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INSTRUCTOR CARING: USING SELF-DETERMINATION THEORY TO UNDERSTAND PERCEPTIONS, MEASUREMENT, AND IMPACT OF INSTRUCTOR CARING ON MOTIVATION AND LEARNING IN ONLINE CONTEXTS

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DISSERTATION

A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Philosophy in the
College of Communication and Information
at the University of Kentucky

By
Amanda J. Lawrence

Lexington, Kentucky

Director: Dr. Brandi Frisby, Professor of Communication

Lexington, KY

2018

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ABSTRACT OF DISSERTATION

INSTRUCTOR CARING: USING SELF-DETERMINATION THEORY TO UNDERSTAND PERCEPTIONS, MEASUREMENT, AND IMPACT OF INSTRUCTOR CARING ON MOTIVATION AND LEARNING IN ONLINE CONTEXTS

At least one third of college students enrolled in a given year take at least one course that is 80%+ online delivery (Allen & Seaman, 2015). This number has increased from 10% of students just within the last decade. Given this increase, the need for instructional communication research in this context has also grown.

One construct that has had little attention in online settings is that of perceived instructor caring. Caring instructors are perceived as concerned, sensitive, not self-centered, and having students' best interests at heart (McCroskey & Teven, 1999). Caring has the potential to impact various aspects of student success, but has seen limited application in online learning research. Self-determination theory (Deci & Ryan, 1985) uses the term relatedness, and assess the impact on motivation; however, this has also been applied very little in online settings.

Guided by self-determination theory, the purpose of this dissertation is to explore perceptions of instructor caring in online education environments, to compare student and faculty views of instructor caring, explore the measurement of mediated instructor caring, and to test a mediation model proposing that perceived instructor caring, autonomy, and competence impacts perceived cognitive learning with motivation and affect as mediators. To do this, the author conducted two mixed-methods studies to compare instructor and student perceptions of caring, validate the measurement of caring, and test the model. Findings seek to improve understanding of how these constructs operate in online learning contexts and to assess self-determination theory for use in online settings, as well as to guide future research in various contexts of instructional communication.

KEYWORDS: Instructional Communication, Self-Determination Theory, Online Learning, Caring, Motivation

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May 9, 2018

Date

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*To Zach, who has always challenged and supported me,
believed in me, and always stood by me.*

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Chapter 1: Introduction

As the prevalence and popularity of online education increases, it is imperative that communication scholars expand their knowledge of this context (Moloney & Oakley, 2010). At least one third of college students enrolled in a given year take at least one course that is 80%+ online delivery (Allen & Seaman, 2015). This number has increased from 10% of students just within the last decade. As these numbers continue to rise (as they have for the past decade), issues surrounding online education are of even more societal importance. Increasing our knowledge base of ways to facilitate student perceptions of positive instructor qualities is important. Then, leveraging this knowledge to enhance student learning in a technology-driven context to support these mediated instructional practices is necessary. It is intuitive, or perhaps assumed, that many of the best practices used in the traditional face-to-face classroom can be used in an online environment; however, many of these behaviors may be difficult to replicate or measure in online settings. Stakeholders such as students, instructors, and administrators must consider the differences in online and face-to-face instruction, the importance of these individual best practices in online education, and how they may be communicated in the online education environment.

Effective instruction has the potential to impact students and generations for years to come. While it may require extra effort, the impact that emotional connections and positive attitudes could have on students is endless. In a study by Carson (1996), alumni were asked to reflect on professors they had 30 years ago. The quality that was most often associated with effective instruction was the instructors' attitudes toward, and relationships with, students. One such positive instructor behavior and indicator of

relationships with students is instructor caring. In a study by Walker, Gleaves, and Gray (2006), a group of “new” instructors identified caring for students as an overlooked aspect of their work, “yet it plays an important part in maintaining their and their students’ sense of scholarly endeavor” (p. 347). In another study, when asked to describe what makes instructors effective, a sample of pre-service and experienced instructors mentioned caring more than any other variable (Perry & Rog, 1992). Although instructor caring has been identified as important, limited research on this construct exists, especially in online education.

Students’ exposure to, and interaction with, caring instructors also has a positive impact on retention (McArthur, 2005). It is becoming more common for states to evaluate retention rates when deciding on funding for college and universities. Institutions are now required to accurately (and often publicly) report retention data. This could not only affect funding, but also their reputation, prospective students’ enrollment decisions, donors’ decisions to contribute, and faculty and staff employment decisions. As retention becomes increasingly important to institutions, higher education professionals must continue to look for ways to improve this. Thus, increasing perceived instructor caring has the potential to impact student retention, which could have multiple positive effects for the institution and for students (Hong, Shull, & Haefner, 2011). It is important to note that these conclusions have been drawn from studies and perspectives on caring in primarily face to face and traditional classroom settings and not from caring in mediated classrooms.

Given this dearth of research on caring in online education, and the potential positive influence of caring, this dissertation aims to address the following overarching research questions:

To what extent does caring matter in online education? How do instructors show caring in online education contexts? How does perceived instructor caring affect students?

Guided by these overarching research questions and self-determination theory (Deci & Ryan, 1985), the purpose of this dissertation is to explore perceptions of instructor caring in online education environments, to compare student and faculty views of instructor caring, explore the measurement of mediated instructor caring, and to test a mediation model proposing that perceived instructor caring impacts learning with motivation as a mediator. The relevant literature on caring, motivation, learning, and online education will be reviewed in the next chapter.

Chapter 2: Review of Literature

Understanding the potential impacts and importance of the issues surrounding instructor caring in online learning discussed in Chapter 1, it is important to first consider prior instructor caring research and theoretical frameworks. First, an overview of self-determination theory will be provided, followed by a review of previous literature related to instructor caring, student motivation, and learning. This chapter will conclude with an application of self-determination theory and caring in online education.

Self-Determination Theory

According to Deci and Ryan's (1985) self-determination theory (SDT), learners have three basic psychological needs: autonomy, competence, and relatedness. These needs are what creates motivation. Autonomy is the feeling of having a choice and the option to choose things that are congruent with who one is as an individual, as opposed to decisions being determined by an outside force (Deci & Ryan, 2000). Competence is to feel that one is good at something. The standards of competence depend on the context, but people desire to be able to master necessary skills and abilities given a context. Relatedness is the need to be cared for by, and connected to, others, to have a sense of belonging, and to feel that we are important to others/others are important to us. The idea of a psychological need is that these have to be fulfilled in order to be psychologically healthy.

SDT is a theory of motivation that focuses on the concept of free-will and the ability to make decisions, with those decisions determining outcomes. An assumption of SDT is to think about people as organismic, or living entities. While this assumption may seem obvious, some approaches to social science view humans almost as machines. This assumption encourages researchers to apply empirical research practices in a humanistic

approach (Ryan, Legate, Niemiec, & Deci, 2012). Researchers apply SDT in a variety of contexts relating to motivation, including biological and neuropsychological, education, nature and environmental sustainability, health care, organizations and work, marketing, psychopathology, psychotherapy and counseling, physical activity and exercise, physical education, and virtual environments and video games. Of interest to the current dissertation, is research on the educational context.

Although SDT research on educational settings has focused on achievement, some research has recognized the importance of and deficit in research related to prosocial interactions, such as those seeking to gain approval or acceptance of others in school settings (Covington, 2000). It is obvious that in education research, learning and achievement are desired outcomes, but the impact of these prosocial behaviors cannot be overlooked. Multiple studies have recognized positive relationships between relatedness and engagement and learning. Research in this area has been prevalent in elementary and middle schools, but less in grade levels beyond that. There has been some successful research on creating environments that promote relatedness and lead to higher levels of motivation and learning. For example, themes that emerge in relation to relatedness in high schools were supporting understanding, managing the classroom, and building and maintaining rapport (Anderman, Andrzejewski, & Allen, 2011). While positive outcomes have been found in education in general, and the value of relatedness is well-supported, research specifically in online education contexts is somewhat limited.

Specific to online education, Seiver and Troja (2014) found need-for-affiliation (or need-for-relatedness) may play a significant role in student satisfaction with their online experience, while similar results were not found for autonomy or competence.

Other research has also highlighted the importance of the psychological need of relatedness in education (e.g., Beachboard et al., 2011; Deci, Vallerand, Pelletier, & Ryan, 1991; Ryan & Deci, 2000). One potential problem in online education is that instructor-student relationships are difficult to create, at least to the extent of face-to-face interactions, in part due to the lack of nonverbal communication cues (Lawrence & Frisby, 2016). According to Walther (1994), this is not true. Mediated relationships are actually often hyperpersonal, or can advance to a level equal to or more developed than a face-to-face interaction. The key difference is they take more time to develop, which means meeting the need for relatedness or connectedness in online education is critical, but can be challenging within a defined timeframe (i.e., one semester). While requiring online communication interaction and incorporating a visual component may be helpful, if the need for relatedness is not met, students in the online education environment may not commit necessary effort or resources to create an ideal learning situation (LaPointe & Reisetter, 2008).

Autonomy-supportive learning environments create opportunities for greater engagement, performance, and persistence (Baeten, Dochy, & Struyven, 2013). This type of environment can be created by providing choice, rationale, and opportunity for personalization (Lee, Pate, & Cozart, 2015). The concept of autonomy is extremely simple to apply in the online context because students often have more autonomy due to delivery style in online learning often providing them with flexibility. In previous research, autonomy has stood out as the most significant factor in determining online learners' motivation and engagement (Chen, Jang, & Branch, 2010).

Competence, also referred to as ability, accounted most significantly for students' perceived learning and achievement (Chen et al., 2010). This is consistent with other competency research in that students' belief in their ability has a direct impact on their perceived learning and likelihood to achieve. There is no reason to believe that this would not apply in online learning, but will still be evaluated in this dissertation in an attempt to further support this notion.

While previous research supports the importance of relatedness for student success, SDT has rarely been tested in online education contexts. In one area of research, relatedness, also referred to as affiliation, was the highest predictor of online course satisfaction when compared to autonomy and competence (Chen et al., 2010). The ideas of creating autonomy and competence in online education are more evident and easier to understand. For example, in an asynchronous course—one where instruction and coursework is taking place at various times and locations (as opposed to a synchronous course where students and instructors meet and interact together at one specific time), the concepts of autonomy and competence are more easily identified than relatedness. To examine relatedness in the online classroom more carefully, instructor caring will be examined as one way to meet students' relational needs in this dissertation.

Instructor Caring

Instructor caring emerged from one of the most prominent and highly visible lines of instructional communication research: instructor credibility (Myers, 2010; Sellnow, Limperos, Frisby, Sellnow, Spence, & Downs, 2015). For decades, research has parsed credibility into three components: competence, character, and caring. Competent instructors are perceived as intelligent, trained, expert, and informed. Instructors with

character are perceived as honest, trustworthy, honorable, moral, ethical, and genuine. Caring instructors are perceived as concerned, sensitive, not self-centered, and having students' best interests at heart (McCroskey & Teven, 1999). The caring construct is highly associated with the concept of "goodwill", as discussed in the writings of Aristotle (McCroskey, 1992; Teven & McCroskey, 1997).

Instructor credibility has been found to have a positive impact on learning outcomes for students (Beatty & Zahn, 1990; Buttner, 2004; Tantleff-Dunn, Dunn, & Gokee, 2002; Teven & McCroskey, 1997; Wheelless, 1974; 1975). Students report greater amounts of self-motivation, affective learning, and cognitive learning when they perceive their instructors as credible (Myers, 2001; Schrodt, 2003). Increasing components of instructor credibility could lead to various positive outcomes for instructors and students. It is important to note that the perceptions of instructor credibility, instructor competence, instructor character, and instructor caring are what is most often addressed—not necessarily the actual credibility, but how the student perceives the credibility (McCroskey, Richmond, & McCroskey, 2006; Simonds & Cooper, 2011).

Of the three components, instructor caring has been researched the least as an individual construct, in part due to its abstract nature (McCroskey, 1966; McCroskey & Young, 1981). A meta-analysis reviewing the findings of 51 studies examining associations among instructor credibility, instructor behaviors, and student outcomes found larger effect sizes for caring when compared to both competence and trustworthiness (Finn, Schrodt, Witt, Elledge, Jernberg, & Larson, 2009). However, the 51 studies included research on instructor-student relationships in primarily face-to-face

settings. Although credibility research has primarily focused on competence and character, the importance of caring should not be discounted.

Caring is the extent to which an instructor is perceived to be concerned about the welfare of his or her students (McCroskey, 1992). Three factors that seem to impact students' perceptions of instructor caring are empathy, understanding, and responsiveness. Empathy is being able to think or view things from another person's perspective and identifying with his or her feelings. Understanding involves being able to sense an individual's needs, feelings, or thoughts. Responsiveness refers to how one reacts to individuals—which includes behaviors such as, being available, helping solve problems quickly, and being attentive to others (McCroskey, 1992). Caring, as a component of credibility, becomes increasingly important as instructors seek to increase students' positive affect toward themselves and their content area and to achieve other positive instructional outcomes.

Outcomes associated with caring. Caring is one component that promotes charisma in the classroom. Charisma has been identified as an aspect of transformational leadership (Bolkan & Goodboy, 2009). Transformational leadership acknowledges needs of “potential followers but tends to go further, seeking to arouse and satisfy higher needs, to engage the full person of the follower” (Bass, 1985, p. 14). Instructors who demonstrate caring have a positive impact on student communication, both in- and out-of-the classroom (Myers, 2004). For example, caring instructors promote a climate of trust within the classroom (Chory, 2007; McDermott, 1977; Teven & Hanson, 2004). Myers, Goodboy, and Members of COMM 600 (2014) examined the extent to which caring (and other instructor behaviors) affected learning outcomes. Students were likely

to be higher in course and instructor affect, cognitive learning indicators, and communication satisfaction when instructors were considered to be confirming and caring. Caring is also expected to increase student motivation, because instructors are interested in being involved with students and responsive to them (Myers et al., 2014). Research further supports the notion that increased perceptions of instructor caring will increase how much the students care about the class and the likelihood they will pay attention and, in turn, learn content (Teven & McCroskey, 1997).

Caring also positively affects instructor outcomes. For example, in a study utilizing the Big Five personality measure to evaluate the relationship among instructor temperament, instructor caring, and instructor burnout, instructor caring was positively related to motivation, job satisfaction, conscientiousness, and agreeableness (Teven, 2007). These characteristics provide an environment in which instructors may be more likely to perform at their peak. Instructor caring was negatively related to depersonalization, loss of personal accomplishment, emotional exhaustion, and neuroticism. Instructor temperament predicted a significant amount of variance in instructor caring (Teven, 2007). Instructor caring also affects student evaluations of instructors.

Perceived caring affects instructor/course evaluations and various other evaluations of instructor performance, behavior, communication, and caring (Teven & McCroskey, 1997). Regardless of the controversy of this practice, instructor and course evaluations are used at many universities. For some, this is part of the promotion and tenure process, for others a form of course and instructor evaluation that takes place each semester. Students who were exposed to caring instructors evaluate the instructor and the

course content more positively than students who are exposed to non-caring instructors (Teven, 2007). Thus, caring has the potential to positively impact both instructor outcomes and student evaluations, which, along with other positive outcomes for the students, provides additional support for the importance of intentionally communicating caring to students.

Instructor behaviors to communicate caring. In order for students to perceive their instructors as caring, instructors must be able to communicate and behave in a way that conveys caring. Straits (2007) identified specific behaviors that indicate instructor caring. Straits categorized these behaviors into two categories of indicators of caring: *learner* centered and *learning* centered. Learner centered behaviors are related to the relationship between the learner and instructor. The relationship must be perceived as interactive, transactional, and one built on trust (Straits, 2007). Learning centered behaviors are related to the context and delivery of material—the behaviors associated with helping students learn and develop specific to the content or material. To imply that caring instructors only focus on affect would be a mistake, as students also perceive the learning center behaviors as indicators of instructor caring (Straits, 2007). See Table 1 (at the end of this chapter) for Straits' (2007) indicators of caring instruction. The results of this study suggest that students feel that these indicators have the potential to increase motivation and learning. Although caring is something that some might think cannot be taught, these indicators provide useful and practical ways for instructors to ensure that their caring is effectively perceived by the students. Of course the best (and most simple way) to demonstrate care is to actually care about your students. However, these indicators are specific ways an instructor can communicate greater degrees of caring. One

participant in the study suggested that, “You can’t fake a smile for an entire semester” (Straits, 2007, p. 174).

Other researchers have identified additional behaviors that demonstrate instructor caring. In focus groups, students recognized the need for instructors to be caring and trustworthy, in order to increase credibility. Furthermore, when instructors disclose information that students believe is relevant to them, students view the instructor as caring and trustworthy. More specifically in this research, a student stated, “When they use self-disclosure it shows they are on the same level, which shows their caring, and I think that it actually increases learning” (Myers, Brann, & Members of COMM 600, 2009, p. 13). Students who complimented an instructor’s use of self-disclosure on Facebook did so because it made the instructor seem genuine, honest, and relatable (or caring) (Mazer, Murphy, & Simonds, 2007). Instructors who disclose personal information appropriately and who make an effort to help students apply content to their everyday lives are perceived as caring. Furthermore, content that is more relevant and disclosure that is at least moderately frequent increased perceived caring (Schrodt, 2013). Given this information, content relevance and disclosure impact instructor caring, and students see the value in that caring and believe instructor caring may even increase learning. Instructor responsiveness, immediacy, and a reduction of verbal aggressiveness also produce perceived caring in students (Teven, 2001).

Although immediacy may be an indicator of caring, the two are not equivalent, and immediacy cannot be substituted for caring. Immediacy can be defined as the perceived psychological closeness between two people in any relationship (Andersen, 1979; McCroskey & Richmond, 1996; Mehrabian, 1961; Richmond, McCroskey &

Hickson, 2008). Immediacy refer to closeness, which may have an impact on caring, but caring includes additional components of empathy, understanding, and responsiveness. While immediacy is likely to impact caring, they are distinct constructs. One similarity is that both immediacy and caring can be communicated both verbally and nonverbally. According to Teven and Hanson (2004), by being more nonverbally immediate in the classroom, and by using more explicit verbal messages that indicate caring, perceived credibility and caring increases. Furthermore, instructors who do not verbally indicate caring will be negatively perceived by their students. When reading low immediacy/low verbal caring scenarios or high immediacy/low verbal caring scenarios, students rated their instructors low on caring (Teven & Hanson, 2004). Additionally, teacher immediacy has been found to be positively associated with student motivation and affective learning (Christophel, 1990). Teacher immediacy behaviors lead to perceptions of teacher caring. It appears logical that teacher caring might also increase motivation. Furthermore, students experience more motivation and affective learning from teachers high in nonverbal immediacy and high in credibility (Pogue & AhYun, 2006).

The idea of perceived caring is important to consider as early in the semester or year as possible, and should be considered in teaching philosophies and on the first day of class. Brann, Edwards, and Myers (2005) hypothesized that instructors whose teaching philosophies were more progressive than transmissive would be rated higher in perceived caring. Instructors who have a more progressive philosophy believe that the learning process is more of a collaboration. In this relationship, input is valued and welcomed. Students may develop a “teamwork” relationship with their instructor, where instruction is viewed as a partnership. Their hypothesis was supported (Brann et al., 2005). Since

immediacy, the perception of closeness has the potential to impact and increase perceived instructor caring, creating this feeling of partnerships and teamwork is important.

Hayward (2002) asked students to listen to audio tapes of instructors on the first day of class. The students (and a group of seasoned instructors) were asked to identify and respond to behaviors that would have a significant impact on the students. A significant portion of behaviors, identified by both students and instructors, were related to concern for students. These behaviors may lead to increased perceived immediacy and perceived caring.

It is important to note that the research reviewed in this section was conducted in a traditional face-to-face classroom. The research reviewed in this section suggests that instructor caring is an effective instructor behavior, however, it is important to empirically examine whether these behavioral suggestions effectively translate into online settings with similar positive outcomes for students. To empirically assess instructor caring in online settings, a reliable and valid measure is needed for instructor caring in the online context.

The measurement of caring. In 1997, Teven and McCroskey developed the scale that is most often used to measure instructor caring. In the original study, this scale was found to have an alpha reliability of .95 (Teven & McCroskey, 1997) and was reliable in the many other studies who used it (e.g., Bolkan & Goodboy, 2009; Bolkan & Goodboy, 2014; Myers, 2004; Zigarovich & Myers, 2011). This scale included four items which did not load as expected: empathetic/apathetic, unresponsive/responsive, understand how I feel/doesn't understand how I feel, and doesn't understand how I think/understands how I think. One potential reason for this is that participants may not

have had a clear understanding of what was meant by adjective pairs, such as empathetic/apathetic (Teven & McCroskey, 1997). As a result, McCroskey and Teven (1999) revised the scale.

The revised version of the scale includes the following six adjective pairs which were retained from the original scale: (1) cares about me/doesn't care about me, (2) has my interests at heart/doesn't have my interests at heart, (3) self-centered/not self-centered, (4) unconcerned with me/concerned with me, (5) insensitive/sensitive, and (6) not understanding/understanding. The revised version has also been used reliably in research on face-to-face instructor caring (Bolkan & Goodboy, 2009; Bolkan & Goodboy, 2014; Myers, 2004; Zigarovich & Myers, 2011). Despite the popularity and frequent use of this measure, a few potential measurement problems should be addressed. Specifically, the current scale is questionable in terms of (a) the construct validity in relation to the definition of caring and (b) validity in the online education context.

First, it is important to consider if the caring scale being used is consistent with the conceptualization of caring which includes the three factors of empathy, understanding, and responsiveness. For example, the current items of *has others interests at heart/doesn't have others interests at heart*, *unconcerned with others/concerned with others* represent empathy. The items of *understanding/not understanding* represent understanding. However, there are not sufficient items to directly represent the dimension of responsiveness. This means that there is inconsistency in how caring is being defined and the scale commonly being used. Thus, there may be inconsistencies in how caring is being conceptualized and operationalized leading to research that is not fully capturing the three dimensions of caring and how they may meet relatedness needs.

Second, this particular measure has not been examined in the online education context, nor was it intended to be used in the online classroom environment. Levine (2005) argued that measures need to be validated for use in multiple contexts, yet this measure has not been tested in online learning. Because the items were developed with a face-to-face classroom in mind, the measure may require modification and revisions to produce a reliable and valid measure that would assess instructor caring in online classrooms. By immediately and directly using this measure in the online context, researchers are assuming that caring matters in the online context (as it does in the face-to-face context), as well as that it can be operationalized in the same way.

Taken together, the influence of instructor caring, as it is currently measured, on student outcomes (e.g., learning and motivation), instructor outcomes (e.g., burnout and teaching evaluations), and university outcomes (e.g. retention) points to instructor caring as a significant instructor behavior. In other words, caring is an important instructor behavior for continued research, but understanding the role of caring in the rapidly growing online setting is still understudied. It is important, then, to determine if caring may have these same effects in an online education environment, to understand how caring may meet students' relatedness needs, and how to best measure online instructor caring.

Caring in online education. Although the studies that examine caring in an entirely online context are limited, there are some researchers who have examined related contexts. For example, instructors who were described as using minimal or moderate technology, as opposed to those who use no technology or complete technology, were perceived by students as more caring (Schrodt & Turman, 2005). To further investigate

these findings regarding the use of instructional technology, the effects of interactivity on trainees' perceptions of the trainer credibility (including goodwill/caring) were evaluated (Stephens & Mottet, 2008). In their research, trainee-controlled interactivity included things such as allowing and encouraging participants to chat/interact online in a discussion-style format (prior to beginning a training program). Trainer-controlled interactivity included polling participants, answering questions in real time, and engaging them in chat. These are strategies that instructors often use to engage students in the online classroom. Stephens and Mottet's findings indicate that trainer-controlled and trainee-controlled interactivity increased participants' perceptions of goodwill/caring. This suggests that these types of interactivity in the classroom could potentially increase students' perceptions of caring in an online learning environment. Increased interactivity and allowing trainees some control in interactivity is one example of how instructors may intentionally increase perceptions of caring in online education environments. The interactive aspects of the instructor-student relationship, as were previously discussed in this chapter, support the notion that an interactive and transactional relationship can increase motivation and learning (Straits, 2007).

Many instructors believe that they are demonstrating caring by focusing on the subject and instruction (Meyers, 2009). Some instructors have difficulty displaying their care for their students, and this may be especially true online. It is important to note that caring and being responsive to students is even important in an online class environment (Richardson & Swan, 2003).

Wei, Chin, and Kinshuk (2012) found that presence or relational closeness among student and instructors should increase the perception of credibility in online contexts.

More specifically related to caring, and despite that lack of physical proximity, previous research suggests that there are behaviors and activities that may increase perceptions of instructor caring (Leners & Sitzman, 2006; Mann, 2014; Plante & Asselin, 2014; Sitzman, 2010; Sitzman & Leners, 2006). Much of this research has taken place in nursing and healthcare instruction, where the concept and importance of caring is naturally more prevalent. This line of research does identify some behaviors that are possible to incorporate into structure and procedure, such as use of caring language, creating human connections, sharing expertise, and consistent and timely attention (Sitzman, 2016). Additionally, Sitzman (2016) explores unplanned displays of caring based on student cues, as described from the instructors' perspectives.

Specific to examining caring in online education, Lawrence and Frisby (2016) collected and analyzed mixed method data related to perceived instructor caring from instructors' perspectives. Six major themes emerged from coding qualitative data. These are compassion (includes empathy and understanding), presence (includes frequent communication and timely responses), feedback (that is high quality and personalized), immediacy (includes closeness, willingness to communicate), motivation (or sense of accountability), and difficulty demonstrating caring online (or lacks "natural" opportunities) (Lawrence & Frisby, 2016). One of the major themes identified is motivation. An additional perspective that was gained is that some faculty are concerned about whether or not their students even value displays of caring, particularly in online settings. While these findings support the need for the research in this dissertation, the data was collected from the instructor perspective. Data from students' perspectives will

be necessary to further develop this line of research on perceived caring in online education.

While previous research is available on instructor caring in online settings, many questions remain unanswered. Given that (a) a larger effect size was generated for perceived caring than for competence or trustworthiness (Finn et al., 2009), (b) that perceived caring is associated with so many positive outcomes (Myers et al., 2009; Myers et al, 2014; Teven & McCroskey, 1997), (c) that caring is the component of credibility that has been researched the least when compared to competence or trustworthiness (McCroskey, 1966; McCroskey & Young, 1981), (d) that caring has primarily been studied in face to face classrooms and (e) that results from Lawrence and Frisby (2016) support the notion that instructor caring should be further explored in online contexts. Thus, greater attention to online instructor caring seems both logical and necessary. Previous research suggests that caring behaviors are positively perceived by students, but this assumption relies heavily on research based in face-to-face settings from the student perspective (Bolkan & Goodboy, 2009; Chory, 2007; McDermott, 1977; Myers, 2004; Myers et al., 2014; Teven, 2007; Teven & Hanson, 2004; Teven & McCroskey, 1997). In order to better understand the impact, and measurement, of instructor caring in online settings, the following research questions are posed:

RQ1: What behaviors do students perceive as demonstrating caring in the online environment, and are these perceptions consistent with instructor perspectives?

RQ2: How, if at all, is caring different in online versus face-to-face settings?

RQ3: How can the instructor caring scale be modified to verify that it is a reliable and valid way to measure caring in online education?

While caring can be easily integrated into SDT and SDT has been found to have positive impacts on state motivation, these concepts have had limited conceptualization (specifically relating to caring) and application in an online context. According to SDT, because caring may be one way in which instructors may meet students' relatedness needs, this sense of fulfillment would lead to increased motivation for students. Motivation is a potential outcome that could be affected by caring/relatedness.

Motivation and Learning in Online Education Research

Motivation, to put it simply, is goal directed behavior (Schunk, 1991). Trait motivation refers to the general level of motivation an individual has across various situations, contexts, and times. Conversely, state motivation refers to motivation for a specific task. In the instructional context, state motivation for learning is the extent to which a student has a desire to acquire knowledge or skills from class activities (Brophy, 1987) and is related to effective instructor behaviors (Frymier & Shulman, 1995). To date, much of the research on motivation in education and instructional communication is related to state motivation. State motivation is not static, so measuring it in relation to specific tasks or context is necessary.

Motivation is also often referred to as intrinsic or extrinsic. Intrinsic motivation refers to motivation to do something for enjoyment, excitement, accomplishment, or for its own sake. In contrast, extrinsic motivation refers to doing something in order to obtain reward or avoid punishment (Lepper, 1988). Previous research supports the idea that intrinsic motivation is related to learning (Pintrich, 1991). However, the previous research on extrinsic motivation in relation to learning has conflicting results (Brophy, 1981; Kohn, 1993; Lepper & Greene, 1978). Intrinsic motivation refers to internal

“forces” that create the desire to do something. Extrinsic motivation refers to being compelled by an outside “force” (i.e., grades, money, removing rewards). Intrinsic motivation, then, is more difficult for others, such as an instructor, to change in students.

In online learning, Artino (2008) argued that technology-mediated courses can increase student motivation. Houser (2004) highlighted the need for motivation research to include/focus on nontraditional students. This becomes especially important, as the prevalence of distance education programs is on the rise. Distance learning students, when compared to students in more traditional settings, may have more motivation to achieve (Hiltz, 1994). While the number of traditional college students taking online courses has increased, a large portion of online students are still considered nontraditional. Their motivations in taking the online course may be different. For example, traditional students often cite class schedule conflicts or alternatives being full as their reasoning for taking an online course (Murphy & Stewart, 2017). Using Burgoon’s expectancy violations theory, Houser (2006) found significantly higher levels of state motivation and cognitive learning indicators for nontraditional students. Allen, Witt, and Wheelless (2006) propose a model in which perception of teacher immediacy generates an intermediate outcome of motivation, which increases cognitive learning outcomes. Their findings supported this model, and this research supports the notion to further consider the role of motivation in online learning. Increasing motivation is one way to help create a positive learning environment for both students and instructors.

Instructors should seek to create a positive climate in their classrooms. Interaction with the instructor has been found to have an even greater impact on this climate in online versus in face-to-face courses. This research supports the idea that the instructor-

student relationship matters online. In addition, some specific concepts identified as creating a positive climate and potentially impacting student learning outcomes include overlap with caring, such as understanding, availability, and sympathy (Kaufmann, Sellnow, & Frisby, 2016). Given that interaction with the instructor relates to perceived caring, this interaction can create a more positive online learning climate. Furthermore, positive relationships have been found between the instructor behaviors that demonstrate caring (e.g., immediacy) and student reports of affective and cognitive learning (Houser & Frymier, 2009; Teven & McCroskey, 1997). For these reasons, behaviors such as interaction with the instructor, should be further evaluated in online education contexts and as they relate to affective and cognitive learning.

This dissertation will examine affect and perceived cognitive learning. It is important to differentiate affect from affective learning. Affect refers to the attitudes, beliefs, and emotions, which have the potential to relate to the knowledge or skills the learner is acquiring. Affective learning on the other hand, includes utility, perceived value, and appreciation (Sellnow et al., 2015). Instructional behaviors greatly influence student affect. Although it is often called affective learning, researchers often actually measure affect toward content, learning, and the instructor (Lane, 2015). Consider the use of teacher evaluations in higher education or trainer evaluations in organizations. Within this domain, instructor behaviors seem to have the most direct and greatest impact on increasing affect. Affective learning occurs when students are motivated, have an appreciation or respect for the content, and take ownership of the material and of their learning beyond simply liking it (Mottet & Beebe, 2006).

Cognitive learning relates to acquired knowledge and the ability to retain and use it. Cognitive learning includes knowledge, comprehension, and understanding (Sellnow et al., 2015). Perceived cognitive learning has been a valuable tool as a proxy for cognitive learning (Cheseboro & McCroskey, 2000; Frisby & Martin, 2010). Limitations exist in measuring perceptions, which are discussed in detail in chapter 5, but support exists for the use of a measure of perceived cognitive learning (Frisby, Mansson, & Kauffman, 2014). Some scholars believe that cognitive learning and affect covary (Frymier, 1994), while others argue that affect leads to cognitive learning (Rodriquez, Plax, & Kearney, 1996). This dissertation takes the perspective of the latter, due to the limitations of affect in measuring actual change and retention of knowledge (Lane, 2015).

This review of previous literature provides support for the idea that perceived caring impacts motivation (Myers, 2001; Myers et al., 2014; Schrodt, 2003; Straits, 2007; Teven, 2007; Teven & McCroskey, 1997). Furthermore, this review provides support the idea of a positive relationship between motivation and cognitive learning outcomes (Allen et al., 2006; Pintrich, 1991). Specific to online learning, credibility as a whole has been found to have a positive effect on cognitive learning; however, the components of credibility (such as caring), were not measured individually (Carr, Zube, Dickens, Hayter, & Barterian, 2013). A goal of this dissertation is to incorporate a theoretical framework such as SDT to understand how caring may increase motivation, and thereby increase student outcomes including affect and perceived cognitive learning.

Summary, Hypotheses, and Proposed Model

Given the prevalence and increased popularity of online education, there is great potential to apply SDT to this context. Previous research suggests that many interpersonal

traits or behaviors (including perceived instructor caring) have a positive impact on students and instructors (Myers et al., 2009; Myers et al, 2014; Teven & McCroskey, 1997). Increased instructor caring even has a positive impact on retention, which is becoming increasingly important as many states move to performance-based funding (Sanford & Hunter, 2011; Legg & Wilson, 2009). Retention has been an issue in distance education, given the type of students who typically take online courses (i.e., non-traditional students, working adults, individuals with children). Previous instructor caring research took place in traditional face-to-face settings. Given the potential impact of perceived instructor caring on student motivation and learning, and in order to better understand how relationships develop between instructors and students in online education, the importance, communication, and potential impact of instructor caring in online education will be evaluated. Further, applying SDT, the roles of caring, motivation, and learning in online settings must be explored to understand the underlying mechanism through which online relationships between students and instructors may motivate students to learn. A mediation model will be proposed to explore the means by which the independent variables of caring, competence, and autonomy affect perceived cognitive learning. In order to better understand SDT's application, as well as the roles of caring and motivation in online settings, the following hypotheses and mediation model (See Figure 1 at the end of this chapter) are posed:

H1: Instructor caring in the online classroom will have positive effects (either directly or indirectly) on perceived cognitive learning, with student state motivation as a mediator.

H2: Instructor caring in the online classroom will have positive effects (either directly or indirectly) on perceived cognitive learning, with affect as a mediator.

H3: Competence in the online classroom will have positive effects (either directly or indirectly) on perceived cognitive learning, with student state motivation as a mediator.

H4: Competence in the online classroom will have positive effects (either directly or indirectly) on perceived cognitive learning, with affect as a mediator.

H5: Autonomy in the online classroom will have positive effects (either directly or indirectly) on perceived cognitive learning, with student state motivation as a mediator.

H6: Autonomy in the online classroom will have positive effects (either directly or indirectly) on perceived cognitive learning, with affect as a mediator.

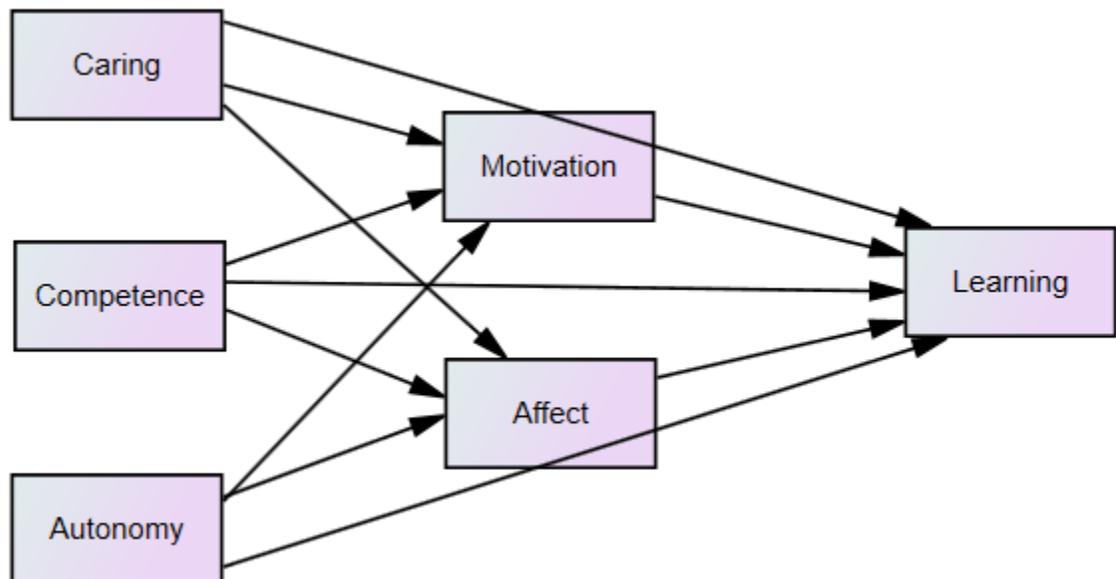
In this chapter, I reviewed the literature on self-determination theory, caring, motivation, affect, and perceived cognitive learning in the online context. The next chapter will describe the methodology used to test the proposed theoretical model.

TABLE 1. Indicators of Caring Instruction

Indicators of caring college instruction	Learner centered	Learning centered
Available to students	X	*
Respects students as individuals	X	*
Willing to give extra effort	X	*
Welcomes questions in class	X	*
Invites discussion outside of class	X	*
Gets to know students	X	*
Wants students to learn/succeed	X	X
Offers multiple learning opportunities	*	X
Utilizes various teaching strategies	*	X
Provides many different resources	*	X
Promotes higher-level thinking skills	*	X

Note. “X” denotes the primary characteristic identified by the indicator, while “*” denotes secondary characteristics. Learner-centered and learning-centered instruction co-occur across all indicators of caring.

Figure 1: Proposed Online Caring Model



Chapter 3: Methodology

The purposes of this dissertation are to better understand perceived instructor caring in an online environment, refine assessment of perceived instructor caring in an online environment, and analyze potential outcomes for students using a theoretically derived model of online instructor caring. To accomplish these goals, two studies were conducted as part of this dissertation. First, Study One is a qualitative study that collected and analyzed perspectives of students related to perceived online instructor caring. Study One is designed to address the need for student perspectives (intended to be combined with instructor perspectives; Lawrence & Frisby, 2016) to better understand how perceived caring should be conceptualized and operationalized in online education settings. Study Two is a quantitative study that evaluated perceived caring using a potentially revised measure to address validity issues with the current measure of caring, state motivation, and perceived cognitive learning and affect. Study Two is designed to address the potential for perceived caring to meet student relatedness needs (i.e., SDT), thereby influencing state motivation and affect, and ultimately, student perceived cognitive learning in an online education context.

Study 1

Participants

Participants ($N = 23$) included 6 male and 17 female students who ranged in age from 17 to 64 ($M = 32.57$, $SD = 13.90$). The ethnicity of this sample was primarily white ($n = 21$, 91.3%), followed by African American ($n = 1$, 4.3%) and Asian ($n = 1$, 4.3%). The sample included students at various levels: 3 freshmen, 2 sophomores, 1 junior, 9 seniors, 6 graduate students, and 2 additional students who indicated other (but did not

specify beyond that). The courses to which they referred include at least 20 different courses (i.e., Technical Writing, Fire Protection Specialist, Social Intelligence, Creative Writing, Business/Professional Communication, Appalachian Studies, Mathematics, Audiology, Health Policy, Internet Security, Nursing, Social Psychology, Public Health Epidemiology, Spanish, Brand and Equity Management) and were taken at various types of institutions, including public, private, research, regional, and community colleges. The participants total number of online courses taken ranged from 1 to 36 ($M = 6.52$, $SD = 8.09$). Of the online courses to which they referred, the class sized ranged from 8 students to 200 students ($M = 30.72$, $SD = 42.91$).

Procedures

After obtaining Institutional Review Board approval, instructors in the researchers' professional network received a standardized recruitment message (which included the link to the questionnaire, hosted by Qualtrics) via email. Recipients of the message were asked to pass the message along to students in their current online courses, as well as to other instructors in their professional network who were currently teaching online courses to promote snowball sampling during early Fall 2017. As an option, instructors were encouraged to provide minimal extra credit to their students for completing this survey. Participation was open to any student who has taken an online course (other than the course in which they are currently enrolled) within the last year.

The questionnaire began with demographic questions and descriptive questions related to their experience, followed by the following definition of instructor caring: caring instructors are perceived as concerned, sensitive, not self-centered, and having students' best interests at heart (McCroskey & Teven, 1999); caring is the extent to which

an instructor is perceived to be concerned about the welfare of their students (McCroskey, 1992). Participants were then asked to think of an online course from the past year when answering the remainder of the survey. The survey included single item quantitative descriptive items and open-ended probing questions (see Appendix A for questionnaire) modeled after Lawrence and Frisby (2016) to allow direct comparison of instructor and student results from Lawrence and Frisby (2016) and the current study. Participants were asked to complete six items measured on 10-point Likert-type scales to remain consistent with previously collected data related to instructor perceptions of caring in online learning (Lawrence & Frisby, 2016). For example, items asked students to respond to how much perceived instructor caring affected students, the instructors, the classroom environment, and their learning on a scale ranging from 1 (does not affect) to 10 (greatly affects). Students were also asked to rate the level of similarity between instructor caring in online vs. face-to-face settings on a scale ranging from 1 (not similar at all) to 10 (extremely similar). Each quantitative item included a follow up open ended question. Each open-ended question asked the participant to explain their quantitative response to the previous item. Given the mixed methods approach of quantitative questions followed by qualitative explanations, both quantitative and qualitative data was analyzed.

Data Analysis Plan

Quantitative Analysis. Quantitative descriptive data were collected, cleaned, and analyzed. Quantitative questions included two 10-point scales, one measuring effects and one measuring similarity (described above). Descriptive data reported included the range, mean, and standard deviation of each quantitative question.

Qualitative Analysis. The author read student responses and created an initial codebook to code for any emergent theme. Codes were created for themes that emerged frequently. Then, codes were collapsed if themes were similar enough to be condensed into one (to create more consistent in identification of themes). Codes were collapsed/condensed in cases where differentiating between the codes made it difficult to categorize responses. For example, empathy and compassion are similar themes that were condensed into one—empathy (includes compassion and understanding). Each individual response was coded as a unit of analysis. The author independently coded all responses and refined the codebook by identifying themes, collapsing codes, and clarifying definitions to refine the codebook. This process is referred to as open, axial, and selective coding (Strauss & Corbin, 1990; Creswell, 2013). Then, the author and an additional independent coder independently coded all student responses using the final refined codebook (see Appendix B). If the coder found that multiple themes or codes applied on a particular item, codes were assigned in order of relevance. When calculating frequencies, multiple themes or codes on items were included in the calculations (had multiple themes been assigned). When calculating intercoder reliability, only the most relevant theme or code was used to simplify this calculation (Owens, 1982).

Additionally, as was discussed in chapter 2 of this dissertation, the conceptualization of caring includes empathy, understanding, and responsiveness, while the current most commonly used form of measurement does not clearly assess responsiveness. This realization was also considered as the new items were developed, to make sure that some of them related more clearly to responsiveness.

Cohen's Kappa was used to calculate intercoder reliability, as recommended by Dewey (1983). Despite some potential drawbacks, it is recommended specifically for research related to behavior (Bakeman, 2000). Cohen's Kappa avoids the assumption that coders have the same distribution of responses. Cohen's Kappa, as calculated by Hayes macro, KALPHA, in SPSS, was acceptable at .82 (Hayes & Krippendorff, 2007). Once Study 1 had been completed, data was compared to and combined with the pilot study on instructor perspectives of communicating caring to online students to gain a better understanding of the instructor caring phenomena in the online context.

Based on the results of the pilot study (Lawrence & Frisby, 2016), the literature review, and Study 1, Teven and McCroskey's (1999) instructor caring scale was modified for use in Study 2 (see instrumentation section of Study 2).

Study 2

Participants

Participants ($N = 226$) included 61 male and 165 female students who ranged in age from 18 to 81 ($M = 30.12$, $SD = 11.07$). The ethnicity of this sample was primarily white ($n = 201$, 88.94%) followed by black or African American ($n = 10$, 4.42%), Asian ($n = 5$, 2.21%), Hispanic or Latino ($n = 5$, 2.21%), American Indian or Alaska Native ($n = 2$, 0.88%), African ($n = 1$, 0.44%), Bi-racial ($n = 1$, 0.44%), and Hebrew ($n = 1$, 0.44%). The sample included students at various levels: 13 freshmen, 26 sophomores, 32 juniors, 48 seniors, 101 graduate students, 1 post-baccalaureate student, and 5 recent graduates. A total of 83 different majors were reported, with the most frequently identified majors or areas of study being: social sciences ($n = 53$), technology/information studies/library science ($n = 44$), education ($n = 34$), health sciences ($n = 25$), business (n

= 22), and justice and safety ($n = 19$). The courses to which they referred represented a variety of disciplines and various types of institutions. 50 different colleges/universities were represented. Students were asked to report the name of the institution, which were then categorized into Carnegie classifications as follows, public master's colleges and universities: larger programs ($n = 76$), public doctoral universities: highest research activity ($n = 67$), public associate's colleges ($n = 30$), and five students did not answer this question. The participants total number of online courses taken ranged from 1 to 48 ($M = 7.45$, $SD = 7.82$). The participants reported on a variety of formats of online instruction, including asynchronous ($n = 206$) and synchronous ($n = 19$), while one participant did not answer this question. Of the courses to which they referred, the class sizes ranged from 2 students to 350 students ($M = 33.74$, $SD = 48.41$).

Procedures

After obtaining Institutional Review Board approval, instructors in the researchers' professional network received a standardized recruitment message (which included the link to the questionnaire, hosted by Qualtrics) via email. Recipients of the message were asked to pass the message along to students in their current online courses, as well as to other instructors in their professional network who were currently teaching online courses to promote snowball sampling during late Fall 2017 and early Spring 2018. As an option, students could choose to fill out an additional brief form to be entered into a drawing for a chance to win one of six Amazon e-gift cards (each worth \$50). Once data collection ended, six people were chosen using a random number generator and notified via email. Participation was open to any student who had taken an online course (other than the course in which they were currently enrolled) within the last

year. The questionnaire began with demographic questions and descriptive questions related to their online learning educational experience. Participants were then asked to think of an online course from a previous semester within the last year when answering the survey questions (see Appendix C for survey protocol). The survey included the following instruments: instructor caring (Teven & McCroskey, 1999); additional items developed from study 1 (to be considered in revisions to Teven & McCroskey's scale); perceived competence (Williams & Deci, 1996); perceived autonomy support (Williams & Deci, 1996); student motivation (Christophel, 1990); affective learning and instructor evaluation (McCroskey, 1994); and perceived cognitive learning (Frisby & Martin, 2010).

Instrumentation

Instructor online caring. To measure instructor online caring, an expanded and modified version of online instructor caring was developed using three sources. Teven and McCroskey's (1999) scale was used to measure perceived instructor caring, which is the most common operationalization of instructor caring in instructional communication research. It is a 6-item scale used to assess students' perceived levels of instructor caring using a 7-point semantic differential scale. The items include the following adjective pairs: cares about others/doesn't care about others, has others interests at heart/doesn't have others interests at heart, self-centered/not self-centered, unconcerned with others/concerned with others, insensitive/sensitive, and not understanding/understanding. This scale range was 1 to 7. This scale has good face validity and was previously reported to have an alpha reliability of above .90 (Teven & McCroskey, 1999).

Because Teven and McCroskey's (1999) measure was developed and has been used primarily in research related to face-to-face instructional settings, additional items were developed using two methods. First, using qualitative data from Lawrence and Frisby (2016) and from Study 1 of this dissertation. Specifically, the author utilized the qualitative responses to develop items specifically identified as caring behaviors in online contexts. Additionally, based on concern that all dimensions of caring were not adequately being assessed in Teven and McCroskey's scale, new items were developed to align with the conceptualization of caring. The qualitative results were compared and transcribed as adjective pairs a semantic differential scale (formatting consistent with Teven & McCroskey's scale). For example, a new item that emerged from the qualitative data was the adjective pair: is empathetic/isn't empathetic.

Second, items were developed using Straits (2007) indicators of caring instruction. Straits' research organized items into learner centered and learning centered items, and these items were also written on a 7-point semantic differential scale (to remain consistent with other items). For example, a new item developed based on Straits was: respects students as individuals/doesn't respect students as individuals. All of the added items were subjected to review by two members of the dissertation committee. These members serve as experts in methodology and content area, as recommended for scale development by DeVellis (2017), to ensure reliability and validity. Table 2 (found at the end of this chapter) shows each item included in the final scale and the source that contributed to item development. Scale descriptives and reliability are reported in response to RQ3 in the Results section.

Perceived competence. A 7-point semantic differential, 4-item scale that was developed by Williams and Deci (1996) was used to measure perceived competence for learning. On a scale of 1 (*not at all true*) to 7 (*very true*), participants were asked to respond to items such as: I feel confident in my ability to learn this material. This measure has been used for research specific to learning, and according to Deci and Ryan (2000), is one of the most face valid of the instruments designed to assess constructs from SDT (Williams & Deci, 1996). This scale range was 1 to 7. The alpha reliability of the original version of this scale is consistently above .80 in previous research (Williams & Deci, 1996; Williams, Freedman, & Deci, 1998). In the current study, Cronbach's coefficient alpha reliability was .94 ($M = 24.67$, $SD = 4.20$).

Perceived autonomy support. The perceived autonomy support scale (also referred to as learning climate scale) is a unidimensional 15-item scale, using a 7-point semantic differential (Williams & Deci, 1996). On a scale of 1 (*strongly disagree*) to 7 (*strongly agree*), participants were asked to respond to items such as: I feel that my instructor provides me choices and options. This scale was chosen because it is consistent with previous SDT research. Items refer to students' perceptions of how autonomous they felt in a given learning environment. This scale range was 1 to 7. This scale has been previously validated and consistently has an alpha reliability of above .90 (Black & Deci, 2000). In the current study, Cronbach's coefficient alpha reliability was .96 ($M = 80.19$, $SD = 17.51$).

Student state motivation. A 12-item, 5-point measure semantic differential describing state state motivation (e.g., motivated/unmotivated) in the course was used (Christophel, 1990). One reason this scale was chosen for this particular study is because

it can be generalized to apply in various subjects or areas of study, whereas some scales would require more specificity in the phrasing of the questions. Additionally, this is the generally accepted scale of state motivation in instructional research. This scale range was 1 to 7. Previous communication research utilizing this as an instructional outcome found this scale to be valid and to have an alpha reliability of .95 (McCroskey, Richmond, & Bennett, 2006). In the current study, Cronbach's coefficient alpha reliability was .95 ($M = 59.91$, $SD = 16.33$).

Affect. Using a 7-point semantic differential scale, students were asked to respond to a 16-item scale related to their affect toward course content (4 items, e.g., I feel the class' content is bad/good), classes in the content area (4 items, e.g., my likelihood of taking other classes in this content area is unlikely/likely), the instructor (4 items, e.g., overall, the instructor I have in this class is bad/good), and taking additional courses with the instructor (4 items, e.g., were I to have the opportunity, my likelihood of taking future classes with this instructor is unlikely/likely) (McCroskey, 1994). This is a commonly used measure of affect in instructional communication research. While McCroskey made clear that the affect toward course content and affect toward the classes in the content area could be used to measure affective learning, and the affect toward instructor and affect toward additional courses with the instructor could be used for instructor evaluation, more recent research clearly identifies this as affect (not affective learning), which is how it will be used here. Lane (2015), for example, supports the idea that affective learning cannot actually be measured and the construct being operationalized here is actually affect. This scale range was 1 to 7. Alpha reliabilities for these subscales have consistently been above .90 (McCroskey, 1994). In this study,

Cronbach's coefficient alpha reliability for the affect toward course content subscale was found to be .89 ($M = 2.425$, $SD = 4.33$). Cronbach's coefficient alpha reliability for the affect toward classes in the content area subscale was calculated at .95 ($M = 22.19$, $SD = 7.11$). Cronbach's coefficient alpha reliability for the affect toward the instructor subscale was found to be .95 ($M = 24.44$, $SD = 5.16$). Cronbach's coefficient alpha reliability for the affect toward taking additional courses with the instructor subscale was found to be .96 ($M = 22.72$, $SD = 7.21$).

Perceived cognitive learning measure. This 10-item scale was used to measure students' understanding and recall of content (e.g., I have learned a great deal in this class; I have learned more in other classes than in this class) (Frisby & Martin, 2010). Using a 5-point Likert scale, responses vary from 1 (*strongly disagree*) to 5 (*strongly agree*). This measure is preferred over other alternatives because it uses multiple items to measure perceived cognitive learning and aligns with multiple aspects of perceived cognitive learning (Frisby et al., 2014; Frisby & Martin, 2010). This was used as a unidimensional scale to be consistent with how the construct is conceptualized and operationalized in recent instructional communication research (Bolkan & Goodboy, 2015; Goldman, Goodboy, & Weber, 2017; Limperos, Buckner, Kaufmann, & Frisby, 2015). This scale was previously reported to have an alpha reliability of .88 (Frisby & Martin, 2010). In the current study, Cronbach's coefficient alpha reliability was found to be .82 ($M = 40.29$, $SD = 6.90$).

Data Analysis Plan

Data was collected, cleaned, and analyzed to a) assess or revise the measure of caring and b) to test the proposed model. First, using exploratory factor analysis (EFA),

the researcher evaluated a modified measure of caring that includes items from three sources: items from Teven and McCroskey's (1999) scale, items created based on study 1 and Lawrence and Frisby (2016), as well as items created from Straits (2007) research. This process provided constitution for items to be included in the revised online instructor caring scale, as recommended by DeVellis (2017). By analyzing correlations to determine structure, and based on what items load or do not load, an EFA appropriately determines what should or should not be included in the scale (Keppel & Wickens, 2004).

To test hypothesis 1 through 6 and to test the proposed mediation model, structural equation modeling (SEM) using AMOS was used to provide a confidence interval reflecting the indirect influence of perceived instructor caring, competence, and autonomy, through the mediating variables of student state motivation and affect, on perceived cognitive learning. SEM was selected as the method of analysis because it allows the researcher to identify not only relationships between variables that are theoretically linked, but also the direction and significance of them (Schreiber, Nora, Stage, Barlow, & King, 2006). SEM was utilized, as opposed to regression analysis, due to the complexity of the model. SEM allows for more complete information when testing the significance of multiple predictors, in this case motivation and affect (Kenny, 2018). When testing the full structural equation model (SEM), the following criteria were used to determine model fit: chi-square ratio of 2:1, a comparative fit index (CFI) and normed fit index (NFI) of greater than .90, and a root mean square error of approximation (RMSEA) and standardized root mean square residual (SRMR) of less than .10 (Byrne, 2001; Hu & Bentler, 1999; Kline, 2011).

Summary

Study 1 of this dissertation examined potential similarities and differences in instructor and student perspectives on instructor caring, considered the importance of instructor caring, and developed items to be used to measure instructor caring. Using data collected from the instructor perspective in Lawrence and Frisby (2016) and similar data collected from the student perspective in Study 1 of this dissertation, additional caring items were added to the existing caring scale and modified for use in measuring online instructor caring. Further, this scale was examined, validated, and used to test the hypothesized mediation model. The next chapter will report the results of each of these studies.

Table 2: Items included in perceived instructor caring scale.

Origin of Items	Items (presented on a 1-7 semantic differential scale)
Teven & McCroskey (1999)	<ul style="list-style-type: none"> • Cares about others/Doesn't care about others • Has others interests at heart/Doesn't have others interests at heart • Self-centered/Not self-centered • Unconcerned with others/Concerned with others • Insensitive/Sensitive • Not understanding/Understanding
Lawrence & Frisby (2016) and Study 1 Results	<ul style="list-style-type: none"> • Isn't passionate about teaching/Is passionate about teaching • Communicates frequently/Doesn't communicate frequently • Is involved in the course/Isn't involved in the course • Provides low quality feedback/Provides high quality feedback • Is close with students/Isn't close with students • Seems to be a part of the class/Doesn't seem to be a part of the class • Doesn't value mutual respect/Values mutual respect • Is empathetic/Isn't empathetic • Doesn't communicate warmth/Communicates warmth • Holds students accountable/Doesn't hold students accountable • Isn't understanding/Is understanding • Doesn't motivate students/Motivates students • Is compassionate/Isn't compassionate • Seems psychologically close/Seems psychologically distant • Provides personalized feedback/Provides generic feedback • Responds in a timely manner/Doesn't respond in a timely manner • Isn't willing to communicate/Is willing to communicate • Is passionate about subject/Isn't passionate about subject
Straits (2007)	<ul style="list-style-type: none"> • Makes himself/herself available to students/Doesn't make himself/herself available to students • Respects students as individuals/Doesn't respect students as individuals • Isn't willing to give extra effort/Is willing to give extra effort • Doesn't welcome questions from students/Welcomes questions from students • Doesn't invite discussion from students/Invites discussion from students

Table 2 (continued)

	<ul style="list-style-type: none">• Gets to know students/Doesn't get to know students• Doesn't want students to learn/Wants students to learn• Doesn't want students to succeed/Wants students to succeed• Didn't offer multiple learning opportunities/Offers multiple learning opportunities• Utilizes various teaching strategies/Doesn't utilize various teaching strategies• Provides many different resources/Doesn't provide many resources• Promotes higher level thinking skills/Doesn't promote higher level thinking skills
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Chapter 4: Results

Results were analyzed and reported consistent with the data analysis plan, in order to determine measurement of relationships between constructs in the model. In response to research questions one and two, participants were asked quantitative and qualitative questions to assess students' perspectives of instructor caring in online classrooms. Study 2 results provided answers to RQ3, as well as to Hypotheses 1-6. To respond to RQ3, exploratory factor analysis was used to assess an expanded measure of online instructor caring. To respond to H1-H6 and to test the proposed mediation model, SEM was used to provide a confidence interval reflecting the direct and indirect influence of perceived online instructor caring, competence, and autonomy, through the mediating variables of student state motivation and affect, on perceived cognitive learning.

Study 1 Results

In response to RQ1, which asked what behaviors students perceive as demonstrating caring in the online environment and if these perceptions are consistent with instructor perspectives, student perspectives were somewhat consistent with faculty perspectives. The most common themes from these student perspectives were: (a) presence, (b) sensitive to student population and specific needs of online learners, (c) feedback that is high quality and personalized, (d) increased engagement and participation, (e) increased motivation, and (f) affect toward course/material. As was previously discussed, in prior research on faculty perspectives, six major themes emerged from coding qualitative data. These are compassion (includes empathy and understanding), presence (includes frequent communication and timely responses), feedback (that is high quality and personalized), immediacy (includes closeness,

willingness to communicate), motivation (or sense of accountability), and difficulty demonstrating caring online (or lacks “natural” opportunities) (Lawrence & Frisby, 2016). The student and faculty themes were similar. Each of these themes will be discussed in turn.

Presence, which includes timely responses and frequent communication, described how involved and present the instructor seems to be in the course and if the student feels like they are really “there.” An example response related to was: “Prompt response to emails. Addressing all questions. Announcements posted frequently to give students some contact from instructor. ;” Another student said, “An instructor who cares about my learning will...communicate frequently.” Related to the timeliness of responses, another student described a caring instructor as having, “Willingness to respond quickly to emails.” Similarly, other students said “Many updates and communication on blackboard in announcements section” and another expanded, “Timely response is a must so it is understood that support is provided in the online environment.”

Sensitive to the student population and to specific needs of online learners was the second theme. For example, one student stated that, “classes were set up with the working professional on mind. ;” Related to technical and timing issues in online environments, one student noted, “Allowance for unforeseen technical difficulties occasionally... Plenty of notice on larger assignments; as the demographic for online student is that many online students have full time jobs and families.”

The third theme was *providing feedback that is high quality and personalized*. Providing feedback on assignments was mentioned often in this research, particularly as

it relates to the quality of the feedback and personalization of the feedback. Specific statements that related to this include: “Feedback when grading assignments to allow students to improve on future assignments.” Related to the quality of feedback, a student recognized that, “An instructor who cares about my learning...will provide caring but honest feedback about my work; make suggestions for improvement of work rather than scolding me for doing things incorrectly;” Students seem to notice and appreciate things such as, “Detailed feedback on assignments and not only a letter grade.” and “Comments on how the student is doing on assignments. Doesn't have to be on every one of them, but at least on one a week.”

Fourth was *increased student engagement and participation*. This theme relates to how likely instructor behaviors were to encourage students to be more engaged and have a higher level of participation in the course. Students said things such as this: “I've seen friends who have also taken the similar online courses really disengage from their classwork and treat it as merely a chore when they don't feel like their profs care. It's like, why care if the prof doesn't?” Additionally, a student felt that, “When professors show they care and are invested in your education I instantly become more invested in the class. I am more likely to ask questions and prioritize the class when I feel the professor is prioritizing the students.”

Increased motivation, or sense of accountability, was the fifth theme. This theme relates to how likely instructor behaviors were to increase student motivation or sense of accountability. One student mentioned an appreciation for “motivational reinforcement.” For example, one student said, “An instructor who cares about my learning will check in with me if I miss an assignment rather than assuming I don't care about the class.”

Another student shared this: “I will work harder for an instructor who cares about me as a person and cares about my learning...anxiety negatively influences learning, and if an instructor shows me that he/she cares, I will be less anxious about my performance.”

Sixth, was *affect toward the course and/or material*. This referred to how much the instructor appeared to like or enjoy the course or material. One student shared that: “If an instructor doesn't care about what they are teaching it makes it hard, as a student, to care about learning. Passion, even online, can go a long way.” Furthermore, a student shared that, “The more passionate a professor is, the more excited I am about the class.”

In combining the themes that emerged from the Lawrence and Frisby (2016) study on faculty perspectives and the results of Study 1 in this dissertation, Table 3 (found at the end of this chapter) shows the most common themes identified by faculty only (Lawrence & Frisby, 2016), themes that were commonly identified by both faculty and students, and the most common themes identified by students only (Study 1). These themes were foundational to the development of items to be including in a more comprehensive online instructor caring measure. If items did not already exist in Teven and McCroskey's scale (1999), or in the items developed based on Straits (2007) research, new items were written for the purposes of this dissertation (see more information in the instructor caring instrumentation section of Chapter 3).

RQ2 asked how, if at all, caring is different in online versus face-to-face settings. When asked to report on a scale from 1 (not important) to 10 (extremely important) how important instructor caring is in an online environment, participants reported scores ranging from 7 to 10 ($M = 8.61$, $SD = .94$). When asked to what extent showing caring affects students (1 = does not affect students to 10 = greatly affects students), participants

reported scores ranging from 3 to 10 ($M = 8.83$, $SD = 1.70$). When asked to what extent showing caring affects learning (1 = does not affect learning to 10 = greatly affects learning, participants reported scores ranging from 4 to 10 ($M = 8.87$, $SD = 1.46$). In other words, participants reported that caring in the online environment is important, affects students, and affects learning,

To more directly answer RQ2, when asked to report on how similar caring behaviors are in an online classroom versus a face-to-face classroom (1 = not similar at all to 10 = extremely similar), participants reported scores ranging from 1 to 10 ($M = 6.13$, $SD = 2.63$). Although there was the greatest range of responses to this question, the mean indicates that participants see it as more similar to caring in the face to face classroom than different.

To continue investigating the research question regarding similarity in caring across class formats, qualitative data were also examined. Some student comments explained that the face-to-face classroom lends itself better to instructor's ability to display caring behaviors. For example, one student shared the following:

There are basic similarities, but the face-to-face classroom professor, in my opinion, has the upper hand. Students can see facial expressions, body language, truly feel the compassion or caring desire in the professor's voice. For online classes, all they can see are words typed in the introduction or weekly emails from the professor. Often times, it is hard to read the emotion from the email.

However, other students indicated that they do not see much of a difference between the two as it relates to instructor caring. For example, students made comments such as, "Instructors in face-to-face classrooms have to be mindful of time constraints

when teaching weekly lessons. In the online classroom, instructors can focus on responding to students and providing feedback to ensure the key information is retained.” Another student said, “after class there was not much time to interact with questions or concerns...because of the hectic student and teacher schedules. Online provides more time for teachers at their leisure to meet the needs of their students.”

Similarly, another student explained, “Even more than in a face-to-face setting, communicating warmth and caring is essential...Written communication that demonstrates caring is the only way to make connections with students.” Another student noted that, “Face to face instructors are visually able to see and feel struggle. In an online setting it's based on open communication alone.” One student said, “There tends to be a disconnect with online courses and the lack of face to face time. I think this requires increased instructor caring to compensate.” Another interesting response was:

Since there is a stronger degree of separation with online courses, it's much easier to disconnect with your classmates and professor. They just become avatars on a screen. But, when I see profs engaging in online discussions or sending out a nice 'have a good weekend' it means a lot.

Students also noted that in many ways, the instructors in online and face-to-face environments are the same. Comments related to this perspective include, “I think a good instructor shines wherever they teach. Be it online or in the class room, they can't help but care.” Another student noted that, “The behaviors are the same, just on different platforms.” One student shared,

I had a class that you could choose to attend in person or online and felt treated the same no matter which way I chose to attend that week. Professors either care or they don't. I don't think they give preference to their in person students.

Another shared that they didn't "think a professor's caring plays much of a part in learning. That is totally up to the student...you can't motivate or show caring to students who aren't willing to allow themselves to be motivated." Another student shared it this way:

I want my instructor to care and exhibit these actions, but if they don't I'll pull up my big girl panties and deal. At the end of the day I want the grade and credit hours and if I have to deal with a more rigid professor or whatever I'll figure it out and be fine.

That is, both quantitative and qualitative responses to RQ2 suggest that students find caring to be important in online settings and has potential to affect students and affect learning; however, the extent to which instructor caring is the same or different in online settings remains somewhat unclear.

Study 2 Results

In response to RQ3, a Principal Component Analysis EFA using Varimax rotation with Kaiser Normalization was calculated using SPSS. The EFA initially revealed 5 factors, accounting for 68.48% of the variance (all eigenvalues > 1). Factor loadings for all items are included in Table 4 (at the end of this chapter). First, factors with Eigenvalues above 1.0 were examined and then each individual item was examined for loading onto the retained factors using the 50/30 rule on rotated component matrix (loads above .50 on one factor, but below .30 on other factors) (Kaiser, 1960; Tabachnick &

Fidell, 2007). If items met these criteria, the items were retained. Items were removed because of cross-loading (loading on multiple factors). Only one factor, including three items, remained after this elimination process. The EFA was calculated again only including the final 3 items. The second EFA confirmed a one factor solution (accounting for 77% of variance; eigenvalue = 2.314). This factor included 3 items and each of the items came from Teven and McCroskey's caring scale (1999): unconcerned with others/concerned with others, insensitive/sensitive, not understanding/understanding. None of the items derived from Straits (2007) or developed for the purposes of this dissertation (from the pilot study and Study 1) were retained. Cronbach's coefficient alpha reliability of this final three-item scale was .85 ($M = 5.67$, $SD = 1.33$), and the range was from 1 to 7. See Table 5 (at the end of this chapter) for the items and their factor loadings onto the retained factor. Based on these results, a reliable and valid composite measure of online instructor caring was utilized to test the proposed mediation model.

To test H1-H6, structural equation modeling was used to provide a confidence interval reflecting the direct and indirect influence of perceived instructor caring, competence, and autonomy, through the mediating variables of student state motivation and affect, on perceived cognitive learning. Following recommendations of SEM research, direct effects, indirect effects, and mediation effects were reported (Goodboy & Kline, 2017; Schreiber et al., 2006). A bootstrapping approach was used in AMOS with a 95% bias-correct confidence interval and 2000 bootstrapped samples (Zhao, Lynch, & Chen, 2010). See Table 6 (at the end of this chapter) for all direct and indirect effects tested in H1-H6. See Table 7 (at the end of this chapter) for correlation matrix.

H1 predicted that instructor caring in the online classroom would have positive effects (either directly or indirectly) on perceived cognitive learning, with student state motivation as a mediator. Model fit was $\chi^2(0) = 0$; CFI = 1; NFI = 1; RMSEA = .459; SRMR = 0, which is just identified and cannot be evaluated properly with zero degrees of freedom (MacCallum, 1995). The standardized direct effect of perceived instructor caring on perceived cognitive learning was -.104. However, in testing this hypothesis, the direct path between caring and perceived cognitive learning was removed for theoretical and empirical reasons. Upon further reflection of the literature, there was not significant theoretical evidence that perceived instructor caring should have a direct effect on perceived cognitive learning. Empirically, this path significantly reduced model fit, so for theoretical and empirical reasons, the path was eliminated. By removing only this path, model fit was significantly improved. The final model had good overall fit, $\chi^2(1) = 2.922, p = .087$; CFI = .997; NFI = .996; RMSEA = .092; SRMR = .0129. There was a significant standardized direct effect of perceived instructor caring on student state motivation, $\beta = .173, p = .008$. There was a significant standardized direct effect of student state motivation on perceived cognitive learning, $\beta = .194, p = .025$. The standardized indirect effect of perceived instructor caring on perceived cognitive learning was $\beta = .095, p = .003$. Upon bootstrapping with bias-corrected percentile method and two-tailed significance of standardized indirect effects, the mediation effects of student state motivation between caring and perceived cognitive learning is significant at .003, which supports mediation. H1 was partially supported; online instructor caring only had indirect effects on perceived cognitive learning through the mediator of student state motivation.

H2 predicted that instructor caring in the online classroom would have positive effects (either directly or indirectly) on perceived cognitive learning, with affect as a mediator. There was a significant standardized direct effect of perceived instructor caring on affect, $\beta = .174, p = .015$. There was a significant standardized direct effect of affect on perceived cognitive learning, $\beta = .355, p = .001$. The standardized indirect effect of perceived instructor caring on perceived cognitive learning was $\beta = .095, p = .003$. Upon bootstrapping with bias-corrected percentile method and two-tailed significance of standardized indirect effects, the mediation effects of affect between caring and perceived cognitive learning is significant at .003, which supports mediation. H2 was partially supported; online instructor caring only had indirect effects on perceived cognitive learning through the mediator of affect.

H3 predicted that competence in the online classroom would have positive effects (either directly or indirectly) on perceived cognitive learning, with student state motivation as a mediator. There were significant standardized direct effect of competence on student state motivation, $\beta = .227, p = .001$. There were significant standardized direct effects of student state motivation on perceived cognitive learning, $\beta = .194, p = .025$. There were significant standardized direct effects of competence on perceived cognitive learning, $\beta = .232, p = .002$. The standardized indirect effect of competence on perceived cognitive learning was $\beta = .116, p = .001$. Upon bootstrapping with bias-corrected percentile method and two-tailed significance of standardized indirect effects, the mediation effects of student state motivation between competence and perceived cognitive learning is significant at .001, which supports mediation. H3 was supported;

competence directly affected perceived cognitive learning and indirectly affected perceived cognitive learning through student state motivation as a mediator.

H4 predicted that competence in the online classroom would have positive effects (either directly or indirectly) on perceived cognitive learning, with affect as a mediator. There were significant standardized direct effects of competence on affect, $\beta = .202, p = .001$. There were significant standardized direct effects of affect on perceived cognitive learning, $\beta = .355, p = .001$. There were significant standardized direct effects of competence on perceived cognitive learning, $\beta = .2326, p = .002$. There were significant standardized indirect effects of competence on perceived cognitive learning, $\beta = .116, p = .001$. Upon bootstrapping with bias-corrected percentile method and two-tailed significance of standardized indirect effects, the mediation effects of affect between competence and perceived cognitive learning is significant at .001, which supports mediation. H4 was supported; competence directly affected perceived cognitive learning and indirectly affected perceived cognitive learning through affect as a mediator.

H5 predicted that autonomy in the online classroom would have positive effects (either directly or indirectly) on perceived cognitive learning, with student state motivation as a mediator. There were significant standardized direct effects of autonomy on student state motivation, $\beta = .468, p = .002$. There were significant standardized direct effects of student state motivation on perceived cognitive learning, $\beta = .194, p = .025$. There were insignificant standardized direct effects of autonomy on perceived cognitive learning, $\beta = .090, p = .259$. There were significant standardized indirect effects of autonomy on perceived cognitive learning, $\beta = .299, p = .001$. Upon bootstrapping with bias-corrected percentile method and two-tailed significance of standardized indirect

effects, the mediation effects of student state motivation between autonomy and perceived cognitive learning is significant at .001, which supports mediation. H5 was partially supported; autonomy only had indirect effects on perceived cognitive learning through the mediator of student state motivation.

H6 predicted that autonomy in the online classroom would have positive effects (either directly or indirectly) on perceived cognitive learning, with affect as a mediator. There were significant standardized direct effects of autonomy on affect, $\beta = .585, p = .002$. There were significant standardized direct effects of affect on perceived cognitive learning, $\beta = .355, p = .001$. There were insignificant standardized direct effects of autonomy on perceived cognitive learning, $\beta = .090, p = .259$. There were significant standardized indirect effects of autonomy on perceived cognitive learning, $\beta = .299, p = .001$. Upon bootstrapping with bias-corrected percentile method and two-tailed significance of standardized indirect effects, the mediation effects of affect on autonomy and perceived cognitive learning is significant at .001, which supports mediation. H6 was partially supported; autonomy only had indirect effects on perceived cognitive learning through the mediator of affect. See Figure 2 (at the end of this chapter) for final mediation model with direct paths.

This chapter presented both the qualitative and quantitative results regarding instructor online caring, the measurement of online caring, and the results of the proposed mediation model. Based on these results, the next chapter will discuss the interpretation, theoretical and practical implications, limitations and future directions for this research.

Table 3: Themes identified in qualitative research.

Faculty-identified themes (Lawrence & Frisby, 2016)	Common themes (identified by both faculty and students)	Student-identified themes (Study 1)
Compassion (includes empathy and understanding)	Presence (includes timely response and frequent communication)	Sensitive to student population and specific needs of online learners
Immediacy (includes closeness and willingness to communicate)	Feedback that is high quality and personalized	Increased engagement and participation
Difficulty demonstrating caring online (or lacks “natural” properties)	Increased motivation or sense of accountability	Affect toward course/material

Table 4: Factor Loadings, Rotated Component Matrix

	1	2	3	4	5
Cares about others/Doesn't care about others	.678	.327	.277	.166	.310
Has others interests at heart/Doesn't have others interests at heart	.620	.318	.212	.077	.227
Communicates frequently/Doesn't communicate frequently	.166	.106	.514	.469	.194
Is involved in the course/Isn't involved in the course	.223	.217	.517	.514	.138
Is close with students/Isn't close with students	.216	.044	.124	.555	.602
Seems to be a part of the class/Doesn't seem to be a part of the class	.365	.379	.278	.470	.395
Is empathetic/Isn't empathetic	.279	.403	.242	.145	.567
Holds students accountable/Doesn't hold students accountable	.131	.428	.497	.151	-.148
Makes himself/herself available to students/Doesn't make himself/herself available to students	.185	.351	.632	.147	.288
Is compassionate/Isn't compassionate	.476	.275	.414	.255	.481
Seems psychologically close/Seems psychologically distant	.277	.142	.334	.087	.702
Provides personalized feedback/Provides generic feedback	.288	.083	.582	.377	.268
Responds in a timely manner/Doesn't respond in a timely manner	.334	.277	.723	.086	.176
Is passionate about subject/Isn't passionate about subject	.196	.655	.238	.400	.229
Respects students as individuals/Doesn't respect students as individuals	.371	.581	.278	.147	.307
Gets to know students/Doesn't get to know students	.116	.314	.061	.291	.651
Promotes higher level thinking skills/Doesn't promote higher level thinking skills	.068	.575	.257	.398	.381
Provides many different resources/Doesn't provide many different resources	.356	.348	.242	.573	.141
Utilizes various teaching strategies/Doesn't utilize various teaching strategies	.267	.200	.231	.697	.305
Self-centered/Not self-centered	.638	.149	.166	.301	-.092
Unconcerned with others/Concerned with others	.738	.175	.157	.254	.200
Insensitive/Sensitive	.638	.195	.116	.268	.250

Table 4 (continued)

Not understanding/Understanding	.728	.206	.261	.211	.278
Isn't passionate about teaching/Is passionate about teaching	.428	.480	.280	.308	.231
Provides low quality feedback/Provides high quality feedback	.234	.065	.617	.276	.402
Doesn't value mutual respect/Values mutual respect	.600	.463	.275	.061	.116
Doesn't communicate warmth/Communicates warmth	.559	.107	.205	.348	.478
Isn't understanding/Is understanding	.611	.369	.292	.285	.317
Doesn't motivate students/Motivates students	.439	.215	.368	.492	.444
Isn't willing to communicate/Is willing to communicate	.489	.429	.456	.283	.147
Isn't willing to give extra effort/Is willing to give extra effort	.462	.283	.444	.200	.297
Doesn't welcome questions from students/Welcomes questions from students	.480	.567	.323	.262	.164
Doesn't want students to learn/Wants students to learn	.471	.662	.251	.236	.120
Doesn't invite discussion from students/Invites discussion from students	.428	.447	.142	.542	.143
Doesn't want students to succeed/Wants students to succeed	.362	.612	.053	.037	.218
Didn't offer multiple learning opportunities/Offers multiple learning opportunities	.427	.295	.302	.591	.205

Note: Principal Component Analysis, Varimax with Kaiser Normalization, converged in 13 iterations

Table 5: Factor loadings for perceived online instructor caring items.

Item	Factor Loading
Unconcerned with others/Concerned with others	.867
Insensitive/Sensitive	.860
Not understanding/Understanding	.907

Table 6: Direct and Indirect Effects for H1-H6

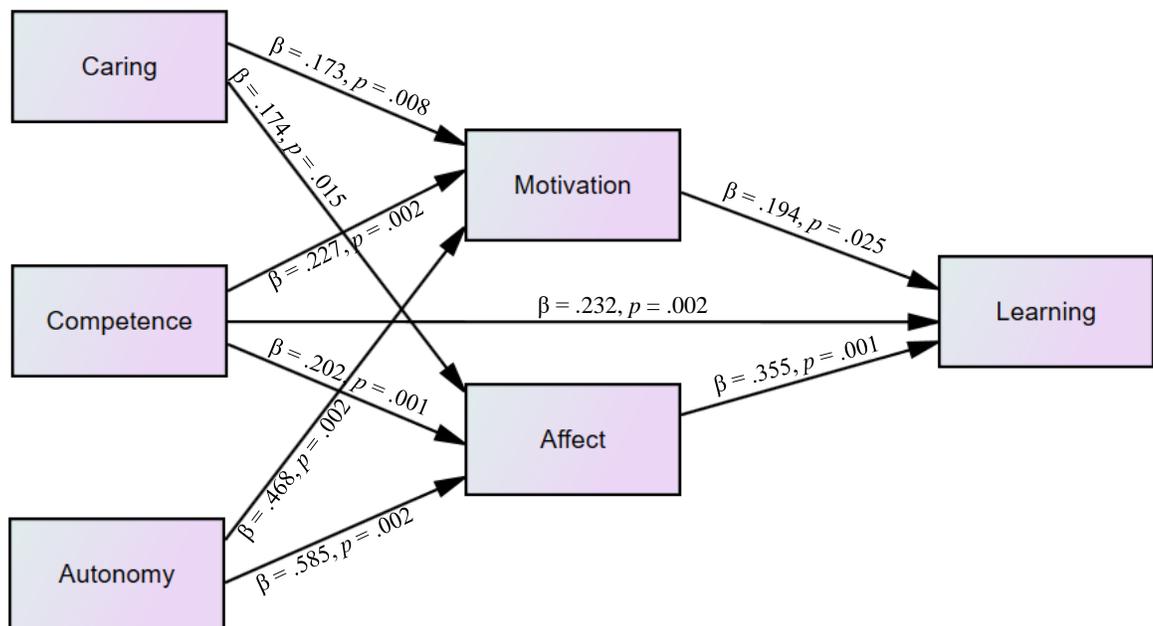
Relationships	β	SE	p	Standardized direct effect	Standardized indirect effect	Standardized total effect
Caring → Motivation	.173	.062	.008	.173		.173
Competence → Motivation	.227	.066	.001	.227		.227
Autonomy → Motivation	.468	.072	.002	.468		.468
Caring → Affect	.174	.048	.015	.174		.174
Competence → Affect	.202	.051	.001	.202		.202
Autonomy → Affect	.585	.056	.002	.585		.585
Competence → Learning	.232	.035	.002	.232	.116	.348
Autonomy → Learning	.090	.044	.259	.090	.299	.389
Motivation → Learning	.194	.034	.025	.194		.194
Affect → Learning	.355	.044	.001	.355		.355
Caring → Learning					.095	.095

Table 7: Overall Means, Standard Deviations, AVEs, and Correlations of Constructs

	Mean (S.D.)	AVE	1	2	3	4	5	6
1. Autonomy	5.35 (1.17)	1.36	1					
2. Motivation	4.99 (1.36)	1.86	.654	1				
3. Competence	6.17 (1.05)	1.10	.354	.438	1			
4. Affect	5.85 (1.25)	1.56	.765	.701	.459	1		
5. Perceived Cognitive Learning	4.03 (.69)	.48	.572	.603	.513	.667	1	
6. Caring	5.67 (1.33)	1.78	.622	.527	.285	.596	.378	1

Note: S.D.: standard deviation; AVE: average variance extracted.

Figure 2: Final Mediation Model. Note: $\chi^2(2) = 4.403, p = .111$; CFI = .997; NFI = .994; RMSEA = .073; SRMR = .0127 when insignificant path was removed and bootstrapping employed.



Chapter 5: Discussion

To review, the goals of this dissertation were to better understand perceived instructor caring in online learning environments, to evaluate and validate a measure of perceived online instructor caring, and to test the hypothesized model predicting relationships between instructor caring, competence, autonomy, and perceived cognitive learning with affect and student state motivation as mediators. After reviewing previous literature, creating and executing a data analysis plan, and collecting and analyzing results, this chapter discusses the major contributions of this dissertations related to student and faculty perspectives of online caring, a comparison of online and face-to-face caring, online instructor caring scale development, testing, and validation, a model of online instructor caring, and the implications for online learning and theory. Finally, limitations, future directions, and conclusions will be discussed.

RQ1: Student and Faculty Perspectives of Online Caring

Research question one asked, “What behaviors do students perceive as demonstrating caring in the online environment, and are these perceptions consistent with instructor perspectives?” Findings indicated that the following themes were consistent with themes that emerged from faculty in a study by Lawrence and Frisby (2016): presence (includes timely response and frequent communication), feedback that is high quality and personalized, and increased motivation or sense of accountability. It is not surprising that both students and instructors find presence online to be an important characteristic for teachers. In online learning, Tu and McIsaac (2002) defined social presence as perceptions, feelings, and reactions to another intellectual being in the mediated environment. This is consistent with Wei, Chin, and Kinshuk’s (2012) research

exploring presence and credibility (of which caring is one dimension). Perhaps presence is an antecedent to feeling like someone cares because psychological closeness and potential for interaction indicates interest, which would be necessary for caring to be conveyed. The indication that feedback increases perceived caring is consistent with Straits' (2007) research, which focuses on learner-centered and learning-centered approaches to perceived caring. Feedback interactions with students may increase or decrease a student's perception of caring. Especially in an online learning environment, feedback is one way of communicating and is an opportunity to build rapport, praise work, critique work, and create community. Lastly, increased motivation being related to perceived caring is consistent with SDT. Specifically, SDT identifies relatedness, which is similar to caring here, as one of the three psychological needs that must be fulfilled to provide state motivation. Relatedness, like competence and autonomy in SDT research, impacts state motivation. In other words, there are multiple ways to show caring and both students and faculty see establishing presence, providing quality and timely feedback, and motivating students as specific communicative indicators that an instructor cares in the online setting.

However, faculty and students differed in other themes. The themes identified by faculty and instructors only included: compassion (includes empathy and understanding), immediacy (includes closeness and willingness to communicate), and the idea that caring is difficult to demonstrate online (or lacks "natural" properties) (Lawrence & Frisby, 2016). Themes that emerged from the data which were identified by students only included: sensitive to student population and specific needs of online learners, increased engagement and participation, and affect toward course/material. Many of these are

tangible things that instructors can focus on to increase perceived caring in their online courses. For example, to be sensitive to specific learners and needs, Mupinga, Nora, and Yaw (2006) recommends that instructors should have a better understanding of the personalities and needs of their online student population. The student comments surrounding engagement and participation focused on instructors who did communicate with them frequently, who participated on discussion boards, and who encouraged frequent communication and questions. This is consistent with research from Mazzolini and Maddison (2003), which found that students appreciate instructor participation (not domination) related to the content and their area of expertise on discussion forums. Student comments related to affect toward the course and material often mentioned passion. This is consistent with Bain's line of research on *What the Best College Teachers Do* (2004) which recognized the importance of sharing passion for teaching and subject matter with students.

The differences in themes that emerged from the two populations may focus on their different roles and goals in the online classroom. Managing courses, especially online courses, can be difficult as an instructor must determine where, how, and to what to devote the most of their time and energy. It is possible that student responses focused more on what they can "get" or "need" in order to be successful, and instructor responses from previous research focused more on what they can "do," since the research was related to instructor caring specifically. Another potential explanation for these differences in themes is the possibility that instructors and students define caring differently. While a definition of caring was provided in the focus groups, each separate population may have some preconceived notions about what it means to be, or even

show, caring. Some instructors may focus on only imparting knowledge, while this research suggests that caring is more than simply fulfilling an informational purpose. Importantly though, it appears that both students and instructors saw caring as going beyond just providing the expected information in a classroom setting.

RQ2: Comparing Online and Face-to-Face Caring

Research question two asked, “How, if at all, is caring different in online versus face-to-face settings?” Findings indicated that student perceptions of caring in an online setting versus a face-to-face setting vary quite significantly. In both the quantitative and qualitative results in Study 1, responses varied from students thinking this is extremely different to not different at all. This may partially be explained by a diversity of expectations for what an online course, and consequently instructor, should be like. Different students, based on different backgrounds, desires, and experiences, have different expectations of online and face-to-face classes, including teacher behaviors in those courses. In reviewing Houser’s (2006) research which found that nontraditional students have different levels of motivation and expectations entering a course, it is likely that students in online courses, many of which are nontraditional, also enter the course with different levels of expectations and motivation than students in face-to-face courses.

It is possible that the student population taking online courses doesn’t expect or want caring behavior. Houser (2006) evaluated expectations and experiences related to instructor clarity, immediacy, and affinity seeking of traditional and nontraditional students, as well as how those expectations affect cognitive learning and state motivation. Houser found that nontraditional students have higher levels of state motivation and cognitive learning, and also that expectancy violations have significant effects on

motivation and learning. According to Ortagus (2017), many students enrolled in online education are considered nontraditional, so this research applies in this context because these students may also have higher levels of state motivation, cognitive learning, and varying expectancies of the course and instructor behaviors. This is important to consider because, for example, some of the behaviors instructors' expect to indicate caring to students may be potential expectancy violations for some students. This idea should impact training and development of faculty in online settings.

Furthermore, this research highlights the importance of considering not only attitudes toward caring, but the expectations of caring, particularly in an online environment, whether the students are traditional or non-traditional. These courses may not need the same level of teacher caring to help students succeed. Additionally, caring may matter more and or mean something different to students who have little online learning experience and are comparing their online experience to their face-to-face experience. This may be a point of relief for some instructors in that there is no "right" or "wrong" way to show caring, while to other instructors it is a point of frustration because a clear conclusion and prescriptive advice cannot seem to be drawn. It is also relevant to note that since the measure of perceived instructor caring in online environments can be based on items already being used to measure perceived caring in face-to-face settings, these may not be quite that different.

RQ3: Online Instructor Caring Scale Development, Testing, and Validation

Research question three asked, "How can the instructor caring scale be modified to verify that it is a reliable and valid way to measure caring in online education?" The findings from this dissertation indicated that a brief 3-item modified version of Teven and

McCroskey's (1999) original scale is a valid and reliable way to measure perceived instructor caring in online learning environments. In this study, 30 new items were created based on other instructor caring research (Lawrence & Frisby, 2016; Straits, 2007) and based on the qualitative results from Study 1 of this dissertation. However, these new items, and 3 items from the original Teven and McCroskey scale, did not statistically hold up as items to be retained in the construct of online instructor caring.

An earlier concern presented in this dissertation was whether the commonly used measure of instructor caring (Teven & McCroskey, 1999) was applicable in online learning. Based on results of this dissertation, some of the items in Teven and McCroskey's (1999) scale are a valid measure of perceived instructor caring in online learning. These specific items focus on concern with others, sensitivity, and understanding. These may work in an online setting because students are concerned with the level of caring they need in order to do well in the course. For example, students may be concerned with how understanding their instructor is when challenges arise in the students' technology tools or schedule. Online students may be less concerned about the instructors' caring on things that are not related to how they will perform in the course. The retained items align well with the current conceptualization of caring, except that the responsiveness component is not directly addressed. This may be because responsiveness is assumed to be a component of one of the other dimensions, such as concern or sensitivity. Also, these items are still focused heavily on student perceptions, as opposed to specific instructor behaviors. It remains unclear exactly *how* instructors show concern, sensitivity, and understanding.

In relation to conceptualization and operationalization, and as was discussed in Chapter 2 of this dissertation, caring instructors are perceived as concerned, sensitive, not self-centered, and having students' best interests at heart (McCroskey & Teven, 1999). Caring is the extent to which an instructor is perceived to be concerned about the welfare of his or her students (McCroskey, 1992). Three factors that seem to impact students' perceptions of instructor caring are empathy, understanding, and responsiveness (McCroskey, 1992). It is interesting to note that a potential theme in the codebook (see Appendix B), compassion (which included empathy and understanding) was not a common theme in Study 1. Since this is such a large component of how instructional communication scholars define caring, it is surprising that this theme did not emerge as good indicators of online instructor caring. One argument is that some of the other themes are similar to these concepts; this raises the need for scholars to re-evaluate how instructor caring is defined. For example, responsiveness does not seem to be directly related to the three-item scale that emerged in this dissertation. It may be implied, but is not directly addressed, while empathy and understanding are clearly addressed by the final three-item scale.

While there are still many questions to be answered regarding the conceptualization and measurement of online instructor caring, the three items that emerged in this study do provide scholars and practitioners with a brief, valid, and reliable way to measure perceived instructor caring in online settings.

H1 – H6: A Model of Instructor Caring and Online Learning

Hypotheses one and two stated that, instructor caring in the online classroom will have positive effects (either directly or indirectly) on perceived cognitive learning, with

student state motivation or affect, respectively, as mediators. Findings indicated that instructor caring has no direct effect on perceived cognitive learning. Based on qualitative results from student perspectives in Study 1 and on previous research related to caring, credibility, and cognitive learning, it seemed plausible that the constructs of caring and learning were associated (Beatty & Zahn, 1990; Buttner, 2004; Lawrence & Frisby, 2016; Myers et al., 2014; Tantleff-Dunn et al., 2002; Teven & McCroskey, 1997; Wheelless, 1974; 1975). While previous research had associated the caring and learning constructs, the direct effects of perceived instructor caring on perceived cognitive learning specifically had not been tested. Results from Study 2 suggest that, at least in this context and in the ways in which caring and perceived cognitive learning were measured in this study, a direct effect between caring and learning does not exist. Testing the direct path helps to determine if there is a direct effect. As was previously discussed, the path was removed. There are various concerns with the direct path from instructor caring to perceived cognitive learning, such as the idea of a halo effect or Hawthorne effect. The halo effect is a form of cognitive bias potentially causes decisions or assumptions to be made for inaccurate reasons (Thorndike, 1920). The Hawthorne effect is the probability that an individual will work harder when they believe they are being observed and/or something is being manipulated (Landsberger, 1957). The perception of the relationship between instructor caring and perceived cognitive learning could very well be affected by both or either of these.

Instructor caring had indirect effects on perceived cognitive learning with both student state motivation and affect as mediators. In other words, instructor caring in online learning is important to the overall student affective experience. Students who are

motivated and have affect toward a course or instructor likely behave differently than students who are unmotivated or have low affect toward a course or instructor. For example, students who are motivated may attend more, engage more in participation, and study more (Teven & McCroskey, 1997) all of which are behaviors that can lead to greater learning gains. Taken together, this does not show that caring is not important, but is clear that it may not directly impact perceived cognitive learning. This is consistent with the theoretical framework of SDT applied in this study, as instructor caring (called relatedness in SDT research) impacts motivation, which then is expected to lead to cognitive learning.

Hypotheses three and four stated that, competence in the online classroom will have positive effects (either directly or indirectly) on perceived cognitive learning, with student state motivation and affect, respectively, as mediators. Findings indicated that competence has direct effects on perceived cognitive learning, as well as indirect effects via the mediators of both student state motivation and affect. In other words, increased competence has the potential to increase student state motivation, affect, which subsequently affects perceived cognitive learning in online environments. This is consistent with self-efficacy research, which has indicated that increased self-efficacy also has positive effects. Self-efficacy is the self-belief that one can achieve a goal or perform a task (Bandura, 1977). This has been found to increase achievement in a variety of settings (Hewitt, 2015; Yerdelen-Damar & Pesman, 2013). Additional research that is relevant here is that of learner empowerment, which the extent to which students feel in control of their performance (Frymier, Shulman, & Houser, 1996; Houser & Frymier, 2009) and has been associated with various learning outcomes (Schrodt, Witt, Turman,

Myers, Barton, & Jernberg, 2009). Given this information, there is strong support for instructors and students to find ways to increase competence. Having the potential to directly and indirectly increase outcomes that undoubtedly have positive effects, increasing competence is invaluable to instructors and students. This is consistent with SDT, as competence impacts student motivation. However, the effects of competence indicate extension of SDT beyond motivation, since competence had significant direct effects on perceived cognitive learning.

Hypotheses five and six stated that, autonomy in the online classroom will have positive effects (either directly or indirectly) on perceived cognitive learning, with student state motivation and affect, respectively, as mediators. Findings indicated that autonomy had no direct effect on perceived cognitive learning, but instead had indirect effects via the mediators of both student state motivation and affect. That is, increased autonomy has the potential to increase student state motivation (which is consistent with SDT) and affect in online environments. This is particularly interesting to consider, as the type of student who selects an online learning experience may expect to have a certain level of autonomy in their learning and/or coursework (Chen, Jang, & Branch, 2010). This is important for instructors to consider and may be related to the theme students identified in Study 1 of “understanding the needs of online students.” When students feel more in charge of their own learning experience, they may experience increased state motivation and affect. Students, especially those who have taken an online class before, likely know that in an online environment, they are going to need to take more initiative and be more proactive. There is less face threat, since an instructor is not physically present. Affect may be involved because students appreciate the autonomy and

flexibility. Students may feel more in control of how they perform with the material. These are positive outcomes; however, the autonomy alone does not create cognitive learning. The motivation and affect may increase cognitive learning, but the increased cognitive learning is not a result of autonomy alone.

Implications for Online Learning

Overall, the implications of this research are that caring, competence, and autonomy matter and have high potential for impact in online students' motivation and affect, and in some cases, perceived cognitive learning. Both instructors and students should strive to find ways to increase perceived instructor caring, perceived competence, and perceived autonomy, as they impact student state motivation, affect, and perceived cognitive learning (directly or indirectly). As was the focus of Study 1, some behaviors that may increase perceived instructor caring in online settings specifically include: behaviors that increase compassion (includes empathy and understanding), intentional presence (includes timely response and frequent communication, being sensitive to student population and specific needs of online learners, behaviors that increase immediacy (includes closeness and willingness to communicate), providing feedback that is high quality and personalized, and increased engagement and participation. It is also worth noting that caring may be difficult to demonstrate online and/or lacks natural properties in online settings. Awareness of this may help instructors to be more intentional about the caring behaviors that instructors do choose to exhibit. Additionally, Study 1 and Study 2 provide support for increased motivation/sense of accountability, and for increased affect when an instructor is perceived as caring. Taken together, there is significant support for, and examples of, behaviors that indicate and increase perceived

online caring. Intentionally increasing competence and autonomy in these settings is equally important. Practically, to increase competence and autonomy, techniques such as experiential learning (Canu, 2008), collaborative and project work (Williams, 2011), service learning (Simons & Cleary, 2010), and student management teams (Troisi, 2015) can be used. These have been tested in face-to-face settings, and many of these techniques have been used in online contexts. Additional research should consider the effects of these techniques in online settings specifically.

The research for this dissertation took place in institutions of higher education, and some implications are specific to higher education. For example, some areas where these results can and should be applied are in faculty training and development, onboarding, culture creation, and evaluation. Faculty manipulation and facilitation of an online learning environment has the potential to impact retention, engagement, and learning (Scalese, 2001). One reason faculty experience dissatisfaction with online learning is lack of faculty support for developing, implementing, and assessing the online courses (Hiltz, Kim, & Shea, 2007). Rewards and incentives are not enough, and expanding research on how and regarding what training, development, and support for faculty in online learning is imperative (Lawrence & Frisby, 2016; Lee, 2002). This is not to say that some research has not focused on this, but considering the prevalence of online learning and mixed reviews of faculty satisfaction with online learning, research related to training, development, and support of online faculty should be expanded (Cook & Steinert, 2013; Fredericksen, Pickett, Shea, Pelz, & Swan, 2000; Howell, Saba, Lindsay, & Williams, 2004; Oncu & Cakir, 2011). Much of the current research in this area focuses on technology training, training in andragogy, and best practices in course

design and pedagogy (Keengwe & Georgina, 2012), and these are important practices in training faculty in online learning. A question this raises is to what extent instructors should be required or encouraged to spend time and effort on intentionally demonstrating caring or cultivating competence and autonomy in students? All three of these constructs illustrated potential for positive effects on affect and perceived learning, so teaching and training the behaviors that create perceptions of caring, competence, and autonomy is worthwhile, but does not currently seem to be a focus of most training and development for faculty in online learning.

Instructional communication research can and should go beyond the scope of the traditional classroom (Sellnow et al., 2015). The application of this research can reach far beyond a traditional higher education setting, into areas such as training and development, coaching, and professional development. Much of instructional communication research has focused on classroom settings (Sellnow et al., 2015). This is extremely useful and should be continued, but it is also important to recognize the need for additional research and application in instructional settings outside of the traditional classroom, such as training and development in various industries, instructional materials provided in various contexts, and programming that is meant to be educational (such as application development). Online learning exists in these settings (and is becoming more prevalent), as it is a cost effective way to continue education and providing development opportunities for employees, train new employees, and comply with legal obligations in various industries. Therefore, this dissertation and future findings impact these non-traditional instructional contexts. In any context where instruction is happening, instructional communication research could be taking place and could be applied.

Another question that has to be asked of the instructor in any setting (higher education or not) is “what is the goal?” Is the goal cognitive learning? Is the goal affect or motivation? The answers to these questions should guide the instructor behavior and communication choices in the online environment. Ellis (2004) argued that learning was the most important goal of any instructor. Assuming this is true, then the research presented in this dissertation has high potential for impact on instructor behaviors. Specifically, behaviors such as caring and promoting autonomy, were identified that have indirect effects on perceived cognitive learning, while competence was identified as having both direct and indirect effects on perceived cognitive learning, and the application of this could be applied in various contexts of online learning.

As it may be tempting to apply research in traditional face-to-face learning directly to the online environment, it is important to note here that research in face-to-face setting cannot always be directly used in online learning contexts with little to no analysis or modification. In this research, SDT and a modified version of the perceived instructor caring scale were found to be relevant and applicable in online learning contexts. Given this information, this line of research is necessary and should be continued, in order to ensure that concepts can be used and modifications be made in order to provide the highest quality instructional communication and online learning empirical research.

Theoretical Implications

The core components of Deci and Ryan’s (1985) self-determination theory are autonomy, competence, and relatedness (or caring, as it was labeled in this dissertation) in relation to state motivation. These principles were directly applied in this dissertation,

and some findings specifically relate back to the tenets of SDT. Three of the takeaways from this dissertation provide further confirmation regarding the roles of autonomy, competence, and caring in this theory. Qualitatively, the themes that emerged from both instructors and students in this research are consistent with SDT concepts. Further, the application of SDT in instructional communication and in online contexts was initially supported and should be expanded upon in additional research.

Consistent use of SDT and research on the component of relatedness reveal its significance in the theory, and the current research supports the notion that relatedness/caring, competence, and autonomy all have significant effects on student state motivation. For example, the potential to increase motivation and sense of accountability is a theme that emerged in research from faculty and student perspectives. Based on this information, SDT should be applied in instructional communication and in online learning research. Previous research in these areas using SDT, and especially in online learning, was limited. Based on results in this dissertation, the use of SDT in instructional communication research and motivation research in online learning contexts is supported.

Furthermore, this dissertation also offers evidence to extend on SDT to include affect and perceived cognitive learning. Recall that the theory originally proposes that relatedness, competence, and autonomy affect state motivation. Yet, there are no theoretical propositions that detail how autonomy, competence, and relatedness would influence student affect or perceived cognitive learning. This study provides initial evidence that these three basic human needs may also affect other psychological states that may drive learning, such as affect. However, affect may also be a component of relatedness in SDT. This highlights the importance of relatedness as a component of

SDT, but also of refining the conceptualization and operationalization of relatedness in SDT research.

Limitations and Future Directions

This dissertation is limited in several ways. First, there may have been a social desirability bias. Overall, students in Study 1 reported that caring is important. It is possible that students did not feel comfortable, or that it is not socially desirable, to say that caring does not matter from the instructor. It is also possible that students wanted caring to matter, and a “good” instructor and “good” person would demonstrate caring to some extent.

Another potential limitation is the lack of diversity in the sample. The sample was primarily female and primarily white. A larger sample size with a more diverse population would be ideal, and perhaps more representative, especially given the diverse student body that is typically enrolled in online courses. Potential ways to address this limitation would be replication of this study and additional analyses of differences between groups in a larger and more diverse sample. This relates to a broader concern of differences in expectation of caring based on things such as gender. For example, are the behaviors related to caring typically expected of, represented by, and/or desired by women? The answer to this is unclear, but is a potential limitation to this study and sample.

An additional potential limitation is related to measurement. First, caring research primarily focuses on self-report and perception-based measures, which are problematic as they typically relate to only affect (Bowman, 2010; Hess, 2015; Hess, Smythe, & Communication 451, 2001; Hooker & Denker, 2014; Sitzmann et al., 2010; Witt,

Wheless, & Allen, 2004). Similarly, the items that emerged as valid in this study remained self-report and perceptual. For this reason, the measure ultimately used in this study may still not be able to fully capture the construct of online instructor caring completely. These self-report and perception-based measures may also limit to what extent researchers can measure the relationship to perceived cognitive learning, since they are so often related to affect. Additionally, the caring measure was designed to be generalizable, so the items are not contextual. It is plausible and begs further consideration that some aspects of caring may vary by context, individual differences, and content areas (i.e., STEM/STEAM). Continuing research on instructor caring behaviors will allow researchers to better understand and measure specific behavior focused items that indicate caring. An additional limitation is that little is known about how to define, measure, and understand the opposite of caring. As with any construct, it is also valuable to continue to evaluate the consistency and accuracy of the conceptualization and operationalization of the construct. This was discussed earlier in this dissertation, as it relates to caring, and should continue to be an aspect of any research in this area.

Next, the measure of cognitive learning is for perceived cognitive learning, not actual learning. This is a limitation because students may perceive more or less levels of learning than what is actually being changed or retained (Lane, 2015). This research could be replicated and extended to include more accurate measures of actual learning. For example, an experimental design testing caring, autonomous, and competent messages could be used in conjunction with other learning measures, such as those that do not depend on self-report, or those that incorporate biologic measures (Mazer &

Graham, 2015). Some researchers use grades as a proxy for learning, but this is problematic as well (Frymier & Houser, 1999; King & Witt, 2009). As noted by Mazer and Graham (2015), actual learning is often difficult to measure. This is especially when dealing with constructs that would not be acceptable to manipulate in actual online learning environments (i.e., instructor caring). Continuing to improve the measure of actual cognitive learning is, and should continue to be, a driving force in instructional communication research (Sellnow et al., 2015).

The makeup of the student body changes, technology changes, platforms change, and in this respect, change is inevitable. For this reason, future directions of this research are seemingly unlimited. Along with additional application of SDT in instructional communication and online learning contexts, there are a few directions that could be considered next steps in this line of research. These future research directions include replication of this study and with modification of relational components, and understanding differences in expectations of changing student and instructor populations. For example, there are multiple potential relational constructs that could be applied to this setting, so there are other potential ways to conceptualize and operationalize relatedness (as opposed to measuring caring). Replication is an important and sometimes undervalued possibility (Kaufmann & Tatum, 2017; Makel & Plucker, 2014; McElreath & Smaldino, 2015). As was previously stated regarding the application of instructional communication research in various settings is needed, so replication of this study in an industrial context, for example, would provide additional insight. Since SDT was supported in this research, it will also be useful to further consider how instructors may increase caring, competence, and autonomy, especially in online learning environments.

Another area of future research is in the differences in populations within this model. For example, how does this vary based on type of institution, generation of student, generation of faculty member, graduate versus undergraduate student status, and various other instructor, cultural, student, and institutional differences. Some of the data collected lends itself to some of these considerations in post hoc analysis, while additional data would have to be collected to best answer each of these questions.

There are also a variety of individual differences that are possible. For example, students who view their experience more as consumers may not be interested in caring. There may be certain contexts in which individuals have varying expectations of caring, such as when they are at risk, or in their home life or work life. Expectations and experiences in online courses may also vary based on if the student is taking a single online course or in a program that is entirely online. There may be differences in asynchronous versus synchronous courses. The motivation for students to take a course in an online format (i.e., limited availability/offerings, schedule, convenience) may cause differences in their levels of motivation, affect, or desire to experience behaviors related to caring, autonomy, and competence. This dissertation provides foundational and generalizable information, as well as support for continuing this line of research.

A potential area of future research, which may also provide more insight into the removal of the direct path from instructor caring to perceived cognitive learning, is the application of Maslow's hierarchy of needs (Maslow, 1943). Maslow proposes that needs exist in the form of a hierarchy and that some, more basic needs (such as physiological and safety needs) must be met before others (such as belonging, esteem, and self-

actualization) become a priority. Given this model, is it possible that some needs, such as autonomy and competence must be met prior to concern with instructor caring?

Another area of interest that can be considered as a future direction is the potential application of expectancy violations theory (Burgoon & Jones, 1976). It is possible that clear illustrations of instructor caring violate expectations in online learning environments, which may affect student perceptions of these behaviors. Students likely have expectations of various behaviors, such as those related to caring and to autonomy, that are specific to online learning experiences. The violation of these expectations may cause more positive or more negative reactions, but regardless, have the potential to impact perceptions of behaviors that are not as expected.

Another area of future research would be in chronemics in online learning contexts. Tatum, Martin, and Kemper (2018) found that the speed of instructor response to emails impacted student perceptions of the instructor-student relationship (2018). In this dissertation, students identified timely response as being relevant to behaviors that illustrate caring. Based on this information, chronemics, especially in a highly mediated and online learning setting, could be related to perceived instructor caring. Since email correspondence is typically even more common in online learning contexts, this could have an even greater impact on student perceptions of the instructor and the relationship than what was found for students in Tatum et al.'s students from face-to-face classrooms.

Conclusions

To summarize, (a) both students and faculty described caring similarly in regards to the potential for impact, specifically in that behaviors associated with presence and providing feedback that is high quality and personalized are ways to display caring in

online environments, and in that, there is a potential for increased motivation or sense of accountability via showing caring, (b) faculty also attributed caring behaviors to showing compassion and immediacy and showed significant concern that caring is difficult to demonstrate online, (c) students also attributed caring to behaviors such as being sensitive to the student population and specific needs of online learners, increased engagement and participation, and affect toward course/material, (d) items intended to measure perceived instructor caring in face-to-face settings also successfully measured caring in online contexts, (e) perceived instructor caring, autonomy, and competence have positive direct relationships with student state motivation and affect as mediators of perceived cognitive learning; (f) neither perceived instructor caring nor autonomy had a direct effect on perceived cognitive learning; and (g) competence has a positive direct relationship on perceived cognitive learning. These conclusions and the information covered in this dissertation have the potential to directly impact practices in online learning and future research in instructional communication and online learning.

It is clear the theoretical framework of SDT can be applied in online contexts and in instructional communication, as well as in predicting additional outcomes (in addition to motivation). Better understanding of and continued refined measurement of the constructs discussed here, including student state motivation, affect, and perceived cognitive learning correlate with many goals, both in and out of the traditional classroom. Increasing our knowledge base of how the concepts of perceived instructor caring/relatedness, autonomy, competence, student state motivation, affect, and perceived cognitive learning function, as well as instructor behaviors that indicate each of these concepts, has potential long-term effects including, but not limited to, increasing

teacher/trainer course affect and evaluations, student motivation, retention, knowledge gain, and efficient use of resources. There is high potential for impact, as researchers consider the value of this research.

As it turns out, Dr. Seuss wasn't entirely wrong in many cases of caring ("Unless someone like you cares a whole awful lot, nothing is going to get better. It's not."), autonomy ("You have brains in your head, you have feet in your shoes, you can steer yourself any direction you choose"), and competence ("And will you succeed? Yes you will indeed! 98 and 3/4 percent guaranteed."). These are valuable tools to promote benefits of motivation, affect, and perceived cognitive learning, even in academic settings and in online learning environments, decades after Seuss's words were written.

Appendix A

Questionnaire to Use for Study 1

Perceived Instructor Caring—Student Perspectives

Sex (select one)

- Male
- Female

Ethnicity

- American Indian or Alaska Native
- Asian
- Black or African American
- Hispanic or Latino
- Native Hawaiian or Other Pacific Islander
- White
- Other

Your Age

Your Class Level (select one)

- Freshman
- Sophomore
- Junior
- Senior
- Graduate Student
- Other (please specify) _____

What is your major/area of study?

Total number of online courses completed

Type of Institution (check all that apply)

- private
- public
- research university
- regional/teaching
- community college
- other _____

Please think of the most recent online course you have taken prior to this semester.
Answer the following question about this recent online course.

What was the format of this online course (select all that apply)?

- Fully online (all coursework is completed in an online format)
- Asynchronous (students may submit assignments on their own; post on forums, use email, etc.)
- Synchronous (interaction takes place in real-time; could utilize live chat or video conference)

What is the course subject?

In what semester and year was this course taught?

How many students were in this course?

Caring instructors are perceived as concerned, sensitive, not self-centered, and having students' interests at heart (McCroskey & Teven, 1999). Caring is the extent to which an instructor is perceived to be concerned about the welfare of their students (McCroskey, 1992). Considering the definition of caring provided above, please answer the remaining questions about your recent online course.

On a scale from 1 (not important) to 10 (extremely important), how important is instructor caring in the *online* environment?

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

Explain your response to the previous question, including specific *instructor behaviors* that led to this perception that your instructor cared in an online setting.

When thinking of specific behaviors in the previous questions, to what extent do you think instructors' caring behaviors affects *students*? (1=does not affect students to 10=greatly affects students)

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

Explain your response to the previous question, including specific *instructor behaviors* that led to this perception.

When thinking of specific behaviors in the previous questions, to what extent do you think instructor caring behaviors affect the *class environment*? (1=does not affect the class environment to 10=greatly affects the class environment)

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

Explain your response to the previous question, including specific *instructor behaviors* that led to this perception.

Do you think instructor caring affects *learning*? (1=caring does not affect learning to 10=caring greatly affects learning)

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

Explain your response to the previous question, including specific *instructor behaviors* that led to this perception.

How similar do you think instructors' caring behaviors are in an online classroom versus a face-to-face classroom? (1=not similar at all to 10=extremely similar)

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

Explain your response to the previous question, including specific *instructor behaviors* that led to this perception.

Have you ever responded to, or commented on, instructor caring behaviors or messages in an online environment? If so, describe your reactions.

List specific instructor behaviors that you think instructors can use to illustrate caring in online environments.

List specific instructor behaviors that you think instructors can use that illustrate the opposite of caring in online environments.

Is there anything else you would add about instructor caring or caring behaviors in the online college classroom?

Appendix B

Codebook Used for Qualitative Analysis of Study 1

0-This does not apply/does not have an effect

Behaviors and potential outcomes associated with caring:
1—Empathy/compassion/understanding
2—Presence (timely response, frequent communication)
3—Instructor exceeds expectations
4—Provide feedback that is high quality/personalized
5—Build rapport/relationships
6—Be sensitive to student population/specific needs of online learners
7—Immediacy (including closeness, willingness to communicate)
7a—Initiate student communication when students perform/participate poorly
8—Intentional positive messages/encouragement
9—Fairness
10—Increased engagement/participation
11—Increased motivation/sense of accountability
12—Comfortable environment
13—Affect toward course/material
14—Believe instructor wants them to do well
15—Students do not find this important
Potential effects on instructor:
16—Increased time commitment/effort
17—Positive feelings/helping others
18—Affects reputation
19—Requires change in communication tools
20—Is difficult to demonstrate online/lacks “natural” opportunities
21—Is believed to affect learning (either directly or indirectly)

Appendix C

Questionnaire to Use for Study 2

Sex (select one)

- Male
- Female
- Other (please specify) _____
- Prefer not to say

Ethnicity

- American Indian or Alaska Native
- Asian
- Black or African American
- Hispanic or Latino
- Native Hawaiian or Other Pacific Islander
- White
- Other (please specify) _____

Your Age

Your Class Level (select one)

- Freshman
- Sophomore
- Junior
- Senior
- Graduate Student
- Other (please specify) _____

What is your major/area of study?

In an online course, all course activity is done online; there are no required face-to-face sessions within the course and no requirements for on-campus activity (Online Learning Consortium). In this study, I only want you to report on an entirely online course.

Total number of online courses completed

Please enter the name of the institution (college or university) where the majority of online courses were/are being completed.

Please think of the most recent online course you have taken prior to this semester. Answer the following question about this recent online course.

What was the format of this online course?

- Asynchronous (students may submit assignments on their own; post on forums, use email, etc.)
- Synchronous (interaction takes place in real-time; could utilize live chat or video conference)

What is the course subject?

In what semester and year was this course taught?

How many students were in this course?

On the scales below please rate your perception of that teacher for each adjective pair. Please work quickly, there are no right or wrong answers. Note that in some cases the most positive score is “1” while in others it is “7.”

1. Cares about others	1	2	3	4	5	6	7	Doesn't care about others
2. Has others interests at heart	1	2	3	4	5	6	7	Doesn't have others interests at heart
3. Self-centered	1	2	3	4	5	6	7	Not self-centered
4. Unconcerned with others	1	2	3	4	5	6	7	Concerned with others
5. Insensitive	1	2	3	4	5	6	7	Sensitive
6. Not understanding	1	2	3	4	5	6	7	Understanding

On the items below please rate your perception of that online teacher for each adjective pair. Please work quickly, there are no right or wrong answers. Note that in some cases the most positive score is on the right, while on others it is on the left. Please select the circle toward the word/phrase which best represents your feelings.

1. Isn't passionate about teaching	1	2	3	4	5	6	7	Is passionate about teaching
2. Communicates frequently	1	2	3	4	5	6	7	Doesn't communicate frequently
3. Is involved in the course	1	2	3	4	5	6	7	Isn't involved in the course
4. Provides low quality feedback	1	2	3	4	5	6	7	Provides high quality feedback
5. Is close with students	1	2	3	4	5	6	7	Isn't close with students
6. Seems to be a part of the class	1	2	3	4	5	6	7	Doesn't seem to be a part of the class
7. Doesn't value mutual respect	1	2	3	4	5	6	7	Values mutual respect
8. Is empathetic	1	2	3	4	5	6	7	Isn't empathetic
9. Doesn't communicate warmth	1	2	3	4	5	6	7	Communicates warmth
10. Holds students accountable	1	2	3	4	5	6	7	Doesn't hold students accountable

11. Isn't understanding	1	2	3	4	5	6	7	Is understanding
12. Doesn't motivate students	1	2	3	4	5	6	7	Motivates students
13. Makes himself/herself available to students	1	2	3	4	5	6	7	Doesn't make himself/herself available to students
14. Is compassionate	1	2	3	4	5	6	7	Isn't compassionate
15. Seems psychologically close	1	2	3	4	5	6	7	Seems psychologically distant
16. Provides personalized feedback	1	2	3	4	5	6	7	Provides generic feedback
17. Responds in a timely manner	1	2	3	4	5	6	7	Doesn't respond in a timely manner
18. Isn't willing to communicate	1	2	3	4	5	6	7	Is willing to communicate
19. Is passionate about subject	1	2	3	4	5	6	7	Isn't passionate about subject
20. Respects students as individuals	1	2	3	4	5	6	7	Doesn't respect students as individuals
21. Isn't willing to give extra effort	1	2	3	4	5	6	7	Is willing to give extra effort
22. Doesn't welcome questions from students	1	2	3	4	5	6	7	Welcomes questions from students
23. Gets to know students	1	2	3	4	5	6	7	Doesn't get to know students
24. Promotes higher level thinking skills	1	2	3	4	5	6	7	Doesn't promote higher level thinking skills
25. Provides many different resources	1	2	3	4	5	6	7	Doesn't provide many different resources
26. Doesn't want students to learn	1	2	3	4	5	6	7	Wants students to learn
27. Doesn't invite discussion from students	1	2	3	4	5	6	7	Invites discussion from students
28. Utilizes various teaching strategies	1	2	3	4	5	6	7	Doesn't utilize teaching strategies
29. Doesn't want students to succeed	1	2	3	4	5	6	7	Wants students to succeed
30. Didn't offer multiple learning opportunities	1	2	3	4	5	6	7	Offers multiple learning opportunities

there are no right or wrong answers. Note that in some cases the most positive score is “1” while in others it is “7.”

1. Motivated	1	2	3	4	5	6	7	Unmotivated
2. Interested	1	2	3	4	5	6	7	Uninterested
3. Involved	1	2	3	4	5	6	7	Uninvolved
4. Not stimulated	1	2	3	4	5	6	7	Stimulated
5. Don't want to study	1	2	3	4	5	6	7	Want to study
6. Inspired	1	2	3	4	5	6	7	Uninspired
7. Unchallenged	1	2	3	4	5	6	7	Challenged
8. Uninvigorated	1	2	3	4	5	6	7	Invigorated
9. Unenthused	1	2	3	4	5	6	7	Enthused
10. Excited	1	2	3	4	5	6	7	Not Excited
11. Aroused	1	2	3	4	5	6	7	Not Aroused
12. Not fascinated	1	2	3	4	5	6	7	Fascinated

Directions: Please circle the number that best represents your feelings.

I feel the class content is:

1. Bad	1	2	3	4	5	6	7	Good
2. Valuable	1	2	3	4	5	6	7	Worthless
3. Unfair	1	2	3	4	5	6	7	Fair
4. Positive	1	2	3	4	5	6	7	Negative

My likelihood of taking future courses in this content area is:

1. Unlikely	1	2	3	4	5	6	7	Likely
2. Possible	1	2	3	4	5	6	7	Impossible
3. Improbable	1	2	3	4	5	6	7	Probable
4. Would	1	2	3	4	5	6	7	Would not

Overall, the instructor I have in this class is:

1. Bad	1	2	3	4	5	6	7	Good
2. Valuable	1	2	3	4	5	6	7	Worthless
3. Unfair	1	2	3	4	5	6	7	Fair
4. Positive	1	2	3	4	5	6	7	Negative

Were I to have the opportunity, my likelihood of taking future courses with this specific instructor would be:

1. Unlikely	1	2	3	4	5	6	7	Likely
2. Possible	1	2	3	4	5	6	7	Impossible
3. Improbable	1	2	3	4	5	6	7	Probable
4. Would	1	2	3	4	5	6	7	Would not

Directions: Respond to the following items on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*).

- (1) I have learned a great deal in this class.
- (2) I have learned more in other classes than in this class.
- (3) My knowledge on this class topic has increased since the beginning of class.
- (4) I can clearly recall information from this class.
- (5) I would be unable to use the information from this class.
- (6) I have learned nothing in this class.
- (7) I can see clear changes in my understanding of this topic.
- (8) I am unable to recall what I have learned in this class.
- (9) I have learned information that I can apply.
- (10) I did not understand what I learned in this class.

What was/is expected to be your final grade in this course?

Please list specific instructor behaviors that show caring in online environments.

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