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Teacher Matters: Teacher Normative Influence and Student Persistence in College

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TEACHER MATTERS: TEACHER NORMATIVE INLUENCE AND STUDENT PERSISTENCE IN COLLEGE

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ABSTRACT

This dissertation extends the work on teacher immediacy (TI) and student persistence by using the Theory of Planned Behavior (TPB) (Ajzen, 1985) to account for variability in college student persistence. Students provided perceptions of their teachers' immediacy behaviors using modified versions of Gorham's (1988) TI scale. Instruction prompts of the TI scale were manipulated to create four conditions. The results from Study 1 demonstrate that TI scale prompt language has an effect on the ways participants assess their teacher's immediacy behaviors. The results from Study 2 show that student perceptions of their teacher's immediacy behaviors change over the course of an academic semester, such that TI is statistically higher at the end of the semester than at the beginning, as measured by collecting data at four time points. The results from both studies generally support the hypotheses and suggest the TPB accurately predicts college student persistence. However, it is unclear how TI is influencing the overall TPB structural model. In some cases, adding TI to the TPB structural models resulted in a poorer fitting model. Discussions, limitations, and future research are provided for both studies.

CHAPTER 1

INTRODUCTION

Having completed more than 10 years of college, I can honestly say that I have only missed one or two classes…per semester. My typical pattern as a student was to arrive early to class meetings, spend some time getting mentally prepared for the day's lesson, talk with the instructor when appropriate, engage with the lecture and course material, and begin collecting my belongings when the instructor was finished, not when I felt like doing it. One might say I brought apples for my teacher. And by apples I mean motivation to be the best student possible. For me, being the best student possible meant engaging with the instructor and fellow students during class time, turning assignments in on time, and completing courses in which I enrolled. It meant getting the most out of my classes and expecting the best from my teachers. I can remember only one instance when I dropped a course, and that drop was due to a scheduling conflict. My back is beginning to hurt from all of my patting. Indeed, I was not a perfect student by any measure, but I was certainly persistent.

Many students, however, do not persist in college; and even if they maintain their status as a student on paper, some students can hardly be described as motivated in the ways described above. Essentially, student persistence is the degree to which students will stay in school and continue taking classes until finished (Wheeless, Witt, Maresh, Bryand, & Schrodt, 2011) and is a function of a student's level of motivation (Christophel & Gorham, 1995) and the institution's academic and social characteristics (Cabrera, Castañeda, Nora, & Hengstler, 1992). Several factors can influence a student's level of persistence in college. For instance, Bourke and Bray (2012) found that African-American students tend to persist in college as a function of perceiving a sense of integration in the college. Indeed, some students with poor high school

academic performance (such as myself) still persist in college. Although Bourke and Bray's study was limited to African-American students, it is likely for other students to persist because they are integrated and part of a college community. Of interest for this dissertation is how teacher behaviors might influence student persistence.

Some students enroll in a class only to drop it or simply not attend. As a college instructor, I have experienced students dropping a class after completing nearly half of the course requirements. On a larger scale, many students complete a year or more of college and never return, often failing to complete all of the requirements for their degree. A five year longitudinal study with a nationally representative sample of approximately 7,000 beginning postsecondary students (BPS) reported that at the end of five years, 50% of the students attained either an Associate's or Bachelor's degree, 13.3% had not attained a degree but were still enrolled, and 36.8% had not attained a degree and were no longer enrolled (Berkner, Cuccaro-Alamin, & McCormick, 1996).

But why does this happen? Why is there variability in student persistence? These are, indeed, important questions. Toward answering them, this chapter explains the theoretical and practical significance expected from the findings of this dissertation. Additionally, this chapter provides a brief overview of teacher immediacy (TI) and situates its relationship with persistence within the framework of the Theory of Planned Behavior (TPB; Ajzen, 1985).

Theoretical and Practical Importance

With nearly 100 studies on teacher immediacy (Witt, Wheeless, & Allen, 2004), only two have measured the effect of TI on student persistence (Wheeless et al., 2011; Witt, Schrodt, Wheeless, & Bryand, 2014); and these studies only measured students' intentions to persist, not their actual behavior of reenrolling in courses. Moreover, it appears the results and implications

of both studies were generated from the same dataset. Study 1 assessed students' intentions to persist in college and measured actual enrollment behavior while using the TPB (Ajzen, 1985), which provided an initial test of using the TPB to assess actual student persistence (i.e., reenrolling in courses). Study 2 of this dissertation involved data collection over the course of an academic semester from first year students. Such longitudinal data assessing groups of freshmen is theoretically interesting for the field of instructional communication. Allen, Witt, and Wheeless (2006) suggest longitudinal assessments of teacher behaviors can result in more accurate assessments of student outcomes compared to cross-sectional studies. Similar to other relationships, teachers and students initially meet at the beginning of an academic semester; this relationship develops over the course of that semester (sometimes for better, sometimes for worse). Students will likely assess their teachers' behaviors differently as a function of time. Similarly, students' motivation levels can change throughout the course of a semester as a function of TI (Allen et al., 2006), and so an effective way to assess whether students' intentions are changing throughout the semester as a function of teacher behaviors is to do so longitudinally. With no longitudinal studies to help explain the relationship between immediacy and important outcomes, the field is at a proverbial standstill.

Practically, this dissertation stands to provide useful information for college instructors and administrators who aim to make an effective "first year experience" for college students. Ultimately, findings from this dissertation should warrant higher education officials to make changes to pedagogical practices for all college teachers to increase college student persistence.

To date, scholars from across the academic landscape have provided a host of explanations for variability in student persistence in college. Staying connected to their past communities is a central component to student persistence (Torres, 2003). So, for instance,

students who enroll at a college or university along with other students from their hometown are more likely to persist. External factors such as GPA, number of hours studying per week, perceptions of other students, and the degree to which students are involved with each other such as through a study group also account for student persistence (Tinto, 1997). Another explanation for student persistence (and one that is most critical during a student's first year in college) is a combination of challenge and support (Upcraft, Gardner, & Barefoot, 2005). That is, college students who do not experience a balance of *challenge*, being part of an environment that promotes learning, and *support*, surrounded by a college community that helps students grow and develop, during their first year are less likely to persist in college.

Interestingly, there is a dearth in the student persistence literature with respect to the role of the teacher. Such a lacuna is surprising given documented evidence that teachers play a vital role in students' levels of motivation in the classroom (e.g., Comadena, Hunt, & Simonds, 2007) and the established link between student motivation and intentions to persist (Wheeless et al., 2011). Tinto (2006-2007) suggests the classroom, for many students, is the only place they have interaction with other students and faculty, and that faculty play a key role in institutional efforts to enhance student retention. Thus, it seems highly probable that college instructors can play a significant role in the degree to which a college student persists.

From a communication perspective, the influence of teachers on student outcomes has primarily been studied with respect to a specific set of teacher behaviors, teacher immediacy (TI). It is within that literature that this dissertation is situated. The purpose of this dissertation is to explore the role of TI behaviors in influencing student decisions to persist in college.

Teacher Behaviors

There are several teacher behaviors that can have an effect on student outcomes. Students who perceive a degree of similarity with their teachers (i.e., homophily) tend to have more favorable attitudes towards persisting in college (Wheeless et al., 2011). Students who perceive their teachers as caring for their well-being also tend to be more motivated in class (Comadena et al., 2007). Teachers who are perceived as humorous tend to have a positive effect on students insofar as it enhances the teacher-student relationship (Gorham & Christophel, 1990). Of all the possible behaviors, teacher immediacy (TI) has attracted the most empirical attention and will be the focus of this dissertation.

The effect of TI on student outcomes exists prior to college. For example, Skinner and Belmont (1993) found that children's behavioral engagement is largely a function of how they perceive their teachers' behaviors. Specifically, "…children who experience their teachers as providing clear expectations, contingent responses, and strategic help are more likely to be more effortful and persistent" (Skinner & Belmont, p. 578). Skinner and Belmont found an effect of reciprocity whereby positive student engagement elicits positive teacher behaviors. Positive behaviors displayed by students and teachers within the classroom walls, therefore, have a contagious effect for student outcomes and teacher behaviors. I do not assert TI fully accounts for teacher behaviors that enhance student outcomes; however, as Tinto (2006-2007) suggests, the classroom is often the only place where some students have other student/faculty interaction. Although there are myriad other factors that can affect persistence, there is only so much time and space for one dissertation and therefore, I focus on immediacy.

Teacher Immediacy

The movie *Dead Poets Society* portrays Professor John Keating as someone who inspires and motivates his students to do well in school. Throughout the film, Professor Keating is seen engaging in various behaviors such as talking and connecting with the students on a personal level, walking around the classroom, using active body gestures and movements, and speaking clearly in a charismatic style. Professor Keating is an immediate teacher, one who engages in immediacy behaviors with his students. In 1971, Albert Mehrabian introduced the Immediacy Principle – that people are drawn towards things and people they like and avoid things and people they dislike. Mehrabian asserts that the closer the proximity individuals have when talking to each other, the greater the amount of stimulation and information exchanged. People seem to be more engaged with a talker when that talker is closer in proximity. Communicating in close proximity raises awareness and provides a more effective communicative experience across a range of contexts – from listening to a teacher's lecture to listening to a speech from an athletic coach, or even when communicating on a first date. The immediacy principle provides a framework for individuals to interpret and infer meaning from communicative behaviors. For example, one can argue that Professor Keating's students were drawn toward him because of his immediacy.

Historically noted as a pioneer in TI studies, Janis Andersen (1979) was the first to incorporate Mehrabian's notion of immediacy to examine the effects of teacher behaviors on student outcomes. Immediacy was defined in a fairly general way, as the degree to which communication behaviors enhance physical and psychological closeness to another individual through nonverbal cues such as touching, body orientation, proximity, eye gaze, smiling, facial expressions, and tone of voice (Andersen, 1979; Mehrabian, 1969; 1971). In particular, TI is a

set of communication behaviors perceived by students that typically generate increased involvement, motivation, and enthusiasm for the course material (Allen et al., 2006). That is, the more immediacy behaviors teachers engage in and consequently that students perceive, the more positive student outcomes will become. The idea of TI posits an empirical question of whether teachers can engage in certain immediacy behaviors to decrease the perceived distance between students and teachers and thus increase the level of motivation to learn. This relationship between TI and affective learning is a well documented one in the TI literature (Witt et al., 2004; Witt, Wheeless, & Allen, 2006).

Because persistence is directly related to student motivation, it is no surprise that teachers are thought to play a significant role in the degree to which students will "complete" and follow through with various aspects of a classroom environment (Christophel, 1990). Student motivation is assessed by the degree to which students feel interested, inspired, and excited about a particular class. Generally speaking, the more motivated students are, the more likely they are to persist in college (Cabrera et al., 1992). When students perceive their instructors engaging in nonverbal immediacy and being enthusiastic about course content, the students perceive their instructor as more credible, which has a significant effect on students' *attitudes* towards intent to persist in college (Wheeless et al., 2011).

Theoretical Framework: Theory of Planned Behavior

The theoretical model I plan to use for this study is Ajzen's (1985) Theory of Planned Behavior (TPB), which suggests that attitude toward a behavior, subjective norms, and perceived behavioral control shape intentions about a behavior, which ultimately have an effect on actual behavior. For example, a student who has a positive attitude toward staying in college, has important people in his or her life such as parents who stress the importance of college, and who

has a certain level of control over persistence is likely to have good intentions to persist; these intentions then effect behavior. Over the last 33 years, communication scholars have given much attention to the relationship between teacher behaviors and student learning outcomes; however, there is a lack of focus on student persistence. It is no secret that a teacher can serve an integral role in the success of his or her students. TI is one particular category of teacher behavior that has had significant effects on certain aspects of student outcomes (e.g., Frymier, 1993). I suggest TI will influence a student's attitude, subjective norm, and perceived control, which in turn will lead to student persistence.

Wheeless et al. (2011) suggest that the same types of communication behaviors teachers engage in that promote affective learning and greater appreciation of course content are also likely to promote greater commitment in students to complete the course and their program of study. Additionally, students from the Wheeless et al. study who perceived their teachers engaging in prosocial and effective teaching behaviors were more likely to report an intention to persist in college, which suggests they are more likely to complete their courses and program of study perhaps irrespective of their grades and their perceived levels of learning. The authors did not, however, assess the beliefs of the participants regarding their attitude, subjective norm, and perceived behavioral control concerning persistence. Instead, the TPB was only used as a rationale to measure behavioral intentions. This leads me to my primary research question: How does teacher immediacy influence the components of the Theory of Planned Behavior in the prediction of students' intentions to persist in college?

Conclusion

My interest in the topic of student persistence in college stems from personal experience with committing to goals and following through. When I enrolled in college courses I did not

like, I still completed them; I would like to think at least one reason why I was more motivated in some classes compared to others was a function of the teachers' behaviors. I would also like to think, as a college instructor and aspiring professor, that what I do in the classroom matters. College teachers engage in myriad behaviors that can have a variety of effects on students. Teachers who engage in immediacy behaviors are more likely to motivate students. The more motivated students are, the more likely they are to persist in college. The TPB is a fitting theoretical framework with which the associations of TI and student motivation can be disentangled in terms of predicting college student persistence.

The next chapter of this dissertation provides a detailed review of the literature on student persistence and TI and provides an account of the relationships among these variables from the viewpoint of the TPB. Chapter 3 provides a detailed account of Study 1 of this dissertation followed by Chapter 4, which provides a detailed account of Study 2. Chapter 5 provides an overall discussion of this dissertation including limitations and direction for future research.

CHAPTER 2

REVIEW OF LITERATURE

The purpose of this chapter is to provide a context and rationale for why I intend to answer the million dollar question, "What makes students persist in college?" First, I review explanations of student persistence in terms of how the focus has shifted from blaming the student, to the institution, to (the topic of interest for this dissertation) the teacher's role in student persistence. A review of the Theory of Planned Behavior (TPB) (Ajzen, 1985; 2012) is included to serve as a theoretical framework to account for why some students persist and others do not. I suggest the components of the TPB can account for variability in explaining student persistence. I explain the role of teacher communication behaviors in terms of the relationship between teacher immediacy and student outcomes. Several studies have found that students are motivated when they have teachers who engage in immediacy behaviors (Witt, Wheeless, & Allen, 2004). This chapter will attempt to disentangle the relationship between teacher behaviors and student outcomes.

Student Persistence: Why Some Students Fail and Others Prevail

When Arthur Chickering shared his views on the need for colleges and universities to be concerned with students' personal values, ways of thinking, and modes of learning during the 1960s and early 1970s, he was met with opposition from faculty (Chickering & Reisser, 1993). Chickering received faculty responses, which were typically, "…vitriolic attacks, scathing criticism, emotionally loaded defensive reactions, and the like" (p. xii). Chickering and Reisser suggested such opposition came from the idea that the purpose of education and the role of the educator is information transfer and cultivating the intellect rather than engaging with students.

Faculty and staff opposed the idea of focusing on the student and did not like the idea of creating policies and practices that focused on the student. Indeed, the focus was primarily on research and talking about information, not on pedagogy. Things are quite different now. With over 30 years of research findings, the need to study persistence is not only evident but embraced by most (e.g., Pascarella, Salisbury, & Blaich., 2011).

Students who persist in college stay in school; that is, they maintain their student status and continue enrolling in classes until their degree is completed (Wheeless et al., 2011). Student persistence is an important topic that concerns those who have a vested interest in promoting persistence and graduation rates of college students including college staff (Kuh, 2009), the US department of education, and teachers (Wheeless et al.). Over the last 40 years, there have been several explanations to account for variability in student persistence (Tinto, 2006-2007). The following sections will review a few of those explanations including pre-college characteristics, blaming the student, systemic factors, and the teacher's role in student persistence.

Pre-College Characteristics

Several pre-college characteristics predict academic success such as good academic records in high school; however, past behavior is not always habitual and does not always predict future behavior (Ajzen, 1991). For example, Friedman and Mandel (2011-2012) found that students' high school GPA and SAT scores did not predict retention after one year of college. Dr. Darrell Ray, Director of FYE at LSU, provided me with an overview of student retention at this campus. There were approximately 1,000 freshmen from the 2010/2011 school year who did not return for the fall 2011 semester. More than half of these non-returning students entered into LSU with a GPA from high school of 3.0 or higher. Why is it that some students who perform well in the high school classroom fail to persist in college? Berkner, Cuccaro-Alamin,

and McCormick (1996) reported a five year study with a nationally representative study of 7,000 beginning postsecondary students (BPS). Only 50% of the sample attained either an Associate's or Bachelor's degree, 13.3% did not have a degree but were still enrolled, and 36.8% had no degree and were no longer enrolled. A more recent report from the National Center for Education Statistics (NCES) provided some outcomes comparing two cohorts of nationally representative students: first time students entering college in 1989-90 and 1995-96 (Horn & Carroll, 2004). The sample sizes were approximately 6,000 for the first cohort and 9,000 for the second, and the response rates for these two studies were 91% and 86%, respectively. The table below from Horn and Carroll (2004, p. 20) provides a brief summary of their findings:

Table 2.1. *Percentage of Beginning Postsecondary Students Who Completed a Degree or Were Still Enrolled 5 Years After They Began Postsecondary Education, by Type of Institution Attended and Year Enrolled: Cohorts from 1989-90 and 1995-96*

	Highest degree completed				No degree, 5-year persistence			
	Total completed	Bachelor's degree	Associate's degree	Certificate	Still enrolled at 4-year	Still enrolled at 2-year or less	No degree, not enrolled	Total completed or persisted
1989-90	49.9	25.8	11.2	13.0	8.1	5.2	36.8	63.2
1995-96	46.6	25.1	9.9	11.7	11.6	6.6	35.2	64.9

So, after five years in college, fewer than half of students earned a degree and more than 35% of students were no longer enrolled and still did not have a degree. As one can see, there were not many significant changes in student persistence when comparing these two cohorts over nearly a decade. Despite all of the benefits that are associated with good high school GPAs and high SAT scores, college student persistence is still a major problem. For me personally, I had a low high school GPA and did not even take the SAT. One of the main reasons I did well in college immediately following my lackluster performance in high school was due to my motivation.

Once I started community college, and continued my higher education, I was always motivated to persist.

Blaming the Student

In support of my anecdotal evidence, Tinto (2006-2007) suggests student persistence has been viewed in terms of placing the responsibility of academic performance on students. This view falls in line with those who opposed Chickering's focus on students. That is, faculty are responsible for facilitating the process of information acquisition, and college students should excel in this context. For instance, students who are motivated tend to persist in college (Christophel, 1990); therefore, students who are not persisting tend to lack motivation. Tinto refers to this view as "blaming the student." Student motivation is a process that can lead to specific behaviors (Christophel) and generally follows a sequential pattern whereby students have energy, volition, direction, involvement, and completion (Wlodkowski, 1978). Student motivation is assessed by the degree to which students feel interested, inspired, and excited about a particular class. Indeed, the more motivated students are in a classroom, the more likely they are to persist (Pascarella & Terenzini, 2005). However, irrespective of motivation level and other pre-college characteristics, student persistence still remains a huge problem (see Table 2.1). Although motivation contributes to student persistence, Tinto noted how blaming the student for failed persistence began to change over time, and suggested the focus on student persistence shifted from the student to the environment; that is, the institution.

Systemic Factors

Braxton (2009) suggested "…the development of the whole person constitutes the core function of the student affairs profession" (p. 573). Kuh (2009) explained what student affairs professionals need to know about student engagement to further understand why students persist

in college. Kuh addressed student engagement by asking what conditions, if any, can institutions systematically alter to increase students' dispositions to engage. For example, student affairs workers create activities and opportunities of various sorts to engage new and returning students. Students who feel more connected to their institution tend to perform better academically (Bourke & Bray, 2012), and students who have a greater sense of institutional commitment are more likely to persist (Davidson, Beck, & Milligan, 2009). Davidson et al. defined institutional commitment as the degree to which students believe they will receive their degree from a particular university and how confident they are that the college they attend is right for them. It seems plausible to suggest that students with a high level of institutional commitment are more likely to be motivated in their classroom and motivated to persist in college. Additionally, college students who experience a balance of *challenge*, being part of an environment that promotes learning, and *support*, surrounded by a college community that helps them grow and develop, are more likely to persist in college especially during their first year (Upcraft, Gardner, & Barefoot, 2005). Indeed, integration *into* and involvement *with* a college is an integral component to student persistence, and this integration and involvement matter the most during a student's first year in college (Tinto, 2006-2007).

More recently, several colleges and universities have added departments and offices that specifically focus on creating a positive first year experience for students in hopes to retain these students for their second year. Louisiana State University (LSU) has recently developed an office for first year students, and describes the first year experience (FYE) initiative as:

> …here to provide the resources and support you need to succeed!
> We're excited that you're here and have chosen to be a Tiger. We are continually planning new things and working with others on campus to make your first year one that can change your life and help put in motion a plan to give you the foundation for a lifetime of success....however you define it!

> FYE is a campus-wide initiative as well as a department within the LSU Student Life & Enrollment. Each year we work with Orientation to provide a seamless experience for you from admission through the first year to help connect you with the resources you need to succeed.

California State University, Fullerton (an institution with which I was affiliated) began implementing "Freshman Programs" in 1997 to support the process of students transitioning from high school to becoming successful college graduates. In my own experience, I have encountered students who explained how they love college but struggle to keep up with their studies and go to class because no one is holding them accountable. Additionally, several former LSU students have commented to me how many of their classes contain 200, 400, and even 800 students. Many of these students have expressed to me how they have absolutely no interaction with their teachers and do not experience any motivation to attend class, especially if the instructor does not take role or post lecture notes online. Some college students may feel completely lost in such an environment and may experience a need for some type of external support. Indeed, freshman programs that help students with the process of transition seem invaluable. Although many colleges and universities are taking steps to encourage students to persist, national attrition rates are still low. Students may feel connected to their college and even perform well in classes in terms of grades; however, student persistence is still a problem.

Although student affairs and freshman programs can encourage students to persist and experience a sense of involvement, that does not guarantee success. Tinto (2006-2007) criticizes the history of student retention efforts by suggesting all of the work to retain students fell to the responsibility of student affairs professionals, and that the role of faculty was largely absent in terms of retaining students. Tinto highlighted the importance of involvement inside the classroom to student retention because "…the classroom is, for many students, the one place, perhaps the only place, where they meet each other and faculty. If involvement does not occur

there, it is unlikely to occur elsewhere" (p. 4). Tinto argued faculty involvement is critical to student persistence and suggested more emphasis should be placed on the teacher's role for student engagement.

Teachers' Role in Student Persistence

Professor Keating from the film *Dead Poets Society* engaged in several formal and informal interactions with his students, and in one scene the audience learned how influential he was with one student, Neil Perry, whom he encouraged to pursue his dream of acting, something from which his father had been discouraging him. This anecdote illustrates how teachers can engage with students in such a way that they are motivated to do things they may not have done otherwise. And although anecdotal and fictional, this lesson is supported by empirical research. For instance, Pascarella and Terenzini (1978) found a significant relationship between informal interactions among students and faculty and student academic achievement during the freshman year. It seems as though students just want to be acknowledged and know they are not just another ID number in a database.

Growing up, I was frequently told the most beautiful sound a person could hear is his or her own name. Referring to students by name may carry a greater impact than what most educators realize. Perhaps the moment a college student is hit with the reality of "I'm in college" is when their first class officially begins and the teacher calls attendance. The student's name is made public in this ritual. After responding "here", a student's existence has been officially made public for all other class members. This could be a daunting experience for a first year college student who does not recognize any of his or her classmates. But, calling a student's name as an individual in such a way that shows the teacher actually knows the student should be

uplifting. As one among many immediacy behaviors, "calling students by name" can help motivate persistence.

College students experience several changes during their journey. For some students, faculty and staff are the only people they interact with on a regular basis. In my personal experience of attending a community college for three years, I can certainly relate to primarily interacting with faculty and staff. I worked full time, and I often would leave campus immediately after a class ended so I could go to work, or take night classes because I worked during the day. I was not connected to the college except for my interactions with librarians, student affairs workers, math tutors, and of course teachers. I experienced many changes during that time of my life, and the way I made sense of the world in terms of a particular topic such as history, trigonometry, or biology was largely affected by my interactions with teachers. My teachers contributed to my personal development through their teaching styles, albeit some of my teachers were better than others. These personal connections I had with teachers motivated me to do my best in their classes. Because they related to me at my level, I transitioned from wo*rking on an assignment for my Public Speaking class* to *creating a "Most Embarrassing Moment" speech for Larry's class*. Part of this transition was made possible by my identity moving from "Denham, Jonathan" to "Jonny."

Teachers can have a dramatic influence on the degree to which a student is motivated to do well in class (Christophel, 1990; Christophel & Gorham, 1995; Schreiner et al., 2011). Brophy (1987) states "Student motivation to learn is an acquired competence developed through general experience but stimulated most directly through modeling, communication of expectations, and direct instruction or socialization by significant others (especially parents and teachers)" (p. 40). In my own experience, I have grappled a few times with comprehending

complex ideas; if I was motivated for a particular class, I would "push through" the comprehension of the topic. Indeed, teachers' role in the development of student motivation can and should be an integral component to the classroom learning environment. Christophel (1990) suggested teachers can play a significant role in the degree to which students will "complete" and follow through with various aspects of a classroom environment; furthermore, teachers have the capacity to stimulate the development of motivation within their students. Therefore, colleges ought to hire faculty who will be engaging with their students.

> If one is willing to assume that faculty generally attach substantial value to student behaviors which increase academic achievement and learning (Wallace, 1963, 1967), and that faculty influence on student values and behaviors is enhanced through informal contact beyond the classroom, it would seem to follow that student-faculty interaction is a potentially important influence on achievement. A number of studies tend to confirm this notion, although evidence is not unequivocal (Pascarella, 1985, p. 33).

Schreiner et al. (2011) suggested "Institutions must take the next step to hire faculty and staff who display the characteristics that impact students' ability to succeed and persist" (p. 335). Schreiner et al. interviewed several students who had already persisted into their third semester of college and asked them to identify the person at their college who had the greatest influence on their decision to persist and/or their ability to succeed. The individuals identified by the students were primarily faculty (70%). The researchers then located the faculty to ask them why they felt they were influential. One faculty member was a history professor who makes a goal to learn all of his students' names within the first month of the semester. He said, "Even that small connection is crucial. If I can run into somebody on campus and say, 'Hi Steve' or 'Hi James,' that is a huge difference than if you have a class where you are 1 in 500 people in the classroom and the professor has no idea who you are. I do care…they see me get impassioned about their progress and improvement" (Schreiner et al., p. 326). Another professor said, "Well, I have a good relationship with our students. But I would not have thought necessarily that it would have

manifested itself in retention" (p. 327). I suggest all professors ought to take a similar approach to how they engage with their students. Schreiner et al. referred to faculty as "retention agents" and provided an excerpt from an interview with one particular student: "Neither of my parents went to college, so when I come home and have all these great stories, they think college is the most amazing thing in your life because all the good outweighs the negative. And that's because of the people I'm surrounded with" (pp. 336-337). Through the interviews with the faculty and staff, Schreiner et al. identified several themes concerning behaviors and attitudes that they believe affect student persistence. Some of the themes were: a desire to connect with students; wanting to make a difference in students' lives; possessing a wide variety of personality styles and strengths but being perceived by students as genuine and authentic; and being intentional about connecting personally with students. The results from this study highlight the type of effect that teachers can have on students.

Do all students respond similarly to one teacher? For example, the history teacher with 500 students calls them all by name and engages with them to motivate them to do well, but does it have the same effect on all students? Motivation can occur in other contexts as well. For example, Ken was talking to me the other day about the human body and how all of its muscles work together. We were talking about health, nutrition, fitness, and commitment. Ken is a seasoned personal trainer who owns a local fitness center. I was "pumped" after our conversation and motivated to exercise. I could feel the blood running through my veins after our conversation. I performed twice as many chin-ups that day than I usually do. Tim, my former sales manager, used to give me mini speeches prior to going on sales calls as a way to motivate me. It worked. When I arrived at my destination, I was motivated. I am confident my customers witnessed the effects of Tim's speech. I was *energetic*, *excited* about the possibility of

getting a sale, and *enthusiastic* when talking to my customers about our company's product. Indeed, there appears to be a general trend of people performing better at a task when they are motivated, and academic research seems supportive of this notion (e.g., Skinner & Belmont, 1993). However, just because Ken and Tim motivated me by their communication does not mean everyone is motivated in the same way, and just because some students are highly motivated by their teacher does not mean all students will be motivated. Students who value what their teachers tell them and believe the rewards are worth the costs (such as studying and attending class) may be more likely to persist. The previous sections have been describing external factors as they relate to student behaviors. For instance, the research demonstrates relationships between faculty engagement and institutional commitment as they relate to student persistence. A theoretical framework that can account for actual behavior is Ajzen's Theory of Planned Behavior (1985), which is a useful approach towards understanding and predicting variability of student persistence as a function of a few key factors.

The Theory of Planned Behavior

> "*Being nether capricious nor frivolous, human social behavior can best be described as following along lines of more or less well-formulated plans*" (Ajzen, 1985, p. 11).

A person who intends to run a marathon ought to have the following: a positive attitude towards running a marathon; important family and friends who are supportive; and all necessary factors for training such as good shoes, a good diet, and a training area. At the same time, however, the fact that this person does not live near a good running trail to adequately prepare may affect his or her ability to complete the marathon. These facts illustrate the essential components that are integral to predicting behavior in the Theory of Planned Behavior (TPB). Ajzen's theory suggests that Attitude toward a behavior, Subjective Norm (SN), and Perceived

Behavioral Control (PBC) shape intentions about a behavior, which ultimately have an effect on actual behavior (see Figure 2.1). Ajzen suggests behavioral intentions are often better predictors of attempted behavior than actual behavior. For example, imagine the prospective marathon runner lives in an area where he or she can fully prepare for the race. This person still has a good

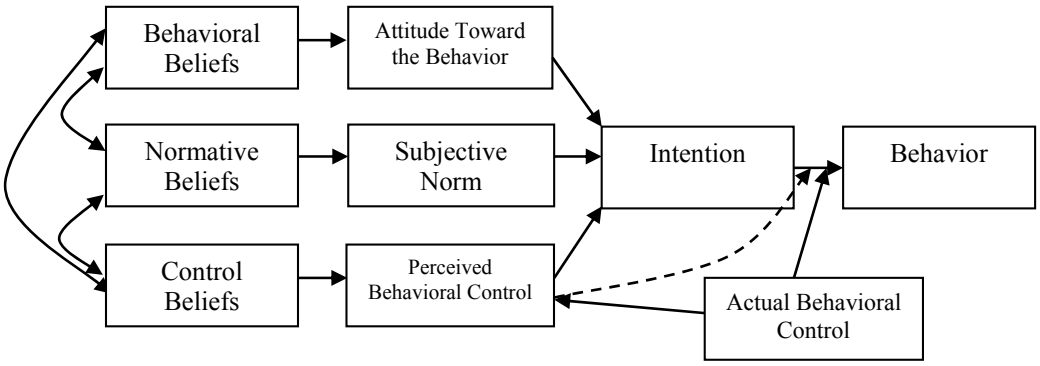

Figure 2.1. *Icek Ajzen's Full TPB Model*

Attitude, a positive SN, and a strong degree of PBC towards completing the marathon, and of course intends to complete it. If he or she collapses after mile 20 and is unable to complete the marathon, then intentions were not a good predictor of actual behavior. Therefore, sometimes it is necessary to look retrospectively at a person's circumstances that either impeded or assisted him or her with the completion of a particular behavior. This part of the chapter will provide an overview of the major components of TPB: Attitude, SN, and PBC as they relate to intentions to perform a behavior as explained by Ajzen (2012).

Attitude toward a Behavior

The degree to which a person positively or negatively values the completion or performance of a behavior is his or her attitude towards the behavior. The evaluation of various outcomes of the performance of a behavior shapes the attitudes towards the behavior. The TPB assumes the evaluation of the outcomes of a behavior is based on a person's readily accessible

behavioral beliefs. A student may or may not have the following beliefs about persistence: "Class attendance is an important part of doing well in college," "Turning assignments in on time is important," "Making a personal connection with my teachers is good for my future," "Paying attention in class is not necessary for performing my best," and "My performance in college does not predict how I will perform in my career." The outcomes for student persistence include: a college degree, high GPA, good letters of recommendation from teachers, and an increase in knowledge. The TPB suggests students' attitude towards persisting in college is a combination of their behavioral beliefs and their evaluation of the outcomes of the behavior.

Subjective Norm

Subjective Norm (SN) refers to the perceived social pressure to engage in a particular behavior, which is assumed to be determined by an individual's normative beliefs. The SN a person has towards a particular behavior such as persisting in college is a function of the normative beliefs held by important people in his or her life such as family, friends, teachers, or coaches. Concerning SN, a student may have the following beliefs about important people in his or her life: "My parents encourage me to do my absolute best as a college student," "My girlfriend/boyfriend does not care whether or not I try my hardest to do well in college," and "My teachers make me feel as though I should be motivated to persist in college." The TPB suggests students' SN towards persisting in college is a function of the strength of each normative belief they have weighted by the motivation to comply with the person in question. For example, if students believe their parents want them to persist in college and they value their parents' opinions, the strength of that normative belief would be stronger than if the person was the admissions counselor at their college whom they do not know very well. Davis, Ajzen, Saunders, and Williams (2002) found that SN had a significant effect on the degree to which

African American students completed high school. Indeed, the normative influence students perceive of others can have a significant effect on whether or not they perform a behavior. The next section briefly reviews additional norms, which can also have an effect on performing a behavior.

Descriptive and Injunctive Norms. Recently, studies have found effects of a more nuanced set of normative motivators on behaviors through *Personal Descriptive* and *Injunctive* norms and *Societal Descriptive* and *Injunctive* norms (Park & Smith, 2007). Descriptive norms refer to beliefs about what is actually done by most people in a group while injunctive norms refer to beliefs about what ought to be done by people in a group (Lapinski & Ramal, 2005). Park and Smith provide distinctions among five norm types concerning the prediction of organ donation behaviors, and what follows is a modification of their examples using student persistence:

> *Subjective* norms: Most people who are important to me think that I should persist in college.
> *Personal descriptive* norms: Most people who are important to me believe that succeeding in college is a good thing.
> *Personal injunctive* norms: Most people whose opinion I value would endorse my commitment to persisting in college.
> *Societal descriptive* norms: A majority of people in the United States have attempted to complete college.
> *Societal injunctive* norms: A majority of people in the United States endorse the idea of students persisting in college.

Park and Smith found that all five norm types had an effect on the behavior of talking about organ donation. Indeed, individuals' perceptions of normative beliefs have an effect on the likelihood of performing a particular behavior. In addition to SN having an influence on a student's behavior, the degree to which students persist in college may also be a function of descriptive and injunctive norms. If people are influenced to perform certain behaviors by what they perceive is normative in terms of their peers, people they trust, and most individuals in

society, my question is why? For example, if students believe their teachers want them to do well, and the students value their teachers' opinions, why does that influence students? The following sections address some explanations for why students might be influenced to persist in college as a function of their perceptions of their teachers.

Approach-Avoidance. Russell and Mehrabian (1978) suggested people approach things they like and avoid things they do not like. Russell and Mehrabian proposed *pleasure* and *arousal* as the basic dimensions of emotion, which influence the likelihood of people approaching and affiliating in particular environments. Russell and Mehrabian are primarily discussing what attracts people towards environments and what keeps them there. In general, people approach pleasant settings more than unpleasant ones. A pleasant setting enhances affiliation, defined as any verbally or nonverbally expressed approach behavior toward another person. Arousal also determines how people approach a setting. Specifically, people tend to prefer moderately arousing settings and tend to avoid the highly arousing or unarousing ones. For instance, it is plausible to suggest students are more likely to go to a class with an engaging instructor who is not excessive in his or her behaviors and less likely to go to class with a teacher who is completely non-engaging. Higher levels of arousal were preferred in pleasant settings. Indeed, the preferred level of arousal was positively correlated with the amount of pleasure experienced (e.g., Rester & Edwards, 2007). From this, I suggest students are more likely to approach classes with engaging instructors, so long as they have a pleasurable experience. Brophy (1987) suggests teachers are not just in a position of reacting to student behavior, but rather are *active socialization agents* who are capable of influencing a student's propensity to develop a motivation to learn. Teachers have the capacity to influence student behaviors towards persisting in college. It seems plausible to suggest that students who like their teachers and who

like going to class are more likely to comply with a teacher's request, which can be further explained by The Pygmalion Effect.

Pygmalion. Part of the reason students may have a positive experience attending class could be a function of their teacher. Students are more likely to hold stronger normative beliefs if they perceive their teachers want them to do well. One explanation for how students may believe their teachers have a strong desire for them to do well in college is The Pygmalion Effect, which suggests that students tend to perform better in class when they perceive a greater expectation placed on them by their teachers (Rosenthal & Jacobson, 1968). Rosenthal and Jacobson commented on why they think the students from their study performed greater as a function of the high expectations of teachers, "Teachers may have treated their children in a more pleasant, friendly, and encouraging fashion when they expected greater intellectual gains of them. Such behavior has been shown to improve intellectual performance, probably by its favorable effect on pupil motivation" (p. 180). Indeed, positive teacher behaviors can have a significant effect on student outcomes.

Perceived Behavioral Control

Perceived behavioral control (PBC) refers to individuals' perceptions of their ability to perform a behavior, which is a function of the combined total of their control beliefs. Control beliefs have to do with individuals' perceptions of factors that may facilitate or impede the performance of a behavior. A college student may intend to persist in college; however, his or her perception of the ability to successfully persist is subject to the degree of control over the behavior. The strength of each control belief is weighted by the perceived power of each control factor. Consider a student's class attendance. A student might have the following beliefs: "I plan to attend class so I learn what I need," "I will leave my house early to get to class on time,"

and "I will not schedule other activities that may interfere with my classes." The power of these control beliefs could be assessed by, "Not attending class regularly will make it difficult to learn and comprehend the material needed to succeed in class." Students may believe a variety of things concerning the factors that impede or facilitate the performance of a behavior; however, students cannot always foresee circumstances that would impede the performance of particular behaviors. A variety of things can happen that would impede the behavior of persisting in class concerning the control factor of class attendance, such as: the student's car breaks down and is unable to find reliable transportation to school, or the student develops a severe illness that prevents him/her from attending class for several weeks.

Intention

Finally, a person's intention is assumed to be the immediate antecedent of a particular behavior (Ajzen, 2012) and is measured by a person's Attitude, SN, and PBC concerning the behavior. As the strength of each predictor increases, the strength of the intention increases, thus making it more likely for a person to actually perform the behavior. However, Intention is still subject to Actual Behavioral Control.

Actual Behavioral Control

Within the framework of the TPB, there are several factors that can inhibit the degree to which a person will perform a given behavior despite a person's intentions to perform the behavior (Ajzen, 2012). Actual Behavioral Control (ABC) deals with whether or a person has the skills, resources, and anything else needed to perform a particular behavior. Perhaps a student is motivated to persist in class, but if factors are present that prevent the student from persisting, he or she will not perform the behavior. Consider the student whose car breaks down. Initially, this student perceives class attendance is within his or her control because he or she

commits to waking up on time and leaving the house early. However, ABC can explain why this student fails to persist in class after the loss of a necessary resource, such as transportation or money. Indeed, the TPB can do a good job of accounting for variability concerning individuals' intentions to perform behaviors and actual performance of those behaviors by considering Attitude, SN, PBC, Intention, and ABC.

There are a variety of general and specific prosocial behaviors teachers can engage in that have positive outcomes for students. For example, Wanzer and Frymier (1999) found that students have increased perceptions of learning when they have teachers with a high humor orientation. Sidelinger and McCroskey (1997) found that students evaluate teachers with high levels of clarity more positively than their less clear counterparts, which suggests clear teaching contributes to a successful instructional environment. Students report being more motivated when they perceive that their teachers genuinely care about them (Comadena, Hunt, & Simonds, 2007). Teachers can engage in a variety of behaviors to contribute to positive student outcomes, and this dissertation focuses on teacher immediacy. The next section of this chapter provides an explanation of how teacher immediacy can influence the components of the TPB to account for variability in student persistence.

Teacher Immediacy and Student Persistence

I had a student a while back whose mother was recovering from breast cancer. Because her dad would not pay child support or alimony, her mom had very little money; so this student had to work extra shifts at her job to pay for the chemotherapy treatment. Additionally, she had to drive her mom to receive treatment a couple of times per week, which caused her to miss several classes. I believe my student had a positive attitude towards persisting in my class, and I also believe she valued the expectations I had for her performance (SN). She did good work and

was well spoken; however, things happened over which she did not have a high degree of control (PBC), and thus she struggled to perform at an optimal level in class. The TPB helps to explain this student's performance; that is, because she had a low level of control over her situation, she did not persist well. She missed several classes and assignments. Towards the end of the term, I had a couple of long conversations with her encouraging her to try her hardest, and I told her I would allow some makeup work. Her performance on the final exam and her makeup work was a significant improvement from her other work, and I believe part of the explanation for the improvement was a function of the normative influence from my conversations with her. I believe SN had a significant effect on her improved performance. I would like to believe my student considered me an effective teacher. Norton and Nussbaum (1980) suggested effective teachers are doing something qualitatively different in terms of dramatic style compared to ineffective teachers. Perhaps the specific behaviors I engaged in contributed to my effective teaching style. Although this example with my student might seem uncommon, I predict there are several students who experience a similar life situation whose performance in a course can be significantly affected by their teachers. Indeed, as illustrated through my own personal example, teachers' prosocial behaviors can have a positive impact on student behavior. This chapter has reviewed a variety of factors that can account for student persistence; however, there are no studies that explain how communication behaviors can account for student persistence. So, how can teachers' level of immediacy influence students to persist in college?

According to Mehrabian's (1971) immediacy principle, people are drawn towards things and people they like and avoid things and people they dislike. The immediacy metaphor provides a framework for individuals to interpret and infer meaning from communication behaviors. Immediacy can be defined as the degree to which communication behaviors enhance

physical and psychological closeness to another individual through touching, body orientation, proximity, eye gaze, smiling, facial expressions, gestures, tone of voice, using personal examples, using humor, and calling others by name (Andersen, 1979; Gorham, 1988; Mehrabian, 1969; 1971). Witt et al. (2006) suggested the reasons why and how TI works is grounded in approach-avoidance theory, which suggests that people approach things they like and avoid things they do not like (Russell & Mehrabian, 1978). Or, one might suggest students persist when they like the teacher. However, Witt et al. posit an empirical question that has yet to be answered, which deals with the long-term implications of students exposed to teachers who engage in immediacy behaviors throughout the course of their college experience.

Considering Approach-Avoidance, The Pygmalion Effect, the immediacy metaphor and TPB, the more immediate teachers are with their students, the more students will like them and be more motivated to comply with their requests, such as coming to class, paying attention, and practicing a speech several days in advance instead of the night before. Students who have normative beliefs concerning their teachers' desire for them to learn, and who also value what their teachers say are more likely to be motivated to learn, according to the TPB. However, the focus for this dissertation is on persistence and predicts TI will influence persistence through the components of the TPB.

The teacher's role in motivating their students to do well in college as a function of their communication behaviors is absolutely fascinating to me. I am perplexed as to why so many students go through the entire process of applying to college, enrolling in courses, buying books, going to class, taking tests, making sacrifices, and yet fail to graduate with a degree. A report from the Chronicle of Higher Education showed that the six year graduation in most American states is only 40% - 65%. It is possible that TI could be the answer to the million dollar question

of what makes students persist. But how does TI influence persistence? I propose a set of research questions to answer in my two studies.

RQ1: How does teacher immediacy influence the components of the Theory of Planned Behavior in the prediction of students' intentions to persist in college?

RQ2: In what ways does the Theory of Planned Behavior do a good job of accounting for variability in student persistence behavior?

RQ3: How do perceptions of teacher immediacy change over the course of an academic semester?

Conclusion

Researchers unanimously agree that teachers who engage in prosocial behaviors such as immediacy can have a dramatically positive effect on student's desire for motivation to learn (Brophy, 1987; Friedman & Mandel, 2011-2012; Pascarella & Terenzini, 2005; Schreiner et al., 2011; and Wheeless et al., 2011). Students experience a lot of change while in college (Pascarella & Terenzini, 2005), and their teachers can be incredible sources of support. Teachers who engage in immediacy behaviors can motivate students to persist in college (Christophel & Gorham, 1995), and the more motivated students are towards persistence in college the more likely they are to graduate with some type of college degree. The Theory of Planned Behavior (TPB) is a useful theoretical framework to help understand human behavior, and its application to student persistence is appropriate. The TPB combines individuals' attitudes toward a behavior, their subjective norm in terms of the social pressure they perceive to perform the behavior, and their perceived control over performing the behavior, which leads to their overall intention to perform the particular behavior. Irrespective of accounting for Attitude, SN, or PBC, I expect to find significant relationships for TI on students' intentions to persist. What the TPB

can do for my dissertation is account for any unique effect for student persistence that is attributable to students' Attitudes, SN, and PBC regarding their teachers. The most significant contribution this dissertation offers is exploring how TI and persistence change over the course of an academic semester in Study 2 (see Chapter 4).

CHAPTER 3

STUDY ONE

Whether teacher behaviors influence student outcomes has been an interest of communication scholars for decades. Key among the findings is that actual teacher behaviors are consistently linked with student motivation and persistence. Largely missing from this literature, however, are studies that attempt to uncover theoretical mechanisms thought to drive the association between what teachers do and whether students are motivated to persist. A recent study by Wheeless, Witt, Maresh, Bryand, and Schrodt (2011) suggested the Theory of Planned Behavior (TPB) as a viable framework for better understanding the teacher immediacy-persistence link; yet, that study stopped short of fully testing the model. The purpose of this chapter is to provide an initial test of the TPB in the prediction of student persistence. After I review the literature relevant to deducing the central hypotheses of interest, the methods and results of the primary study are detailed followed by an explanation of the results found from all statistical procedures. The chapter concludes by discussing limitations, some of which are addressed by a subsequent study presented in Chapter 4.

Student Persistence: Why Some Students Fail and Others Prevail

Student persistence is an important topic that concerns those who have a vested interest in promoting college and university graduation rates including college staff (Kuh, 2009), the US Department of Education (Horn & Carroll, 2004), and teachers (Wheeless et al., 2011). In recent years, persistence has been primarily addressed through student affairs and freshman programs that can encourage student involvement, an important contributor to persistence. Tinto (2006-2007) criticized student retention efforts, however, because the role of faculty is largely absent.

Tinto argued faculty involvement is critical to student persistence and suggested more emphasis should be placed on the teacher's role for student engagement. Indeed, Tinto suggested the focus of student persistence research should target the relationship between teachers and students, which matters most during a student's first year in college.

Teachers' Role in Student Persistence

Pascarella and Terenzini (1978) found a significant relationship between informal interactions among students and faculty and student academic achievements during the freshman year. College students seem to have a desire to be acknowledged and know they are not just another "ID number" in the eyes of a database. College students experience several changes during their journey, and for some students, faculty and staff are the only individuals with whom they interact on a regular basis. Indeed, teachers can have a significant influence on the degree to which a student is motivated to do well in class (Christophel, 1990; Christophel & Gorham, 1995; Schreiner, Anderson, Noel, & Cantwell, 2011). Brophy (1987) states that "[student] motivation to learn is an acquired competence developed through general experience but stimulated most directly through modeling, communication of expectations, and direct instruction or socialization by significant others (especially parents and teachers)" (p. 40). Teachers' roles in the development of student motivation can and should be an integral component to the classroom learning environment. Christophel (1990) suggested teachers can play a significant role in the degree to which students will follow through with various aspects of their education. Therefore, colleges ought to hire faculty who will be engaging with their students. To wit, Schreiner et al. (2011) found that 70% of students from their study reported faculty members as the greatest influence on their decision to persist in college leading these authors to refer to faculty as "retention agents" (p. 336).

The vital role played by teachers to student motivation to persist in college is highlighted in communication research by findings showing several general and specific prosocial behaviors teachers can enact that have positive outcomes for students. For example, Wanzer and Frymier (1999) found that student perceptions of learning increase as a function of teachers' humor orientation. Sidelinger and McCroskey (1997) found that students evaluate teachers with high levels of clarity more positively than their less clear counterparts, which suggests clear teaching contributes to a successful instructional environment. Perhaps most influential, however, is a set of behaviors referred to as teacher immediacy.

Teacher Immediacy and Student Persistence

Teacher immediacy (TI) is the degree to which the communication behaviors of a teacher signal physical and psychological closeness to students. The behaviors most thoroughly studied in this regard include touching, body orientation, proximity, eye gaze, smiling, facial expressions, gestures, tone of voice, using personal examples, using humor, and calling others by name (Andersen, 1979; Gorham, 1988; Mehrabian, 1969; 1971). In their meta-analyses of TI studies, Witt, Wheeless, and Allen (2004; 2006) found a high correlation between TI and both affective and behavioral learning; furthermore, most immediacy studies report positive relationships between TI and student outcomes like class attendance, paying attention, taking notes, and interacting with the teacher. Recently, Witt, Schrodt, Wheeless, and Bryand (2014) reported TI behaviors are positively related to students' intentions to persist. Therefore:

H1: Teacher immediacy is positively associated with college students' intention to persist.

While copious research documents the positive role TI plays on student motivation (e.g., Christophel, 1990), very little of this research seeks a theoretical explanation for this relationship. Wheeless et al. (2011) suggested one such theoretical explanation in the Theory of

Planned Behavior (TPB), which posits the intention to perform a behavior is the immediate antecedent of actual behavior (Ajzen, (1985). While Wheeless et al. supported their argument for teachers' prosocial behaviors having a positive effect on college students' intentions to persist, their study fell short of fully testing the TPB. In addition, that study did not measure actual persistence, or the degree to which college students will stay in school and continue enrolling in classes until finished. This study, therefore, seeks to fill this gap in the literature on teacher immediacy and student persistence.

The Theory of Planned Behavior

> *"Being nether capricious nor frivolous, human social behavior can best be described as following along lines of more or less well-formulated plans" (Ajzen, 1985, p. 11).*

Ajzen's (1985; 2012) Theory of Planned Behavior (TPB) suggests that Attitude toward a behavior, Subjective Norm (SN), and Perceived Behavioral Control (PBC) shape intentions about a behavior, which ultimately have an effect on actual behavior (see Figure 3.1). This part of the chapter will provide an overview of the major components of the TPB (Attitude, SN, and PBC) as they relate to intentions to perform a behavior.

Attitude toward a Behavior

The degree to which a person positively or negatively values the completion or performance of a behavior is his or her attitude towards the behavior. The evaluation of various

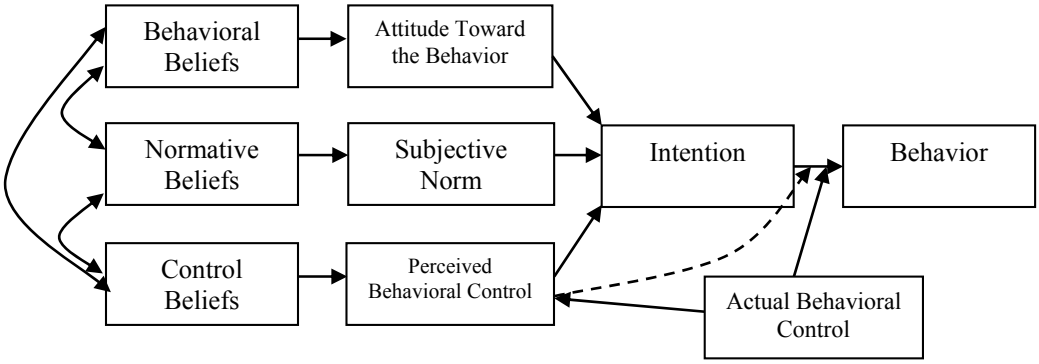

Figure 3.1. *Icek Ajzen's Full TPB Model*

outcomes of the performance of a behavior shapes the attitudes towards the behavior. The TPB assumes the evaluation of the outcomes of a behavior is based on a person's readily accessible behavioral beliefs. For example, a student may have the following beliefs about persistence: "Class attendance is an important part of doing well in college," "Turning assignments in on time is important," and "Paying attention in class is not necessary for performing my best." The outcomes for student persistence include: a college degree, high GPA, good letters of recommendation from teachers, and an increase in knowledge. The TPB suggests students' attitude towards persisting in college is a combination of their behavioral beliefs and their evaluation of the outcomes of the behavior. Therefore,

H2: Attitude toward persistence is positively associated with intentions to persist in college.

Subjective Norm

Subjective Norm (SN) refers to the perceived social pressure to engage in a particular behavior, which is assumed to be determined by an individual's normative beliefs. The SN a person has towards a particular behavior such as persisting in college is a function of normative beliefs – what he or she believes important people such as family, friends, and educators think

about the behavior under question. Concerning SN, a student may have the following beliefs about important people in his or her life: "My parents encourage me to do my absolute best as a college student," "My girlfriend/boyfriend does not care whether or not I try my hardest to do well in college," and "My teachers make me feel as though I should be motivated to persist in college." The TPB suggests students' SN towards persisting in college is a function of the strength of each normative belief they have weighed by the motivation to comply with the person in question. For example, if a student believes her parents want her to persist in college and she values her parents' opinions, the strength of that normative belief would be stronger than if the person was the admissions counselor at the college whom the student does not know very well. Indeed, the normative influence students perceive of others can have a significant effect on whether or not they perform a behavior (Davis, Ajzen, Saunders, & Williams, 2002). Thus,

H3: SN towards persistence is positively associated with students' intention to persist in college.

Perceived Behavioral Control

The last component of the TPB is perceived behavioral control (PBC), which refers to individuals' perceptions of their ability to perform a behavior. In particular, PBC is a function of the combined total of an individual's control beliefs. Control beliefs have to do with perceptions of factors that may facilitate or impede the performance of a behavior. A college student may intend to persist in college; however, his or her perception of the ability to successfully persist is subject to the degree of control over the behavior. The strength of each control belief is weighted by the perceived power of each control factor. A student might have the following beliefs: "I plan to enroll in classes until I graduate so I can get a job," "I am able to enroll in classes next semester," and "I will not schedule other activities that may interfere with my enrolling in classes next semester." The power of these control beliefs could be assessed by, for

instance, “Not enrolling in classes every semester will make it difficult to obtain a career.” Students may believe a variety of things concerning the factors that impede or facilitate the performance of a behavior; however, students cannot always foresee circumstances that impede the performance of particular behaviors. A variety of things can happen that might impede the behavior of persisting, such as: the student’s car breaks down and is unable to find reliable transportation to school, or the student develops a severe illness that prevents him/her from attending class for several weeks. Therefore,

H4: PBC towards persistence is positively associated with students’ intention to persist in school.

Behavioral Intention and Actual Behavior

A person’s intention is assumed to be the immediate antecedent of a particular behavior (Ajzen, 2012) and is a function of a person’s Attitude, SN, and PBC concerning the behavior. As the strength of each predictor increases, the strength of the intention increases, thus making it more likely for a person to actually perform the behavior.

H5: Intention to persist in school is positively associated with student reenrollment.

Actual Behavioral Control

Within the framework of the TPB (Ajzen, 1985), there are several factors that can inhibit the degree to which a person will perform a given behavior despite a person’s intentions to perform the behavior (Ajzen, 2012). Actual Behavioral Control (ABC) deals with whether a person has the skills, resources, and anything else needed to perform a particular behavior. Even if a student is motivated to persist, if factors are present that prevent the student from persisting, he or she will not perform the behavior. Consider the student whose car breaks down. Initially, this student perceives persistence is within his or her control because he or she commits to attending every class. However, ABC can explain why this student fails to persist after the loss

of the necessary transportation resource. Indeed, the TPB can account for variability concerning individuals' intentions to perform behaviors and actual performance of those behaviors by adding to Attitude, Subjective Norm, and Perceived Behavioral Control, the degree of Actual Behavioral Control involved.

H6: ABC is positively associated with student reenrollment.

The studies reviewed above suggest a significant relationship between teacher immediacy and positive student outcomes, and the review of literature on the TPB suggests student persistence can be accurately measured as a function of attitudes toward persistence, the normative influence to persist in college, and the degree of behavioral control (perceived and actual) over which an individual can persist in college. There are indeed a variety of behaviors students should perform to persist in college, such as studying for exams, completing homework, and of course attending class. Rocca (2004) pointed out that most college student attendance literature has focused on variables that exclude the role of the teacher, such as paying for school, using drugs, or conflicts with class meeting times. Rocca found that students who perceived their teachers as highly immediate were more likely to attend class. Student participants from the Wheeless et al. study who perceived their teachers engaging in immediacy behaviors were more likely to report an intention to persist in college. If the TPB accurately predicts behaviors and teacher immediacy has positive associations with attitudes and behaviors, then it stands to reason that teacher immediacy can somehow influence the relationship between the TPB and student persistence. Indeed, this study seeks to fully test all components of the TPB to account for variability in students' intentions to persist in college from a communication perspective, which leads to my primary research question:

RQ: How does teacher immediacy influence the components of the Theory of Planned Behavior in the prediction of students' intentions to persist in college?

Method

Participants

Data were collected through an online survey via Qualtrics® survey software. The survey was completed by 462 participants (323 female, 139 male) who reported a mean age of 18.66 (*SD* = .57) and self-reported as primarily White (*n* = 370). All participants were in their

Table 3.1. *Demographic Information for All Participants (N = 462)*

Item	Frequency	Percent	Mean	Mode	*SD*
Age			18.66	19	.573
Biological Sex					
-Male	139	30.1			
-Female	323	69.9			
Year					
-Freshman	401	86.6			
-Sophomore	56	12.1			
-Junior	3	.6			
-Senior	0	0			
-Graduate Student	1	.2			
-Non-degree seeking	1	.2			
Identity					
-Black	63	13.6			
-Asian	20	4.3			
-Caucasian/White	370	80.1			
-Chicano/a	2	.4			
-Hispanic	25	5.4			
-Latino/a	9	1.9			
-Native American	9	1.9			
-Pacific Islander	1	.2			
-Other	3	.6			
Academic Concentration					
-Agriculture	23	5.0			
-Art/Design	14	3.0			
-Basic Sciences	87	18.8			
-Business	72	15.6			
-Coast & Environment	4	.9			

Table 3.1 (con't)

-Communication	39	8.4
-Education	28	6.1
-Engineering	69	14.9
-Humanities/Social Sciences	88	19.0
-Liberal Arts	8	1.7
-Music/Dramatic Arts	9	1.9
-Social Work	5	1.1
-Veterinary Medicine	13	2.8
-Other	56	12.1

first year at LSU and were classified as freshmen. The most common academic concentration of the participants was Humanities/Social Sciences (n = 88) followed by Basic Sciences (n = 87). Full demographic information for all study participants is found in Table 3.1.

Procedures

A list of all first-year students and their email addresses was obtained from the University Registrar. An invitation email was sent to these 5,165 students towards the end of the Spring Semester 2013 that explained the purpose of the study and included one of four links to a secure URL. That is, there were four groups of 1,291 students, and each email was sent out three times to each group to promote a greater response rate. There were a total of 462 responses by the time the second email was sent, which was two weeks later, and a total of 733 responses by the time the third email was sent, which was also two weeks later. There were a total of 831 responses at the close of the survey, which is a 16% response rate. After the close of the survey, there were 462 usable observations (8.9%) due to missing data from several participants.

Measures

Teacher Immediacy. Most teacher immediacy (TI) studies ask participants to assess teacher behaviors in reference to the instructor they had in the class that just met, the one prior to the time they are taking the survey (e.g., Wheeless et al., 2011). Participants who assess the

behaviors of a teacher in a prior class could be assessing teachers of various levels of effectiveness making it unclear what type of teacher participants generally assess in most TI studies. Moreover, the concern of this study was with teachers as a general class of normative influence on student persistence. Thus, several measurement methods were used to ascertain whether the reliability and predictive power of the TI scale changes as a function of the instructions to participants.

Instruction prompts of the TI scale were manipulated to create four conditions (see Appendix A). Additionally, I wanted to know what effect if any the prompt of the TI scale has on the factor structure for each scale and also the effect of immediacy on student persistence. Each of the 5,165 emails included a randomly assigned link that corresponded to one of the four conditions through a mechanism available in the survey software.

Participants completed modified versions of the 30-item immediacy scale from Gorham (1988), which uses 7-point Likert response scaling to assess the perception of the frequency to which teachers engage in a variety of verbal and nonverbal immediacy behaviors (see Appendix B). All items were randomized for each participant. Internal consistency estimates were adequate for each version of the scale (see Table 3.2). Instructions for each version of the questionnaire are found in Appendix A.

Because the TI scale is reported as producing a single dimension for both verbal and nonverbal components, as a general data reduction technique, all TI scale items were submitted initially to two separate principle components analyses (one for the verbal items and the other for the nonverbal items) with orthogonal (Varimax) rotation (Tabachnik & Fidell, 2007). The solution for the verbal items suggested three components that explained 56.97% of the item variance, and the solution for the nonverbal items suggested two components that explained 52%

of the item variance. To identify problematic items, each rotated component matrix was analyzed separately for items with a primary loading no less than .50 and secondary loadings no greater than .30. After inspecting the 13 verbal items with three shared components and the eight nonverbal items with two shared components, this still resulted in a 21-item TI scale. Some of the items for each component did not seem to possess a qualitatively significant difference. For example, the first component for the verbal items shared the following scale items: "Uses humor in class.", "Refers to class as 'our' class or what 'we' are doing.", and "Asks how students feel about an assignment, due date, or discussion topic." The aforementioned scale items do not seem to represent any kind of distinct thematic component for verbal immediacy. Thus, to create a more psychometrically appealing scale (and one that could be utilized in the study presented in Chapter 4), I submitted all 30 items to ALPHAMAX (Hayes, 2005). The ALPHAMAX for the verbal items resulted in a six-item scale with an alpha reliability of .846 and a correlation of .861 to the original scale. The ALPHAMAX for the nonverbal items resulted in a six-item scale with an alpha reliability of .866 and a correlation of .911 to the original scale. The resulting scale contains 12 items (see Appendix C).

Table 3.2. *Alpha Reliability Estimates for Teacher Immediacy (TI) Scale*

30-item TI scale		**12-item TI Scale**	
Conditions	**α**	**Conditions**	**α**
All	.91	All	.92
1	.89	1	.91
2	.87	2	.88
3	.93	3	.93
4	.85	4	.87

The purpose for employing an ALPHAMAX for both verbal and nonverbal items is that these items differ qualitatively, albeit they still measure a single construct, teacher immediacy. Mehrabian's (1971) notion of immediacy involves a person engaging in behaviors to signal psychological and physical closeness, which involves both verbal and nonverbal behaviors. For example, *Gets into conversations with individual students before or after class* (Verbal) is similar to *Looks at students when talking to them* (Nonverbal) in terms of signaling psychological and physical closeness. Witt et al. (2004) report several studies that demonstrate significant relationships between student outcomes and both verbal and nonverbal immediacy. Although the six verbal items differ from the six nonverbal items in the resulting scale for this study, they are both still measuring one construct, teacher immediacy. For this study, the set of the verbal items is significantly and positively associated with the set of nonverbal items, $r = .83$, $p = .000$, $N = 462$.

Table 3.3. *Model Fit Statistics for Measurement of Teacher Immediacy in Each Condition*

Fit Statistic	**Condition 1**	**Condition 2**	**Condition 3**	**Condition 4**
Chi-Square (df)	χ^2 (54) = 98.367	χ^2 (54) = 99.245	χ^2 (54) = 94.214	χ^2 (54) = 95.549
p-value	< .001	< .001	< .001	< .001
CFI	.94	.91	.94	.91
RMSEA	.08	.09	.09	.08
(90% CI)	(.05, .10)	(.06, .11)	(.06, .12)	(.05, .11)

To ensure equivalent measurement models across the four conditions of the TI scale, four confirmatory factor analyses were performed. The resulting 12-item model fit in all four conditions (see Table 3.3). In order to assess model equivalency for each condition, I employed multigroup confirmatory factor analytic procedures and tested for *configural* invariance (same

factor structure holds across groups) and *metric* invariance (factor loadings are equal across groups). Establishing this type of invariance – often labeled *weak* invariance – basically suggests that the factor structure is equivalent across administrations (Byrne, 2010; Little, 1997). As seen in Table 3.4, configural invariance was met, and the model did not substantively change when the measurement weight restrictions were added (ΔCFI = .01; $\Delta \chi^2$ (33) = 45.6). Irrespective of the prompt language of the teacher immediacy scale, the factor structure works equally well across each condition.

Table 3.4. *Model Fit Statistics for Measurement Invariance Analyses, Teacher Immediacy*

	Weak Invariance	
Fit Statistic	**Configural**	**Measurement Weights**
Chi-Square (df)	χ^2 (216) = 387.460	χ^2 (249) = 433.079
p-value	< .001	< .001
CFI	.93	.92
RMSEA	.04	.04
(90% CI)	(.04, .05)	(.03, .05)

TPB. All participants in each condition completed the same scale items to assess Attitude, SN, PBC, and Intention. All items were modeled after Ajzen's TPB questionnaire construction (Fishbein & Ajzen, 2010). Each component of the TPB contained between 2 and 3 items to assess participants' dispositions towards *enrolling in courses* (see Appendix D). Internal consistency estimates were adequate for the 3 scales in each condition (see Table 3.5).

To ensure equivalent measurement models across the four survey conditions, four confirmatory factor analyses were performed. With four factors and 10 items, the model did not fit in any of the conditions due to two poor-fitting items from PBC. When these items were

omitted from the PBC scale (leaving a single PBC item), the model only fit in condition 1, χ^2 (11) = 40.059, $p < .001$, CFI = .953, RMSEA = .138 (.094, .186). Due to the SN and Intention

Table 3.5. *Alpha Reliability Estimates for All Components in the TPB*

Attitude		**SN**		**PBC**		**Intention**	
Conditions	**α**	**Conditions**	**α**	**Conditions**	**α**	**Conditions**	**α**
All	.84	All	.83	All	.44	All	.93
1	.84	1	.84	1	.37	1	.95
2	.78	2	.87	2	.48	2	.91
3	.85	3	.72	3	.27	3	.89
4	.86	4	.85	4	.56	4	.94

Table 3.6. *Model Fit Statistics for Measurement Invariance Analyses, the TPB Factors*

		Weak Invariance
Fit Statistic	**Configural**	**Measurement Weights**
Chi-Square (df)	χ^2 (44) = 93.654	χ^2 (56) = 115.270
p-value	< .001	< .001
CFI	.972	.966
RMSEA	.050	.048
(90% CI)	(.036, .064)	(.036, .061)
With PBC		
Chi-Square (df)	χ^2 (116) = 391.943	χ^2 (134) = 430.973
p-value	< .001	< .001
CFI	.884	.876
RMSEA	.072	.070
(90% CI)	(.064, .080)	(.062, .077)

factors only having 2 items, and having smaller sample sizes when assessing conditions separately, the TPB model in conditions 2, 3, 4 produced negative variances on the SN and Intention factors, which is a Heywood case (Kenny & Kashy, 1992). Kolenikov and Bollen (2012) explain that "Heywood cases" are negative estimates of variances greater than or equal to one, which are a common occurrence in factor analysis and structural equation models. There are a variety of causes and treatments for Heywood cases; however, I was unable to ascertain the exact reasons for Heywood cases in my analyses and thus unable to treat them.

In order to assess model equivalency for each condition, I employed multigroup confirmatory factor analytic procedures as described above for TI. As seen in Table 3.6, configural invariance was met, and the model did not substantively change when the measurement weight restrictions were added. Table 3.6 also shows the improvement in model fit after removing the PBC factor. Irrespective of the language of the TI scale, the factor structure of the TPB works equally well across each condition after removing PBC.

Reenrollment. To ascertain which students from this study (Spring 2013) reenrolled in courses for the following semester (Fall 2013), I contacted the University Registrar and obtained a list of all students from the Spring 2013 semester who were enrolled during the Fall 2013 semester. Then, I crosschecked all students in Study 1 (Spring 2013) who did not appear in the list of enrolled students for Fall 2013. This provided me with a measure of actual behavior. There were 44 students (9.5%) from Study 1 who did not reenroll for courses in the following semester.

Results

With $N = 462$ and alpha set at .05, power to detect small effects ($r = .10$) was .70 and above .99 for detecting medium (.30) and large (.50) effects. For Condition 1 with $N = 139$ and

alpha set at .05, power to detect small effects (r = .10) was .32; it was .98 for medium effects (.30); and it was above .99 for detecting large (.50) effects. For Condition 2 with N = 115 and alpha set at .05, power to detect small effects (r = .10) was .28; it was .95 for medium effects (.30); and it was above .99 for detecting large (.50) effects. For Condition 3 with N = 88 and alpha set at .05, power to detect small effects (r = .10) was .24; it was .89 for medium effects (.30); and it was above .99 for detecting large (.50) effects. For Condition 4 with N = 120 and alpha set at .05, power to detect small effects (r = .10) was .29; it was .96 for medium effects (.30); and it was above .99 for detecting large (.50) effects.

H1 stated TI is positively associated with college students' intention to persist. The overall association between TI and college students' intention to persist, r = .12, p = .011, helps support this prediction. Table 3.7 shows correlations of observed variables in all conditions combined. However, while assessing the effect of the condition, the association between TI and college students' intention to persist is only significant in condition 2 (*consider the most effective teacher*), r = .39 p < .001, N = 115. Table 3.8 provides all correlations of observed variables separated by condition, which suggests the way TI is measured seems to influence the TI-persistence link.

H2 stated Attitude toward persistence is positively associated with intentions to persist in school. The overall association between Attitude toward persistence and college students' intention to persist, r = .32, p < .001, supports this prediction. Z-scores were computed to determine any differences among the r values in each condition. Although the correlation between attitude and intention is significant in each condition (see Table 3.8), the r value in condition 3 (r = .42) is different from condition 2 (r = .25) (Z = 2.91, p < .01). Condition 3 asks

participants to consider their *least effective* teacher; however, it is unclear why the r value would be significantly different than the other conditions.

Table 3.7. *Correlations of Observed Variables in all Conditions Combined (N = 462)*

	TI	ATT	SN	PBC	INT	REN
TI	1					
ATT	.16**	1				
SN	.11*	.29***	1			
PBC	.08	.28***	.21***	1		
INT	.12*	.32***	.28***	.71***	1	
REN	.09*	.16***	.21***	.27***	.43***	1

Note: TI = Teacher Immediacy; ATT = Attitude; SN = Subjective Norm; PBC = Perceived Behavioral Control; INT = Intention; REN = Reenrollment.
Two tailed significance, *$p < .05$; **$p<.01$; ***$p<.001$.

H3 stated SN towards enrolling in courses is positively associated with students' intention to persist in school. The overall association between SN toward persistence and college students' intention to persist, $r = .28$, $p < .001$, supports this prediction. However, while assessing the effect of the condition, the association between SN and college students' intention to persist was variable (see Table 3.8 below). Z-scores were computed to determine any differences among the r values in each condition. Although the correlation between SN and intention is significant in conditions 1, 2, and 4 (see Table 3.8), the r value in condition 1 ($r = .45$) is different from condition 2 ($r = .23$) ($Z = 3.80$, $p < .001$) and condition 4 ($r = .22$) ($Z = 3.95$, $p <.001$). Condition 1 asks participants to consider the teacher they had in the *prior class*; however, it is unclear why the r value would be significantly different than the other conditions. H4 stated PBC towards persistence is positively associated with students' intention to persist in school. The overall association between PBC toward enrolling in courses and college students'

intention to persist, $r = .71$, $p = .000$, helps support hypothesis four. Z-scores were computed to determine any differences among the r values in each condition. Although the correlation between PBC and intention is significant in each condition (see Table 3.8), the r value in condition 4 ($r = .78$) is different from condition 1 ($r = .68$) ($Z = 3.28$, $p = .001$) and condition 2 ($r = .67$) ($Z = 3.55$, $p < .001$). Additionally, the r value in condition 3 ($r = .74$) is different from condition 2 ($r = .67$) ($Z = 2.12$, $p < .05$). Condition 4 asks participants to consider *all the teachers they have had*; however, it is unclear why the r value would be significantly different than conditions 2 and 3.

among the r values in each condition. Although the correlation between intention and reenrollment is significant in each condition (see Table 3.8), the r value in condition 1 ($r = .51$) is different from condition 3 ($r = .68$) ($Z = 2.64$, $p < .01$) and condition 4 ($r = .40$) ($Z = 2.11$, $p < .05$). Condition 2 asks participants to consider their *most effective* teacher; so, it is possible the r value is significantly different than the other conditions because students are more likely to persist and reenroll in courses when they perceive their teachers as highly effective.

While hypotheses 1-5 dealt with the correlations of the observed variables, the following analyses illustrate the ways all of the variables work together in a model. That is, part of the purpose for this study is to understand how the TPB accounts for variability in student persistence. Indeed, H6 stated ABC is positively associated with student reenrollment. This hypothesis was partially supported. ABC had no significant effect on reenrollment in the TPB path model; however, ABC had a significant effect on reenrollment in the TPB structural model (see Figure 3.2). That is, the more control students believe they have for performing the behavior of enrollment (PBC), the more likely they are to enroll in courses.

Table 3.8. *Correlations of Observed Variables in Each Condition*

	TI	ATT	SN	PBC	INT	REN
TI_1	1					
TI_2	1					
TI_3	1					
TI_4	1					
ATT_1	.16	1				
ATT_2	.19*	1				
ATT_3	.08	1				
ATT_4	.32***	1				
SN_1	.16	.38***	1			
SN_2	.12	.20*	1			
SN_3	.02	.18	1			
SN_4	.28**	.39***	1			
PBC_1	.11	.26**	.29**	1		
PBC_2	.26**	.24*	.07	1		
PBC_3	-.12	.43***	.15	1		
PBC_4	.15	.23*	.32***	1		
INT_1	.17	.36***	.45***	.68***	1	
INT_2	.39***	.25**	.23*	.67***	1	
INT_3	-.06	.42***	.20	.74***	1	
INT_4	.09	.25**	.22*	.78***	1	
REN_1	.01	.09	.34***	.17*	.51***	1
REN_2	.07	-.02	.23*	.30**	.45***	1
REN_3	-.00	.29**	.16	.29**	.37***	1
REN_4	.23*	.26**	.12	.34***	.40***	1

Note: TI = Teacher Immediacy; ATT = Attitude; SN = Subjective Norm; PBC = Perceived Behavioral Control; INT = Intention; REN = Reenrollment.
Two tailed significance, *$p < .05$; **$p<.01$; ***$p<.001$.

Table 3.9. *Correlations of Observed Variables in Condition 1 (N = 139)*

	TI	ATT	SN	PBC	INT	REN
TI	1					
ATT	.16	1				
SN	.16	.38***	1			
PBC	.11	.26**	.29**	1		
INT	.14	.36***	.45***	.68***	1	
REN	.01	.09	.34***	.17*	.51***	1

Note. Two tailed significance, *$p < .05$; **$p<.01$; ***$p<.001$.

Table 3.10. *Correlations of Observed Variables in Condition 2 (N = 115)*

	TI	ATT	SN	PBC	INT	REN
TI	1					
ATT	.19*	1				
SN	.12	.20*	1			
PBC	.26**	.24*	.07	1		
INT	.39***	.25**	.23*	.67***	1	
REN	.07	-.02	.23*	.30**	.45***	1

Note. Two tailed significance, *$p < .05$; **$p<.01$; ***$p<.001$.

Table 3.11. *Correlations of Observed Variables in Condition 3 (N = 88)*

	TI	ATT	SN	PBC	INT	REN
TI	1					
ATT	.08	1				
SN	.02	.18	1			
PBC	-.12	.43***	.15	1		
INT	-.06	.42***	.20	.74***	1	
REN	-.00	.29**	.16	.29**	.37***	1

Note. Two tailed significance, *$p < .05$; **$p<.01$; ***$p<.001$.

Table 3.12. *Correlations of Observed Variables in Condition 4 (N = 120)*

	TI	ATT	SN	PBC	INT	REN
TI	1					
ATT	.32***	1				
SN	.28**	.39***	1			
PBC	.15	.23*	.32***	1		
INT	.09	.25**	.22*	.78***	1	
REN	.23*	.26**	.12	.34***	.40***	1

Note. Two tailed significance, *$p < .05$; **$p<.01$; ***$p<.001$.

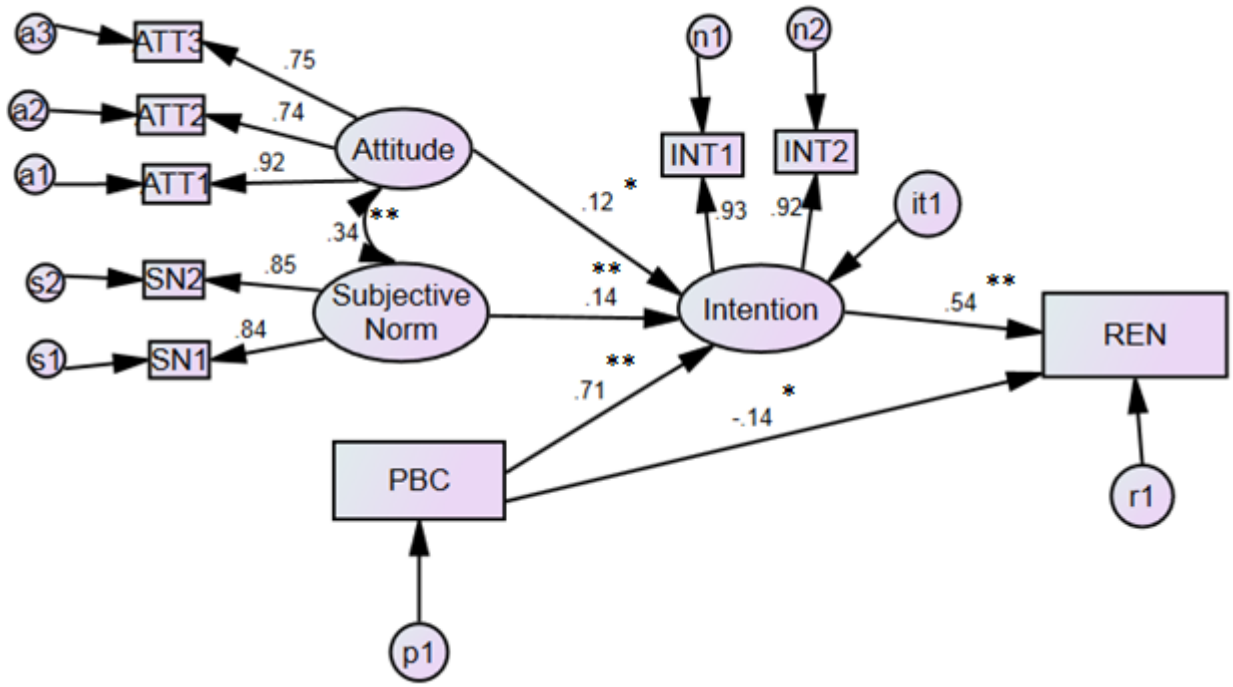

Figure 3.2. Structural model of TPB in all conditions combined. With two-tailed significance, *p<.05; **p<.001.

To test the full TPB, a structural model was constructed in AMOS 21 using latent variables for Attitude, SN, and Intention and observed variables for PBC and persistence Behavior (see Figures 3.2, 3.3, & 3.4). The model fit well when estimating all conditions combined; however, the model only fit in conditions 1 and 4 when estimating each condition separately. Table 3.13 shows fit statistics of three structural models. However, Heywood cases (Kenny & Kashy, 1992) are produced in conditions 2 and 3 of the TPB structural models and thus I am unable to estimate these models.

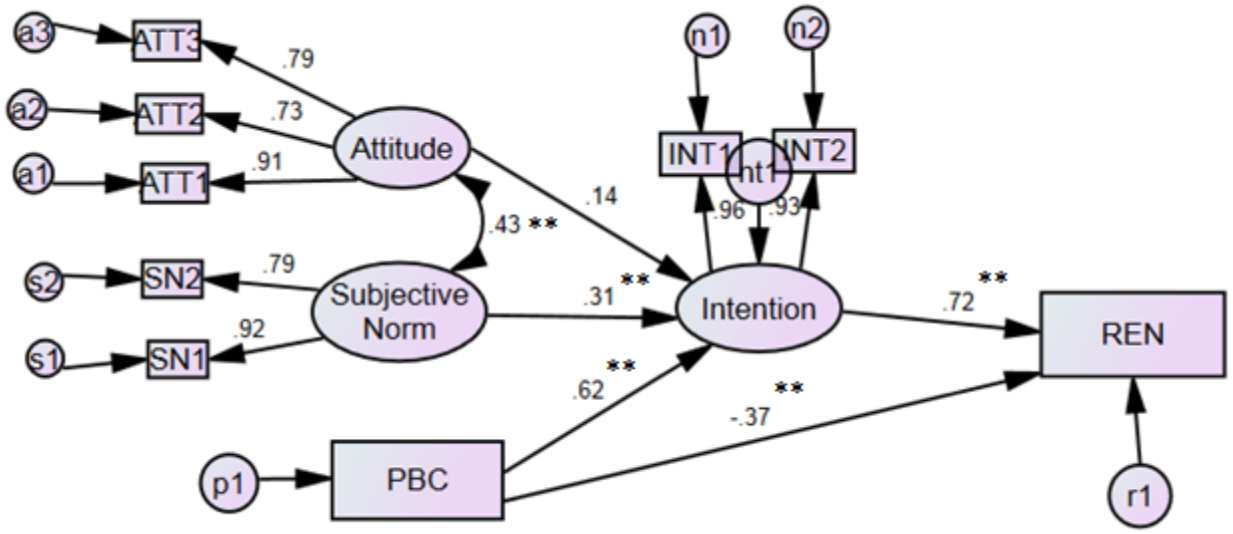

Figure 3.3. Structural model of TPB in condition 1. With two-tailed significance, **p<.001.

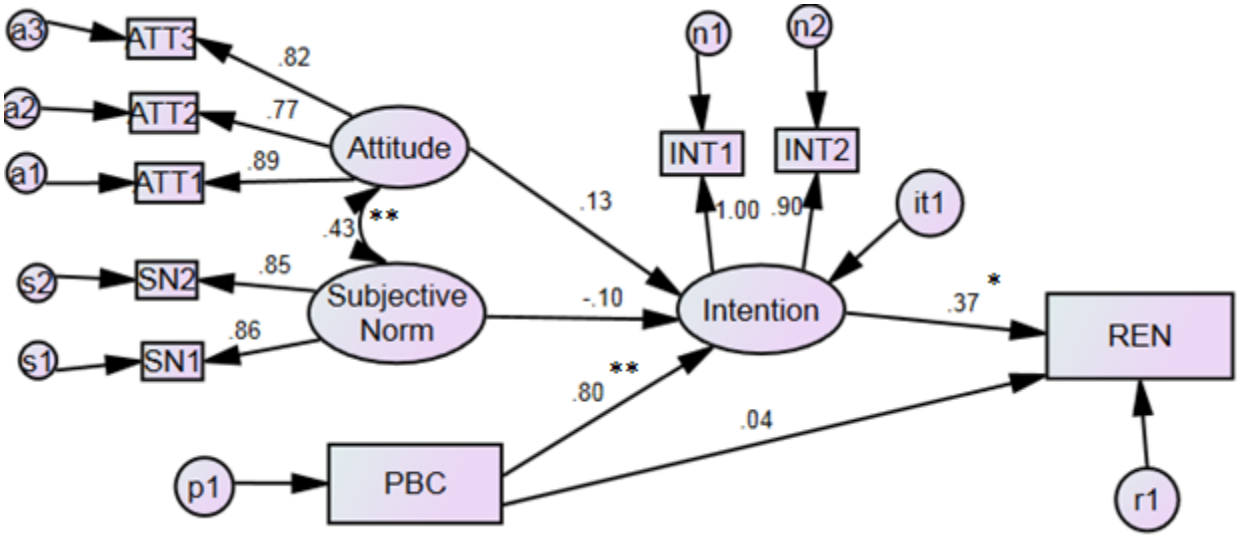

Figure 3.4. Structural model of TPB in condition 4. With two-tailed significance, *p<.01; **p<.001.

Table 3.13. *Model Fit Statistics for Measurement of the TPB Structural Models*

Fit Statistic	All Conditions	Condition 1	Condition 4
Chi-Square (df)	χ^2 (23) = 111.312	χ^2 (23) = 77.708	χ^2 (23) = 44.312
p-value	< .001	< .001	< .05
CFI	.96	.93	.97
RMSEA	.09	.13	.09
(90% CI)	(.08, .11)	(.10, .16)	(.05, .13)

Table 3.14. *Comparison of the TPB Structural Model With and Without TI in All Conditions*

Fit Statistic	Without TI	With TI
Chi-Square (df)	χ^2 (23) = 111.312	χ^2 (183) = 394.384
p-value	< .001	< .001
CFI	.96	.96
RMSEA	.09	.05
(90% CI)	(.08, .11)	(.04, .06)

Research Question

The primary RQ asked how teacher immediacy influences the components of the Theory of Planned Behavior in the prediction of students' intentions to persist in college. Figure 3.5 illustrates the overall effect of TI on the TPB. Table 3.14 shows the effect of adding TI to the TPB structural model. There are no significant changes in model fit from the addition of TI on the overall structural model of TPB. Table 3.15 below shows the effect of adding TI to the TPB path model. Adding TI to the path model resulted in a poorer fitting model. Although TI has positive associations with other observed variables from the study (see Table 3.8), it is unclear exactly how TI is influencing the overall model of using the TPB to predict student persistence.

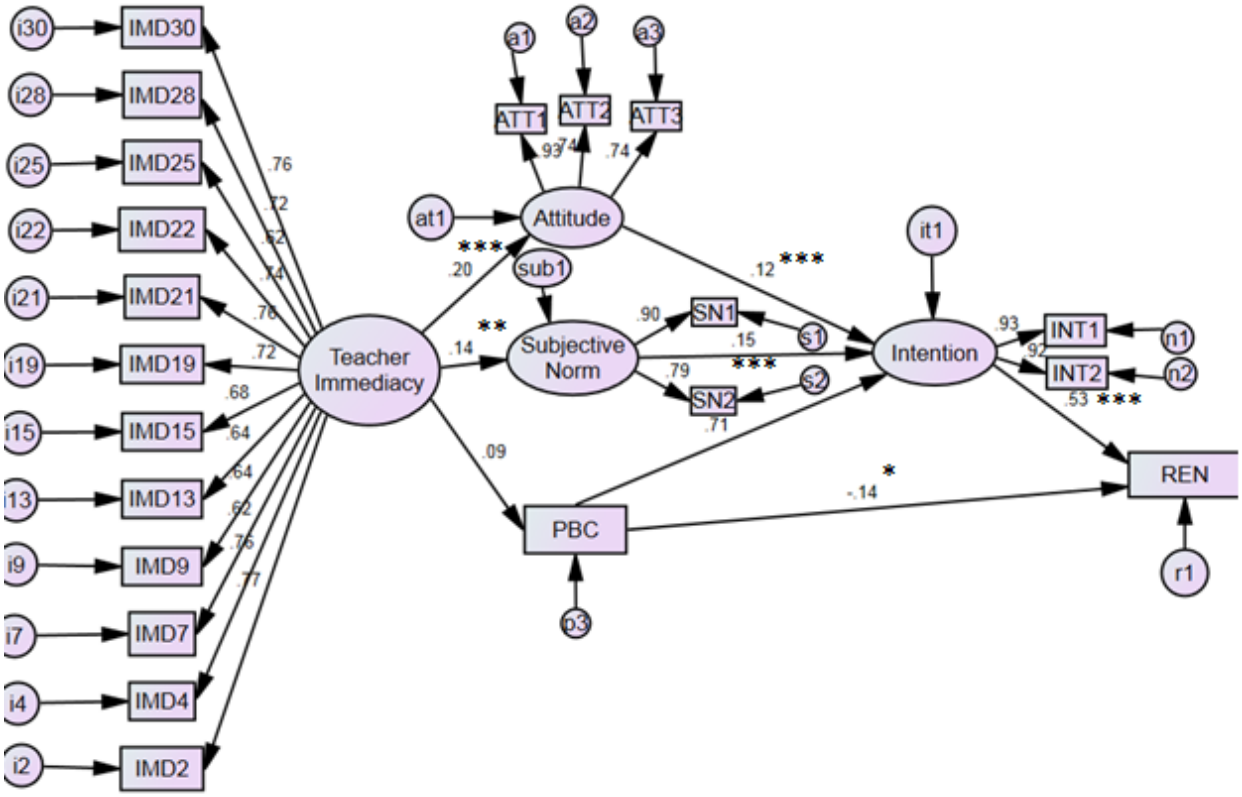

Figure 3.5. Structural model of the TPB with TI in all conditions combined. With two-tailed significance, *p<.05; **p<.01, ***p<.001. PBC = Perceived Behavioral Control; REN = Reenrollment.

Table 3.15. *Comparison of the TPB Path Model With and Without TI in All Conditions Combined*

Fit Statistic	**Without TI**	**With TI**
Chi-Square (df)	χ^2 (2) = 4.486	χ^2 (7) = 87.729
p-value	= .106	< .001
CFI	.99	.85
RMSEA	.05	.16
(90% CI)	(.00, .12)	(.13, .19)

However, as seen in Table 3.16, the effect of TI on both INT and REN is a function of the TPB components. That is, there is no direct effect of TI on INT and REN and 100% of the overall

effect of TI on INT and REN is completely mediated by the TPB components. These effects support the notion of teachers playing the role of "active socialization agents."

Table 3.16. *Total, Direct, and Indirect Effects of TI on TPB Components*

	ATT	SN	PBC	INT	REN
TI					
Total	.199	.143	.092	.111	.046
Direct	.199	.143	.092	.000	.000
Indirect	.000	.000	.000	.111	.046
% Mediation	0	0	0	100	100

Note: TI = Teacher Immediacy; ATT = Attitude; SN = Subjective Norm; PBC = Perceived Behavioral Control; INT = Intention; REN = Reenrollment.

Discussion

The primary goals of this study were to assess the effect of using alternate versions of prompt language for the 30-item TI scale from Gorham (1988), measure the impact TI has on student persistence, assess the degree to which the TPB is a viable method for measuring student persistence, and investigate any effect of TI on the way the TPB predicts student persistence. Overall, hypotheses were supported, the prompt language of the TI scale does matter, and the TPB accurately predicts student persistence. Additionally, the total effect of TI on intention and reenrollment behavior is completely mediated by the TPB components (see Table 3.16).

Several studies have demonstrated the positive impact teachers can have on student outcomes (e.g., Christophel, 1990), and this study adds to extant findings of the positive outcomes associated with TI. This study showed the positive associations between TI and the various components of the TPB in terms of predicting student persistence (see Table 3.7). Overall, TI has an influence on students' attitudes, SN, and intention towards persistence. PBC

was the only observed variable failing to show an association with TI. Perhaps this insignificant association is due to the PBC containing only one item, "I am confident I can enroll in courses at LSU for Fall Semester 2013." This item is getting at one's ability to perform a behavior, which is perhaps less influenced by one's teacher and more influenced by external factors such as finances or extrinsic motivation, such as obtaining a college degree. Additionally, this study captured the effect of TI on actual behavior by including a variable of reenrollment. Indeed, the findings from this study contribute to the TI-persistence link in ways that are both practically and theoretically significant. Practically, this study illuminates the importance of educators' roles in motivating their students to persist, which bolsters Tinto's (2006-2007) argument that student persistence research needs to focus on the role of the teacher. To address the million dollar question of how to increase college student retention, this study contributes an answer: As college instructors/professors become privy to the knowledge produced by studies such as mine, and hopefully subsequent studies in the future, my hope is that the instructors and professors will make it a personal and professional goal to engage in more prosocial behaviors such as immediacy to influence their students in positive ways.

The theoretical significance of this study is illustrated by the use of all components from the Theory of Planned Behavior (TPB) (Ajzen, 1985; 2012) to investigate the relationship between TI and college student persistence. This is the first study to my knowledge to use all components of the TPB to predict college student persistence from a TI perspective. Additionally, this study provided a more psychometrically appealing TI scale. Most TI studies ask participants to assess teacher behaviors in reference to the instructor they had in the class that just met, the one prior to the time they are taking the survey (e.g., Wheeless et al., 2011). This study examined any effect of changing the prompt language of the TI scale thus creating four

conditions. Although TI has an overall effect on attitude, TI is only significantly correlated with attitude in condition 2 (*consider the most effective teacher*) and condition 4 (*consider all teachers*). Indeed, TI has a more significant impact on student's attitudes towards persisting in college when they are asked to assess the behaviors of either the most effective teacher they have or had or assess all their teachers as a whole. Future TI studies should consider asking participants to consider all teachers when assessing a measure of TI to predict persistence or other student outcome variables, such as learning or motivation. Students' assessment of all of their teachers as a whole is more representative of the effect of the population of teachers at a particular college.

Although TI has an overall effect on SN, the correlation was only significant in condition 4 (*consider all teachers*). Perhaps the normative influence on students' behaviors is more accurately assessed when students are considering all of their teachers as a whole. Students are only thinking of one teacher in conditions 1, 2, and 3. Students are considering a class of individuals in condition 4. Generally speaking, it could be the case that the power of influence on behavior is greater from a class of individuals than just one person. For example, the overall correlation between TI and reenrollment is significant; however, it is only significant in condition 4 (consider all teachers). Students from this study were more likely to reenroll in courses when they assessed the behaviors of all teachers.

Interestingly, although TI had an overall effect on intention to persist, TI was only correlated with intention to persist in condition 2 (*consider the most effective teacher*). Intentions to enroll in courses are best predicted when students consider their most effective teacher, which seems reasonable. Indeed, students with highly effective teachers might also be experiencing an overall better college experience. A student whose teachers are all very

effective will likely intend to enroll in courses and return to school the following semester. The participants from this study were primarily first year students, so most participants are choosing from a rather small number of teachers, 5-10, and may have had more effective than ineffective teachers, which is a limitation to be addressed later.

Overall, the TPB accurately predicts college student persistence. Figure 3.2 shows attitude, SN, and PBC predicting intention. Student reenrollment was accurately predicted by intention and ABC. This study demonstrated students' attitudes, the normative influence of people in their lives, the degree of control to which believe they possess, and their intentions accurately predict the likelihood of reenrolling college courses. One of the more significant outcomes from this study is the measurement of actual behavior, a limitation from most studies that investigate student persistence. Indeed, the TPB accurately predict students' intentions to persist as a function of attitudes, SN, and PBC, and this study illustrates the effect of the TPB on actual behavior.

Limitations

There are a number of limitations surrounding the current study. The first is the use of cross-sectional data, the second is the sample size for each condition, and the third is the skewness of the observed variables.

Andersen (1979) suggested one reason there is little to no relationship between TI and some student outcomes, namely that a test early in the semester may be too soon for this relationship to manifest. A study done during week one may offer different results than a study done in week seven. Andersen argued that TI behaviors can lead to stronger feelings of liking throughout a semester, thus leading to expectations for a stronger relationship to student outcomes. Andersen's criticism about cross-sectional data is noteworthy. Indeed, the only study

I have found that measured TI and student persistence that uses the TPB as a theoretical framework is Wheeless et al. (2011), which did not employ any components of the TPB, and specifically did not measure actual behavior. Students in the Wheeless et al. study assessed TI behaviors only at one time point during the semester. A number of variables could systematically influence a student's assessment of a teacher. For example, a student who receives a poor grade on an exam, assignment, or quiz and feels the teacher was unfair may rate the teacher as less immediate compared to an assessment of the same teacher two weeks prior who led a very fun and engaging in-class assignment and gave all students extra credit for their participation. Indeed, the cross-sectional nature of this study does not capture the full effect of the relationship teachers develop with students throughout a semester. Study 2 of this dissertation addresses this limitation by assessing students' perceptions of TI behaviors using longitudinal data.

There are data from 462 participants in this study; however, because there were four conditions of the TI scale, the sample sizes were relatively small. Respectively, they are $n = 139$, $n = 115$, $n = 88$, and $n = 120$. The sample sizes can partially account for the negative variances seen in the estimation of the TPB factors. To address this limitation for Study 2, all participants completed the same version of the TI scale (consider all teachers) thus creating only one condition.

All of the observed variables (Attitude, SN, PBC, and Intention) are negatively skewed to the left (see Table 3.17). Indeed, there appears to be a systematic inflation of students' attitudes, SN, PBC, and intentions to persist. It seems as if most students feel positive towards persistence (Attitude), feel influenced by normative behaviors of others concerning persistence (SN), feel

Table 3.17. *Skewness and Kurtosis of All Observed Variables in Study 1*

	ATT	SN	PBC	INT
Skewness	-.931	-1.873	-1.953	-2.261
SE of Skewness	.114	.114	.114	.114
Ratio	-8.17	-16.43.	-17.13	-19.83
Kurtosis	.437	3.191	2.454	3.969
SE of Kurtosis	.227	.227	.227	.227
Ratio	1.93	14.06	10.81	17.48

Note. ATT = Attitude; SN = Subjective Norm; PBC = Perceived Behavioral Control; INT = Intention

confident in the ability to persist (PBC), and genuinely intend persist in college (Intention). It is reasonable to suggest most students from this study plan on completing a second year of college, or at least intend to complete a second year. For example, according to Fall Semester 2013 LSU undergraduate admissions, the freshmen admission requirements are a 3.0 GPA and a 22 for the ACT or a 1030 for the SAT. The incoming freshmen class for the 2013/2014 academic year entering in summer 2013 or fall 2013 (N = 5,491) had an average GPA of 3.39 (n = 5,484; *Mode* = 4.0); an average ACT of 26 (n = 5,094; *Mode* = 23); and an average SAT of 1125 (n = 1,017; *Mode* = 1100). Indeed, most of the participants from this study came to LSU exceeding LSU's admission requirements with great GPAs and ACT/SAT scores.

In a recent report by the Chronicle of Higher Education (2010), the LSU freshman retention is about 84%, which places them around the 80th percentile compared to all 4-year public colleges in the US. Most of the participants from this study were freshmen and were likely still experiencing the "honeymoon" phase of their college experience. Indeed, first-year students at LSU tend to be in the top of their graduating class from high school; receive a *TOPS* scholarship that covers most and in some cases all tuition costs; and seem to be proud about

attending a Flagship University with great sports teams, a beautiful campus, and several opportunities to become involved with the school such as through sororities, fraternities, and other social communities.

Perhaps a more symmetrical distribution of the observed variables would result with a larger sample size, more variability in age, and more variability in class level such as including second, third, fourth, and fifth year students. The Chronicle of Higher Education (2010) reports the four year graduation rate for LSU students beginning in 2004 (2008 graduation rate) was 26.2% while the six year graduation rate (2010 graduation rate) was 58.8%. It is possible there are students who begin their first year at LSU, then fail to reenroll for one or more semesters, and then reenroll at LSU later to graduate with a degree. Students who would complete this same survey at a community college or at a Liberal Arts college may also have very different outcomes and distributions. For example, I received my A.A. degree at a community college that did not have a very active sports program, fewer ways to become involved with the college, and many of the students were working part or full time. Many of my fellow classmates were first generation students and perhaps were never fully confident of their ability to continuously enroll in courses each semester.

Conclusion

This study sought to examine the effect of teacher immediacy (TI) behaviors on college student persistence and ascertain whether the Theory of Planned Behavior (TPB) is a viable theoretical framework for predicting student persistence. TI is positively correlated with students' attitudes and normative influence towards enrolling in courses, and their intentions to persist and whether they actually reenroll in courses. The TPB accurately predicts student persistence as a structural model. Additionally, the prompt language of the TI scale does have an

effect on the way students assess the components of the TPB, such that in some cases, it is more significant for students to consider all of their teachers as a whole when estimating the effect of the components of the TPB to predict student persistence.

CHAPTER 4

STUDY TWO

The purpose of this study is to investigate the relation between teacher immediacy (TI) and student persistence. In particular, I am interested in how TI and persistence change over the course of an academic semester. In addition, this study seeks to explore how concepts central to the Theory of Planned Behavior (TPB) (Ajzen, 1985) change over time in concert with TI and persistence. Essentially, this study provides a conceptual replication of Study 1 by measuring the same independent variables (TI, Attitude, Subjective Norm [SN], and Perceived Behavioral Control [PBC]) to predict the same dependent variable, student persistence. This study, however, uses a comprehensive TPB survey created from a pilot study to additionally measure beliefs that form TPB components (see Appendix F for a description of the pilot study). Additionally, this study uses longitudinal data captured at four time points in a single academic semester.

This chapter is divided into four sections. First, this chapter provides an explanation of the comprehensive TPB survey. Second, I provide a rationale for using longitudinal data to account for variability in student persistence. Then, the methods and results of this study are detailed followed by an explanation of the results found from all statistical procedures. Last, the chapter concludes by discussing limitations.

Comprehensive TPB Survey

Ajzen's (1985) TPB suggests that Attitude, SN, and PBC toward a behavior shape intentions about the behavior, which ultimately have an effect on the actual behavior (see Figure 3.1). Moreover, each of the predictors of intention (Attitude, SN, PBC) consists of antecedent

conditions (see Chapter 2 for a detailed description of the TPB). In particular, Attitude deals with the degree to which individuals positively or negatively evaluate the completion of a behavior, SN refers to the perceived social pressure to engage in a particular behavior, and PBC refers to individuals' perceptions of their ability to perform a behavior. Thus, this study measures *attitudinal beliefs* regarding the various outcomes associated with persisting in college, *normative beliefs* about the way most people think about persisting in college, and *control beliefs* that reflect participants' perceptions of the factors that would facilitate or impede their ability to persist in college. Because Study 1 only provided direct measures about enrolling in courses, I used data collected from formative research to develop a comprehensive TPB survey. This comprehensive survey allows for the assessment of (a) behavioral beliefs (BB) about the outcomes associated with enrolling in courses (Attitude), such as *gaining knowledge* and *being more prepared for a career*; (b) normative beliefs (NB) concerning the degree to which students feel motivated to comply with referents identified as having an influence on whether they enroll in courses (SN), such as the influence of *family members* and *teachers*; and (c) control beliefs (CB) about the degree to which students perceive certain factors affect their ability and control over enrolling in courses (PBC), such as *financial support* and *poor grades*. Thus, this study accounts for college students' beliefs about persistence, a limitation I noted about Study 1.

Ajzen (1991) states,

> The underlying foundation of beliefs provides the detailed descriptions needed to gain substantive information about a behavior's determinants. It is at the level of beliefs that we can learn about the unique factors that induce one person to engage in the behavior of interest and to prompt another to follow a different course of action (pp. 206-207).

So, participants in Study 2 assessed beliefs about items provided by members sampled from the same population. The comprehensive TPB survey used in this study provides a more in-depth account of students' intentions to persist in college and whether they reenroll in courses for the

semester following the time of data collection (i.e., those students from the Fall Semester 2013 who reenroll for courses in the Spring Semester 2014).

Using Longitudinal Data

A primary limitation of work on TI was noted by Andersen (1979) who suggested the null relationship between TI and important outcomes might be accounted for by the fact that measuring TI early in the semester may be too soon for this relationship to manifest. Even so, twenty-five years later, this limitation remains underappreciated. Indeed, assessing outcomes as a function of teachers' immediacy behaviors at multiple time points throughout a semester may reveal patterns of relations not possible with cross-sectional data. Most work on TI is cross-sectional in nature, which prevents an understanding of how teachers' immediacy behaviors change over an academic semester. That is, cross-sectional studies on TI do not reveal any exponential increases or decreases of students' perceptions of their teachers' behaviors. For example, a TI study done during week 1 of an academic semester may offer different results than a study done in week 7 or week 15. Longitudinal assessments of TI would reveal these changes, or the lack thereof as it is also possible that TI does not change at all throughout a semester. Andersen argued that TI behaviors can lead to stronger feelings of liking throughout a semester, thus leading to expectations for a stronger relationship to student outcomes. Using Andersen's rationale, I posit the use of longitudinal data can provide a more vivid and theoretically interesting account of the relationship between TI and student persistence. Specifically, as college student perceptions of TI increase throughout a semester, students' dispositions towards persistence should also increase.

In Chapter 3, I established the TPB as a sound theoretical framework to study student persistence. Additionally, data gathered from the pilot study (see Appendix F) regarding beliefs

about persistence provided additional variables to measure in the current study. Using longitudinal data in Study 2 addresses some of the limitations from Study 1 and provides a more thorough explanation of the ways students feel towards persistence throughout an entire semester. Therefore,

H1a: Increases in Attitude toward persistence over of an academic semester leads to increases in students' intentions to persist.

H1b: Increases in BB toward persistence over of an academic semester leads to increases in students' intentions to persist.

H2a: Increases in SN with respect to persistence over an academic semester leads to increases in students' intentions to persist.

H2b: Increases in NB with respect to persistence over an academic semester leads to increases in students' intentions to persist.

H3a: Increases in PBC over persistence over an academic semester leads to increases in students' intentions to persist.

H3b: Increases in CB over persistence over an academic semester leads to increases in students' intentions to persist.

Accounting for variability in student persistence can be accomplished through assessing the teacher's role in student persistence, the administration's role in persistence, and through assessing external factors such as financial reasons for student attrition. Chapter 2 provided a detailed review of the literature on student attrition and persistence. Tinto (1982) noted there is no singular model that can fully account for variability in student persistence. Indeed, although using the TPB can accurately predict variability in student persistence, there are still several variables not accounted for while estimating a TPB model or any model that attempts to account for variability in student persistence. Tinto criticized the limitation of not using longitudinal data when attempting to account for variance in student attrition. He highlighted the limitation of most studies using only two time points to predict persistence: the point at which a student

entered into school and at another point in time when the student has dropped out or has withdrawn from school. Tinto suggested the factors that lead to dropout in the early stages of students' academic careers can be very different from factors that lead to dropout at later stages in students' academic careers. Indeed, college students can drop out of college at any stage of their academic career, and this dissertation focuses on students in their first year of college. Therefore, using longitudinal data to predict persistence during students' first year of college provides a theoretically and practically significant means to account for persistence behavior.

Another limitation from Study 1 is an unclear relationship between TI and the overall model of TPB predicting student persistence. Indeed, TI had significant positive associations with Attitude, SN, intention to persist, and the actual behavior of reenrollment in (see Table 3.7). However, it is unclear what role TI serves in the overall model because all data in Study 1 were collected simultaneously. The use of longitudinal data can help to adjudicate among competing roles for TI. Throughout a semester, teachers spend more time interacting with students before class begins and after class ends. Some students will engage in more interaction with teachers in their offices, in the hallways, and perhaps have informal conversations on campus or in the student union. Indeed, Pascarella and Terenzini (1978) found a significant relationship with informal interactions between students and faculty and student academic achievements during the freshman year. Tinto (1982) stated, "…the more time faculty give to their students, and students to each other, the more likely are students to complete their education. Both academically and socially, such informal contacts appear to be essential components in the process of social and intellectual development of individuals and in the rewards they seek in entering higher education" (p. 697). The more frequent interactions students have with their teachers, the more they begin to relate to them, like them, and want to do right by them, with an

underlying assumption that these teachers are engaging and are characterized by TI behaviors. Students who feel a closer connection to their teachers may feel more obligated to attend class more frequently, take better notes, and be more motivated to excel at assignments and exams, and are thus more likely to continuously enroll in courses. Therefore:

H4: Increases in student perceptions of TI over the course of an academic semester leads to increases in students' intentions to persist.

H5: Increases in students' intentions to persist over the course of an academic semester leads to a higher likelihood of reenrollment.

Method

Participants

Data were collected at four time points through an online survey developed using Qualtrics® survey software. The survey at Time 1 was completed by 465 participants (356 female, 109 male) who reported a mean age of 18.07 (*SD* = .83) and primarily self-identified as White (*n* = 335). Most of the participants were freshmen (*n* = 461), and the most common academic concentration of the participants was Basic Sciences (*n* = 102) followed by Engineering (*n* = 87). Full demographic information for all study participants in each wave is found in Tables 4.1 – 4.4. Participants were eligible to complete subsequent study waves only if they completed the survey at Time 1. All participants who completed the survey at Time 1 were invited to complete all subsequent surveys irrespective of completion of these subsequent surveys. Some participants only completed 1 survey while other participants completed 2, 3, or all 4 surveys.

Procedures

A list of names and emails for all first-year students was obtained from the University Registrar. In September 2013, an invitation email was sent to these 5,490 students that explained

the purpose of the study and included a link to a secure URL (Time 1). I sent a reminder email one week later. There were 465 responses (8.5%) at the close of the Time 1 survey. In October, I sent an email with a link to a secure URL (Time 2) to the 465 participants who completed the Time 1 survey. I sent a reminder email within one week of the original email. There were 148 responses (31.8%) at the close of the Time 2 survey. In November, I sent an email with a link to a secure URL (Time 3) to the 465 participants who completed the Time 1 survey. I sent two reminder emails within one week of the original email. There were 109 responses (23.4%) at the close of the Time 3 survey. In December, I sent an email with a link to a secure URL (Time 4) to the 465 participants who completed the Time 1 survey. I sent three reminder emails within one week of the original email. There were 99 responses (21.3%) at the close of the Time 4 survey. There are 266 participants who only completed Wave 1 (57.2%); 99 participants who completed Wave 1 and at least one more Wave (21.3%); 45 participants who completed Wave 1 and at least two more Waves (9.7%); and 55 participants who completed all four Waves (11.8%). The participants who completed all four Waves are referred to as "complete observations."

Table 4.1. *Demographic Information for All Participants in Time 1 (N = 465)*

Item	Frequency	Percent	Mean	Mode	*SD*
Age			18.07	18	.826
Biological Sex					
-Male	109	23.4			
-Female	356	76.6			
Year					
-Freshman	461	99.1			
-Sophomore	1	.2			
-Junior	1	.2			
-Graduate Student	2	.4			
Identity					
-Black	75	16.1			
-Asian	37	8			
-Caucasian/White	335	72			
-Hispanic	28	6			
-Latino/a	12	2.6			
-Native American	13	2.8			
-Pacific Islander	1	.2			
-Other	4	.9			
Academic Concentration					
-Agriculture	35	7.5			
-Art/Design	12	2.6			
-Basic Sciences	102	21.9			
-Business	57	12.3			
-Coast & Environment	2	.4			
-Communication	35	7.5			
-Education	13	2.8			
-Engineering	85	18.3			
-Humanities/Social Sciences	77	16.6			
-Liberal Arts	9	1.9			
-Library/Information Sciences	1	.2			
-Music/Dramatic Arts	12	2.6			
-Social Work	5	1.1			
-Veterinary Medicine	16	3.4			
-Other	74	15.9			

Table 4.2. *Demographic Information for All Participants in Time 2* (N = 148)*

Item	Frequency	Percent	Mean	Mode	*SD*
Age			18.23	18	1.293
Biological Sex					
-Male	21	14.2			
-Female	127	85.8			
Year					
-Freshman	147	99.3			
-Graduate Student	1	.7			
Identity					
-Black	23	15.5			
-Asian	12	8.1			
-Caucasian/White	112	75.7			
-Hispanic	9	6.1			
-Latino/a	5	3.4			
-Native American	1	.7			
-Pacific Islander	1	.7			
-Other	2	1.4			
Academic Concentration					
-Agriculture	20	13.5			
-Art/Design	5	3.4			
-Basic Sciences	32	21.6			
-Business	19	12.8			
-Communication	11	7.4			
-Education	1	.7			
-Engineering	25	16.9			
-Humanities/Social Sciences	26	17.6			
-Liberal Arts	2	1.4			
-Music/Dramatic Arts	3	2.0			
-Social Work	1	.7			
-Veterinary Medicine	9	6.1			
-Other	16	10.8			

Note: All participants in Time 2 were also in Time 1.

Table 4.3. *Demographic Information for All Participants in Time 3* (N = 109)*

Item	Frequency	Percent	Mean	Mode	*SD*
Age			18.33	18	1.503
Biological Sex					
-Male	18	16.5			
-Female	91	83.5			
Year					
-Freshman	108	99.1			
-Graduate Student	1	.9			
Identity					
-Black	12	11.0			
-Asian	11	10.1			
-Caucasian/White	84	77.1			
-Chicano/a	1	.9			
-Hispanic	5	4.6			
-Latino/a	3	2.8			
-Native American	2	1.8			
-Pacific Islander	1	.9			
-Other	2	1.8			
Academic Concentration					
-Agriculture	13	11.9			
-Art/Design	2	1.8			
-Basic Sciences	25	22.9			
-Business	14	12.8			
-Communication	7	6.4			
-Education	3	2.8			
-Engineering	17	15.6			
-Humanities/Social Sciences	23	21.1			
-Liberal Arts	1	.9			
-Music/Dramatic Arts	2	1.8			
-Social Work	2	1.8			
-Veterinary Medicine	4	2.8			
-Other	12	11.0			

Note: All participants in Time 3 were also in Time 1.

Table 4.4. *Demographic Information for All Participants in Time 4* (N = 99)*

Item	Frequency	Percent	Mean	Mode	*SD*
Age			18.43	18	1.559
Biological Sex					
-Male	13	13.1			
-Female	86	86.9			
Year					
-Freshman	98	99.0			
-Graduate Student	1	1.0			
Identity					
-Black	11	11.1			
-Asian	10	10.1			
-Caucasian/White	80	80.8			
-Hispanic	3	3.0			
-Latino/a	1	1.0			
-Native American	4	4.0			
-Pacific Islander	1	1.0			
-Other	1	1.0			
Academic Concentration					
-Agriculture	15	15.2			
-Art/Design	1	1.0			
-Basic Sciences	20	20.2			
-Business	17	17.2			
-Communication	5	5.1			
-Education	2	2.0			
-Engineering	19	19.2			
-Humanities/Social Sciences	18	18.2			
-Liberal Arts	3	3.0			
-Music/Dramatic Arts	1	1.0			
-Social Work	1	1.0			
-Veterinary Medicine	4	4.0			
-Other	9	9.1			

Note: All participants in Time 4 were also in Time 1.

Measures

Teacher Immediacy. For each wave of the survey, participants completed the 12-item TI scale generated from Study 1 (see Chapter 3), which uses 7-point Likert response scaling to assess the perception of the frequency with which teachers engage in a variety of verbal and nonverbal immediacy behaviors (see Appendix B). All items were randomized for each participant. Internal consistency estimates were adequate for the scale in each wave (see Table 4.5).

Table 4.5. *Alpha Reliability Estimates for TI Scale at Each Time Point*

Time	***n***	**α**
1	447	.90
2	144	.95
3	107	.97
4	97	.96

To ensure equivalent TI measurement models in each wave, four confirmatory factor analyses were performed in AMOS 21. The resulting 12-item model fit in all four conditions (see Table 4.6). However, there was a very modest decline in model fit in Waves 3 and 4, likely a function of the decreased sample size.

In order to assess model equivalency for each wave, I employed multigroup confirmatory factor analytic procedures and tested for *configural* invariance (same factor structure holds across groups) and *metric* invariance (factor loadings are equal across groups). Establishing this type of invariance – often labeled *weak* invariance – basically suggests that the factor structure is equivalent across administrations (Byrne, 2010; Little, 1997).

Table 4.6. *Model Fit Statistics for Measurement of Teacher Immediacy in Each Wave*

Fit Statistic	**Wave 1**	**Wave 2**	**Wave 3**	**Wave 4**
Chi-Square (df)	χ^2 (54) = 127.533	χ^2 (54) = 95.899	χ^2 (54) = 115.897	χ^2 (54) = 137.843
p-value	< .001	< .001	< .001	< .001
CFI	.964	.966	.950	.923
RMSEA	.054	.073	.103	.126
(90% CI)	(.042, .066)	(.048, .096)	(.077, .129)	(.100, .152)

As seen in Table 4.7, configural invariance was met, and the model did not substantively change when the measurement weight restrictions were added (ΔCFI = .001; Δ χ^2 (33) = 25.74). Irrespective of the time at which the TI scale is assessed by participants, the factor structure works equally well across each wave.

Table 4.7. *Model Fit Statistics for Measurement Invariance Analyses for All Waves, TI*

	Weak Invariance	
Fit Statistic	**Configural**	**Measurement Weights**
Chi-Square (df)	χ^2 (216) = 478.058	χ^2 (249) = 503.797
p-value	< .001	< .001
CFI	.954	.955
RMSEA	.039	.035
(90% CI)	(.034, .043)	(.031, .040)

TPB. All participants in each wave completed the same scale items to assess Attitude, SN, PBC, and Intention. All items were modeled after Ajzen's TPB questionnaire construction advice (Fishbein & Ajzen, 2010). Each component of the TPB contained between 2 and 3 items

to assess participants' dispositions towards *enrolling in courses* (see Appendix E). Internal consistency estimates were adequate for all scales in each wave (see Table 4.8).

Table 4.8. *Alpha Reliability Estimates for TPB Factors at Each Time Point*

	Attitude		**SN**		**PBC**		**Intention**	
Time	***n***	**α**	***n***	**α**	***n***	**α**	***n***	**α**
1	442	.85	451	.93	451	.62	451	.81
2	142	.85	146	.89	146	.61	146	.81
3	107	.87	108	.89	107	.70	108	.91
4	94	.87	97	.88	97	.75	97	.91

Note. SN = Subjective Norm; PBC = Perceived Behavioral Control.

The TPB components for Study 2 also included the items formulated from the formative research done in the pilot study. In each wave, participants assessed 6 items concerning behavioral beliefs (BB); 8 items concerning normative beliefs (NB); and 6 items concerning control beliefs (CB) (see Appendix E). After removing 2 items from the CB scale, internal consistency estimates were adequate for all belief scales in each wave (see Table 4.9).

Table 4.9. *Alpha Reliability Estimates for TPB "Belief Assessment" Scales at Each Time Point*

	Behavioral Beliefs		**Normative Beliefs**		**Control Beliefs**	
Time	***n***	**α**	***n***	***a***	***n***	**α**
1	457	.88	456	.79	455	.77
2	146	.96	146	.83	145	.85
3	109	.95	109	.77	108	.88
4	97	.96	98	.82	98	.87

To ensure equivalent measurement models across each wave of the study, four confirmatory factor analyses were performed using AMOS 21. With three factors and 20 items, the model did not fit in any of the conditions due to 4 poor-fitting items from NB and 2 poor-fitting items from CB. When these items were omitted from the NB and CB scales, the model fit in each wave (see below). Table 4.10 shows a slight decline in model fit between Waves 3 and 4; again, I attribute this to smaller sample sizes in these waves.

Table 4.10. *Model Fit Statistics for Measurement of Belief Scales in Each Wave*

Fit Statistic	**Wave 1**	**Wave 2**	**Wave 3**	**Wave 4**
Chi-Square (df)	χ^2 (74) = 358.993	χ^2 (54) = 182.986	χ^2 (54) = 144.364	χ^2 (54) = 251.307
p-value	< .001	< .001	< .001	< .001
CFI	.902	.938	.935	.866
RMSEA	.091	.100	.094	.156
(90% CI)	(.082, .101)	(.082, .118)	(.071, .116)	(.135, .178)

Table 4.11. *Model Fit Statistics for Measurement Invariance Analyses for All Waves, Belief Scales*

	Weak Invariance	
Fit Statistic	**Configural**	**Measurement Weights**
Chi-Square (df)	χ^2 (296) = 938.973	χ^2 (329) = 1046.856
p-value	< .001	< .001
CFI	.909	.899
RMSEA	.052	.052
(90% CI)	(.048, .055)	(.048, .055)

In order to assess model equivalency for each wave, I employed multigroup confirmatory factor analytic procedures and tested for *configural* and *metric* invariance (see above). As seen

in Table 4.11, configural invariance was met, and the model did not substantively change when the measurement weight restrictions were added (ΔCFI = .01; $\Delta \chi^2$ (33) = 107.88). Irrespective of the time during the semester at which the belief scales are assessed by participants, the factor structure works equally well across each wave.

Reenrollment. To ascertain which students from this study (Fall 2013) reenrolled in courses for the following semester (Spring 2014), I contacted the University Registrar and obtained a list of all students from the Fall 2013 semester who were enrolled during the Spring 2014 semester. Then, I crosschecked all students in Study 2 (Fall 2013) who did not appear in the list of enrolled students for Spring 2014. This provided me with a measure of actual behavior. There were 21 students (4.5%) from Study 2 who did not reenroll for courses in the following semester.

Results

All hypothesis testing for the current study is limited to the complete observations (n = 55). As such, power is a concern. With N = 55 and alpha set at .05, power to detect small effects (r = .10) was .18; it was .73 for medium effects (.30); and it was above .99 for detecting large (.50) effects.

The hypotheses for this study deal with the measurement of the following observed variables over the course of an academic semester: TI, Attitude, BB, SN, NB, PBC, CB, and Intention. Prior to estimating regression models for each hypothesis, I created scatterplots to illustrate variability across waves (see Figures 4.1 – 4.8). The only variable that statistical analyses showed as changing significantly was TI (see Table 4.12). Although the overall model was not significant, TI increased significantly from Wave 1 (M = 5.74) to Wave 4 (M = 6.08), t = 1.99, $p < .05$, r^2 = .02 (see Table 4.12). Indeed, the 55 participants who completed the survey in

each wave perceived their teachers engaging in significantly higher immediacy behaviors at the end of the semester than at the beginning of the semester, a finding that supports observations made by Anderson (1979). Tables 4.13 – 4.19 show the regression outcomes for changes in all of the other observed variables across all four waves. See Appendix I for tables of descriptive data for all variables in each wave. See Appendix J for correlation matrices of all variables in each wave.

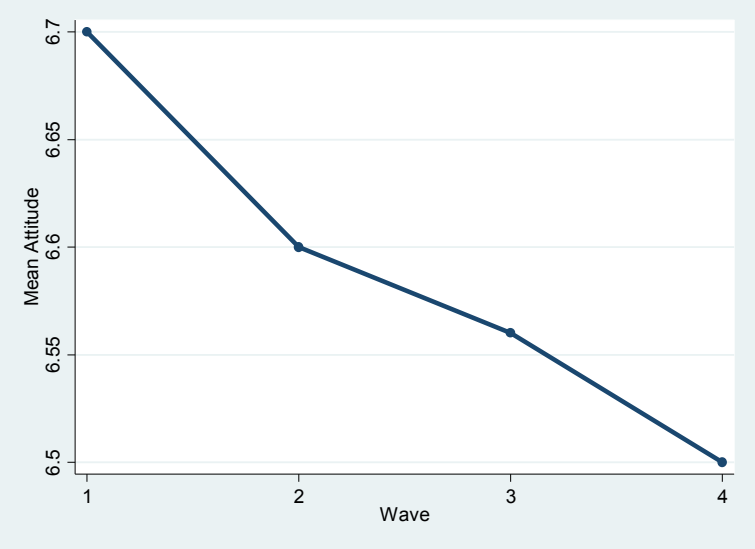

Figure 4.1. Trends in Attitude across waves

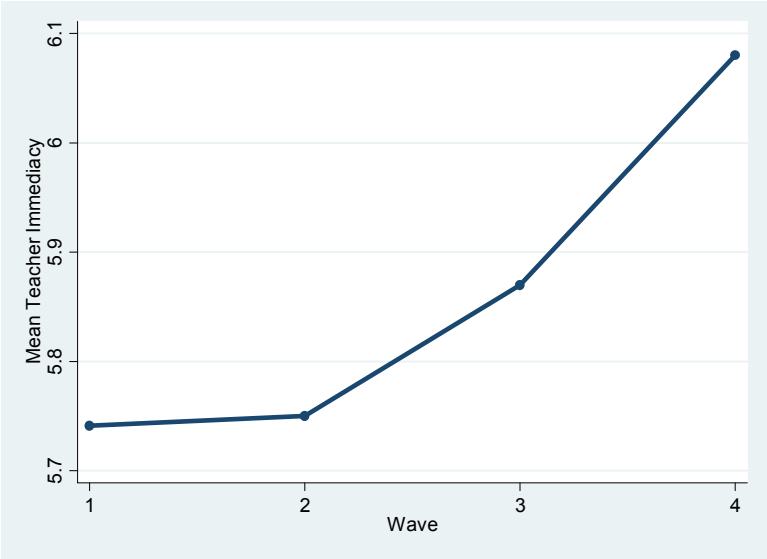

Figure 4.2. Trends in Teacher Immediacy across waves

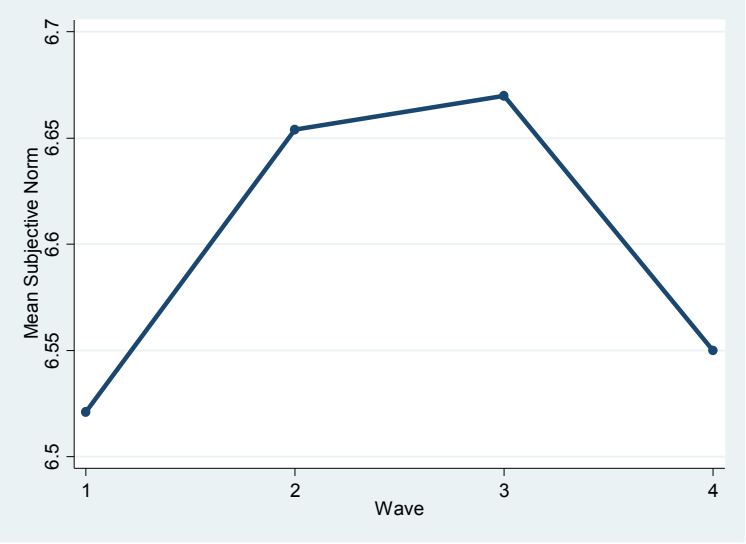

Figure 4.3. Trends in Subjective Norm across waves

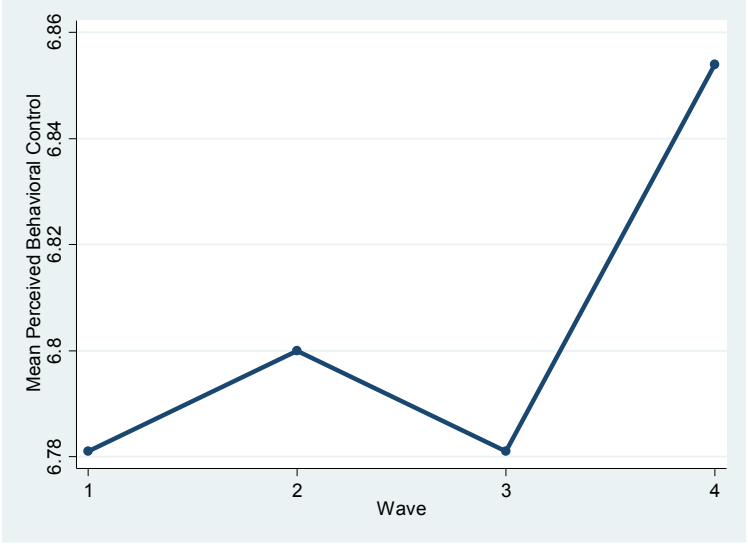

Figure 4.4. Trends in Perceived Behavioral Control across waves

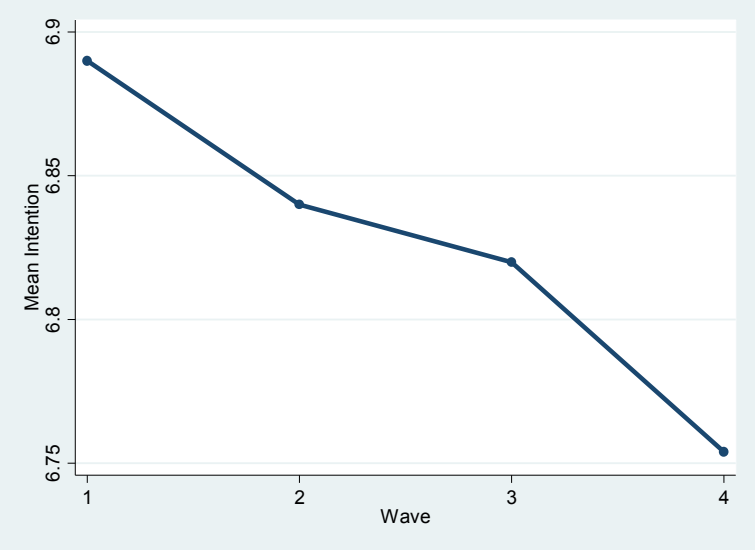

Figure 4.5. Trends in Intention across waves

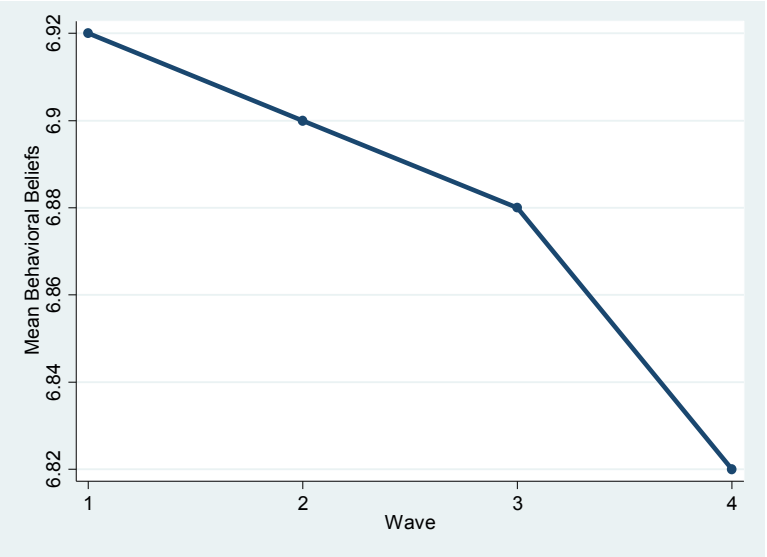

Figure 4.6. Trends in Behavioral Beliefs across waves

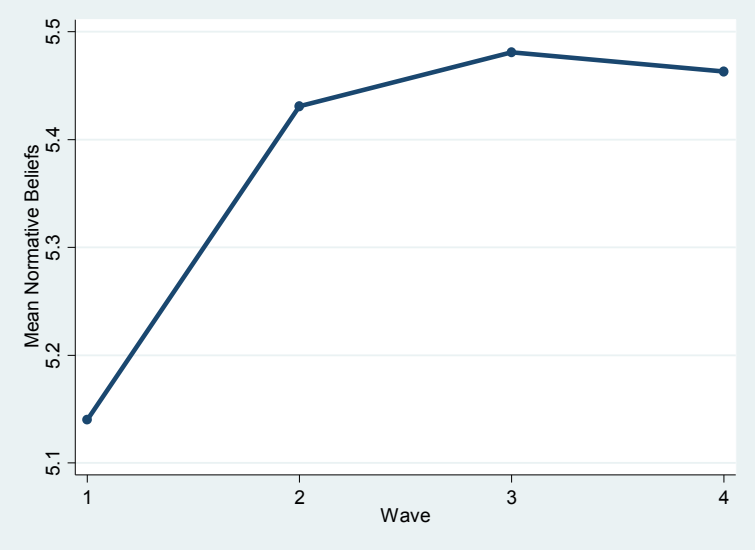

Figure 4.7. Trends in Normative Beliefs across waves

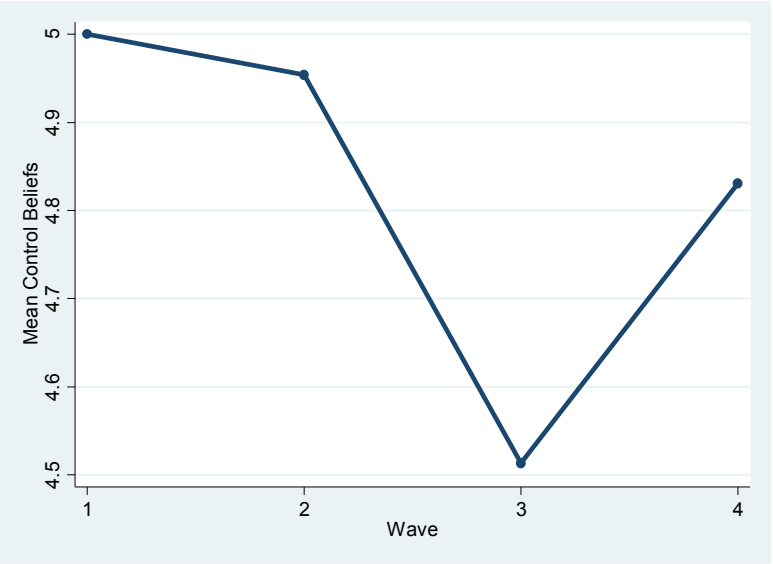

Figure 4.8. Trends in Control Beliefs across waves

Table 4.12. *Changes in TI for Each Wave*

TIM	B	SE (B)	Beta	t	*p*>|t|
Wave 2	.009	.170	.004	0.05	.957
Wave 3	.126	.170	.061	0.74	.460
Wave 4	.339	.171	.164	1.99	.048
_cons	5.741	.120		47.75	.000

Note. N = 219, F (3, 215) = 1.70, p = .167, R^2 = .023

Table 4.13. *Changes in Attitude for Each Wave*

ATT	B	SE (B)	Beta	t	*p*>|t|
Wave 2	-.101	.154	-.055	-0.66	.513
Wave 3	-.141	.152	-.078	-0.93	.355
Wave 4	-.200	.153	-.109	-1.31	.193
_cons	6.70	.107		62.42	.000

Note. N = 214, F (3, 210) = 0.61, p = .611, R^2 = .009

Table 4.14. *Changes in SN for Each Wave*

SN	B	SE (B)	Beta	t	*p*>|t|
Wave 2	.133	.186	.060	0.72	.473
Wave 3	.145	.186	.065	0.78	.434
Wave 4	.024	.186	.011	0.13	.896
_cons	6.52	.131		49.71	.000

Note. N = 220, F (3, 216) = 0.32, p = .810, R^2 = .004

Table 4.15. *Changes in PBC for Each Wave*

PBC	B	SE (B)	Beta	t	*p*>|t|
Wave 2	.018	.112	.014	0.16	.871
Wave 3	0	.112	0	0.00	1.00
Wave 4	.073	.112	.054	0.65	.516
_cons	6.78	.079		85.70	.000

Note. N = 220, F (3, 216) = 0.19, p = .904, R^2 = .003

Table 4.16. *Changes in Intention for Each Wave*

INTN	B	SE (B)	Beta	t	*p*>|t|
Wave 2	-.055	.114	-.039	-0.48	.631
Wave 3	-.073	.114	-.053	-0.64	.522
Wave 4	-.136	.114	-.099	-1.20	.231
_cons	6.89	.080		85.88	.000

Note. N = 220, F (3, 216) = 0.49, p = .689, R^2 = .007

Table 4.17. *Changes in BB for Each Wave*

BB	B	SE (B)	Beta	t	*p*>|t|
Wave 2	-.020	.090	-.019	-0.22	.823
Wave 3	-.039	.090	-.037	-0.44	.659
Wave 4	-.100	.090	-.093	-1.12	.263
_cons	6.92	.063		109.75	.000

Note. N = 219, F (3, 215) = 0.47, p = .704, R^2 = .007

Table 4.18. *Changes in NB for Each Wave*

NB	B	SE (B)	Beta	t	*p*>|t|
Wave 2	.291	.263	.0902	1.11	.269
Wave 3	.341	.263	.108	1.30	.195
Wave 4	.323	.263	.102	1.23	.220
_cons	5.14	.186		29.70	.000

Note. N = 220, F (3, 216) = 0.75, p = .525, R^2 = .010

Table 4.19. *Changes in CB for Each Wave*

CB	B	SE (B)	Beta	t	*p*>|t|
Wave 2	-.045	.323	-.012	-0.14	.888
Wave 3	-.486	.323	-.125	-1.51	.133
Wave 4	-.168	.323	-.043	-0.52	.603
_cons	5.00	.228		21.91	.000

Note. N = 220, F (3, 216) = 0.92, p = .430, R^2 = .013

To estimate the longitudinal effects of the independent variables on the key variable of interest, intention to persist, I created three lag variables for each independent variable using Stata 13. For example, there are three lag variables for Attitude: attitude (lag1), which indicates the Attitude score from 1 wave prior; attitude (lag2), which indicates the Attitude score from 2 waves prior; and attitude (lag3), which indicates the Attitude score from 3 waves prior. For the ease of interpretation of the data, I will refer to the month in which each wave was completed (Wave 1, September; Wave 2, October; Wave 3, November; Wave 4, December). For example, when estimating the effect of Attitude on intention to persist as a function of wave, I may find that a person's Attitude towards persistence in September does not affect their Attitude toward persistence in October but does affect their Attitude toward persistence in November. That is,

students' Attitude scores may change over the course of two months, but not over the course of one month.

H1a stated that increases in Attitude toward persistence over an academic semester leads to increases in students' intentions to persist. The overall effect of Attitude toward persistence, F (3, 45) = 9.75, $p < .001$, helps support H1a. The Cohen's f^2 effect size is .65. It appears that stronger attitudes toward persistence in the previous month increase the level of students' intentions to persist. However, the coefficient for attitude (lag2) is not statistically significant, which means participants' Attitude toward persistence in September had no effect on their Attitude toward persistence in November (see Table 4.20).

Table 4.20. *Effects of Attitude Lag Variables on Intention*

INTN	B	SE (B)	Beta	t	$p>\|t\|$
attlag1	.545	.254	.575	2.14	.038
attlag2	.244	.250	.244	0.97	.335
attlag3	-.460	.216	-.333	-2.13	.039
_cons	4.64	1.10		4.22	.000

Note. N = 49, F (3, 45) = 9.75, p = .000, R^2 = .394

H1b stated that increases in BB toward persistence over an academic semester leads to increases in students' intentions to persist. The overall effect of BB toward persistence, F (3, 48) = 29.24, $p < .001$, helps support H1b. The Cohen's f^2 effect size is 1.83. However, the only significant change in BB toward persistence is found in the coefficient for behavioral beliefs (lag1), which means participants' BB toward persistence in October increased as a function of their BB toward persistence in September (see Table 4.21).

Table 4.21. *Effects of BB Lag Variables on Intention*

INTN	B	SE (B)	Beta	t	*p*>|t|
bblag1	1.78	.452	1.075	3.94	.000
bblag2	-.514	.494	-.279	-1.04	.303
bblag3	-.095	.299	-.029	-0.32	.752
_cons	-1.28	2.01		-0.64	.525

Note. N = 52, F (3, 48) = 29.24, p = .000, R^2 = .646

H2a stated that increases in SN with respect to persistence over an academic semester leads to increases in students' intentions to persist. The overall effect of SN on Intention, F (3, 49) = 28.49, $p < .001$, helps support H2a. The Cohen's f^2 effect size is 1.74. However, the coefficient for subjective norm (lag3) is not statistically significant, which means participants' SN in September had no effect on their SN in December (see Table 4.22). It appears the effect of normative influence becomes weaker towards the end of the semester such that students perceive a weaker sense of social pressure to persist at the end of the semester than at the beginning.

Table 4.22. *Effects of SN Lag Variables on Intention*

INTN	B	SE (B)	Beta	t	*p*>|t|
snlag1	.649	.108	.592	6.02	.000
snlag2	.377	.124	.321	3.04	.004
snlag3	.011	.049	.021	0.22	.826
_cons	-.149	.772		-0.19	.848

Note. N = 53, F (3, 49) = 28.49, p = .000, R^2 = .636

H2b stated that increases in NB with respect to persistence over an academic semester leads to increases in students' intentions to persist. The overall effect of NB was not statistically significant, and there were no significant changes of NB as a function of wave (see Table 4.23). Therefore, H2b was not supported. Although students' perceptions of the degree to which they experience social pressure changed throughout the semester (see Table 4.23), their beliefs about specific normative referents such as teachers and family members remained relatively stable.

Table 4.23. *Effects of NB Lag Variables on Intention*

INTN	B	SE (B)	Beta	t	*p*>|t|
nblag1	-.040	.036	-.090	-1.09	.275
nblag2	.048	.039	.111	1.22	.222
nblag3	-.014	.036	-.034	-0.41	.684
_cons	6.85	.201		34.05	.000

Note. N = 217, F (3, 213) = 0.64, p = .589, R^2 = .009

Table 4.24. *Effects of PBC Lag Variables on Intention*

INTN	B	SE (B)	Beta	t	*p*>|t|
pbclag1	.281	.154	.251	1.82	.074
pbclag2	.790	.198	.499	4.00	.000
pbclag3	-.095	.167	-.070	-0.57	.570
_cons	.122	1.441		0.08	.933

Note. N = 53, F (3, 49) = 11.28, p = .000, R^2 = .408

H3a stated that increases in PBC over an academic semester leads to increases in students' intentions to persist. The overall effect of PBC, F (3, 49) = 11.28, $p < .001$, helps support H3a. The Cohen's f^2 effect size is .69. However, the only significant change in PBC is

found in lag2, which means participants' PBC in November increased as a function of PBC in September (see Table 4.24).

H3b stated that increases in CB over an academic semester leads to increases in students' intentions to persist. The overall effect of CB, F (3, 213) = 4.21, $p < .01$, helps support H3b. The Cohen's f^2 effect size is .06. However, the only significant change in CB is found in the lag 1 coefficient, which means participants' CB in October increased as a function of their CB in September (see Table 4.25).

Table 4.25. *Effects of CB Lag Variables on Intention*

INTN	B	SE (B)	Beta	t	$p>\|t\|$
cblag1	.083	.028	.234	2.99	.003
cblag2	.015	.030	.042	0.49	.626
cblag3	-.042	.028	-.117	-1.50	.134
_cons	6.55	.147		44.50	.000

Note. N = 217, F (3, 213) = 4.21, p = .006, R^2 = .056

Table 4.26. *Effects of TI Lag Variables on Intention*

INTN	B	SE (B)	Beta	t	$p>\|t\|$
timlag1	.143	.155	.180	0.92	.361
timlag2	.316	.178	.359	1.77	.082
timlag3	-.249	.159	-.254	-1.56	.125
_cons	5.53	.798		6.92	.000

Note. N = 53, F (3, 49) = 3.28, p = .029, R^2 = .167

H4 stated that increases in student perceptions of TI over an academic semester leads to increases in students' intentions to persist. The overall effect of TI towards persistence, F (3, 49) = 3.28, $p < .05$ helps to partially support H4. The Cohen's f^2 effect size is .20. However, there

were no statistically significant changes in TI towards persistence as a function of teacher immediacy (lag1, lag2, or lag3) (see Table 4.26). Although H4 is partially supported, the overall model is very weak.

H5 stated that increases in students' intentions to persist over an academic semester leads to a higher likelihood of reenrollment. Only one participant of the 55 did not reenroll in courses for the Spring Semester 2014; therefore, H5 cannot accurately be estimated for this group of complete observations.

Table 4.27. *Model Fit Statistics for Measurement of the TPB Structural Models*

		With TI		
Fit Statistic	**Wave 1**	**Wave 2**	**Wave 3**	**Wave 4**
Chi-Square (df)	χ^2 (546) = 1252.94	χ^2 (546) = 968.78	Neg variance	Neg variance
p-value	< .001	< .001	n/a	n/a
CFI	.90	.89	.85	.80
RMSEA	.053	.073	.092	.114
(90% CI)	(.049, .057)	(.065, .080)	(.083, .100)	(.106, .123)
		Without TI		
Fit Statistic	**Wave 1**	**Wave 2**	**Wave 3**	**Wave 4**
Chi-Square (df)	Neg variance	χ^2 (221) = 541.67	Neg variance	χ^2 (221) = 708.74
p-value	n/a	< .001	n/a	< .001
CFI	.89	.88	.82	.78
RMSEA	.076	.099	.122	.150
(90% CI)	(.070, .081)	(.089, .110)	(.110, .135)	(.138, .163)

To test the full TPB, a structural model was constructed in AMOS 21 using latent variables for Attitude, BB, SN,NB, CB and Intention and observed variables for PBC and

persistence behavior (see Figures 4.9 – 4.12). The model fit well when estimating all conditions combined; however, the model only fit in conditions 1 and 4 when estimating each condition separately. Table 4.27 shows fit statistics of structural models for each wave. Negative variances (Kenny & Kashy, 1992) were produced in Waves 1, 3, and 4 of the TPB structural models and thus I was unable to fully estimate these models in AMOS. Tables 4.28 – 4.31 show the total, direct, and indirect effects of TI on the TPB components. Of most interest for this dissertation is the effect of TI on Intention. Table 4.28 shows TI has a small direct effect on Intention (.044); however the total effect (.237) is primarily indirect. That is, the effect of TI on Intention is mediated 81.43% through the TPB components. Table 4.30 shows TI has a small direct effect on Intention (.017); however the total effect (.535) is primarily indirect. That is, the effect of TI on Intention is mediated 96.64% through the TPB components. These data support the notion of teachers playing the role of "active socialization agents." Teachers from this study somehow effected students' intentions to persist through the components of the TPB.

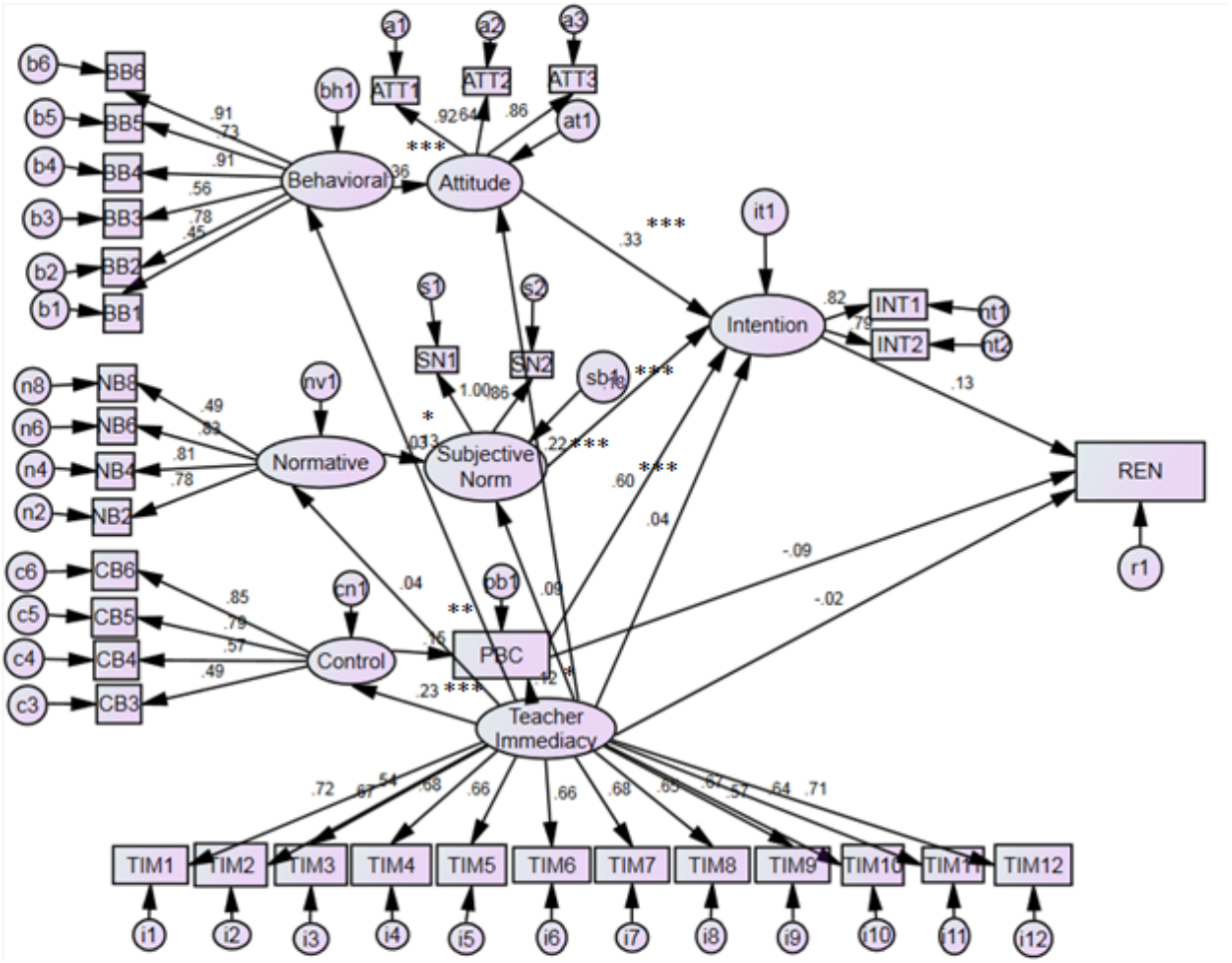

Figure 4.9. Structural model of TPB with TI in Wave 1. With two-tailed significance, *p<.05; **p<.01, ***p<.001. PBC = Perceived Behavioral Control; REN = Reenrollment.

Table 4.28. *Total, Direct, and Indirect Effects of TI on TPB Components, Wave 1*

	ATT	BB	SN	NB	PBC	CB	INT	REN
TI								
Total	.268	.134	.090	.045	.150	.228	.237	-.007
Direct	.219	.134	.089	.045	.117	.228	.044	-.024
Indirect	.049	.000	.001	.000	.033	.000	.193	.018
% Mediation	18.28	0	7.78	0	22.00	0	81.43	N/A

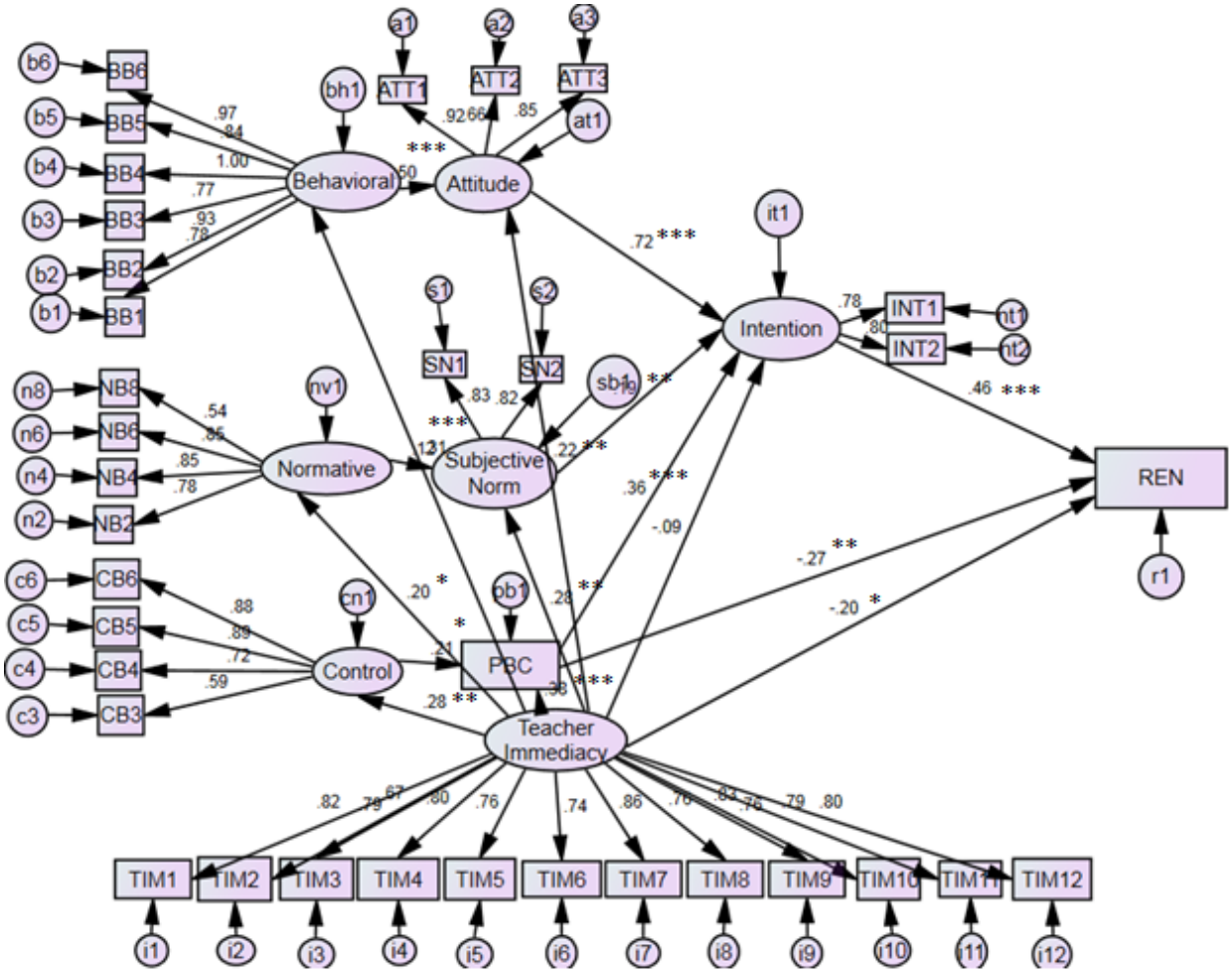

Figure 4.10. Structural model of TPB with TI in Wave 2. With two-tailed significance, *p<.05; **p<.01, ***p<.001. PBC = Perceived Behavioral Control; REN = Reenrollment.

Table 4.29. *Total, Direct, and Indirect Effects of TI on TPB Components, Wave 2*

	ATT	BB	SN	NB	PBC	CB	INT	REN
TI								
Total	.379	.308	.307	.205	.433	.280	.401	-.131
Direct	.223	.308	.283	.205	.375	.280	-.088	-.200
Indirect	.155	.000	.024	.000	.058	.000	.489	.069
% Mediation	40.90	0	7.82	0	13.40	0	<100*	52.67

Note. *It is unclear how Teacher Immediacy is mediating more than 100% of Intention through the TPB components.

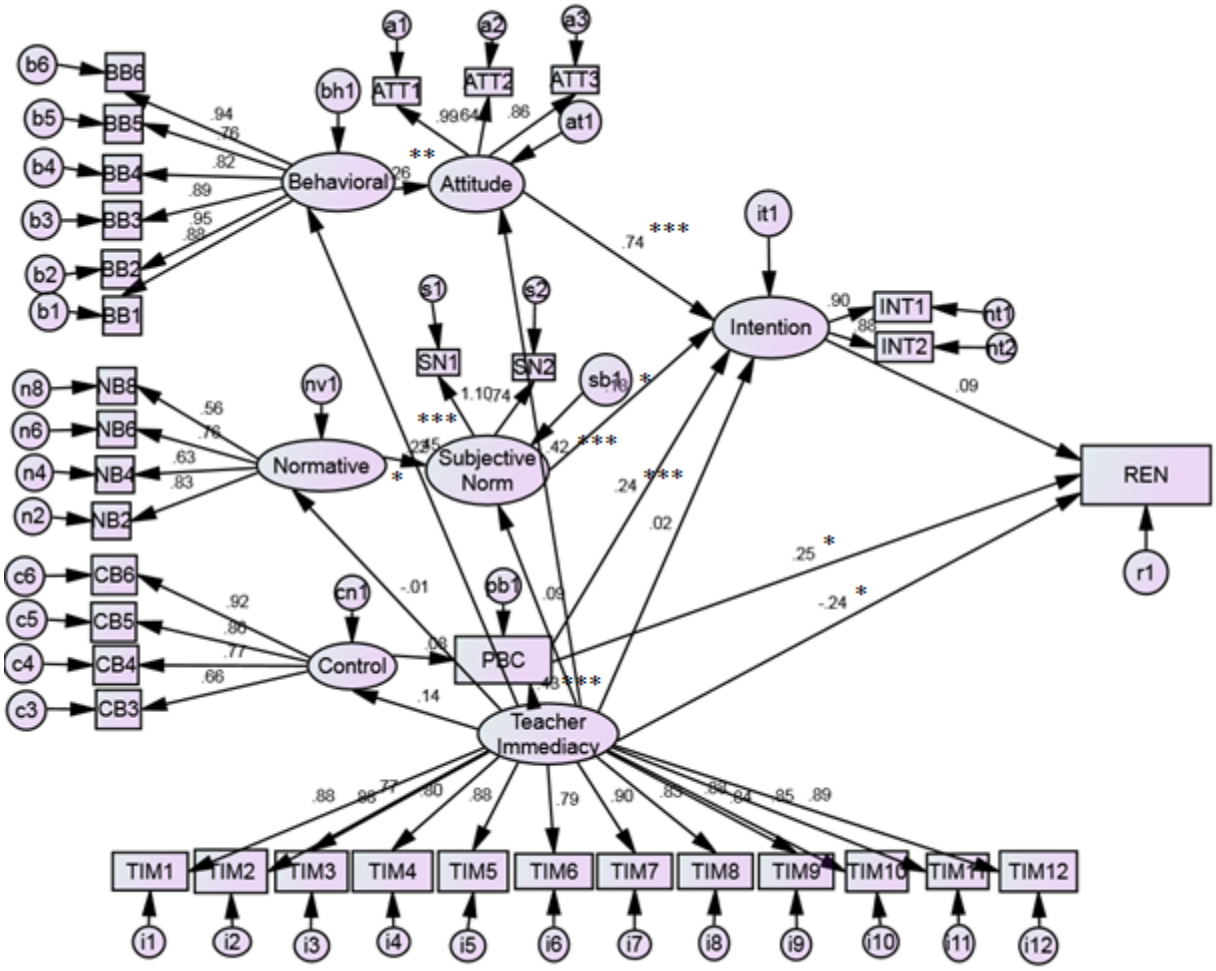

Figure 4.11. Structural model of TPB with TI in Wave 3. With two-tailed significance, *p<.05; **p<.01, ***p<.001. PBC = Perceived Behavioral Control; REN = Reenrollment.

Table 4.30. *Total, Direct, and Indirect Effects of TI on TPB Components, Wave 3*

	ATT	BB	SN	NB	PBC	CB	INT	REN
TI								
Total	.532	.451	.088	-.013	.442	.139	.535	-.083
Direct	.416	.451	.091	-.013	.431	.139	.017	-.243
Indirect	.116	.000	-.003	.000	.010	.000	.517	.160
% Mediation	21.80	0	3.41	0	2.26	0	96.64	N/A

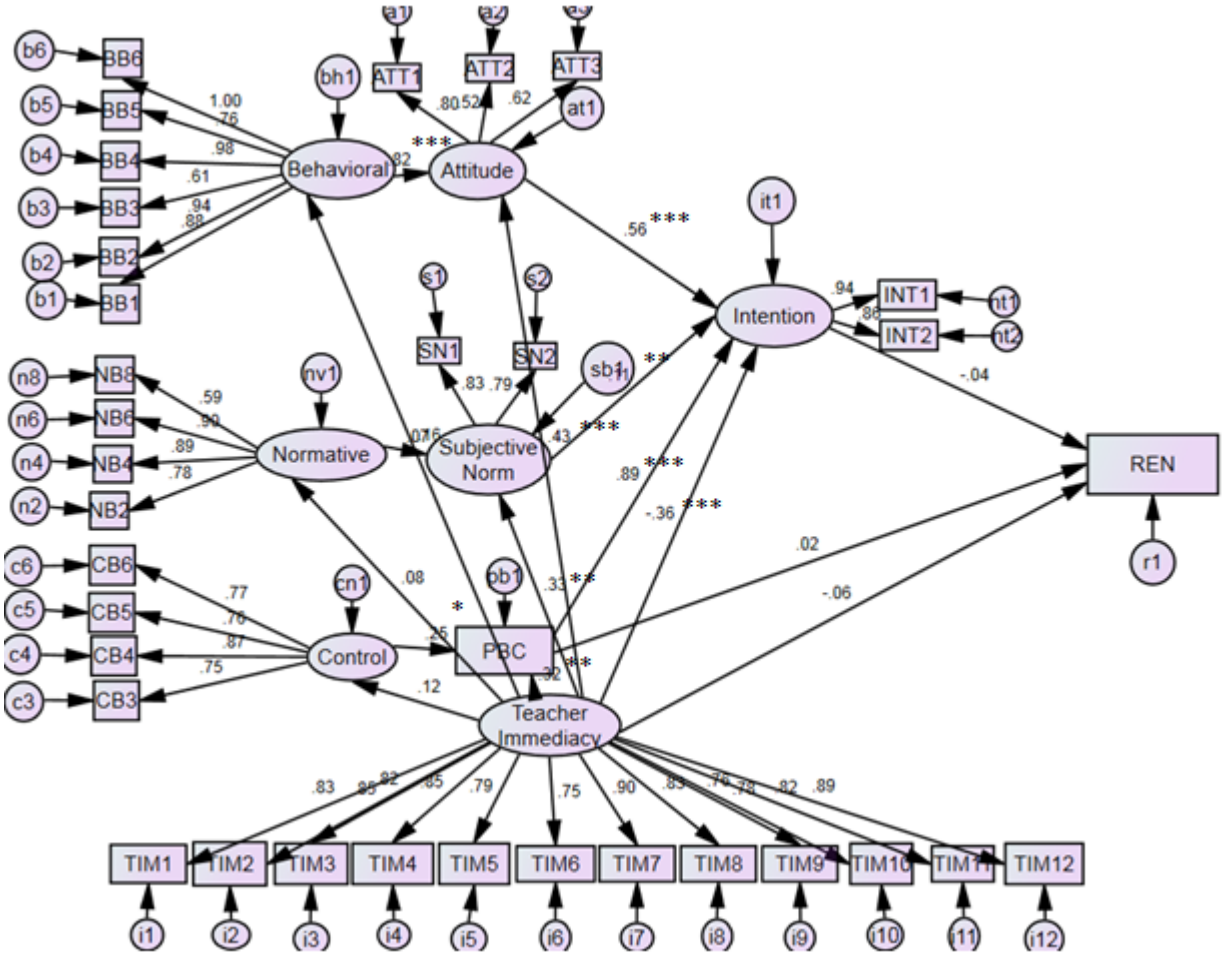

Figure 4.12. Structural model of TPB with TI in Wave 4. With two-tailed significance, *p<.05; **p<.01, ***p<.001. PBC = Perceived Behavioral Control; REN = Reenrollment.

Table 4.31. *Total, Direct, and Indirect Effects of TI on TPB Components, Wave 4*

	ATT	BB	SN	NB	PBC	CB	INT	REN
TI								
Total	.561	.156	.335	.077	.346	.115	.297	-.069
Direct	.432	.156	.330	.077	.316	.115	-.363	-.062
Indirect	.129	.000	.005	.000	.029	.000	.661	-.007
% Mediation	23.00	0	1.50	0	8.38	0	<100*	10.14

Note. *It is unclear how Teacher Immediacy is mediating more than 100% of Intention through the TPB components.

Discussion

The primary purpose of this study was to investigate the relationship between TI and student persistence over the course of an academic semester using the TPB (Ajzen, 1985) as a theoretical framework. This section of the chapter will provide a discussion of the hypotheses proposed for this study using a combination of the statistical analyses found in Tables 4.20 – 4.26, and the trend data found in Figures 4.1 – 4.8 and Tables 4.13 – 4.19. Next, a discussion of the overall observations of the study will be provided, followed by a discussion of the limitations.

Hypotheses

The following section elaborates on the outcomes of the hypothesis testing that is explained in the Results section of this chapter. Some hypotheses were partially supported and some not supported.

Partially supported hypotheses. The outcome for H1a demonstrates that stronger attitudes toward persistence in previous months tend to increase the level of students' intentions to persist. Although this relationship does not significantly change each month of the semester, generally speaking, students' dispositions towards persistence change as a function of their Attitude toward persistence, such that this relationship is significantly different in December than it was in September. This general trend supports the theoretical role posited by the TPB of attitude on behavioral intention.

The outcome for H1b demonstrates that behavioral beliefs (BB) towards persistence increases students' intentions to persist; however, this relationship is only significant for September to October. That is, there are no more significant changes (increases or decreases) in students' intentions to persist as a function of their BB after October, perhaps reflecting a ceiling

effect. Students' responses to the BB scale items deal with their dispositions toward knowledge acquisition, career preparation, and increasing the opportunities to have jobs. As shown in the trend data, behavioral beliefs are strong at the beginning of the semester (September) and become slightly stronger in October. After October, however, there seems to be a slight but not significant decline in BB. Participants' Attitude scores also slightly decline from September to December (see Figure 4.1). It is possible that attitudes toward and behavioral beliefs about persistence just fail to increase after October because that is often the time when students are experiencing the pressing demands of being a college student; it is now real! The added pressures of studying for midterms, writing comprehensive research papers, or realizing that college is harder than they had originally anticipated may contribute to a slight decline. Perhaps the idea of enrolling in courses sounds great at the beginning of an academic semester; indeed, it is hard to imagine in September that you won't be back in January. Towards the end of the first semester, however, the idea of enrolling college classes may become slightly more uncertain. It could be that the "honeymoon phase" of being a first-year college student is wearing thin. It also is possible that students are experiencing "buyer's remorse"; that is, the idea of college sounded great when they accepted their offer to the University, but over the course of a semester, they may be having regrets due to the demands of the college student life, such as studying, homework, difficult exams, and massively large lecture courses.

The outcome for H2a demonstrates that subjective norm (SN) towards persistence increases students' intentions to persist; however, this relationship is not significant for December. That is, students' SN in September does not affect their SN in December. Although there are significant increases from September to October to November in students' intentions to persist as a function of their SN, it appears the effect of normative influence becomes weaker in

December such that students perceive a weaker sense of social pressure at the end of the semester than at the beginning. As shown in the trend data, students' perception of the pressure to engage in the behavior of enrolling in courses for the Spring Semester 2014 slightly increases from September to November, but then students experience a decline in perceived pressure to enroll in courses in December (see Figure 4.3). The deadline to enroll in courses for the Spring Semester 2014 was November 12, 2013; therefore, most of the students from this study were most likely already enrolled in courses by the time they took the survey in December, which would imply an invalid assessment of the SN measure for December. That is, it would be confusing for students to respond to "Most people whose opinions I value would approve of my enrolling in courses at LSU for Spring Semester 2014" if they already enrolled. A similar pattern exists for participants' NB scores, which assesses their normative beliefs towards persistence (see Figure 4.7). For both SN and NB, students appear to increasingly be affected by the normative influence of others in their lives, up until the point where they enrolled in courses for the following semester. Perhaps students experience a sense of temporary relief when they have confirmation for what their schedule will be like for the remainder of the year. Perhaps the experience of having courses scheduled reduces some uncertainty in their lives and these students tend to perceive less pressure to be influenced by others. Some students may have done their research to choose the classes that best suit their personal and academic needs and after registering for courses in November, they experience a less significant sense of pressure to engage in behaviors as a function of normative influences.

The outcome for H3a demonstrates that perceived behavioral control (PBC) towards persistence increases students' intentions to persist; however, this relationship is only significant for November, such that students' PBC in September predicts their PBC in November. That is,

the only statistically significant coefficient for PBC is lag2 (see Table 4.24). Students' perceptions of the degree to which they have control over enrolling in courses (PBC) in November tends to be a function of their PBC in September; however, the overall model is very weak. This relationship could possibly be explained by students choosing their courses for the Spring Semester 2014. If the participants in Wave 3 already chose their classes for the following semester, even if they did not formally enroll, then they could have greater perceptions of control over enrollment behavior. Although PBC is lower in November than October, it is possible that students' PBC scores would have been even lower for Wave 3 if the participants had not yet chosen or enrolled in courses. It is also possible that students did not register on time, paid late fees, and/or did not receive the classes they had desired, which could account for the drop in PBC from October to November. However, it is also possible that students were already registered for courses by the time they completed the survey for Wave 3 in November because Spring 2014 course scheduling began on October 20, 2013. Nevertheless, there is a slight increase in PBC after November, so perhaps by December all students had "worked out" any issues with course scheduling and perceived a much greater sense of control. However, if students already enrolled in courses by the time they assessed PBC in Wave 4, it could be an invalid assessment of PBC (similar to the case with SN). That is, if students already enrolled in courses, it may be strange for them to assess PBC items such as "I am confident I can enroll in classes at LSU for Spring Semester 2014."

The outcome for H3b demonstrates that control beliefs (CB) towards persistence increases students' intentions to persist; however, this relationship is only significant for October, such that students' CB in September predicts their CB in October. That is, the only statistically significant coefficient for CB is lag1 (see Table 4.25). Students' beliefs about the

degree to which they have control over enrolling in courses (CB) in October is predicted by their CB in September; however, the overall model is very weak (see Table 4.25). Contrary to my discussion in the previous paragraph that accounts for the lag2 variable for PBC, there does not appear to be any explanation for why the lag1 coefficient is the only significant coefficient for CB. Again, a major limitation for the hypothesis testing was the small sample size ($N = 55$), which could account for the discrepancy in the differences for the coefficients for PBC and CB. Participants' CB scores slightly declined in October and November but then increased in December, but was still lower in December than in September (see Figure 4.8). Some of the items for the CB scale deal with the effect of receiving poor grades as a factor that might discourage students from enrolling in courses. Perhaps throughout the semester, these students received a variety of good, average, and poor grades thus creating the variable pattern in their CB scores. Indeed, both PBC and CB are assessing a very similar concept, students' dispositions towards their level of control over the behavior of enrolling in courses. Other than the small sample size, it is unclear to me why the statistically significant coefficients for the lag variables for PBC and CB would not be the same. That is, if lag1 and lag3 are significant in PBC, then I would expect lag1 and lag3 to be significant for CB, because PBC and CB are conceptually similar.

The outcome for H4 demonstrates that increases in students' perceptions of TI leads to increases in students' intentions to persist; however, the overall model is very weak (see Table 4.26). Although the overall model is modestly significant, $F(3, 49) = 3.28$, $p < .05$, none of the coefficients for the lag variables are significant after a two-tailed test. It appears that throughout the course of the semester, students' perceptions of TI tend to increase their intentions to persist; however, there are no significant changes as a function of month. Interestingly, Table 4.12 and

Figure 4.2 show the trends in TI over an academic semester, such that TI is statistically higher in December than in September. Considering the perspective of Andersen (1979), this was an expected outcome, such that students' perceive exponentially higher levels of TI behaviors, which could be attributed to teachers engaging in higher levels of immediacy behaviors. This reciprocal relationship is explained further in the Overall Observations section.

The primary dependent variable measured for this study is Intention, and all hypotheses predicted exponential increases in Intention throughout the semester. Although statistically non-significant, the trend data show that participants' Intention scores slightly decreased from September to December (see Figure 4.5). It could be the case that students feel increasingly less inclined to enroll in courses throughout an academic semester. Alternatively, students' intentions to enroll would likely decrease if they are already enrolled in courses. In a similar way that their Attitude and BB scores slightly declined, their Intention scores also declined. Perhaps, they are experiencing some sort of "burn out" towards the end of the semester. Although the students perceive high levels of control over their ability to enroll in classes, they might just dislike the idea of more class work, or they at least find it less desirable at the end of a semester compared to the beginning.

Hypotheses not supported. The outcome for H2b demonstrated the overall effect of students' normative beliefs (NB) towards persistence did not increase their intentions to persist. There were no significant changes of NB as a function of wave, which possibly suggests their beliefs about specific normative referents such as teachers and family members remained relatively stable throughout the semester. That is, students' intentions to persist were not significantly influenced by any dispositions they held towards those normative referents throughout the semester.

H5 was not able to be estimated for the group of complete observations, which deals with student reenrollment. Only one participant did not reenroll for the Spring Semester 2014. Therefore, I am not able to predict any relationship between intention to persist and reenrollment behavior. A much larger sample with a much larger number of people failing to reenroll is necessary to estimate this relationship. A future study might capture the effect of intentions to persist on reenrollment behavior while using longitudinal data over the course of several semesters instead of just one. Longitudinal assessments of reenrollment behavior would likely produce more variable outcomes i.e., generally speaking, student attrition tends to decline exponentially for college students.

Overall Observations

Overall, the results from this study have demonstrated the unique effect of assessing students' dispositions towards persisting in college over an academic semester. Students tend to have different dispositions towards their teachers' behaviors and towards the idea of persisting in college at different times in a semester. Participants' perceptions of their teachers' immediacy behaviors are higher at the end of the semester than at the beginning (see Table 4.12), which seems in line with Anderson's (1979) criticism of using cross-sectional data for assessing student outcomes. A general principle can be established from the outcomes of this study (see Figure 4.2) when considering Andersen's argument, namely that teachers develop a relationship with their students in the beginning of a semester, and over the course of four months students perceive their teachers engaging in higher levels of immediacy behaviors. Frymier and Houser (2000) posited a two dimension perspective of teaching, content and relational. They suggested the relational dimension of teaching involves teachers developing a personal relationship with their students to establish trust in hopes to encourage students to engage in more pro-social

pedagogical behaviors such as asking for feedback and asking "risky" questions. It stands to reason that teachers will likely have a more significant relationship with their students at the end of the semester compared to the beginning. Indeed, the longer teachers are around their students, the more immediacy behaviors they can engage in and thus the more immediate they can be perceived by their students.

Indeed, the findings from this study contribute to the extant research on TI and student persistence in ways that are both practically and theoretically significant. Practically, this study illuminates the importance of educators' attempts to establish personal relationships with their students. Educators' efforts to connect with their students are worthwhile, which can be illustrated by a recent Gallup Report dealing with the relationship between caring professors and student outcomes. Carlson (2014) writes,

> College graduates, whether they went to a hoity-toity private college or a midtier public, had double the chances of being engaged in their work and were three times as likely to be thriving in their well-being if they connected with a professor on the campus who stimulated them, cared about them, and encouraged their hopes and dreams (p.1).

These outcomes give credence to the predicted outcomes of the long term effects of positive teacher-student relationships. That is, as students have more exposure to their teachers over an academic semester, they begin to perceive higher degrees of verbal and nonverbal immediacy behaviors. It is also likely the case that teachers are engaging in higher degrees of immediacy behaviors throughout the semester as they [teachers] perceive their students responding positively to those immediacy behaviors such that a reciprocal effect exists. For example, Skinner and Belmont (1993) found an effect of reciprocity where positive student engagement elicits positive teacher behaviors. Although this reciprocity effect may appear intuitive and commonsensical, this results from this study are the first to support a significant longitudinal effect of increased perceptions of TI behaviors (see Table 4.12 & Figure 4.2). The findings from

this study can inform teachers of the linear nature of how their students assess their behaviors over the course of a semester. That is, students perceive their teachers engaging in immediacy behaviors most highly towards the end of the semester rather than the beginning. This is significant because teachers can have a dramatic influence on the degree to which a student is motivated to do well in class (Christophel, 1990; Christophel & Gorham, 1995; Schreiner, Anderson, Noel, & Cantwell, 2011). Additionally, Frymier (1993) found that students experience an increase in motivation from the beginning to the end of a semester as a function of a highly immediate teacher. Considering these findings, it stands to reason that teachers may have the greatest influence on their students at the end of a semester. Therefore, teachers may strategically wait until the end of the semester to discuss topics of importance such as career preparation, reenrolling in courses, study habits, and completion of all coursework until graduation. A future study should assess the relationship of students' attitudes towards various behaviors that their teachers try to influence them to engage in and assess changes in the students' attitudes over an academic semester. Perhaps students are more inclined to take their teachers' advice later in the semester, and students would likely experience an even greater motivation to comply with their teachers' requests if they [students] perceive high levels of immediacy behaviors in their teachers.

The theoretical significance of this study is illustrated by the use of all components from the Theory of Planned Behavior (TPB) (Ajzen, 1985; 2012) in addition to the new components developed as a result of the comprehensive TPB. This is the first study to my knowledge to use a comprehensive TPB survey, which uses all components of the theory, to predict college student persistence. Overall, the TPB accurately predicts college student persistence. Table 4.27 shows model fit statistics for the TPB structural models with and without TI (see Figures 4.9 – 4.12 for

structural models in each wave). The addition of TI to the TPB slightly improves model fit. Student reenrollment was not accurately predicted in this study. Only 1 of the 55 participants from the complete observations did not reenroll for courses for the Spring Semester 2014. Albeit this is good news for LSU and their retention efforts, I was not able to estimate any relations between the TPB and actual behavior. Students tend to be more likely to reenroll from the fall to the spring compared to reenrolling from the spring to the fall. Indeed, 418 students (90.5%) from the Spring 2013 semester (Study 1) reenrolled for the Fall 2013 semester; however, 444 students (95.5%) from the Fall 2013 semester (Study 2 including all observations from Wave 1) reenrolled for the Spring 2014 semester. Perhaps students, especially freshmen, feel more inclined to complete the second semester of their first year of college than to complete a second year altogether. There is also the likelihood of some students transferring to another college after completion of one full year. Nevertheless, this study demonstrates students' attitudes, the normative influence of people in their lives, and the degree of control to which believe they possess accurately predict their intentions to reenroll in college courses. Indeed, the TPB accurately predict students' intentions to persist as a function of Attitudes, BB, SN, NB, PBC, and CB.

The addition of the belief statements generated from the pilot study made a unique contribution to the overall TPB model. The three sub-scales for the belief items were reliable and fit well in each wave of the survey (see Tables 4.10 & 4.11). Another unique contribution in this study is the use of lag variables to ascertain how variables measured at previous points in time can affect the measurement of variables at future points in time (see Tables 4.20 – 4.26). Table 4.26 shows the relationship between TI and persistence at different time points. Although the overall regression model was significant, $F\,(3, 49) = 3.28$, $p < .05$, there were no significant

changes as a function of the wave. That is, students' intentions to persist were not predicted by any changes in their perceptions of their teachers' immediacy behaviors throughout the semester. Although students' perceptions of their teachers' immediacy behaviors increased throughout the semester, the increase in immediacy behaviors did not translate to a direct increase in their intentions to persist. The lack of finding more significant outcomes is likely due to a number of limitations, which will be addressed in the following section.

Limitations

There are a number of limitations surrounding the current study. There are data from 465 participants in this study; however, the hypotheses tested for this study are limited to the "complete observations" (n = 55), participants who completed all four waves of the survey. The model is very weak for student persistence increasing as a function of students' perceptions of their teachers' immediacy behaviors over the course of an academic semester (see Table 4.26). Additionally, there are eight males and 47 females represented in the complete observations, and they are mostly 18 years old. A study that includes a much higher number of participants with more variability in age and sex would likely produce different outcomes.

All of the observed variables (Attitude, BB, SN, NB, PBC, CB, and Intention) are negatively skewed to the left. Indeed, there appears to be a systematic inflation of students' attitudes, BB, SN, NB, PBC, CB, and intentions to persist. The participants in the complete observations are first-year students who attend LSU, a Research One Flagship University with a beautiful state-of-the-art campus, excellent sports teams, and several extracurricular activities. They were at the top of their graduating high school class, as would make it likely that most students felt positive towards persistence (attitude), believed good things will happen if they enroll in courses (BB), felt influenced by normative behaviors of others concerning persistence

Table 4.32. *Skewness and Kurtosis of All Observed Variables in All Waves Combined in Study 2*

	ATT	BB	SN	NB	PBC	CB	INT
Skewness	-2.653	-5.733	-2.653	-.605	-3.081	-.506	-3.569
SE of Skewness	.087	.086	.086	.086	.086	.086	.086
Ratio	-30.49	-66.66	-30.85	-7.03	-35.83	-5.88	-41.50
Kurtosis	8.679	42.850	6.625	-.355	11.262	-.435	14.542
SE of Kurtosis	.174	.172	.172	.171	.173	.172	.172
Ratio	49.88	249.13	38.52	-2.08	65.10	-2.53	84.55

Note. ATT = Attitude; BB = Behavioral Beliefs; SN = Subjective Norm; NB = Normative Beliefs; PBC = Perceived Behavioral Control; CB = Control Beliefs; INT = Intention.

(SN), believed important people would want them to enroll in courses (NB), felt confident in the ability to persist (PBC), believed they had the means by which it is necessary to enroll in courses (CB), and genuinely intended to persist in college (intention). It is also reasonable to suggest most students from this study plan on completing a second year of college, or at least intend do so. For example, the students in the complete observations ($N = 55$) completed each wave of the survey. So, these students may not be representative of the LSU population, nor even the Freshmen class. That is, the students in the complete observations are only representing about 1% of the total number of first year students, which was 5,490 at the start of the Fall Semester 2013. Although anecdotal, it is reasonable to suggest that the same kinds of students who will complete all necessary surveys in a study are also the kinds of students who are attending their classes regularly, engaging in positive student behaviors, and consistently enrolling in courses each semester. For example, Table 4.33 shows a comparison of HS GPA, ACT, and SAT scores between the complete observations and the population. The students from the complete

observations had higher means on HS GPA and ACT compared to the population, respectively 3.64 versus 3.38 and 28 versus 25 (See Table 4.33).

Table 4.33. *Comparison of Sample Data to Population Data*

	HS GPA		ACT Score		SAT Score	
	Sample	Population	Sample	Population	Sample	Population
Valid	54	5430	52	5042	8	1009
Missing	1	6	3	394	47	4427
Mean	3.64	3.38	27.52	25.48	1102.50	1124.90
Median	3.68	3.43	28.00	25.00	1095.00	1120.00
Mode	4.00	4.00	26.00	23.00	940.00	1070.00
SD	.30	.53	2.96	3.45	127.36	150.59
Minimum	2.99	.00	22.00	10.00	940.00	540.00
Maximum	4.00	4.00	33.00	36.00	1320.00	1600.00

Ideally, a future study would use the same independent and dependent measures, include a much larger number of participants in all waves of data collection, and track the progress of the participants over the course of several semesters. Then, for students who do not reenroll in any given semester, those students should be contacted to ascertain their reason for not reenrolling in courses, and then of course those students' assessment of measures such as TI and the components of the TPB should be considered to account for variability in their persistence.

Conclusion

This study sought to examine how changes in students' perceptions of their teachers' immediacy behaviors systematically influence their intentions to persist in college. The results demonstrated a modest effect, which is slightly due to the small sample size. College students

from this sample ($N = 55$) generally change their overall dispositions towards the idea of persisting in college over the course of an academic semester. Some of the trends in the changes of observed variables in Figures 4.1 – 4.8 are unexpected. For example, Figure 4.5 shows a decline in intention to persist across all waves. This decline is not significant; however, it may suggest that as students endure the semester, they are less inclined to persist. That is, during week one, things are great, they are brand new college students (only one participant from the complete observations was not a freshman), and they have great attitudes towards college. However, as the semester progresses they honeymoon phase of being a freshman may gradually dwindle influencing them to be less inclined to persist. Overall, this study has demonstrated the utility of using a comprehensive TPB survey to predict behavior, and the effect of using longitudinal data to capture the relationship of how students' dispositions towards their teachers and towards persisting in school changes over time.

CHAPTER 5

DISCUSSION

The purpose of this chapter is to provide an overall discussion of the results of Study 1 and Study 2 of this dissertation in light of the research questions presented in Chapter 2. Next, a discussion of the limitations to this dissertation will be offered along with directions for future research. Last, this chapter concludes with a closing paragraph of my final thoughts on this dissertation and the topic of teacher immediacy-student persistence research in light of the Theory of Planned Behavior (TPB).

Discussion of Results

Research Question 1 asked how teacher immediacy (TI) influences the components of the TPB in the prediction of students' intentions to persist in college. I created structural models using AMOS 21 for both Study 1 and Study 2 data to estimate any kind of effect TI has on the relationship between TPB and persistence. The relationship is unclear. Figure 3.5 illustrates the overall effect of TI on the TPB for Study 1. Table 3.14 shows the effect of adding TI to the TPB structural model. There are no significant changes in model fit from the addition of TI on the overall structural model of TPB. Although TI has positive associations with other observed variables from the study (see Table 3.8), it is unclear how TI is influencing the overall model of using the TPB to predict student persistence. Indeed, TI and intention to persist had a correlation of .12 in Study 1 (see Table 3.7); however, it is unclear how TI is influencing the other TPB models. Figures 4.9 – 4.12 illustrate the effect of TI on the TPB structural models for Study 2; however, it is unclear how TI was influencing the comprehensive TPB model to account for persistence behavior. A major limitation is due to the negative variances produced in Waves 3

and 4 of the TPB structural models which included TI. Although the effect of TI on the TPB is unclear in the structural models from both studies, TI is positively correlated to the observed variables that represent the components of the TPB (see Table 3.7). That is, the immediacy behaviors of teachers tend to positively affect students' attitudes towards persistence (Attitude), the normative influence they experience to persist (SN), and the degree of control they believe they have over persistence (PBC).

Research Question 2 asked whether the TPB does a good job of accounting for variability in persistence behavior. That is, does the TPB work and which components are accounting for behavior the best? Study 1 results showed all TPB components are positively correlated with persistence behavior (see Table 3.7). Figure 3.2 provides a structural model to illustrate the relationship between the TPB and persistence, which shows PBC has the greatest influence on students' intentions to persist. This suggests students' perceptions of the degree to which they have control over enrolling in courses are stronger than their attitudes or any normative influence they have towards enrolling courses. Table 4.27 illustrates the structural model fit for the comprehensive TPB without TI, which is a poorer fitting model than what was found in Table 3.13 and Table 3.14. The TPB structural models in Study 1 and Study 2 are dealing with different groups of participants. Study 1 assessed first year students in the Spring Semester 2013, and Study 2 assessed first year students in Fall Semester 2013. It is possible that students generally have different dispositions towards persistence in their second semester of being a college student compare to their first. Additionally, the sample sizes were relatively small for estimating the TPB structural models in Study 1 and Study 2.

Research Question 3 asked how student perceptions of TI change over the course of an academic semester. The answer to this question requires the use of the longitudinal data, so this

question is specific to Study 2. Although the overall model is weak, Table 4.12 provides the TI lag variables, which illustrates students' perceptions of their teachers' immediacy behavior are significantly higher in December than in September. Figure 4.2 provides a more visually appealing illustration of this relationship showing students' perceptions of TI slightly increases from September to October with a more moderate increase in November and the most significant increase in December. One likely reason for a weak model is the small sample size ($N = 55$). Nevertheless, participants' perceptions of their teachers' immediacy behaviors are higher at the end of the semester than at the beginning, which seems to support Anderson's (1979) criticism of using cross-sectional data for assessing student outcomes. A general principle can be established from the outcome of this study when considering Andersen's argument, namely that teachers develop a relationship with their students in the beginning of a semester, and over the course of four months students perceive their teachers engaging in higher levels of immediacy behaviors. It is also likely that students develop more positive dispositions towards their teachers over the course of a semester, assuming they like their teachers. For example, students will gradually perceive their teachers as funnier, clearer, more caring, and will probably respect them more throughout a semester. That is, students' perceptions of behaviors such as humor, clarity, caring, and respect would likely increase exponentially over the course of a semester.

Limitations

Of course, no dissertation is without its limitations. For both studies of this dissertation, nearly all participants were first year students and most were 18 or 19 years of age, so there is very limited variability in age. Another potential limitation inherently present in all self-report measures is a social desirability bias, meaning individuals completing the various persistence behavior scales in this study, despite reassurances of anonymity, still strive to present themselves

as good students. Nearly all participants from this study were first year students who generally "intend" to persist in school by continuously enrolling in courses until they graduate.

One of the major limitations from Study 1 was the use of cross-sectional data to assess the relationship between TI and persistence. Anderson's (1979) criticism of the use of cross-sectional data to assess the effects of TI on student outcomes is that a test early in the semester may not capture the effect of teachers' behaviors on their students' performance. This limitation was addressed in Study 2 by measuring students' perceptions of teacher's immediacy behaviors over the course of a semester.

Another major limitation for both studies is sample size. For Study 1, there are data from 462 participants; however, because there are four conditions of the TI scale, the sample sizes were relatively small. Respectively, they are $n = 139$, $n = 115$, $n = 88$, and $n = 120$. The sample sizes can partially account for the Heywood cases (Kenny & Kashy, 1992) seen in the estimation of the TPB factors. For Study 2, there are data from 465 participants; however, the hypotheses tested for this study are limited to the "complete observations" ($n = 55$) which only includes participants who completed all four waves of the survey. Additionally, there are eight males and 47 females represented in the complete observations, so in addition to limited variability in age, there is very little variability in biological sex.

The final major limitation is the skewness of the observed variables in Study 1 and Study 2. All of the observed variables (attitude, BB, SN, NB, PBC, CB, and intention) are negatively skewed. Indeed, there appears to be a systematic inflation of students' dispositions towards these variables. Because the participants in these studies are first-year students who attend LSU, a Research One Flagship University with a beautiful state-of-the-art campus, excellent sports teams, and several extracurricular activities, and who were at the top of their graduating high

school class, it is likely to reason that most students feel positive towards persistence (Attitude), believe good things will happen if they enroll in courses (BB), feel influenced by normative behaviors of others concerning persistence (SN), believe important people would want them to enroll in courses (NB), feel confident in the ability to persist (PBC), believe they have the means by which it is necessary to enroll in courses (CB), and genuinely intend persist in college (intention). It is also reasonable to suggest most students from this study plan on completing a second year of college, or at least intend do so.

Future Research

Ideally, a future study would use the same independent and dependent measures, include a much larger number of participants in all waves of data collection, and track the progress of the participants over the course of five to six years. Some of the major longitudinal studies that measure student retention tend to look at the 5-year or 6-year graduation rate (Berkner et al., 1996; Horn & Carroll, 2004). Measuring student progress over five or six years would allow researchers to track enrollment trends, grade fluctuations, and ultimately whether students graduate with a degree. For students who do not reenroll in any given semester, those students should be contacted to ascertain their reason for not reenrolling in courses, and then of course those students' assessment of measures such as TI and the components of the TPB should be considered to account for variability in their persistence.

Considering one of the major limitations of students at LSU having highly skewed outcomes for the observed variables, a study on the TI-student persistence link using the TPB should be done at different types of colleges and in different regions. I am curious to see how students' dispositions towards college and college teachers would be different at a community college or a liberal arts college in a different area such as New York City or Los Angeles.

Assuming a much larger sample size would be possible doing this same study in the areas mentioned would likely produce different outcomes. There is much more variability in age, ethnicity, and dispositions towards cultural norms and preferences in areas such as New York and Los Angeles. For example, the greater Los Angeles area has a population of approximately 18 million with more than 120 colleges and universities, and New York City has a population of approximately 8.5 million also with more than 120 colleges. That is 26.5 million people, which is more than 8% of the nation's population, represented in just two areas. Collecting research from participants in these areas would provide a more nationally geographically representative sample of the ways US college students perceive their teachers' behaviors and how that affects their dispositions towards persistence. After all, the large studies done by the US Department of Education tend to be nationally representative of college students in the US, not just LSU students.

Implications

The implications from the results of this dissertation should call attention to college administrators, departmental deans, and of course faculty members. I posit the outcomes from both studies of this dissertation are the tip of the iceberg on the utility of directing retention efforts to the classroom. Without classrooms and teachers, most of college education would be obsolete. With more research findings showing significant positive effects of teacher behaviors on student outcomes, colleges ought to incentivize effective teaching. It would behoove teachers to engage in effective prosocial teaching behaviors if there were enough data illustrating the benefits of such teaching, and it would especially benefit teachers to be incentivized if they are found to be teaching in such ways. The results from this dissertation support the efforts of college initiatives such as LSU's "Freshman Year Experience" (FYE), which seek to provide

first year students with the resources that are essential for persisting in college. My hope is that the FYE at LSU in addition to retention programs among all colleges in the U.S. will rise above the top and begin targeting the retention efforts to the classroom.

Conclusion

The studies presented in this dissertation have contributed to the extant research on TI, student persistence, and have illustrated the utility of using the TPB to account for intentions to perform behavior. One of the most significant outcomes from this dissertation is the support for changes in student perceptions of TI behaviors over the course of a semester. I imagine Janis Andersen would be proud to know the outcome of Study 2 results, namely that assessing teachers' behaviors over the course of a semester provides a more comprehensive understanding of the relational development between teachers and students.

Considering the recent report from the Chronicle of Higher Education (Carlson, 2014), it appears the effect of positive teachers is enduring not ephemeral, lasting more than one semester. For example, individuals who had teachers that provided emotional support and made them excited about learning were more likely to be engaged at work. Because I only assessed students' perceptions of their teachers over the course of one academic semester, I am unable to estimate the long term effects of teachers who engage in prosocial behaviors, specifically high degrees of immediacy behaviors. Consider the approach-avoidance concept discussed in Chapter 2. Russell and Mehrabian (1978) suggest people approach things they like and avoid things they do not like. In general, people approach pleasant settings more than unpleasant ones. Arousal also determines how people approach a setting. For instance, it is plausible to suggest students are more likely to go to a class with an engaging instructor who is not excessive in his or her behaviors, and less likely to go to class with a teacher who is completely non-engaging. From

this, I suggest students are more likely to approach classes with engaging instructors, so long as they have a pleasurable experience. Brophy (1987) suggested teachers are not just in a position of reacting to student behavior, but rather are *active socialization agents* who are capable of influencing a student's propensity to develop a motivation to learn. In my own experience of being a college student, there were certain teachers I would take for multiple classes because I liked the teachers' style of teaching, their personalities, and they way they treated me. I would look forward to attending class and interacting with the teacher. I can't say I looked forward to writing papers; however, my overall disposition towards persistence was influenced by the teacher, who I believe really is an *active socialization agent*, as Brophy suggested. Perhaps one way to understand this phenomenon is the way brand loyalty works. For example, some people will finally settle on a specific brand of laundry detergent, many times at a young age. Throughout their lives, they always use Tide. They like the way it smells, the way it makes their clothes feel, the way it can remind them of their childhood, and hopefully the way it gets the stains out. Perhaps these people "approach" Tide because it is "pleasant." Perhaps these people get to a point where they actually enjoy the experience of washing clothes, or at least find it pleasant and maybe even develop more positive behaviors towards cleanliness. I wish not to make too close a comparison of effective teachers to effective laundry detergent; however, I think the analogy highlights an anecdotal principle, which is partially supported by the Chronicle of Higher Education report: If students have a few teachers who are effective and highly immediate, students may develop good habits and positive dispositions towards persistence behaviors such as arriving on time, completing all necessary work, paying attention, and asking good questions. The effect of certain highly immediate teachers may be long-lasting, such that students may approach all of their college classes proactively with positive attitudes, even for the

classes with ineffective teachers who are non immediate; in other words, they persist because of their interactions with important socialization agents. One way to conceive of college students and teachers is preparation for a career job where students become employees and they now have employers instead of teachers. Any good habit developed as students will likely carry over into their job and of course any bad habits may also carry over. This leads to a question of how teachers' behaviors towards students during their first year as a college student affects their overall work performance throughout their career. I am hopeful there will be future studies to address questions like this, which would require a lot of time and resources but offer a very rich understanding of the long term effects of teachers' positive communication behaviors on student outcomes.

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APPENDIX A: THE FOUR CONDITIONS OF TEACHER IMMEDIACY

1- "Think of the LSU teacher you had in the class that met just prior to you taking this survey. This could have been 10 minutes ago, a few hours ago, or a few days ago. Please indicate the frequency with which this teacher uses each behavior presented."

2- "Effective teachers can be described as engaging in prosocial (positive) behaviors that tend to produce positive student outcomes. From the time you began taking courses at LSU, **think of the teacher you would describe as the *most* effective**. This could be a teacher you had in a course that is completed or the teacher in a class in which you are currently enrolled. The only criterion is that this teacher is someone you had while at LSU. Please indicate the frequency with which this teacher uses/used each behavior presented."

3- "Effective teachers can be described as engaging in prosocial (positive) behaviors that tend to produce positive student outcomes. From the time you began taking courses at LSU, **think of the teacher you would describe as the *least* effective**. This could be a teacher you had in a course that is completed or the teacher in a class in which you are currently enrolled. The only criterion is that this teacher is someone you had while at LSU. Please indicate the frequency with which this teacher uses/used each behavior presented."

4- "From the time you began taking courses at LSU, **think of all of the teachers you have had**. Take a moment to reflect and think back to your very first course and then forward to all the courses in which you are currently enrolled. How would you evaluate these teachers' behaviors as a whole? That is, thinking of all your LSU teachers, in general. Please indicate the frequency with which these teachers use each behavior presented."

APPENDIX B: GORHAM'S (1988) 30-ITEM TEACHER IMMEDIACY SCALE

Verbal items:

1. Uses personal examples or talks about experience she/he has had outside of class.
2. Asks questions or encourages students to talk.
3. Gets into discussions based on something a student brings up even when this doesn't seem to be part of his/her lecture plan.
4. Uses humor in class.
5. Addresses students by name.
6. Addresses me by name.
7. Gets into conversations with individual students before or after class.
8. Has initiated conversations with me before, after or outside of class.
9. Refers to class as "our" class or what "we" are doing.
10. Provides feedback on my individual work through comments on papers, oral discussions, etc.
11. Calls on students to answer questions even if they have not indicated that they want to talk.*
12. Asks how students feel about an assignment, due date, or discussion topic.
13. Invites students to email or meet with him/her outside of class if they have questions or want to discuss something.
14. Asks questions that solicit viewpoints or opinions.
15. Praises students' work, actions, or comments.
16. Will have discussions about things unrelated to class with individual students or with the class as a whole.
17. Is addressed by his/her first name by the students.

Nonverbal items:

18. Sits behind desk while teaching.*
19. Gestures while talking to class.
20. Uses monotone/dull voice when talking to class.*
21. Looks at students when talking to them.
22. Smiles at the class as a whole, not just individual students.
23. Has a very tense body position while talking to the class.*
24. Uses appropriate touch with students in class.
25. Moves around the classroom while teaching.
26. Looks at the board or notes while talking to the class.*
27. Stands behind podium or desk while teaching.*
28. Has a very relaxed body position while talking to class.
29. Smiles at individual students in the class.
30. Uses a variety of vocal expressions while talking to the class.

APPENDIX C: 12-ITEM TEACHER IMMEDIACY SCALE

Verbal items:

2. Asks questions or encourages students to talk.
4. Uses humor in class.
7. Gets into conversations with individual students before or after class.
9. Refers to class as "our" class or what "we" are doing.
13. Invites students to email or meet with him/her outside of class if they have questions or want to discuss something.
15. Praises students' work, actions, or comments.

Nonverbal items:

19. Gestures while talking to class.
21. Looks at students when talking to them.
22. Smiles at the class as a whole, not just individual students.
25. Moves around the classroom while teaching.
28. Has a very relaxed body position while talking to class.
30. Uses a variety of vocal expressions while talking to the class.

APPENDIX D: SURVEY ITEMS FOR THE TPB COMPONENTS

College graduation rates vary widely among colleges throughout the U.S. Some students enroll in courses every semester, complete all necessary coursework, and graduate in 4 years. Some students will not enroll in courses every semester, and may still graduate within 5 or 6 years. However, several college students will take courses for a few or several semesters, but do not graduate with a degree. The present survey is part of an investigation that attempts to ascertain some of the reasons why students persist in college. Essentially, student persistence is the degree to which students will stay in school and continue taking classes until finished (Wheeless, Witt, Maresh, Bryand, & Schrodt, 2011). By student persistence, we mean continuous enrollment for courses every semester. Please read each question carefully and answer it to the best of your ability. There are no correct or incorrect responses; we are primarily interested in your opinion.

Remember: all responses to this survey are completely confidential. Your instructors have **nothing** to do with this study and will **not** see your responses. Please be assured that the information you provide in this study will have **no effect on your grades**.

Attitude

For me to enroll in classes at LSU for Fall Semester 2013 is

Extremely Good:-------: Extremely Bad
Extremely Pleasant:-------:Extremely Unpleasant
Extremely Wise:-------:Extremely Foolish

Subjective Norm

Most people who are important to me think that I should enroll in courses at LSU for Fall Semester 2013.

Strongly Disagree:-------:Strongly Agree

Most people whose opinions I value would approve of my enrolling in courses at LSU for Fall Semester 2013.

Strongly Disagree:-------:Strongly Agree

Most people like me will enroll in courses at LSU for Fall Semester 2013.

Extremely Unlikely:-------:Extremely Likely

Perceived Behavioral Control

For me to enroll in classes at LSU for Fall Semester 2013 will be

Extremely Difficult:-------: Extremely Easy

My enrolling in courses at LSU for Fall Semester 2013 is up to me.

Strongly Disagree:-------:Strongly Agree

I am confident I can enroll in classes at LSU for Fall Semester 2013.

True:-------:False

Intention

I intend to enroll in courses at LSU for Fall Semester 2013.
Extremely Likely:-------:Extremely Unlikely

I intend to enroll in courses at LSU and complete all coursework until I have a degree.
Extremely Likely:-------:Extremely Unlikely

APPENDIX E: SURVEY ITEMS FOR THE TPB COMPONENTS IN STUDY TWO

College graduation rates vary widely among colleges throughout the U.S. Some students enroll in courses every semester, complete all necessary coursework, and graduate in 4 years. Some students will not enroll in courses every semester, and may still graduate within 5 or 6 years. Many college students will take courses for a few or several semesters, but do not graduate with a degree. The present survey is part of an investigation that attempts to ascertain some of the reasons why students persist in college.

Student persistence is the degree to which students will stay in school and continue taking classes until finished. By student persistence, we mean continuous enrollment for courses every semester. Please read each question carefully and answer it to the best of your ability. There are no correct or incorrect responses; we are primarily interested in your opinions.

Remember: all responses to this survey are completely confidential. Your instructors have **nothing** to do with this study and will **not** see your responses. Please be assured that the information you provide in this study will have **no effect on your grades**.

Behavioral Beliefs and Outcome Evaluations

I will gain knowledge I if I enroll in courses for the Spring Semester 2014.

Likely: ------- :Unlikely

Gaining knowledge is

Good: ------- :Bad

I will be more prepared for a career if I enroll in courses for the Spring Semester 2014.

Likely: ------- :Unlikely

Being prepared for a career is…

Good: ------- :Bad

I will have better job opportunities if I graduate college with a degree.

Likely: ------- :Unlikely

Having better job opportunities is…

Good: ------- :Bad

Injunctive Normative Beliefs and Motivation to Comply

My family members think that I should enroll in courses for the Spring Semester 2014.

Agree: ------- :Disagree

When it comes to matters of persisting in college, I want to do what my family members think I should do.

Agree: ------- :Disagree

My teachers think that I should enroll in courses for the Spring Semester 2014.

Agree: ------- :Disagree

When it comes to matters of persisting in college, I want to do what my teachers think I should do.

Agree: ------- :Disagree

My close friends think that I should enroll in courses for the Spring Semester 2014.

Agree: ------- :Disagree

When it comes to matters of persisting in college, I want to do what my close friends think I should do.

Agree: ------- :Disagree

Descriptive Normative Beliefs and Identification with the Referent

Most of my friends who have graduated college with a degree had persisted in college by continuously enrolling in courses every semester.

False: ------- :True

When it comes to matters of persisting in college, how much do you want to be like your friends?

Very Much: ------- :Not at All

Control Beliefs and Power of Control Factors

I expect that I will have a consistent source of financial support during this college year.

Likely: ------- :Unlikely

Having a consistent source of financial support during this college year will enable me to enroll in courses for the Spring Semester 2014.

Disagree: ------- :Agree

How much do unenthusiastic professors discourage you from wanting to persist in college?

Not Much: ------- :Very Much

Having unenthusiastic professors will make me less likely to enroll in courses for the Spring Semester 2014.

Disagree: ------- :Agree

How much would a poor grade for an entire course discourage you from persisting in college?

Not Much: ------- :Very Much

Receiving a poor grade for an entire course would make me less likely to enroll in courses for the Spring Semester 2014.

Disagree: ------- :Agree

Attitude

Direct Measure

For me to enroll in classes at LSU for the Spring Semester 2014 is

Extremely Good:-------: Extremely Bad
Extremely Pleasant:-------:Extremely Unpleasant
Extremely Valuable:-------:Extremely Worthless

Subjective Norm

Direct Measure

Most people who are important to me think that I should enroll in courses at LSU for the Spring Semester 2014.

Strongly Disagree:-------:Strongly Agree

Most people whose opinions I value would approve of my enrolling in courses at LSU for the Spring Semester 2014.

Strongly Disagree:-------:Strongly Agree

Most people like me will enroll in courses at LSU for the Spring Semester 2014.

Extremely Unlikely:-------:Extremely Likely

Perceived Behavioral Control

Direct Measure

Enrolling in classes at LSU for the Spring Semester 2014 will be

Extremely Difficult:-------: Extremely Easy

Enrolling in courses at LSU for the Spring Semester 2014 is up to me.

Strongly Disagree:-------:Strongly Agree

I am confident I can enroll in classes at LSU for the Spring Semester 2014.

True:-------:False

Intention

Direct Measure

I intend to enroll in courses at LSU for the Spring Semester 2014.

Extremely Likely:-------:Extremely Unlikely

I intend to enroll in courses at LSU and complete all coursework until I have a degree.

Extremely Likely:-------:Extremely Unlikely

Past Behavior

Generally speaking, I complete the LSU courses in which I am enrolled.

False:-------:True

APPENDIX F: PILOT STUDY FOR TPB SURVEY IN STUDY 2

The Theory of Planned Behavior (TPB) (Ajzen, 1985) does not have any standard questionnaire; therefore, one must conduct formative research to create a survey that is appropriate for any given population. This pilot study was designed to assess LSU students' dispositions towards persisting in college, which is a specific behavior. The ways participants responded to the questions in the pilot study determined the survey items used in Study 2.

Method

Data were collected through an online survey via Qualtrics® survey software. The survey was completed by 25 participants (20 female, 5 male) who reported a mean age of 18.68 (*SD* = .48) and were primarily White (*n* = 21). All of the participants were freshmen, and the most common academic concentration of the participants was Basic Sciences (*n* = 5) followed by Education (*n* = 4).

A list of all first-year students and their email addresses was obtained from the University Registrar (*N* = 5,748). I randomly selected approximately 10% of these students for the pilot study. An invitation email was sent to these 588 students towards the end of the Spring Semester 2013 that explained the purpose of the study and included a link to a secure URL. There were a total of 25 responses with complete survey information.

All participants were informed of the purpose of the study and then responded to open-ended questions. Participants provided their answers to the following questions assessing their dispositions towards persistence in college:

> What do you see as the advantages of enrolling in courses at LSU for Fall Semester 2013?
>
> What do you see as the disadvantages of enrolling in courses at LSU for Fall Semester 2013?

What else comes to mind when you think about enrolling in courses at LSU for Fall Semester 2013?

What do you see as the advantages of graduating college with a degree?

What do you see as the disadvantages of graduating college with a degree?

Please list the individuals or groups who would approve of think you should enroll in courses at LSU for Fall Semester 2013.

Please list the individuals or groups who would disapprove of think you should not enroll in courses at LSU for Fall Semester 2013.

Please list the factors or circumstances that would make it easy or enable you to enroll in courses at LSU for Fall Semester 2013.

Please list the factors or circumstances that would make it difficult or prevent you from enrolling in courses at LSU for Fall Semester 2013.

Are there any other factors that might encourage you to enroll in courses at LSU for the Fall Semester 2013?

Are there any other factors that might discourage you from enrolling in courses at LSU for the Fall Semester 2013?

Results

Participants provided a variety of answers and comments to the survey items. For advantages of enrolling in courses, participants provided responses such as: gaining knowledge, career preparation, and furthering one's education. For disadvantages of enrolling in courses, participants provided responses such as: large class sizes, cost associated with enrolling, and academic challenges. For other things that come to mind when enrolling in courses, participants provided responses such as: football season, stress associated with persisting, and enjoying college life. For advantages of graduating college with a degree, participants provided responses such as: more job opportunities, increasing knowledge, and self-fulfillment. For disadvantages of graduating college with a degree, participants provided responses such as: paying off debt from loans, takes a lot of time, and overqualified to work certain jobs. For individuals who think

students should enroll in courses, participants provided responses such as: family, friends, sorority/fraternity members, and teachers. For individuals who think students should not enroll in courses, participants provided responses such as: competitors, certain family members, and myself in 10 years. For factors that would make it easy to enroll in courses, participants provided responses such as: TOPS, more availability for classes, and more information from counselors about choosing the right courses. For factors that would make it difficult to enroll in courses, participants provided responses such as: losing a scholarship, health emergencies, and classes filling up. For other factors that might encourage students to enroll in courses, participants provided responses such as: personal goals, the recommendation of a good teacher, and more availability for classes. For other factors that might discourage students from enrolling in courses, participants provided responses such as: difficulty of classes, dispassionate professors, time conflicts, and poor grades.

Discussion

The most common responses found to the various survey items from this pilot study were then modified to create a comprehensive TPB survey for Study 2. Therefore, the survey items from Study 2 were created from members of their own population i.e., LSU freshmen. Generating survey items from formative research is in accord with the principles of TPB research according to Ajzen. It would be likely to generate much different responses using the same questions if this same survey were given to college students at a different school or in a different region. Educators and college administrators should take the necessary steps and measures to become privy to the factors and circumstances that can improve or impeded the performance of their college students.

APPEN DIX G: DESCRIPTIVE DATA FOR STUDY 1

All Conditions Combined

N = 462	Mean	Median	Mode	SD	Minimum	Maximum	Variance
TI	5.06	5.33	5.42	1.24	1.00	7.00	1.54
ATT	5.64	6.00	7.00	1.29	1.00	7.00	1.68
SN	6.08	7.00	7.00	1.40	1.00	7.00	1.96
PBC	6.11	7.00	7.00	1.75	1.00	7.00	3.08
INT	6.27	7.00	7.00	1.57	1.00	7.00	2.46

Note. TI = Teacher Immediacy; ATT = Attitude; SN = Subjective Norm; PBC = Perceived Behavioral Control; INT = Intention.

Condition 1

N = 462	Mean	Median	Mode	SD	Minimum	Maximum	Variance
TI	5.06	5.33	5.42	1.24	1.00	7.00	1.54
ATT	5.64	6.00	7.00	1.29	1.00	7.00	1.68
SN	6.08	7.00	7.00	1.40	1.00	7.00	1.96
PBC	6.11	7.00	7.00	1.75	1.00	7.00	3.08
INT	6.27	7.00	7.00	1.57	1.00	7.00	2.46

Condition 2

N = 462	Mean	Median	Mode	SD	Minimum	Maximum	Variance
TI	5.06	5.33	5.42	1.24	1.00	7.00	1.54
ATT	5.64	6.00	7.00	1.29	1.00	7.00	1.68
SN	6.08	7.00	7.00	1.40	1.00	7.00	1.96
PBC	6.11	7.00	7.00	1.75	1.00	7.00	3.08
INT	6.27	7.00	7.00	1.57	1.00	7.00	2.46

Condition 3

N = 462	Mean	Median	Mode	SD	Minimum	Maximum	Variance
TI	5.06	5.33	5.42	1.24	1.00	7.00	1.54
ATT	5.64	6.00	7.00	1.29	1.00	7.00	1.68
SN	6.08	7.00	7.00	1.40	1.00	7.00	1.96
PBC	6.11	7.00	7.00	1.75	1.00	7.00	3.08
INT	6.27	7.00	7.00	1.57	1.00	7.00	2.46

Condition 4

N = 462	Mean	Median	Mode	SD	Minimum	Maximum	Variance
TI	5.06	5.33	5.42	1.24	1.00	7.00	1.54
ATT	5.64	6.00	7.00	1.29	1.00	7.00	1.68
SN	6.08	7.00	7.00	1.40	1.00	7.00	1.96
PBC	6.11	7.00	7.00	1.75	1.00	7.00	3.08
INT	6.27	7.00	7.00	1.57	1.00	7.00	2.46

APPENDIX H: DESCRIPTIVE DATA FOR EACH WAVE IN STUDY 2

Wave 1

N = 465	Mean	Median	Mode	SD	Minimum	Maximum	Variance
TI	5.46	5.67	6.25	.96	1.92	7.00	.93
ATT	6.63	7.00	7.00	.69	1.67	7.00	.48
BB	6.85	7.00	7.00	.44	1.00	7.00	.19
SN	6.30	7.00	7.00	1.52	1.00	7.00	2.31
NB	5.20	5.25	7.00	1.42	1.00	7.00	2.02
PBC	6.65	7.00	7.00	.89	1.00	7.00	.79
CB	4.88	5.00	7.00	1.50	1.00	7.00	2.26
INT	6.70	7.00	7.00	.87	1.00	7.00	.76

Note. TI = Teacher Immediacy; ATT = Attitude; BB = Behavioral Beliefs; SN = Subjective Norm; NB = Normative Beliefs; PBC = Perceived Behavioral Control; CB = Control Beliefs; INT = Intention.

Wave 2

N = 148	Mean	Median	Mode	SD	Minimum	Maximum	Variance
TI	5.50	5.63	5.58	1.08	1.33	7.00	1.16
ATT	6.47	7.00	7.00	.86	3.00	7.00	.75
BB	6.83	7.00	7.00	.58	3.67	7.00	.33
SN	6.37	7.00	7.00	1.24	1.00	7.00	1.54
NB	5.51	5.50	7.00	1.32	1.00	7.00	1.74
PBC	6.55	7.00	7.00	.86	4.00	7.00	.75
CB	4.59	5.00	7.00	1.72	1.00	7.00	2.95
INT	6.59	7.00	7.00	.88	1.50	7.00	.78

Wave 3

N = 109	Mean	Median	Mode	SD	Minimum	Maximum	Variance
TI	5.71	6.00	7.00	1.11	1.00	7.00	1.23
ATT	6.38	7.00	7.00	1.04	1.00	7.00	1.08
BB	6.85	7.00	7.00	.51	4.00	7.00	.26
SN	6.45	7.00	7.00	1.10	1.00	7.00	1.20
NB	5.52	5.50	7.00	1.17	2.25	7.00	1.37
PBC	6.62	7.00	7.00	.85	4.00	7.00	.73
CB	4.53	4.50	4.00	1.73	1.00	7.00	2.98
INT	6.60	7.00	7.00	.99	2.50	7.00	.97

Wave 4

N = 99	Mean	Median	Mode	SD	Minimum	Maximum	Variance
TI	5.90	6.00	7.00	1.04	1.42	7.00	1.09
ATT	6.54	7.00	7.00	.90	2.67	7.00	.82
BB	6.86	7.00	7.00	.51	4.00	7.00	.26
SN	6.36	7.00	7.00	1.21	1.00	7.00	1.48
NB	5.73	6.00	7.00	1.27	2.25	7.00	1.60
PBC	6.72	7.00	7.00	.90	1.00	7.00	.81
CB	4.67	4.63	4.00	1.71	1.00	7.00	2.91
INT	6.69	7.00	7.00	.92	1.00	7.00	.84

APPENDIX I: CORRELATIONS OF OBSERVED VARIABLES BY WAVE IN STUDY 2

Wave 1

N = 465	TI	ATT	BB	SN	NB	PBC	CB	INT
TI	1							
ATT	.252**	1						
BB	.152**	.404**	1					
SN	.070	.211**	.259**	1				
NB	.039	.152**	.179**	.046	1			
PBC	.121*	.297**	.279**	.336**	.044	1		
CB	.210**	.215**	.141**	.059	.045	.139**	1	
INT	.172**	.405**	.356**	.378**	.057	.627**	.119*	1

Note. Two-tailed significance, *$p < .05$; **$p < .01$.

Wave 2

N = 148	TI	ATT	BB	SN	NB	PBC	CB	INT
TI	1							
ATT	.358**	1						
BB	.341**	.537**	1					
SN	.265**	.447**	.308**	1				
NB	.194*	.298**	.201*	.208*	1			
PBC	.414**	.478**	.576**	.374**	.122	1		
CB	.239**	.232**	.147	.066	-.146	.265**	1	
INT	.305**	.671**	.512**	.493**	.149	.602**	.243**	1

Note. Two-tailed significance, *$p < .05$; **$p < .01$.

Wave 3

N = 109	TI	ATT	BB	SN	NB	PBC	CB	INT
TI	1							
ATT	.506**	1						
BB	.360**	.434**	1					
SN	.223*	.566**	.336**	1				
NB	-.019	.031	.083	.110	1			
PBC	.363**	.586**	.482**	.523**	.118	1		
CB	.092	.145	.146	.029	-.239*	.132	1	
INT	.384**	.751**	.355**	.634**	.020	.662**	.145	1

Note. Two-tailed significance, *$p < .05$; **$p < .01$.

Wave 4

N = 99	TI	ATT	BB	SN	NB	PBC	CB	INT
TI	1							
ATT	.451**	1						
BB	.267**	.635**	1					
SN	.294**	.420**	.411**	1				
NB	.115	.242*	.201*	.091	1			
PBC	.307**	.415**	.278**	.621**	-.081	1		
CB	.117	.171	.195	.199	-.192	.283**	1	
INT	.248*	.514**	.581**	.706**	-.005	.867**	.305*	1

Note. TI = Teacher Immediacy; ATT = Attitude; BB = Behavioral Beliefs; SN = Subjective Norm; NB = Normative Beliefs; PBC = Perceived Behavioral Control; CB = Control Beliefs; INT = Intention. Two-tailed significance, *$p < .05$; **$p < .01$.

APPENDIX J: GLOSSARY OF TERMS

TI	Teacher Immediacy
TPB	Theory of Planned Behavior
ATT	Attitude
BB	Behavioral Beliefs
SN	Subjective Norm
NB	Normative Beliefs
PBC	Perceived Behavioral Control
CB	Control Beliefs
INT	Intention to Persist
REN	Reenrollment

APPENDIX K: IRB APPROVAL FOR STUDIES 1 AND 2

Application for Exemption from Institutional Oversight

Institutional Review Board
Dr. Robert Mathews, Chair
131 David Boyd Hall
Baton Rouge, LA 70803
P: 225.578.8692
F: 225.578.6792
irb@lsu.edu
lsu.edu/irb

Unless qualified as meeting the specific criteria for exemption from Institutional Review Board (IRB) oversight, ALL LSU research/ projects using living humans as subjects, or samples, or data obtained from humans, directly or indirectly, with or without their consent, must be approved or exempted in advance by the LSU IRB. This Form helps the PI determine if a project may be exempted, and is used to request an exemption.

-- Applicant,Please fill out the application in its entirety and include the completed application as well as parts A-E, listed below, when submitting to the IRB. Once the application is completed, please submit two copies of the completed application to the IRB Office or to a member of the Human Subjects Screening Committee. Members of this committee can be found at http://www.lsu.edu/screeningmembers.shtml

-- A Complete Application Includes All of the Following:
(A) Two copies of this completed form and two copies of part B thru E.
(B) A brief project description (adequate to evaluate risks to subjects and to explain your responses to Parts 1&2)
(C) Copies of all instruments to be used.
*If this proposal is part of a grant proposal, include a copy of the proposal and all recruitment material.
(D) The consent form that you will use in the study (see part 3 for more information.)
(E) Certificate of Completion of Human Subjects Protection Training for all personnel involved in the project, including students who are involved with testing or handling data, unless already on file with the IRB. Training link: (http://phrp.nihtaining.com/users/login.php.)
(F) IRB Security of Data Agreement: (http://www.lsu.edu/irb/IRB%20Security%20of%20Data.pdf)

1) Principal Investigator: Jonathan Denham **Rank:** Doctoral Candidate

Dept: CMST **Ph:** 714-396-2763 **E-mail:** jdenha2@lsu.edu

2) Co Investigator(s): please include department, rank, phone and e-mail for each

Graham Bodie, CMST, Associate Professor, 578-6683, gbodie@lsu.edu

IRB# E8280 LSU Proposal #
☑ Complete Application
☑ Human Subjects Training

3) Project Title: The Influence of Teachers to Predict Student Enrollment

Study Exempted By:
Dr. Robert C. Mathews, Chairman
Institutional Review Board
Louisiana State University
203 B-1 David Boyd Hall
225-578-8692 | www.lsu.edu/irb
Exemption Expires: 4/15/2016

4) Proposal? (yes or no) **If Yes, LSU Proposal Number**

Also, if YES, either ◯ **This application completely matches the scope of work in the grant**
OR ◯ **More IRB Applications will be filed later**

5) Subject pool (e.g. Psychology students)

*Circle any **"vulnerable populations" to be used:** (children <18; the mentally impaired, pregnant women, the ages, other). Projects with incarcerated persons cannot be exempted.

6) PI Signature Jonathan Denham **Date** 4/16/13 (no per signatures)

**** I certify my responses are accurate and complete.** If the project scope or design is later changes, I will resubmit for review. I will obtain written approval from the Authorized Representative of all non-LSU institutions in which the study is conducted. I also understand that it is my responsibility to maintain copies of all consent forms at LSU for three years after completion of the study. If I leave LSU before that time the consent forms should be preserved in the Departmental Office.

Screening Committee Action: Exempted ✓ Not Exempted ____ Category/Paragraph ____

Reviewer James Honeycutt **Signature** James Honeycutt **Date** 4/16/2013

Note. The same IRB approval code was used in Study 1 and Study 2.

VITA

Jonathan Paul Denham, a native of Orange County, CA, received his bachelor's degree at Biola University in La Mirada, CA in May 2003. Thereafter, he worked in sales for Pella Windows and later began substitute teaching in Orange and LA Counties for middle school, high school, and for adult English language learners. As his passion for education grew, he began graduate school in the Department of Human Communication Studies at California State University, Fullerton in August 2005, and received his masters degree in May 2008. He began teaching at the college level as a masters student and taught at three colleges during his masters program. After graduating, he taught as a part-time instructor at California State University, Fullerton and Biola University, where his passion for teaching at the college level solidified and pursued plans for a doctoral education. He became a doctoral student in the Department of Communication Studies in August 2010 at Louisiana State University and received his Ph.D. in August 2014 after completing his dissertation on the relationship between teacher behaviors and student persistence. He taught a variety of courses while in the Ph.D. program including Public Speaking, Interpersonal Communication, and Business Communication. He plans to continue teaching at the college level and pursue a career in academia.