular life, need to understand that a dissertation requires sustained focus and more time than students realize at the beginning. Thus, the mentor can give them a realistic picture of the time required. Time management is not just setting goals and deadlines; it requires prioritizing and setting sub-goals along the way. Students may also need help overcoming procrastination. For example, it may be useful for the mentor to remind the protégé about the benefits of completing the dissertation.

How much should mentors get involved in time management with protégés? We encourage mentors to help students with different aspects of time management, including breaking larger goals into smaller ones and setting reasonable deadlines for each part of their dissertation. We agree with the research conclusions that mentors should help protégés with time management, but we argue that mentors should set some boundaries in this area. It is not the mentor's responsibility to hold the protégé accountable to the deadlines. We have to assume that doctoral students are mature adults and we believe they are responsible to hold themselves accountable to meet deadlines. Responsibility is on the protégé to organize his life to make sure he meets the deadlines. Perhaps, in the beginning of the process, mentors can give tips for accountability and can encourage protégés to avoid procrastination. But, we believe protégés should quickly take over responsibility for their own time management.

Faculty integrity and time management. As in many professional fields, people in academia are very busy; they sometimes over commit by taking on more protégés than they can mentor with integrity (Carmel & Paul, 2015; Straus, et al, 2013). Just as protégés must be realistic about their time, so must faculty. Faculty need to give careful thought to their decision when a protégé asks them to mentor. Faculty need to be self-aware and realistic before making a commitment to a protégé. Effective mentoring is a time-consuming job and a professor should only say, "Yes," to a student if she feels there is a very good chance she can see the student through to completion of the doctorate.

What can doctoral program administrators do to help mentors and protégés manage their time? According to Carmel and Paul (2015) doctoral program administrators who value mentoring should find ways to reward mentors in the tenure and promotion system for this kind of service. Administrators should also provide opportunities for mentors and protégés to spend time together to develop the kinds of relationships that bring about effective partnerships. This is not easy with online programs, but some universities have been successful with short-term residencies that give mentors and protégés time to bond. In one innovative program at Gwynedd Mercy University in the U.S., second year doctoral students spend a week on campus, staying in residence halls, for a retreat on ethical leadership. The cost of this retreat is included in their tuition. Mentors meet with their protégés for an informal dinner during the retreat to give continued guidance, maintain communications, and reinforce a positive relationship.

Strengths and Limitations of Study

With interview methods, researchers establish credibility by showing that the conclusions are believable and consistent with the point of view of the interviewees. In this study, we established credibility by presenting many verbatim quotes from the effective mentors who participated in the study. The reader can see clear evidence consistent with our conclusions. Moreover, by presenting multiple examples for each theme, readers can see consistent patterns across several interviewees. This consistency across several interviewees strengthens the reliability of our conclusions. We have also included the interview questions, verbatim, in the Appendix so other researchers can explore these topics to determine whether the findings are repeatable in other samples. With regard to generalizability, our sample size is small and non-random, so external validity is not strong. However, our purpose was to describe strategies and methods of a select group of effective mentors to provide guidance for other mentors who want to learn greater competence. Thus, we believe these methods and strategies can be helpful for all doctoral student mentors. With regard to construct validity, there is a clear and logical alignment between our scholarly research questions and our interview protocol. Thus, we deem the construct validity to be strong. Regarding conclusion validity and internal validity, we did not set out to study correlations or causes, so both types of validity are irrelevant to this study.

Summary

Research shows effective mentoring is a crucial factor in determining students' successful completion of their dissertations and, therefore, their doctoral degrees. We feel the methods and strategies we presented in the paper will help mentors to be more effective. These learned behaviors are not innate qualities. We believe that, with some effort, mentors will be able to master these methods and strategies. Thus, these strategies and methods should be learned and applied by those seeking to be more effective mentors.

Research on effective mentoring can be further refined by additional studies that explore the optimal timing of feedback and the most effective ways to deliver tough feedback. We also encourage researchers in this field to explore the protégés' perspectives, to learn what protégés have found to be the most helpful actions of their mentors. We expect some of the same themes will emerge, though it is possible that students will offer additional insights that shed new light on the qualities and impact of effective doctoral mentors.

We found effective mentors possess varied skill sets and play several different roles in the lives of their protégés. The mentors we interviewed provide moral support and help protégés with goal-setting and management of time and tasks. They serve to model many different skills of scholarship, including networking, seeking out resources, and organizing thoughts. With regard to writing, these mentors hold students to scholarly standards in terms of writing style and scientific coherence. Regarding methods, mentors provide expertise and direct students to resources. These mentors do not expect competence from protégés on Day 1, but help the protégés develop from dependent students to autonomous scholars over the course of their dissertation work. Mentors provide more support in the beginning and gradually remove the scaffolding as protégés become more competent. These mentors do not give students the answers, but instead direct them to resources and use questions to help students grow, learn, and gain competence as scholars. Why is question-asking so important?

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APPENDIX

APPENDIX A: QUESTIONS FOR THE INTERVIEW

1. As a mentor, what is the most important thing you do to help doctoral students succeed?
2. In what ways do you support students in the writing process?
3. How do you help them in research methods?
4. What interpersonal skills do you have that help you to be an effective mentor?
5. How important is it to nurture good relationships with students?
6. What do you do to nurture good relationships with students?
7. How important is it to create trust in your relationships with students?
8. How do you nurture trust in these relationships?
9. Some have voiced concerns that when mentors provide too much support, it can lead to dependency that reduces students' motivation to seek out information on their own. Do you have strategies to find the right balance between providing support and encouraging independence?
10. Is there any other advice or any additional hints you have to help doctoral students succeed in the dissertation phase of their doctorate?

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