THE MOTIVATION TO LEARN ONLINE QUESTIONNAIRE

by

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ABSTRACT

The goal of the current study was to develop and to validate a research instrument to assess college students' motivation to learn online. Considerable research has been done on motivation to learn in traditional classrooms and several instruments to assess motivation in those environments exist. One such instrument is the Motivated Strategies for Learning Questionnaire, upon which the present research is partially based. Motivation to learn online is not as well-researched and, with the increasing prevalence of online courses, a better understanding of the role of motivation in the online classroom is needed. A valid, reliable instrument to assess motivation in online environments will provide instructors with a powerful tool for creating and assessing optimal online educational experiences. A Motivation to Learn Online Questionnaire (MLOQ) has been developed to assess college students' motivation to learn in online classes. This instrument was administered to 160 students in courses taught online at a large public university. Confirmatory factor analysis was performed on the responses to determine if the hypothesized motivational factors explain the shared variance in the items that are intended to measure pre-defined factors. Additionally, reliability estimates were calculated for the items in each subscale to determine whether those items measure the same construct. Regression analyses were performed to determine if there were relationships between the demographic data and the

survey data. The subscales of the MLOQ exhibited high reliability coefficients, however the proposed theoretical model did not fit the data. Gender differences were observed in overall motivation, extrinsic goal orientation, and social engagement, with women scoring higher than men on each of those subscales.

INDEX WORDS: Motivation, Online learning, Self-determination theory, Autonomy, Competence, Relatedness, Motivation to Learn

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B.A, The University of Georgia, 2000

M.A., The University of Georgia, 2007

A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF PHILOSOPHY

ATHENS, GEORGIA

2018

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May 2018

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CHAPTER 1

INTRODUCTION

Since the advent of the Internet and the World Wide Web, online courses have emerged as a viable form of instruction. Although these online courses have become a prominent method for delivering instruction, the cognitive and psychological effects of the shift in instructional environment are poorly understood. Factors that are well-documented as influencing the quality of instruction in a traditional classroom might function differently in online learning environments. Additionally, how motivational factors are considered when determining the optimal approach to online learning is not well studied.

Research indicates motivation to learn plays a strong role in fostering academic success. Motivated students engage with subject matter for longer periods of time, display more persistence when encountered with adversity, and achieve at higher levels than do students who are less motivated (Bandura, 1986; Schunk, 1995). Much of the work on motivation in learning has been conducted in traditional classroom settings. How motivation operates within online learning environments is not as well understood. Does motivation in online classrooms differ from traditional classrooms? How can instructors design their online courses to optimize student motivation? How can students identify and take advantage of motivational strengths in online courses? As online courses become more prevalent and the understanding of the influence of motivation in such learning environments becomes more grounded, teachers, researchers, and students need an effective measurement tool to answer these questions and assess student motivation.

Emergence of Online Courses

The popularity of online courses in higher education is growing. A number of factors is contributing to this increased popularity, including the rising cost of providing college education, the rising popularity of higher education, the growing number of nontraditional students (Miltiadou & Savenye, 2003) pursuing higher education, and the increased inclusion of the internet in the daily lives of Americans.

Two ways the emergence of online courses have impacted education are through traditional courses held in post-secondary institutions and Massively Open Online Courses (MOOCs). Traditional universities are beginning to embrace online education. While online courses began as an experiment in the 1990s, they have emerged from the novelty of the educational fringe to become part of the mainstream in higher education. Today, many major colleges and universities regularly offer online courses as part of their standard curriculum and a number of universities now offer both undergraduate and graduate degree programs that are conducted exclusively online. A study conducted by the National Center for Education Statistics found that 25.8% of U.S. postsecondary students were enrolled in a distance education course, with 12.5% enrolled exclusively in distance education courses (NCES, 2013).

Courses once taught in lecture halls filled with hundreds of students are now offered online, allowing students to access learning from the convenience of their homes. Along with collegiate instruction, there is a growing, competitive market for online education. With traditional universities now invested in online education, what was frequently regarded as second-rate instruction is becoming increasingly accepted, mainstream, and popular.

Massively Open Online Courses (MOOCs) were introduced in 2008 and have risen in popularity since that time. MOOCs are courses designed to be conducted over the Internet and

made available to a large, virtually unlimited, number of students. There is a great deal of variation in the way that MOOCs are structured and administered (Kennedy, 2014). Much of this variation is dependent on the organization delivering the MOOC.

Currently, there are two primary categories of MOOC providers: nonprofit and commercial. edX is a prominent example of a nonprofit provider. The edX project is a multi-institution collaboration including post-secondary institutions such as MIT, Harvard, and UC Berkeley, among others. Popular commercial MOOC providers include Coursera, Udemy, and Udacity. Commercial organizations create and administer MOOCs for profit. However, many commercial MOOC providers also feature partnerships with academic institutions, as well as working with individuals and businesses to administer courses.

MOOCs vary in their instructional design. Lectures range from live sessions conducted by an instructor and broadcasted online in real-time, to recorded sessions accessed on-demand by students. While some of these courses are offered for credit, many are offered for the learning alone. Often, students pay a fee to receive credit for the course, while it is available for free to noncredit-seeking students. Likewise, there is variation in the ways students interact in the courses. Some courses have real-time discussions monitored by teaching assistants or more advanced students. Many options also exist for coursework. In some courses, coursework is graded by instructors and teaching assistants. In others, students check their work against answers released by the instructor. A common approach in courses offered by academic institutions is that students seeking course credit in degree programs receive grades and feedback, as well as additional graded assignments, while noncredit seeking students do not.

Criticisms

Despite growing popularity, there are significant criticisms of online learning. Some researchers have found that the quality of learning outcomes in online courses is poor when compared with traditional courses (Xu & Jaggars, 2013). Additionally, Figlio, Rush, & Yin (2010) found there was little performance difference between online and traditional classrooms for high performing students, but students who perform poorly in traditional classrooms perform even more poorly in online courses. Another criticism is that persistence and course completion are often lower in online courses than traditional ones in both post-secondary (Hart, Friedmann, & Hill, 2014; Xu & Jaggars, 2013;) and K-12 (Freidhoff, 2015) environments. Though Shea & Bidjerano (2014) found course completion rates are lower for community college students enrolled primarily in online courses, degree completion rates are higher than for their counterparts in traditional courses. Studies also indicate students enrolled in online courses tend to be more likely to drop those courses than traditional ones and also have higher rates of student failure (Xu & Jaggars, 2013).

There is evidence suggesting students are more motivated in traditional courses than in online courses. In a study investigating the interaction between gender and course format (online vs. traditional), Yang, Cho, & Watson (2015) found that both males and females displayed a higher mastery goal orientation in traditional courses than in online courses. In addition, they found that males displayed a higher performance goal orientation than females in online courses and females displayed a higher performance goal orientation than males in traditional courses.

Research also indicates students prefer face to face instruction for certain topics. Jaggars (2014) found community college students are more comfortable taking online courses for topics they perceive as easy, but prefer the traditional classroom for topics they perceive as more

difficult. Among the reasons for this preference was greater instructor availability in traditional classrooms. When explaining their preference for traditional instruction in classes they perceived as difficult, students in Jaggars' research indicated that while online courses were appropriate for topics in which the students could teach themselves the subject matter, for harder classes students preferred the greater level of instructor support typically available in face-to-face environments.

MOOCs have also been subject to criticism. Like traditional educational institutions, a popular criticism of MOOCs is that, while enrollment numbers are often high, completion rates are typically very low. For instance, a 2014 study found the average MOOC enrolls approximately 43,000 students, but only 6.5% of those students complete the course (Jordan, 2014). Additionally, critics have expressed concerns about the quality of the learning outcomes produced by MOOCs when compared to traditional courses.

The goal of the current study is to develop and validate a research instrument to assess college students' motivation to learn online. For the purposes of this study, the focus of the research will be on courses taught online in large traditional universities. A valid, reliable instrument to assess motivation in online environments will provide instructors with a powerful tool for creating optimal online educational experiences.

CHAPTER 2

LITERATURE REVIEW

A survey of the field of motivation reveals an array of constructs that operate within a variety of competing theoretical approaches (Conradi, Jang, & McKenna, 2014; Lin-Siegler, Dweck, & Cohen, 2016; Murphy & Alexander, 2000; Schunk, 2000). Despite the lack of consensus on the exact nature of motivation, there is much agreement among educational psychologists on the fundamental role that motivation plays in learning. In addition to being considered a powerful and essential component of education by itself, motivation is also associated with other major factors involved with learning. Among these factors are self-regulation (Mega, Ronconni, & De Beni, 2014; Zimmerman & Kitsantas, 2014), metacognition (Zepeda, Richey, Ronevich, & Nokes-Malach, 2015), strategy use (Johnson, Taasoobshirazi, Kestler, & Cordova, 2015; Wilson & Narayan, 2016), and persistence (Pintrich & Van De Groot, 1990; Shukla, Tombari, Toland, & Danner, 2015). When viewed in relation to these other factors in educational achievement, it becomes clear that motivation is a key component in a web of characteristics that promote academic success.

The present study draws from three popular theories of motivation: social cognitive theory, self determination theory, and mindset theory. The following section contains a brief review of the basic concepts of these theories.

Social Cognitive Theory

Social cognitive theory is a psychological theory which explains learning and behavior as it occurs within the social context. Though there are a large number of researchers operating

within the social cognitive theory framework, Albert Bandura is its primary proponent (Schunk & Usher, 2012). Bandura formulated most of the ideas underlying social cognitive theory during the mid-twentieth century, after noticing a number of flaws in *behaviorism*, which was the prevailing psychological paradigm at the time (Bandura, 1986). Bandura noted behaviorism failed to provide a mechanism for learning through observation, rather than experience. Behaviorism also does not make the distinction between learning and performance. Additionally, Bandura noted behaviorism does not account for the causal interplay between the individual and the surrounding environment; especially the role of individual agency in that process. In response to these observations, Bandura began to develop the ideas and perform the experiments that form the foundation for social cognitive theory.

It is important to note that social cognitive theory is not a theory of motivation. It is a broad theoretical framework that attempts to explain human cognition, behavior, and agency. However, motivation plays a foundational role in social cognitive theory. The following section contains a review of a number of the key concepts in social cognitive theory, as well as an explanation of how they relate to motivation.

Triadic reciprocity. One of the central concepts in social cognitive theory is triadic reciprocity. Social cognitive theorists posit that human behavior is mediated via the relationship between individual factors, behavior, and the environment (Schunk & Usher, 2012). In this model, individual factors refer to fundamental components of the self, such as cognition, affect, and physical attributes. These factors influence the individual's behavior, which can in turn influence the environment. However, directionality is equal in this model. It is just as possible that environmental conditions will influence behavior, which will in turn influence the

individual's mental, physical, or emotional state. Furthermore, individual factors and the environment may influence one another directly.

Learning and performance. Unlike the behaviorists, who focused primarily on stimulus/response conditioning, social cognitive theorists acknowledge the role that individual cognition plays in learning and performance. Using the model of triadic reciprocity, the social cognitive theorists created a framework that allows for the disentanglement of learning and performance. Under the behavioral paradigm, learning was not thought to have occurred without the performance demonstrating that learned behavior. Social cognitive theorists found that learning can occur without production of behaviors that demonstrate that learning (Bandura, 1965; Groenendijk, Jansser, Rijlaarsdam, & van den Bergh, 2013) and that those behaviors will not be produced unless the consequences motivate the individual to do so (Bandura & Jeffrey, 1973; Schunk & Usher, 2012).

Observational learning. Social cognitive theory states that individuals can learn through observation as well as through active engagement. Observational learning occurs when an individual observes a model perform a behavior. The observer often judges the value of the demonstrated behavior by taking note of the consequences endured by the model for the performance of the behavior. If the model receives a positive consequence, the observer will likely view the behavior positively. If the model receives a negative consequence, the observer will likely view the behavior negatively. If there are no apparent consequences, the observer may conclude that the behavior is acceptable (Bandura, 1986; Schunk & Usher, 2012).

There are four processes involved with observational learning: attention, retention, production, and motivation (Bandura, 1986). The role of attention is fundamental to learning, in that individuals cannot learn unless they are cognizant of what they are experiencing. Retention

is also important because learning requires the recall of knowledge gained from previous experiences and observations to serve as the foundation for new knowledge or the demonstration of knowledge. Production refers to the skills necessary to produce the behavior being learned. For instance, John is a child who knows how to spell his name out loud and recognize it in print, but even after watching his parents write his name, he simply doesn't have the motor skills to produce the name himself. In this case, John has not yet learned to write his name because he lacks the skills to produce the behavior of writing. The final process is motivation. Motivation is required for both learning and performance. Without motivation, individuals will not pay appropriate attention when they are learning. This can affect comprehension and retention. Sufficient motivation is also required for the production of a learned behavior. For example, an individual may have the basic underlying skills necessary to perform a learned task, but lacks the motivation required to put those skills together to perform the task.

Modeling. Modeling plays a prominent role in observational learning. There are a number of factors through which a model can influence the learning of the observers. These include both real and perceived properties of the model, as well as behaviors and strategies the model can incorporate to engage observers and highlight salient elements of the topic or behaviors presented (Ahn, Bong, & Kim, 2016; Bandura, 1986).

Three model characteristics that frequently affect learning are perceived model status, perceived model competence, and model similarity (Bandura, 1986). High status models typically receive more attention from observers, and are more effective at motivating them. This is frequently seen in marketing and advertising in the form of celebrity endorsements for musicians, athletes, and movie stars. Likewise, perceived model competence affects the effectiveness of instruction. Models who are perceived to be experts in the subject matter being

presented receive greater attention from observers and produce higher levels of motivation. Schunk (1987) found that high status models produced effective learning more quickly, but peer models increased self-efficacy. This is likely due to model similarity. When observers view an activity performed by models similar to themselves, they are more likely to believe that they can also successfully perform that activity (Schunk, 1987; Schunk & Usher, 2012).

Self-regulation. Self-regulation refers to individuals' abilities to monitor and modify their current behaviors, as well as mental, physical, and emotional state. Bandura defined three elements of self-regulation: self-observation, self-judgment, and self-reaction (Bandura, 1986). Self-observation is the act of monitoring one's self. Self-judgment is the assessment of one's activities with regard to goals or predefined standards. Self-reaction refers to the internal response to the self-judgments made. Self-regulating individuals, by means of these three elements, continuously assesses their levels of performance and make necessary adjustments.

Self-regulation has been shown to be highly predictive of academic performance (Zimmerman, 1990; Zimmerman & Kitsantas, 2014). Additionally, research indicates that while individuals may not have strong self-regulation skills, those skills can be taught and cultivated (Schunk & Zimmerman, 2007; Zimmerman, 2002). Self-regulatory efficacy – belief in one's own ability to self-regulate – has also been shown to be predictive of academic success (Bandura, Caprara, Barbaranelli, Gerbino, & Pastorelli, 2003).

Outcome expectations. Outcome expectations are internal representations of the consequences of actions that are formed through personal and vicarious experiences (Bandura, 1986). Outcome expectations contribute to the formation of goals and sustain motivation as individuals progress toward goal attainment. Additionally, attribution of high value to outcome

expectations has been correlated with increased motivation and higher levels of achievement (Schunk & Usher, 2012; Shell, Murphy, & Bruning, 1989).

Goal setting. The setting of goals and evaluation of progress toward their achievement are important facets of social cognitive theory. Research on goal setting indicates that specific goals are more effective than less defined goals (Schunk & Ertmer, 2000; Schunk & Usher, 2012). Proximal goals are more motivating than goals that are either very easy to accomplish or very difficult to accomplish (Masuda, Locke, & Williams, 2015; Schunk, 1983). Additionally, proximal goals keep individuals engaged over a longer period of time, possibly because they can create a series of successes down the path to larger overarching goals (Bandura & Schunk, 1981). Individuals are more motivated by self-set goals, as opposed to goals set by others or imposed on them. Individuals pursuing self-set goals typically exert more time and effort toward their completion and persist on them longer in the face of challenges (Bandura, 1986; Gillet, Lafrenière, Vallerand, Huart, & Fouquereau, 2014). Additionally, feedback on individuals' progress toward their goals can increase self-efficacy and foster motivation (Krenn, Würth, & Hergovich, 2013; Schunk & Swartz, 1993).

Self-efficacy**.** Bandura's (2001) notion of self-efficacy is one of the primary components of motivation in the social cognitive framework of learning. Self-efficacy refers to an individual's beliefs about his or her ability to perform well on a certain task (Bandura, 1986). While self-efficacy is typically used in a domain-specific context, some theorists also study the general self-efficacy of individuals. Both ability and self-efficacy are necessary for competence, but self-efficacy is distinct from ability (Schunk & Usher, 2012).

Research suggests that self-efficacy is highly predictive of performance (Bandura, 1997). Robbins et al. (2004) conducted a study that indicated that self-efficacy had a powerful impact

on grade point average for college students, though recent studies suggest that self-efficacy is more associated with past performance than present and future performance (Sitzmann & Yeo, 2013). Additionally, self-efficacy has been linked to willingness to engage in new activities, effort, persistence, and cognitive engagement (Bandura, 1997; Schunk 1995). The strong links between self-efficacy and academic success indicate the importance of fostering self-efficacy in the classroom. By systematically exposing students to tasks that are increasingly challenging, yet within their reach, teachers can help them develop the self-efficacy necessary for success.

Bandura identified four primary sources of self-efficacy (Bandura, 1986): enactive attainment, vicarious experience, verbal persuasion, and physiological state. Enactive attainment, also referred to as mastery experience, has been found to be one of the most influential sources of self-efficacy (Bandura, Adams, & Beyer, 1977; Butz & Usher, 2015). Essentially, experiences of success positively affect individuals' beliefs in their own competence. Research indicates for observers who see other similar individuals perform activities at a high level, through vicarious experience, the self-efficacy of the observers for that task will likely be raised (Morris, Usher, & Chen, 2016). Vicarious experience has been found to be effective at raising the self-efficacy of individuals with little experience with a task, hence no baseline for their own abilities (Bandura, 1986). Verbal or social input from others can affect the self-efficacy of individuals. While positive verbal persuasion can raise self-efficacy, abundant or unrealistic persuasion can actually lower self-efficacy (Bandura, 1997). States of arousal and anxiety, as well as overall physical well-being impact self-efficacy. For example, studies have shown that the mitigation of anxiety corresponds to a rise in self-efficacy (Bandura, 1977).

Self Determination Theory

Self-determination theory is a motivational theory pioneered by Edward L. Deci and Richard M. Ryan. Like social cognitive theory, self-determination theory recognizes the role of the interplay between individual agency and environmental context in the formation and functioning of human psychology. The foundational assertion of the theory is that human motivation is driven by the satisfaction of three basic psychological needs: autonomy, competence, and relatedness (Ryan & Deci, 2000b). Proponents of self-determination theory posit these three needs are fundamental to human psychology and transcend other social and biological factors such as age, gender, and culture (Chirkov, Ryan, Kim & Kaplan, 2003). Satisfaction of these needs is predictive of individual motivation. Settings in which these needs are satisfied produce greater individual motivation. Conversely, settings in which these needs are undermined or thwarted produce amotivation or disaffection in the affected individuals (Blais, Briere, Senecal, & Vallieres, 1993; Deci & Ryan, 2008; Vallerand, Pelletier). Research has confirmed the role of these three needs in a variety of domains, including the classroom (Furrer & Skinner, 2003; Ratelle & Duchesne, 2014; Ryan & Deci, 2013), the workplace (Bard, Deci, & Ryan, 2004; Güntert, 2015), sports (Frederick & Ryan, 1995; Pelletier, Fortier, Vallerand & Briere, 2001), and healthcare (Williams, Freedman, & Deci, 1998; Williams, Rodin, Ryan, Grolnick, & Deci, 1998).

Deci and Ryan consider self-determination theory to be a meta-theory, comprising six sub-theories: basic psychological needs theory, cognitive evaluation theory, organismic integration theory, causality orientations theory, goal contents theory, and relationships motivation theory. A brief overview of each sub-theory is below.

Basic psychological needs theory. Basic psychological needs theory is the central theory of self-determination theory. It states that humans have three basic psychological needs - autonomy, competence, and relatedness - and that individual motivation, health, and well-being depend on the satisfaction of these needs. While each of these needs plays a role in psychological well-being, the satisfaction of all three needs is necessary for optimal functioning. For instance, an individual who has his or her needs for autonomy and competence satisfied, but not relatedness, will suffer sub-optimal motivation. Additionally, satisfaction of these needs is context-specific. An individual may have all three needs satisfied at home, but not at work or school. Furthermore, because conditions, settings, and needs change over time, needs satisfaction may also change over time.

Autonomy. Deci and Ryan's notion of autonomy focuses on the perceived locus of causality for the individual's action. For any given action, there are a number of internal and external factors that influence the engagement in the action. Internal factors - such as the desire to succeed, the desire to be perceived a certain way, or the simple pleasure of engaging in an activity – all have an internal perceived locus of causality. External factors – such as social pressures, forced behaviors, and coercion – all have an external perceived locus of causality.

Though it has been contested (Cameron & Pierce, 1994), one of the major findings in self-determination theory is that the proffering of extrinsic rewards for intrinsically motivated behaviors undermines intrinsic motivation (Deci, Koestner, & Ryan, 1999). This finding serves as one of the primary pieces of evidence in support of the role of autonomy as a necessary determinant of motivation in self-determination theory. The causal mechanism underlying the demotivating effects of extrinsic rewards is the shift in perceived locus of causality (Ryan & Deci, 2000). When an individual is intrinsically motivated to perform a behavior, there is an

internal locus of causality driving the behavior. As extrinsic rewards are introduced, the locus of causality becomes externalized, reducing the intrinsic motivation. Essentially, the introduction of extrinsic rewards takes a situation in which the individual performs the action for its own sake and turns it into a situation in which the individual is likely to feel coerced or manipulated.

Studies have also found evidence suggesting increased autonomy increases intrinsic motivation to perform a task. For instance, Zuckerman, et al. (1978) found in a puzzle solving activity involving yoked pairs where one subject was free to choose which puzzles to solve and how long to spend on those puzzles and the other subject was told which puzzles to work on and for how long, the subject with more autonomy displayed higher levels of intrinsic motivation. These findings have been validated by studies conducted by other researchers (Deci, Koestner, & Ryan, 1999).

An important point of distinction drawn by self-determination theorists is the difference between autonomy and similar concepts, such as individualism and independence (Chirkov, Ryan, Kim, & Kaplan, 2003). While there are cultural differences concerning beliefs about the role of the individual in relation to society, as well as individual differences within cultures, the notion of autonomy in self-determination theory does not apply to that idea. Rather, autonomy refers to the individual's ability to direct his or her own time and attention within a particular task (Ryan & Deci, 2000b). Research supports this idea, with intercultural studies finding that increased autonomy supports increased intrinsic motivation, regardless of culture (Kim, Butzel, & Ryan, 1998).

Competence. Within the self-determination theory framework, competence refers to the individual's perceived effectiveness at performing a particular task. This concept differs from similar concepts, such as Bandura's self-efficacy. While self-efficacy is domain-specific, the

self-determination theory notion of competence is task-specific. However the two concepts are similar in that they refer to the perception of one's own abilities. This is important because much of the self-determination theory research on competence is based on the role external factors play in influencing that perceived effectiveness. Some of Deci's early research focused on the role of external rewards on intrinsic motivation. In a 1971 study, he found that when money was used as an extrinsic reward, it decreased intrinsic motivation. However, when praise was used as an extrinsic reward, it actually increased motivation (Deci, 1971). Further research has confirmed this finding, though verbal rewards used in a controlling manner have been shown to undermine intrinsic motivation (Kast, Mims, & Koestner, 1988; Ryan, et al., 1983).

Deci and Ryan went on to theorize positive feedback - unlike tangible forms of extrinsic reward – fosters intrinsic motivation because it can increase the perceived competence of the individual being praised (Deci, Koestner, & Ryan, 1999). Other researchers have found praising the individual's efforts rather than abilities is more effective at increasing intrinsic motivation because the praise brings focus on a factor within the individual's control (Mueller & Dweck, 1998). Furthermore, studies have found evidence indicating negative verbal feedback diminishes intrinsic motivation, further supporting Deci and Ryan's position that perceived competence and autonomy influence motivation (Osbaldiston & Sheldon, 2003; Rosenfield, Folger, & Adelman, 1980, Salancik, 1975).

Relatedness. Though it may be construed to pertain to a general sense of belonging, the self-determination theory concept of relatedness refers primarily to close personal relationships (Baumeister & Leary, 1995). Ryan and Deci contend relationships like those with romantic partners and close friends play a fundamental role in creating the environment necessary for the expression and exploration of intrinsically motivated behaviors. Furthermore, Ryan and Deci

(2000b) state high-quality personal relationships don't just satisfy the need for relatedness, but also the need for autonomy and competence as well.

Cognitive evaluation theory. Cognitive evaluation theory is the sub-theory of self-determination theory that focuses on intrinsic motivation. Specifically, cognitive evaluation theory focuses on the role of autonomy and competence as factors that explain the variability in intrinsic motivation (Deci & Ryan, 1985). Deci and Ryan view intrinsic motivation as the desire to engage in a specific behavior "for its own sake," and consider it to be a naturally occurring state that will arise given the proper conditions. From this perspective, cognitive evaluation theory is the study of the conditions that facilitate intrinsic motivation, as well as those that inhibit it (Ryan & Deci, 2000b).

Some of the fundamental ideas underlying cognitive evaluation theory are based on research finding optimal challenges and positive feedback promote intrinsic motivation, while negative feedback diminishes intrinsic motivation (Deci, 1975; Deci, Koestner & Ryan, 1999). The causal mechanism for these findings is hypothesized to be perceived self-competence. Additionally, researchers have found that the effects of both positive and negative feedback are mediated by perceived self-competence (Vallerand & Reid, 1984). However perceived self-competence alone is not sufficient to create the optimal conditions for intrinsic motivation. Autonomy is needed as well. One of the most significant – and most contested (Cameron & Pierce, 1994) – aspects of cognitive evaluation theory is the finding that all tangible rewards suppress intrinsic motivation (Deci, Koestner & Ryan, 1999).

Organismic integration theory. Organismic integration theory focuses on extrinsic motivation. self-determination theory defines extrinsic motivation as the urge to perform an activity in order to achieve an outcome (Ryan & Deci, 2000b). Based on the findings from

numerous studies, extrinsic motivation is generally regarded as less effective than intrinsic motivation. Research indicates that those involved in extrinsically motivated behaviors typically report lower levels of engagement (Froiland & Oros, 2014; Meece, Blumfield, & Hoyle, 1988), expend less effort than their intrinsically motivated counterparts (Dysvik & Kuvaas, 2013), devote less time on the task then their intrinsically motivated counterparts (Ryan & Connell, 1989), and display lower levels of persistence (Ryan, Kuhl, & Deci, 1997). However, extrinsic motivation is generally more pervasive in common social environments like workplaces and classrooms because it can be fostered by external agents, such as employers and teachers. For this reason, there is great interest in understanding extrinsic motivation and identifying ways to optimally utilize it.

Self-determination theory posits that there are varying degrees of extrinsic motivation, with some forms of extrinsic motivation more powerful than others (Ryan & Deci, 2000b). With organismic integration theory, the researchers have created a framework for categorizing motivation. In this framework, motivation exists on a scale that contains 3 categories, including amotivation (no motivation), extrinsic motivation, and intrinsic motivation. Within the extrinsic motivation category, there are four subcategories. They are external regulation, introjected regulation, identified regulation, and integrated regulation.

A number of characteristics vary between these categories of extrinsic motivation, but the primary determinant is the perceived locus of causality. At the extrinsic end of the scale is external regulation, in which the locus of causality is external. At the intrinsic end of the scale is integrated regulation, in which the locus of causality is internal. As individuals internalize the motivational factors driving specific behaviors, they become more engaged and their behavior begins to more closely resemble the behaviors of intrinsically motivated individuals (Ryan &

Deci, 2000b). Since the formulation of this framework, a number of studies have confirmed that extrinsic motivation featuring more internalized loci of causality produces higher quality outcomes (Miserandino, 1996; Vallerand & Bissonnette, 1992; Williams, et al., 1998).

Causality orientations theory. Causality orientations theory is concerned specifically with individual orientation toward causality. Within self-determination theory, three causality orientations are defined (Deci & Ryan, 1985a). Individuals with an autonomy orientation have an internal locus of control and engage in self-regulation. Individuals with a control orientation typically have an external locus of control and rely on external regulations. Individuals with an impersonal orientation have an impersonal locus of causality and typically display apathy or helplessness (Gagne, 2003).

It is important to note that causality orientation is not a fixed personality characteristic. Nor is it exclusive. Multiple causality orientations can and typically do exist in individuals in varying degrees (Vansteenkiste, Niemiec, & Soenens, 2010). Additionally, causality orientation can be affected by environmental factors, meaning it is changeable and context-specific (Vansteenkiste, Niemiec, & Soenens, 2010).

Unsurprisingly, individuals possessing an autonomy orientation have been found to achieve more positive outcomes (Gagne, 2003) and, because causality orientation is susceptible to influence from environmental conditions, support for autonomy has been shown to promote autonomy orientation in environments such as the classroom (Grolnick & Ryan, 1989) and workplace (Deci, Ryan, Gagne, Leone, Usunov, & Kornazheva, 2001). Conversely, individuals with a control orientation tend to achieve lower outcomes and display higher levels of negative emotions, such as stress and defensiveness (Deci & Ryan 1985a; Reeve, 2012).

Goal contents theory. Whereas cognitive evaluation theory and organismic integration theory are concerned with the orientation of motivation, goal contents theory is focused on the orientation of the objects of goals. Goal orientation is an essential component of motivation. To be motivated is to be motivated *toward something* (Ryan & Deci, 2000). That something is a goal. Goal orientation refers to the types of goals that motivate students – in particular, the direction from which those goals originate. There are two general types of goals: intrinsic goals and extrinsic goals (Vansteenkiste, Niemiec, & Soenens, 2010).

Intrinsic goals are those that originate from within the individual. Goals that fall under this category include satisfaction, mastery, and the pleasure derived from simply being engaged in an activity. Intrinsic goals are often referred to as mastery goals. Extrinsic goals are those goals that originate from outside the individual. Examples of extrinsic goals include money, social recognition, grades, and avoidance of punishment. Extrinsic goals often take the form of rewards and are sometimes referred to as performance goals.

Generally, it is believed that intrinsic goals are more productive than extrinsic goals (Ryan & Deci, 2000). This is because research indicates that, while extrinsic goals are capable of affecting changes in behavior, those changes are only temporary. Students who change their behavior to reach extrinsic goals often revert to the original behavior after the promise of the extrinsic reward is removed. Furthermore, some research suggests that the application of extrinsic rewards to a task for which the individual is intrinsically motivated can actually undermine intrinsic motivation (Deci & Ryan, 2012; Lepper, Greene, & Nisbett, 1973). On the other hand, intrinsic goals are believed to be capable of affecting long-term changes in behavior, as well as fostering greater persistence toward achievement (Ryan & Deci, 2000).

It would seem that intrinsic goals are inarguably superior to extrinsic goals, but there is a tradeoff. Intrinsic goals are difficult to cultivate. Because intrinsic goals originate from within the individual, external agents, such as teachers, have little control over them. Conversely, extrinsic goals are much easier to control. As a result, much of the motivation that occurs in the classroom focuses on extrinsic goals. More successful teachers though, promote student performance by providing extrinsic motivation while fostering the development of intrinsic goals (Ryan & Deci, 2000).

Relationships motivation theory. Relationships motivation theory focuses on the importance of human relationships in needs satisfaction and overall wellbeing. Relationships act as the primary mechanism through which satisfaction of the three basic needs is mediated. The most apparent of these is the satisfaction of the need for relatedness. When individuals feel a sense of relatedness, it is with the other individuals with whom they interact, as well as with overall organizations and social groups, such as workplaces and classrooms. But needs satisfaction is not limited just to relatedness. Autonomy and competence are also satisfied through relationships (Deci & Ryan, 2014).

In fact, research suggests autonomy and competence contribute to healthy relationships independently of relatedness (La Guardia, Ryan, Couchman, & Deci, 2000). Humans are social animals. Every individual maintains relationships with others in a variety of different capacities - siblings, parents, romantic partners, children, bosses, coworkers, teachers, etc. Through these relationships, individuals get both verbal and nonverbal feedback on competence in a variety of domains. Information contained in interactions with others is used to gauge performance, which, in turn, colors self-perception. This applies to autonomy as well. Individuals that interact with each other behave in ways that either support or undermine autonomy. Though feedback on

autonomy and competence can come from other sources, such as self-evaluation and structural feedback, relationships are the fundamental conduit through which needs satisfaction occurs.

Mindset Theory

Mindset theory is a motivational theory pioneered by Carol Dweck. The primary focus of mindset theory is the role of specific self-theories – which Dweck refers to as mindsets – in human psychology. In her research, Dweck has defined two mindsets–*growth* and *fixed*. Individuals with a fixed mindset believe that their abilities are innate and fixed. Individuals with a growth mindset believe that their abilities are the result of their own efforts and can change as a result of those efforts (Dweck, 2006; Lin-Siegler, Dweck, & Cohen, 2016). Mindsets are considered to be domain-specific (Dweck, Chiu, & Hong 1995), meaning that an individual might have a growth mindset about math, but a fixed mindset about dancing.

Fixed mindset. Individuals with a fixed mindset have an entity theory concerning abilities. They believe their qualities are innate and unchangeable. A student with a fixed mindset might say, "I did well on my math test because I'm good at math." Alternatively, a student with a fixed mindset might also say, "I did poorly on my math test because I'm bad at math." In both cases, the locus of causality is internal, but it is uncontrollable. It is fixed. Although they may be high performers, individuals with a fixed mindset typically regard their successes as the result of their innate skill and intelligence. They think they performed better than others because they *are* better.

Individuals with a fixed mindset are typically averse to challenges and often display higher levels of anxiety than their growth mindset counterparts when confronted by challenges (Dweck, 2006). Additionally, individuals with a fixed mindset often engage in avoidance behaviors when challenged. Such avoidant behaviors include disengagement, handicapping, and

intentional underperformance (Dweck & Leggett, 1988). Also, when faced with failures and setbacks, fixed mindset individuals often undertake ego-protective measures; finding external excuses for their failure, rather than acknowledging that it was the result of their lack of effort, skill, or preparation. This is because individuals with fixed mindset base their self-efficacy on their abilities, which they think are innate (Dweck, 2006). If this belief is true, and their abilities are inadequate, then they are inadequate and there is nothing they can do about it. For this reason, fixed mindset individuals typically gravitate toward performance goals rather than learning goals (Dweck, Walton, & Cohen, 2011). This is because the potential failure inherent in proximal learning goals represents a threat to their self-efficacy. Instead, they look for opportunities to demonstrate their current mastery, thereby validating their abilities and preserving their self-esteem.

Growth mindset. Individuals with a growth mindset have an incremental theory regarding their abilities (Dweck & Leggett, 1988). Rather than seeing their abilities as fixed traits, of which they have a limited portion, they see them as malleable characteristics that can be increased and refined based on their deliberate effort. A student with a growth mindset might say, "I did well on my math test because I studied hard," or, "I did poorly on my math test because I didn't study." In both cases, the focus is on the individual's level of effort, rather than inherent ability. Because performance is not so tightly bound with self-efficacy, growth mindset individuals do not perceive a failure of performance as a failure of self, but rather a failure of effort. They also typically choose learning goals over performance goals (Henderson & Dweck, 1990; Martin, 2015) and display more persistence in the face of difficulty.

Dweck notes having a growth mindset does not mean having unrealistic expectations about one's own abilities (Dweck, 2006). Individuals with a growth mindset do not necessarily

believe that if they train hard they can be an Olympic champion. However, they know that if they train hard, they will get better, and that no Olympic champion achieved that level of success without dedication and hard work.

Cultivating growth mindset. One of the most significant findings that has emerged from mindset theory is that positive feedback about effort is actually more effective at fostering motivation than positive feedback about ability (Dweck, 2007). From the perspective of a Mindset theorist, this is because positive feedback about ability cultivates a fixed mindset, whereas positive feedback about effort cultivates a growth mindset (Dweck, 2006). This is good news for parents, teachers, coaches, and employers. External agents often attempt to foster motivation through performance goals, but as Deci & Ryan (1980) have demonstrated, creating and measuring performance goals can create conditions that undermine intrinsic motivation, which is much more effective at producing success. By using a growth mindset intervention, external agents can cultivate an internal locus of causality and a sense of autonomy in others. This is done by using feedback to inform individuals about the efficacy of their efforts, rather than focusing on them as individuals. For example, a growth mindset strategy for developing writers would involve complimenting the writers on the effort they put into an essay, rather than their skill as writers. Done consistently over time, evidence indicates that this approach can turn fixed mindset students into growth mindset students (Dweck, 2006).

CHAPTER 3

THE MOTIVATION TO LEARN ONLINE QUESTIONNAIRE

The Motivation to Learn Online Questionnaire (MLOQ) is designed to assess college students' motivation to learn in online classes. The MLOQ is adapted, in part, from the Motivated Strategies for Learning Questionnaire (MSLQ), and some of the concepts it was designed to assess, such as goal orientation, self-efficacy, control of learning beliefs, and task value. Goal orientation and self-efficacy were discussed in previous sections. Control of learning beliefs and task value are discussed in the following sections, along with two other constructs, instructor support and social engagement, that are relevant to the motivation to learn.

Control of Learning Beliefs

Control of learning beliefs refers to students' beliefs about the amount of control they have over their ability to learn class material. As a construct, control of learning beliefs is linked closely with attribution theory. Specifically, control of learning beliefs involves the distinction between internal and external learning attributions.

A student who has internal learning attributions tends to attribute academic performance to some factor that is inherent in his or her being. "I made a good grade because I'm smart," and, "I made a bad grade because I'm stupid," are both examples of statements that might be uttered by a student who possesses internal learning attributions. External learning attributions exist when a student attributes academic performance to some external factor. "I failed the test because the room was too cold," and, "I got an A on the test because I got lucky," are both examples of statements that might be made by a student with external learning attributions.

Academically successful students typically attribute successes to internal factors and failures to factors under their control, particularly effort (Pintrich, Smith, Garcia, & Mckeachie, 1993; Weiner, 1979)

Locus of control is another notion closely associated with control of learning beliefs, as well as attribution theory. Like attribution theory, locus of control focuses on the internal/external distinction. Students with internal locus of control tend to believe they have control over events in their lives. Conversely, students with external locus of control tend to believe that events in their lives are outside of their control. Research on locus of control indicates that students with internal locus of control tend to have greater motivation and higher levels of achievement (Anderson, Hattie, & Hamilton, 2005). As a construct, control of learning beliefs incorporates both locus of control and attribution theory. The theory behind control of learning beliefs suggests that students who believe they have control over their learning, and attribute their performance to factors under their control (as opposed to factors such as ability or luck) will be more successful.

Task Value

Task value refers to the individual's subjective perception of the value of a particular task. Much of the work on task value is based on the Expectancy-Value framework of motivation developed by Eccles (1983). Eccles identified four primary factors in task value: attainment value, intrinsic value, utility value, and cost (Eccles & Wigfield, 2002). Attainment value is defined as, "the importance of doing well on a given task" (Wigfield & Eccles, 2000). Intrinsic value is defined as the enjoyment from engagement in the task itself. Utility value refers to the perceived usefulness of the task. And cost refers to the perceived opportunity cost of engaging in the task, as well as the perceived resources spent and emotional cost of engaging

in the task. Researchers have identified relationships within those factors, as well as relationships with other motivational constructs. For instance, attainment value and intrinsic value have been shown to be correlated with one another, as well as with intrinsic motivation (Hillman, Durik, Schweigert, & Harackiewicz, 2008). Utility value, with its focus on external factors, is more closely associated with extrinsic motivation (Wigfield & Eccles, 2000).

In the Expectancy-Value framework, task value is one of two factors involved in motivation. The other is expectancy. Essentially, expectancy refers to the individual's beliefs about her ability to perform the task. This is similar to the notion of self-efficacy. Task value has been shown to be closely associated with activity choice, though achievement in the task is more closely associated with self-efficacy (Pintrich, 2004; Eccles, Wigfield, & Schiefele, 1998). Additionally, task value is malleable. For instance, with academic tasks, many college students attempt to increase task value by increasing the relevance of the tasks to other aspects of their lives (Wolters, 1998). In situations such as these, students are compensating for lack of intrinsic value by creating more attainment and utility value for the task.

Instructor Support.

The modern classroom is built around the relationship between instructors and students. The premise of the classroom structure is that the instructor is the arbiter of knowledge and the classroom is an environment designed for the instructor to impart that knowledge to the students. As such, it is not surprising that instructor support plays a pivotal role in student success.

From the self-determination theory perspective, instructors facilitate or thwart motivation by creating an environment that impacts all three of the basic psychological needs. Instructors can encourage autonomy satisfaction by engaging in behaviors that promote autonomy, such as offering choices in assignments and tailoring instruction or assignments to student interests. By

interacting with students in autonomy-supportive ways, instructors can create classroom conditions that make students comfortable enough to engage in agentic behaviors, such as asking questions and communicating their opinions (Reeve, 2012). Instructors can also refrain from offering controlling or manipulative feedback, praising effort rather than performance, and offering rewards that support an internal, rather than an external, locus of causality. Instructors can influence perceived competence by communicating in ways that acknowledge student effort when answering questions, providing feedback on assignments, and encouraging student inquiry. Instructors can support relatedness by establishing an emotional connection with students through the nature of their classroom interactions.

In a classroom environment, relatedness refers not just to the teacher's relationships with the students, but also to the atmosphere that the teacher creates. In a study involving children in grades 3-6, Furrer & Skinner (2003) found teacher relatedness was a strong predictor of classroom engagement (both self-reported and teacher-reported), especially in boys. In the same study, Furrer & Skinner found relatedness was a stronger predictor of engagement than self-control, and students with high classroom relatedness (teacher and peer relatedness) and low parent relatedness showed no significant difference in teacher reports of engagement, suggesting that classroom relatedness may act as a buffer to parent relatedness.

Engagement plays a significant role in the instructor/student dynamic. Reeve (2012) presents a model explaining the relationship between motivation and engagement in the classroom. In this model teachers engage in behaviors that facilitate student motivation. Motivation then leads to engagement. When signs of that engagement are validated by the teacher and students, it increases motivation and, therefore, engagement. When engagement is not socially validated by teachers or peers, it undermines motivation by decreasing the sense of

relatedness in students. In his research, Reeve found that, "…engagement fully mediates and explains the motivation-to-achievement gap." (Reeve, 2012, p.163)

In this model, signs of student engagement provide a feedback loop for teachers, helping to guide the tone and nature of the instruction. Using the information provided in this feedback, teachers can ensure that students stay engaged and achieve optimal outcomes. In the traditional classroom, these signs of engagement are well-established. Attentive gaze, posture, tone of voice, active questioning - these are among the signs that teachers use to assess student engagement.

In the online classroom these signs of engagement are typically not available. The teacher is often like a singer performing to an empty room. The difference in instructional support between online and traditional classrooms could have a significant impact on the quality of instruction, student motivation, and learning outcomes. For instance, Jaggars (2014) found that perceived greater levels of instructor support played a part in community college students' preference for traditional courses over online courses.

Without the ability to assess student engagement, how can instructors of online courses gauge the quality of their instruction and make the necessary adjustments? This is one of the questions the present study was designed to address.

Social Engagement.

The learning environment is an ongoing interplay of personalities. It is a collectively defined space in which instructors and students engage with one another, giving shape to the environment through their interactions. The collective nature of the classroom has a powerful impact on motivation. When viewed from the perspective of both social cognitive theory and self-determination theory, motivation is not a factor that exists only within the individual, but is

rather the product of an ongoing interaction between the individual and the environment. In educational settings, that environment is the classroom. In the traditional classroom, the social dynamics that affect motivation are fairly well researched and understood. However, the introduction of a new social context - in the form of online classrooms - introduces the need for additional research, to understand how that environment affects social dynamics and, in turn, motivation and related educational outcomes.

Though both online and traditional classrooms are structured and conducted in a variety of ways, there are a number of differences between the two that could have a considerable impact on motivation. These differences are related to the limited interactions afforded by an online environment. Individual attitudes toward academic achievement are influenced by the attitudes of the social groups to which the individual belongs (Urdan & Schoenfelder, 2006). However, participants in online courses are often geographically disparate. In addition to not being in the same physical classroom, students and instructors are often not in the same town, state, or sometimes even the same country. Opportunities for interactions outside of the classroom are often limited. If students are geographically dispersed, it is difficult to meet over coffee or lunch. Lack of proximity reduces the opportunity for informal interactions, which often form the foundation of social relationships. Frequently, social bonds are formed and strengthened through side-conversations and informal interactions that occur before, during, or after class. Opportunities for these interactions are typically limited or nonexistent in the online classroom.

The format of communication in online classrooms might also affect student engagement and motivation. Communication in most online courses is restricted to text and audio, which are often used in a limited capacity (e.g., audio is controlled by instructors, who grants the ability to

speak to participants who respond through online classroom technology). Though some online courses have begun to introduce video into the classroom, the video is typically only of the instructor during the lecture. Additionally, many online courses are asynchronous, which eliminates the opportunity for spontaneous communication between participants in those courses. The limited format of interaction in online courses presents a dramatic departure from the online classroom. A few of the many elements of the traditional classroom missing in most online classrooms are body language that conveys empathy or understanding, tone of voice that conveys sarcasm, and subtle jokes that highlight shared frustrations. Though seemingly superficial and not related to the formal pedagogical structure of the classroom, these sorts of interactions contribute to the dynamics of a learning environment and their absence likely impacts student motivation.

Perhaps the most significant impact of the limited social interaction in the online classroom is that students will not have the opportunity to have their basic needs supported if they are not interacting with fellow students. According to the basic psychological needs subtheory of self-determination theory, motivation is dependent on the satisfaction of the needs for autonomy, competence, and relatedness. If social dynamics in the classroom contribute to or thwart motivation, goal pursuit, and the satisfaction of basic psychological needs, how does the relative lack of social interaction in the online classroom affect those factors? This is another key question that this study was designed to address.

CHAPTER 4

METHOD

Participants

The participants in this study consisted of 190 students, recruited from online courses taught at The University of Georgia, in accordance with the policies of the Human Research Protection Program of that university. Participants were recruited through the assistance of the instructors of those courses. The researcher sent an email to instructors, requesting that they send a notification with details about the study to their students. Participation was voluntary and anonymous. No incentives were offered for participation in the study.

Of the 190 respondents, 30 of them did not complete all of the survey. Those incomplete submissions were discarded, leaving the remaining 160 submissions for analysis. Of these, 83.8% (134) of the participants were female (Table 1). The age distribution (Table 2) was 85% (n = 136) 18-25 year olds with 5% of the participants falling into each of the remaining age ranges (26-30, 31-40, 41+). Participants were asked to indicate the number of online courses they had completed prior to the course they referenced as they completed the study. 38.8% of participants (Table 3) noted they had never completed an online course before the one referenced in the current study. Others (23.8%) had completed one previous online course, 14.4% had completed two, 15.% had completed 3 to 5 online courses, and 5.6% had completed more than 5. The recruitment email was sent to the instructors of all of the online courses offered at the university that semester, but the majority of the respondents indicated that their major was in the field of education. The recruitment period was during the first third of the semester.

Instrument

The present iteration of the Motivation to Learn Online Questionnaire (MLOQ) is based on the instrument developed for a previous study (Fowler, 2007). The primary goal of that study was to determine if there were differences in motivational factors between students enrolled in online and traditional courses. The study found that there were significant differences in intrinsic goal orientation and social engagement between students rolled in online and traditional courses. However, reliability analysis of the earlier version of the MLOQ indicated that it needed further refinement. The version of the MLOQ used in the present study was refined to address those issues.

The present version of the MLOQ consists of two sections. Section one, the student background section, is comprised of 4 questions designed to collect basic demographic information about the participants and their experience with online courses. Section two of the MLOQ consists of 38 questions comprising seven subscales, each designed to assess a different facet of motivation in online courses. For each question in section two, there is an item stem, which is a statement prompting participants to indicate their level of agreement regarding their experiences online classes with a Likert scale. The Likert scale ranges from one to five, with the following values: 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree. For one item, reverse coding was employed.

Among the seven subscales of the MLOQ, five subscales were adapted from the Motivated Strategies for Learning Questionnaire (MSLQ). The MSLQ (Pintrich et al, 1993), is a widely-used tool for educators and researchers interested in assessing student motivation and

cognitive strategy use. To some degree, the popularity of the MSLQ might be attributed its availability in the public domain (Duncan & McKeachie, 2005). The freedom to modify the MSLQ to suit individual needs has also contributed to its popularity. Analyses of the MSLQ indicate it has high reliability and predictive validity (Garcia & Pintrich, 1995).

In its original form, the MSLQ consists of 81 questions organized into two parts. The first part of the MSLQ contains six motivational scales consisting of 31 questions designed to assess motivation in college students enrolled in traditional classrooms. The second part of the MSLQ focuses on cognitive scales, which contain 50 questions designed to assess the use of learning strategies by college students enrolled in traditional classrooms. While the MSLQ is a popular tool for assessment, often used in its entirety, the present study is designed to address motivation, thus negating the need for the cognitive scales.

The motivational scales of the MSLQ are based on three motivational constructs: expectancy, value, and affect. Each of the six subscales comprising the motivational scales are designed to assess aspects of these constructs. Two subscales are devoted to expectancy, focusing on the constructs of self-efficacy and control of learning beliefs. There are three subscales related to value. They are intrinsic goal orientation, extrinsic goal orientation, and task value. Affect consists of only one subscale: test anxiety (Duncan & McKeachie, 2005). This study will focus on five of the six MSLQ subscales: intrinsic goal orientation, extrinsic goal orientation, task value, control of learning beliefs, and self-efficacy. A pilot study of the MLOQ (Fowler, 2007) found there were no significant differences in test anxiety between online and traditional classes. For the purposes of the present study, the test anxiety subscale was removed.

Two additional subscales were created for the MLOQ. These scales are the social engagement and instructor support subscales. Together, these two subscales were designed to

measure a fourth motivational construct: social support. Many theories, particularly social cognitive theory (Bandura, 2001), emphasize the role environment and social involvement play in motivation. The social engagement subscale is intended to assess levels of social engagement in online and traditional classes and was added because the opportunities for social interaction in online classes and the methods through which such opportunities take place are dramatically different from traditional classes. Additionally, the instructor support subscale was designed to assess student perception of both emotional and practical support from the instructor.

Reliability and Validity of the MSLQ. The developers of the MSLQ conducted comprehensive analyses to establish the reliability and validity of the instrument; both of which have been confirmed by other researchers who have adapted the questionnaire for their own purposes (Dangwal & Grope, 2011; Karadeniz, Bueyuekoeztuerk, Akguen, Cakmak, & Demirel, 2008; Pellhuber, Chomienne, & Karsenti, 2008; Theodorou & Meyer, 2001). In the MSLQ, internal consistency of items within the scales was determined by computing coefficient alphas for the scales. The number of questions that constitute the five relevant MSLQ subscales ranges from four to eight with internal consistency values from .62 to .93 (Garcia & Pintrich, 1995) suggesting homogeneity within the scales.

Garcia and Pintrich (1995) examined the measure for its construct validity. The assessment was given to 380 college students, in 37 classes, across 14 subjects. Confirmatory factor analysis determined the items that comprised the individual subscales measured one factor (the construct underlying that subscale). The researchers found, “the measurement models tested in the analyses followed the theoretical framework, and the structural models freely estimated the covariances between the latent constructs” (Garcia & Pintrich, 1995, p. 10). The researchers concluded that the scales of the assessment were “reasonable representations of the data” (Garcia

& Pintrich, 1995, p. 10). Findings from Garcia and Pintrich suggest the reliability and validity of the MSLQ are good, although it should not be automatically assumed those psychometric properties will transfer to the MLOQ. There are specific reasons not to make this assumption.

First, as mentioned earlier, the test anxiety subscale was removed in the creation of the MLOQ and the social engagement and instructor support subscales were added. Not only does this change influence the number of questions in the motivational scales, it may also affect the ways in which the subscales relate to the motivational scale as a whole. Additionally, the two new subscales have not been previously tested for either reliability or validity.

Second, the motivational scales of the MSLQ were designed to assess student motivation in traditional classrooms and they were standardized using a traditional classroom population. The MLOQ, on the other hand, is designed to assess student motivation online classrooms. The population, by definition, is currently enrolled in an online class.

Keeping these concerns in mind, it is possible the reliability and validity of the MLOQ might differ significantly from the MSLQ. As a result, the reliability and validity of the MLOQ were evaluated independently of the MSLQ. The MSLQ will, however, be used as a baseline in determining the concurrent reliability and validity of the MLOQ.

Procedure

The MLOQ was administered entirely online through a web-based platform. Participants accessed the questionnaire by entering the Internet address provided by the researcher into their web browser. After reading the informed consent document, participants indicated their consent to participate by clicking on a submit button. At that point, participants were taken to Section One of the questionnaire on demographic questions. After completing this section, participants then proceeded to Section Two by clicking on the continue button. Upon reaching the bottom of

Section Two of the questionnaire, participants were presented with the option of clicking on the, "SUBMIT," button to complete the survey. Upon successful completion of the questionnaire, users received a message confirming their completion and thanking them for their participation. See the appendices for a complete list of the survey items.

CHAPTER 5

RESULTS

Statistical analyses were performed on the data, using Statistical Package for the Social Sciences (SPSS) version 24.0, to assess the items and scales of the MLOQ questionnaire. The questionnaire was evaluated for reliability and validity. Additionally, descriptive statistics for the subscales were calculated, and ANOVAs were performed to determine if there were relationships between the demographic variables and overall performance on the questionnaire.

Reliability

Reliability estimates and descriptive statistics were calculated for each subscale. Using SPSS, Cronbach's alpha was calculated as a measure of reliability for each subscale, with values of .7 or greater considered satisfactory indicators of reliability. Of the seven subscales, only one - Extrinsic Goal Orientation - fell below the .70 threshold for Cronbach's alpha, with a coefficient of .66. Table 4 contains a summary of the reliability statistics. Below is an overview of the relevant statistics for each subscale.

The Intrinsic Goal Orientation subscale consisted of 4 items, and reliability analysis yielded a coefficient alpha of .70. The individual item means ranged from 3.47 to 4.46 (M = 4.04; SD = .41). The Extrinsic Goal Orientation subscale consisted of 4 items, and reliability analysis yielded a coefficient alpha of .66. The individual item means ranged from 3.84 to 4.24 (M = 4.01; SD = .18). The Control of Learning Beliefs subscale consisted of 4 items, and reliability analysis yielded a coefficient alpha of .71. The individual item means ranged from 3.73 to 4.66 (M = 4.25; SD = .42). The Self-efficacy subscale consisted of 8 items, and

reliability analysis yielded a coefficient alpha of .87. The individual item means ranged from 4.01 to 4.67 (M = 4.39; SD = .23). The Task Value subscale consisted of 6 items, and reliability analysis yielded a coefficient alpha of .88. The individual item means ranged from 4.23 to 4.61 (M = 4.46; SD = .13). The Social Engagement subscale consisted of 5 items, and reliability analysis yielded a coefficient alpha of .73. The individual item means ranged from 3.48 to 4.14 (M = 3.83; SD = .28). The Instructor Support subscale consisted of 7 items, and reliability analysis yielded a coefficient alpha of .85. The individual item means ranged from 4.13 to 4.58 (M = 4.40; SD = .16).

Validity

Construct validity refers to the degree to which an instrument measures what it claims, or purports, to be measuring. Confirmatory factor analysis was chosen as the method to provide evidence of the construct validity of the MLOQ. A confirmatory factory analysis was performed to determine if the proposed motivational factors explain the shared variance in the items that are intended to measure those factors. In the proposed model, there are three latent factors: expectancy, value, and social support. According to the model, the Self-efficacy and Control of Learning Beliefs subscales measure expectancy, the Intrinsic Goal Orientation, Extrinsic Goal Orientation, and Task Value subscales measure value, and the Social Engagement and Instructor Support subscales measure social support. Figure 1 provides a visual overview of the model used in the factor analysis.

The confirmatory factor analysis was performed using the lavaan package in the statistical programming language, R. The lavaan package is for latent variable modeling. The lavaan package can be used to estimate a large variety of multivariate statistical models,

including confirmatory factor analysis, structural equation modeling, path analysis, and growth curve models.

In the confirmatory factor analysis, RMSEA and CFI were used as the primary indicators of fit. A RMSEA value of .05 or less would be considered a good fit and a CFI value of .90 or greater would be considered a good fit. The analysis yielded a RMSEA value of .093 and a CFI value of .67 (see Table 6 for additional details). These results implied that the proposed model was not a good fit for the data.

Demographic Factors

Three demographic variables were evaluated to determine if there were between group differences in the mean scores for each subscale, as well as for the mean total score of the MLOQ. These variables are Number of Online Courses Completed, Age Range, and Gender.

The Number of Online Courses variable consisted of 5 categories: 0 (no previous online courses completed), 1, 2, 3 to 5, and more than 5. Four respondents did not indicate a value for this variable. A one-way ANOVA found that there were no statistically significant differences in scale mean between these groups ($F_{4,151} = .41$, MSE = .07, $p = .799$). Additionally, there were no statistically significant differences between groups for any of the subscale means.

The Age Range variable consisted of four categories: 18-25, 26-30, 31-40, and 41+. A one-way ANOVA found that there were no statistically significant differences in scale mean between these groups ($F_{3,156} = .22$, MSE = .04, $p = .883$). Additionally, there were no statistically significant differences between groups for any of the subscale means.

The Gender variable consisted of two categories: male and female. A one-way ANOVA found that there was a statistically significant difference between the groups ($F_{1,158} = 5.74$, MSE = .97, $\eta_p^2 = .04$, $p = .018$), with women having a higher MLOQ mean score (M = 4.23, SD = .39)

than men (M = 4.02, SD = .51). Additionally, there were significant gender differences for two of the subscale means. For the Extrinsic Goal Orientation subscale ($F_{1,158}$ = 7.14, MSE = 2.38, , η_p^2 = .04, p = .008), women displayed a higher mean (M = 4.07, SD = .65) than men (M = 3.28, SD = .76). Likewise, on the Social Engagement subscale ($F_{1,158}$ = 4.30, M = 2.71, , η_p^2 = .02, p = .040), women displayed a higher mean (M = 3.88, SD = .78) than men (M = 3.53, SD = .87).

CHAPTER 6

DISCUSSION

This study was designed with multiple goals in mind. The first goal was to establish the reliability and validity of the Motivation to Learn Online Questionnaire. The second was to further understand motivation to learn in online classrooms. The final goal was to gain a deeper understanding of the role of relatedness in motivation to learn online, specifically with regard to social support, which, for the purposes of this study, refers to the sense of connectedness students feel to their instructor and classmates.

The first goal was partially achieved. The results of the confirmatory factor analysis indicate that the proposed theoretical model does not fit the data from this study, thus failing to provide evidence of construct validity for the instrument. However, the reliability of the instrument was well-established. The Cronbach's alpha coefficients for the subscales ranged from .66 to .88, with only one subscale, Extrinsic Goal Orientation, falling below the .70 threshold for strong reliability. These reliability coefficients are on par with those established in the initial MSLQ. Conversely, the lack of fit for the model suggests additional analysis and research. Specifically, an EFA should be performed on the data to determine the number of factors in the model, as well as the loadings of each item on the respective factor. Additionally, the homogeneity of the sample may have produced data that is not representative of the larger population. For instance, 85% of the sample was female, the sample was taken entirely from one university, and many of the respondents indicated their course of study was in the field of education. A follow-up study should be performed with a more diverse population. The analysis

of that study should be informed by the EFA results from the data from the present study.

Concerning the second goal – to further understand motivation to learn in online courses – there were interesting findings regarding the role of gender. Gender differences were found regarding the overall MLOQ score, as well the gender differences in scores on the Extrinsic Goal Orientation and Social Engagement subscales. Women displayed higher scores than men for all three, at a statistically significant level. However, while the gender differences were statistically significant, the effect sizes for each of these findings were small. Additional research is needed to further understand the gender differences identified in this study. Are these findings the byproduct of a sample that is heavily skewed toward women, or are women more motivated to learn online courses? Are women more motivated to learn in traditional courses as well? These are questions that merit further study, ideally with a more balanced sample.

Regarding the third goal – to further understand the role of social support in motivation to learn online – there were two findings of note. The first is the relatively high mean score for Instructor Support. It was hypothesized that Instructor Support scores would be low in relation to the other subscales, because the traditional methods of instructor support are largely absent in the online classroom. However, the Instructor Support subscale recorded the second highest scale mean ($M = 4.40$) in the inventory. However, this finding may have been influenced by the fact that student recruitment occurred through participating instructors. Participating students may have been biased toward positive marks as a result. Additionally, selection bias may be at play, with unmotivated students less likely to complete the questionnaire. A study that recruits from a wider, more diverse population without involving instructors is necessary to further study instructor support.

The second social support finding is that the Social Engagement scale mean was the lowest in the inventory. This was an expected outcome. While, as noted above, women scored significantly higher than men on this subscale, both genders reported lower social engagement scores. While not conclusive, this supports the hypothesis that the lack of social engagement methods available in a traditional classroom present an obstacle to social engagement online. From the perspective of Self-Determination Theory, this presents an obstacle to motivation. Not only does relatedness play a key role in motivation, relatedness is also the method though which autonomy and competence are mediated. Interpersonal relationships serve as a mechanism through which perceptions of autonomy and competence are either disputed or confirmed.

Limitations of the Present Study

One clears limitation to this study is one shared by many survey-based studies; it used a voluntary sampling method. While this sampling method is popular due to the relative ease of recruiting participants, its shortcomings are well documented. This sample fails to satisfy the criterion of representation: Because the sample used for this study was a convenience sample—not a random one—it is possible that it is not an accurate representation of the population it seeks to study. In other words, students who do not perform well in online classes or who exhibit low levels of academic motivation are a lot less likely to participate in a completely voluntary online study that offers no incentive for participation.

The homogeneity of the population is another limitation. The sample for this study was primarily female (83.8%) and between the ages of 18 and 25 (85%). Additionally, they were all recruited from the same university and primarily from the same program. While the respondents were anonymous, it is possible that they were drawn from classes led by a small set of instructors, which could skew data.

Misrepresentation of the population is a common and legitimate criticism of studies that use convenience samples. Because the sample may not accurately reflect the target population, it may be difficult to apply study results to the general population. Most statistical analysis methods (including the ones used in this study) include random sampling as one of their basic assumptions, and failure to meet this assumption may—under some circumstances— invalidate the conclusions drawn from the analyses. While a misrepresentative sample is never desirable, required participation presents its own challenges with data quality.

Directions for Future Research

Future research regarding the Motivation to Learn Online Questionnaire should focus on instrument enhancement by means of item revision, use of qualitative methods such as student interviews and focus groups, and cross-validation with a new and larger sample of students. Future tests should be conducted on larger, more heterogeneous samples. The sample for the present study was small ($N = 160$) and limited to students from one university, which suggests that those participants have only encountered one school's approach to online classes. As such, any generalization of the findings to other populations is questionable.

It is possible that students from other universities perceive their experiences in online classes differently. Additionally, norms of communication and social engagement may vary according to geographic region, which could affect the results of the questionnaire. Variations according to race, age, gender, nationality, and socioeconomic status also need to be taken into consideration. Of those characteristics, only age and gender were identified in the present study. The gender differences identified in the study should be further explored, specifically with a more balanced sample.

Future research efforts should focus on establishing the validity of the MLOQ and further investigating the constructs it is designed to measure. The confirmatory factor analysis found that the latent factors theorized to underpin the model did not fit the data collected. An exploratory factor analysis needs to be conducted in order to understand the number of factors present in the data and the relationships between those factors and the items in the scale. Additionally, as mentioned above, more studies need to be conducted to provide a more robust and diverse data set. The data produced from those studies would allow for a richer analysis regarding both validity and reliability. In addition to using factor analysis to establish construct validity, concurrent validity should be established by administering the MLOQ alongside established measures of motivation, and predictive validity should be established by comparing MLOQ scores with academic performance measures.

Conclusions

While additional studies need to be conducted to improve the validity of the Motivation to Learn Online Questionnaire as a research and classroom instrument, its potential usefulness has been demonstrated in the present study. As technology advances, online education is likely to proliferate in both formal and informal academic settings. Convenience, economic issues, and the increasing power of the Internet as a platform for the delivery of education are converging to increase the popularity of online education. As a result, many educators find themselves in the midst of a paradigm shift—one which has them pressured on one side by the responsibility of providing quality education and on the other by the technological expectations of both students and society. With additional research, the Motivation to Learn Online Questionnaire may become an important resource for instructors and administrators to use to assess, understand, and improve the effectiveness of online instruction.

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TABLES

Table 1

Gender Distribution

Gender	N	%
Female	134	83.8
Male	26	16.2
Total	160	100

Table 2

Age Distribution

Age	N	%
18-25	136	85
26-30	8	5
31-40	8	5
41+	8	5
Total	160	100

Note: Four respondents did not indicate age

Table 3

Online Course History Distribution

Online Courses Completed	N	%
0	62	38.8
1	38	23.8
2	23	14.4
3-5	24	15.0
6+	9	5.6
Total	156	97.6

Table 4

Subscale Statistics

Subscale	MSLQ Cronbach's Alpha	MLOQ Cronbach's Alpha	Items	Mean	SD
Intrinsic Goal Orientation	.74	.70	4	4.04	.41
Extrinsic Goal Orientation	.62	.66	4	4.01	.18
Control of Learning Beliefs	.68	.71	4	4.25	.42
Self-Efficacy	.93	.87	8	4.39	.23
Task Value	.80	.88	6	4.46	.13
Social Engagement*	NA	.73	5	3.83	.28
Instructor Support*	NA	.85	7	4.40	.16

Note: * = Subscale no Included in Motivated Strategies for Learning Questionnaire

Table 5

Item Ranges

Subscale	Item	Minimum Value	Maximum Value
Intrinsic Goal Orientation			
	1	1	5
	2	2	5
	3	2	5
	4	1	5
Extrinsic Goal Orientation			
	5	1	5
	6	1	5
	7	1	5
	8	1	5
Control of Learning Beliefs			
	9	2	5
	10	2	5
	11	2	5
	12	1	5
Self-Efficacy			

	13	1	5
	14	1	5
	15	2	5
	16	2	5
	17	2	5
	18	3	5
	19	2	5
	20	2	5
Task Value			
	21	1	5
	22	1	5
	23	1	5
	24	1	5
	25	1	5
	26	2	5
Social Engagement			
	27	1	5
	28	1	5
	29	1	5
	30	1	5
	31	1	5
Instructor Support			
	32	1	5
	33	1	5
	34	1	5
	35	1	5
	36	1	5
	37	1	5
	38	1	5

Table 6

Confirmatory Factor Analysis Statistics

Model	df	p	RMSEA	CFI
MLOQ Proposed Model	703	.00	.093	.670

Table 7

Confirmatory Factor Analysis Item Statistics

	Item	Estimate	Std.Err	z-value	P(>|z|)
Social Support	27	1			
	28	0.177	0.121	1.459	0.145
	29	0.626	0.152	4.125	0
	30	0.82	0.158	5.194	0
	31	0.743	0.181	4.097	0
	32	1.03	0.162	6.363	0
	33	0.99	0.155	6.372	0
	34	0.932	0.147	6.344	0
	35	1.037	0.16	6.5	0
	36	0.773	0.135	5.729	0
	37	0.38	0.114	3.343	0.001
	38	0.995	0.173	5.755	0
Expectancy					
	9	1			
	10	1.299	0.252	5.163	0
	11	1.403	0.21	6.683	0
	12	0.989	0.263	3.765	0
	13	1.462	0.216	6.764	0
	14	1.717	0.262	6.556	0
	15	1.166	0.172	6.765	0
	16	1.614	0.222	7.258	0
	17	1.79	0.24	7.446	0
	18	0.763	0.153	5.001	0
	19	1.447	0.201	7.187	0
	20	1.415	0.19	7.455	0
Value					
	1	1			
	2	0.459	0.154	2.983	0.003

	3	0.93	0.211	4.401	0
	4	0.926	0.258	3.586	0
	5	0.226	0.173	1.3	0.193
	6	-0.311	0.207	-1.505	0.132
	7	0.173	0.214	0.807	0.42
	8	0.703	0.227	3.102	0.002
	21	1.594	0.279	5.71	0
	22	1.324	0.228	5.796	0
	23	1.848	0.306	6.042	0
	24	1.246	0.218	5.72	0
	25	1.442	0.251	5.752	0
	26	1.512	0.252	6.004	0

FIGURES

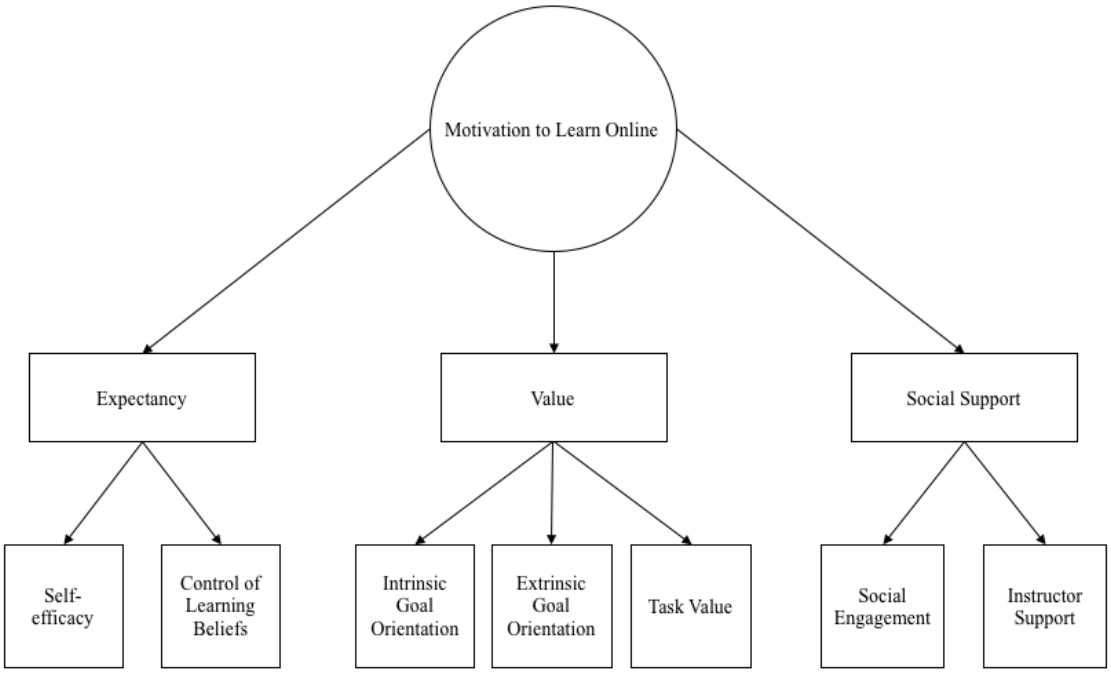

Figure 1. MLOQ proposed theoretical model. Expectancy, value, and social support represent latent factors. Self-efficacy, control of learning beliefs, intrinsic goal orientation, extrinsic goal orientation, task value, social engagement, and instructor support represent observed variables.

APPENDIX A

Part I of Survey: Demographic Data

Please respond to all of the following questions. Once you have answered all of these questions, please click "Continue" at the bottom of the page. We do not ask your name, so that you will feel comfortable about candidly sharing your thoughts and feelings about learning online. Your responses will help improve online instruction.

Thank you.

1. Age

2. Gender

3. Major/Concentration

4. Number of Online Courses Completed Before This Course

    A. None

    B. 1

    C. 2

    D. 3-5

    E. More Than Five

APPENDIX B

Subscales of the MLOQ

Intrinsic Goal Orientation

- I prefer material that really challenges me, so I can learn new things.
- I prefer material that arouses my curiosity, even if it's difficult to learn.
- The most satisfying thing for me is trying to understand the content as thoroughly as possible.
- I choose assignments that I can learn from even if they don't guarantee a good grade.

Extrinsic Goal Orientation

- Getting a good grade is the most satisfying thing for me.
- The most important thing for me is to improve my overall grade point average, so my concern is getting a good grade.
- I want to get better grades than most of the other students in my classes.
- I want to do well in my classes because it's important to show my ability to my family, friends, employer, or others.

Control of Learning Beliefs

- If I study in appropriate ways, then I'll be able to learn the material.

- It's my own fault if I don't learn the material taught.
- If I try hard enough, then I'll understand the material presented.
- If I don't understand the material presented, it's because I didn't try hard enough.

Self-Efficacy

- I believe I'll receive excellent grades in my classes.
- I'm certain I can understand the most difficult material presented in the readings.
- I'm confident I can learn the basic concepts that are being taught.
- I'm confident I can understand the most complex material presented by the instructor.
- I'm confident I can do an excellent job on assignments and tests.
- I expect to do well.
- I'm certain I can master the skills being taught.
- Considering the difficulty of the classes, the teachers, and my skills, I think I can do well.

Task Value

- I think I will be able to use what I learn in this course in other courses.
- It is important for me to learn the course material in this class.
- I am very interested in the content area of this course.
- I think the course material in this class is useful for me to learn.
- I like the subject matter of this course.
- Understanding the subject matter of this course is very important to me.

Social Engagement

- I feel "disconnected" from my teacher and fellow students in classes.
- I pay attention in classes.
- I enjoy class discussions.
- I feel like I can freely communicate with other students in classes.
- I have strong relationships with fellow students in this course.

Instructor Support

- I feel like I can freely communicate with the instructor in this class.
- The instructor responds to questions, clearly, completely, and in a timely manner.
- The instructor's expectations for me in this class are clear.
- The instructor provides the guidance I need to be successful in this class.
- The instructor presents the material in a way that makes it relevant to me.
- In this course, I have the freedom to guide my own learning
- The instructor provides regular feedback that helps me gauge my performance in this class.