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MANDATORY SECOND LANGUAGE LEARNING IN POST-SECONDARY EDUCATION: THE ROLE OF THE IDEAL SELF AND IMAGERY IN MOTIVATION AND ACHIEVEMENT

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MANDATORY SECOND LANGUAGE LEARNING IN POST-SECONDARY EDUCATION: THE ROLE OF THE IDEAL SELF AND IMAGERY IN MOTIVATION AND ACHIEVEMENT

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BY

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Dedication

This dissertation is dedicated to my family. My husband, Hal, and my children, Chloë, Reba and Ethan, who helped and encouraged me everyday. My parents, Don and Rita Garen, who always told me that I could be or do anything if I believed in myself. My best friend and mentor, Dr. Mary E. Davis, who has been there to inspire me throughtout my higher education journey.

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Abstract

The majority of language learning in post-secondary higher education is compulsory. Many students in compulsory L2 courses demonstrate lower than average levels of achievement and persistence. Because L2 learning is an important component of a post-secondary education in modern society, improving the motivation to learn languages can improve both achievement and retention.

Studies based upon the L2 Motivational Self System (L2 MSS) demonstrate that the variables included in the model have the potential for helping us explain motivation in L2 learning. In addition, an important component of the model is the potential of imagery in enhancing motivation. Much of the research however, examined the salience of the model's key construct rather than examining the relationships among the constructs and their ultimate impact upon second language learning. Moreover, the majority of these studies have been in settings outside the United States with students learning English as a second language and none of the studies examine compulsory language learning.

Using a quasi-experimental nonequivalent control group design, 512 college students in beginning level Spanish courses completed pre and post test surveys and an imagery treatment. Path analysis was performed to validate Dörnyei's L2 MSS in the context of US College students (English speakers) in mandatory L2 university courses. Additionally, Analysis of Covariance was performed to examine the use of imagery (ideal self and traditional cultural) to increase motivated learning behavior and intended effort as well as performance in the second language.

Data validated the L2 MSS model in a US population of L2 learners in compulsory courses. Results indicated that while all three constructs of the L2 MSS model, ideal L2 self, ought-to L2 self and L2 learning experience, were predictors of motivated learning behavior and intended behavior, they were not equal predictors of performance. Data strongly supported imagery as a priming factor that can link the utility value of learning a language to a perceived future use resulting in student reported increase in interest to learn the L2.

Chapter I
Introduction

José Ortega y Gasset (1944) argued that the primary mission and the responsibility of the university was the transmission of culture because it is through such learning that students learn how to become critical thinkers. As Ortega y Gasset reflects, the study of language has been a central component of the Liberal Arts education throughout the centuries. But for the 21st century, our society's stake in language learning has never been greater. Along with being a component of a well-rounded education, the study of language and cultures is a requirement for development of a *worldcentric* view so important in light of the rapid globalization that is occurring in the world today.

Despite the importance of language learning in modern society, the majority of students in the United States today are not introduced to second languages until junior high or high school, and many experience second language learning for the first time once enrolled in college. For many of these college students, second language learning is a mandatory requirement for graduation. Beginning second language study in high school or even later as an adult in college is difficult and presents a unique set of mental challenges for learners, especially when coupled with feelings of loss of choice associated with compulsory courses. Improving language learning by providing the opportunity to learn a second language early in childhood, while an ideal solution, is unlikely given a variety of structural and financial constraints within our educational system. Likewise, eliminating mandatory language learning in college would amount to sacrificing a central feature of a liberal education. A more viable solution would be to

improve language learning in mandatory settings by focusing upon the student's motivation to learn a second language.

Motivation to learn has been an interest in the field of second language learning for many years. However, most of the current theories of language learning simply do not address motivation of students in compulsory second language courses. Therefore, this study explores motivation in second language learning by examining some of the underlying psychological constructs that may impact language learning in mandatory settings. Students who are more motivated to learn a second language are not only more likely to achieve at higher rates, but also more likely to adopt worldcentric views and attitudes, which are necessary in our increasingly global society.

Background to the Problem

Early research in language learning focused primarily upon how students learn languages. Thus, the question many language instructors ask is why some college students excel in learning and mastery of a foreign language while others do not. In answering this question, many educators take either a rationalist/process approach or an empiricist/skill approach when explaining language learning. The empiricist/skill approach is grounded in behaviorist theories based upon the assumption that language learning is a conditioned response to the effects of prior experience (Omaggio, 1986). The rationalist/process or cognitivist approach is grounded upon theories of cognition asserting that language learning is primarily the result of internal processes of thinking, perceiving, memorizing and learning (Omaggio, 1986). Whereas the behavioral empiricist approach would view learning as a result of external conditions, the rationalist/process approach assumes that learning results from internal conditions.

Questions about how to teach languages led others to begin to consider how to get students to engage and learn second languages, or "why" students learned languages. Beginning in the 1950's, researchers in second language (L2) acquisition began to focus on the role of attitudes, aptitude and motivation in the L2 learning process.

Much of the early L2 research was conducted by Gardner and associates and focused on Canadian students learning French. Early studies by Gardner and Lambert (1959, 1972) found that the success or failure of Canadian students to learn French was related to their desire to become part of the French culture. Based on this research, Gardner developed the socio-educational model of L2 learning which linked motivation to learn a language with positive attitudes toward the target language community, along with early encounters with the language and parental attitudes toward the target language culture (1968, 1979, 1980, 1983, 1985a, 1988).

A recent study found that experience with a second language (L2) at an early age led to a significant increase in both motivation and achievement in foreign and native language learning in secondary and post-secondary students (Loewen, Ellis & Hacker, 2006). Cognitive language acquisition theory posits the critical period for learning languages is age 2-11 (Anderson, 2005). Puberty has long been considered as a significant point in development for language learning capacity and for the "reorganizational capability of the specialized cerebral systems important for linguistic processing" (Lenneberg, 1967, 1969). Which means that, the onset of puberty marks the age at which individuals start losing their ability to acquire a high level of proficiency in a new language (Webber-Fox & Neville, 1996). According to Loewen, Ellis and Hacker (2006) it is the first encounter at an early age that makes the difference in

motivation to learn a second language, “prior experience is largely related to learners' perceptions of how learning an additional language features in their personal lives” (p. 16). This means that while their ability to acquire an L2 in high school or college may be lower, motivation is higher because of the perceived usefulness of the L2 in both present and future goals. In other words, increased motivation for L2 may compensate for the cognitive disadvantages encountered by older learners who try to learn languages after adolescence.

Research suggests that motivation to learn is as important to learning language as aptitude (Dörnyei, 1994a; Dörnyei & Csizér, 1998). This is important, because changing the ability or aptitude of a student to learn an L2, or turning back the hands of time to reopen the lost windows of opportunity from the primary years to provide prior experiences with the L2 is not possible, but changing the student’s motivation level is certainly possible. Perhaps by examining more broadly theories of motivation in learning, we can move toward achieving this goal. Also, by exploring factors that motivate learners to learn in a variety of contexts, we can identify ways to motivate university students in L2 compulsory courses.

Since 2000, research began to explore psychological explanations for motivation in L2 learning. Several of the more robust theories included self-determination theory, self efficacy theories and self theories. Self-determination theory (SDT) considers motivation as a function of the importance or value of the activity. In terms of learning a second language, students can engage in learning because of intrinsic, or extrinsic motivation. Students who enjoy learning languages and conversing with native L2 speakers are intrinsically motivated. Intrinsically motivated students engage in learning

because it is both pleasurable and challenging. An extrinsically motivated student will engage in learning to achieve an instrumental outcome to earn a reward or avoid a punishment. Students who are extrinsically motivated could engage in learning an L2 if it is conducive to obtaining a desirable job or if earning a high grade in the class will help them gain entrance into a preferred medical or law school. Amotivation is the lack of motivation and can result from not valuing an activity, feeling a lack of control, lack of choice, lack of competence or seeing no application of the course in their future (Deci & Ryan, 2002). Many students in compulsory L2 courses are amotivated because of the reasons mentioned above.

Self-efficacy theory is based upon the idea that an individual's belief in his or her proficiency is a key factor in motivation. Self-efficacy is derived from basic needs theory that considers that individuals have innate needs, autonomy, relatedness and competence that are central to psychological health and well-being and that effective motivation must serve these needs.

Finally, self theory argues that effective motivation necessitates the ability for individuals to see the future relevance of the current task at hand and that this view must be consistent with individuals' idea of what they would like to become (Markus & Nurius, 1986). When individuals envision a possible self in a particular domain, not only do their feelings of competence increase, but also their drive to attain this particular possible self (Cross & Markus, 1994). Ushioda and Dörnyei (2009) posit that when proficiency in the target language is included as part of one's future ideal self it becomes a powerful motivator to learn the L2. In defense of this Ushioda and Dörnyei

(2009) cite a basic tenet of possible selves in which individuals have a psychological desire to reduce the "discrepancy between our current and possible future selves" (p. 4).

These theories can inform language course content, design and teaching method in ways that can increase L2 learner motivation and engagement even in mandatory settings (Bakar, Sulaiman, & Rafaai, 2010; Comanaru & Noels, 2009; Goldberg, & Noels, 2006; Jones, Llacer-Arrastia, Newbill, 2009; McIntosh & Noels, 2004; Noels, 2005; Noels, Pelletier, Clément & Vallarand, 2000, 2003; Noels, 2001a; Noels, 2001b; Noels, Clément & Pelletier, 1999, 2001; Pae & Shin, 2011; Pae, 2008; Wang, 2008). Using these theoretical approaches to motivation, Dörnyei (2009a) developed the L2 Motivational Self System in which he integrates key concepts from these theories and argues for the use of imagery in course design as a way of enhancing the concept of the L2 future self. The L2 Motivational Self System model combines self theory with a dynamic view of motivation theory (Dörnyei, 2009b). Dörnyei's dynamic view of motivation theory stems from the notion that a system is dynamic if it contains two or more interconnected elements that change over time (Dörnyei, 2009b; Dörnyei & Ushioda, 2011). The interaction of individuals with their L2 learning environment results in a complex dynamic system (Dörnyei & Ushioda, 2011).

Studies based upon the L2 Motivational Self System demonstrate that the variables included in the model have the potential for helping us explain motivation in L2 learning. Much of the research however, has examined the salience of the model's key construct rather than examining the relationships among the constructs and their ultimate impact upon second language learning. Additionally the majority of these studies have been in settings in which learners in other countries are learning English as

a second language and none of the studies examine compulsory language learning. Since current research suggests that motivation is an important factor in L2 learning and because the L2 Motivational Self System framework considers the need to internalize external motivation, this system may help us explain the role of motivation in L2 learning in compulsory settings.

Statement of the Problem

The majority of language learning in post-secondary higher education is compulsory. Many students in compulsory L2 courses demonstrate lower than average levels of achievement and persistence. Because L2 learning is an important component of a post-secondary education in modern society, improving the motivation to learn can improve both achievement and retention. Motivation research suggests that motivation is an important factor in L2 learning (Dörnyei & Ushioda, 2011, 1994a; Dörnyei & Csizér, 1998). Likewise, motivation theory posits that compulsory learning can actually undermine motivation since it is a form of external rather than internal motivation (Deci & Ryan 1985, 2002; Dörnyei & Ushioda, 2011). Since the study of a second language is required for many degree programs, there is a need for research that identifies ways to increase motivation to learn in compulsory L2 college courses.

Purpose of the Study

The purpose of the present study is to explore the role of English speaking college students' motivation to learn a second language in compulsory settings. Dörnyei's L2 Motivational Self System has demonstrated promise as a model that can explain L2 motivation. However, the interaction of the variables central to this theory has not been tested in a way that helps us understand how they influence L2 learning.

Additionally the model has not been tested using English speaking college students in the United States in compulsory L2 settings. If the model can successfully predict motivation and performance in compulsory L2 settings, then we can design instructional strategies that will enhance motivation for second language learning, improve L2 achievement in college settings and possibly enhance cultural understanding among US college students. Since current research and theory posit that motivation is an important factor in L2 learning, this study proposes to test the L2 Motivational Self System in compulsory L2 learning settings with English speaking college students in the United States. An important component of the model is the potential of imagery in enhancing motivation to learn (Dörnyei, 2009a, 2009b; Dörnyei & Ushioda, 2011). Therefore, a second purpose of the present study is to explore the impact of imagery upon L2 motivation and achievement.

Significance of the Study

This study will contribute to our understanding of motivation in second language learning and to our understanding of the factors that can improve motivation in compulsory settings. Additionally the study will validate Dörnyei's (2009a) L2 Motivational Self System. According to Dörnyei (2009a), "we can conclude that there exists a robust theoretical and empirical confirmation of the soundness of the proposed self-based approach" (p. 32). While the model has been tested in other cultures, to date there are no empirical studies applying the L2 Motivational Self System in the United States for native English speaking learners who are learning second languages. Furthermore, the model has not been explored in mandatory settings. Additionally, as Dörnyei (2009a) emphasizes, no research has been conducted to date on ways to

develop the ideal L2 self. Therefore, a second significance of the study is to explore the use of imagery in the design of mandatory L2 courses to determine the impact of imagery on enhancing the L2 self and ultimately, the impact upon learning.

Conclusion

In light of the phenomenon of globalization there is a need for individuals who are both fluent in multiple languages and knowledgeable of other cultures. Much of the recent work on L2 learning posits that motivation is a powerful impetus for both engagement and learning; therefore igniting motivation is one key to increase L2 learning. However, compulsory learning can undermine motivation. Eliminating compulsory language learning will undermine the mission of a liberal education in an increasingly worldcentric environment. A more productive approach is to improve motivation to learn a second language by focusing upon strategies that can enhance motivation in compulsory settings. The L2 Motivational Self System, by using the ideas from self-determination theory, basic needs theory and self theory, offers potential to enhance motivation in mandatory settings. This system posits that if an individual envisions the relevance of an L2 in their future, the future self vision becomes a powerful motivator to acquire proficiency in the L2. The model uses key ideas from self-determination theory and self theory to empower students in compulsory settings by helping them make connections to desirable futures.

Chapter two describes the evolution of motivation as an explanation in language learning and describes the key theoretical influences in the development of Dörnyei's L2 Motivational Self System. Following a review of relevant research, the role of the proposed study in addressing the current gaps in the literature will be advanced.

Chapter II
Review of the Literature

Introduction

The study of motivation to learn an L2 began in the late 1950's with what is termed as the socio-cultural period. Research during this time is characterized by the work of Gardner and associates in Canada. Models developed during this time were very restrictive in their application to learners and learning contexts outside of Canada. The 1990's mark a shift from socio-cultural explanations of L2 motivation toward models based on educational psychological explanations. This chapter begins with a brief overview of the evolutionary shift from socio-cultural to psychological explanations in L2 motivation. The chapter continues with a review of the key theoretical influences on the development of the L2 Motivational Self System (L2 MSS) and a description of the L2 MSS model. The chapter ends with a discussion on research of the current model and the current gaps in research.

Considerations of Motivation in the Evolution of L2 Learning

Early theories attempting to explain the motivation to learn a second language were based on Mowrer's (1950) research on infants and language and learning (also see Gardner, 1959, p. 267). Mowrer (1950) argued that the motivation to learn a language emanates from the desire to become like other family members or to receive attention and affection. For this reason, early theories of foreign language learning that addressed motivation identified it in relation to the acquisition of a language as represented by the desire to be like a valued family or community member (Gardner, 1959; Mower, 1950). In later discussions, motivation to learn a language represented a desire to become part of a valued cultural community, so that learners could distance themselves from their

own culture due to dissatisfaction towards their own ethnic group (Lambert, 1955; Gardner, 1958).

Prior to 1960, most research on foreign language acquisition focused on the measurement of students' ability to learn languages as a function of their linguistic aptitude (Gardner & Lambert, 1959). Carroll (1958) was the first to note a discrepancy between the aptitude scores on the Modern Languages Aptitude Test (MLAT) battery and actual students' grades. Students with high language learning aptitude scores did not receive a corresponding high grade in the language course. Likewise, some students with low language learning aptitude scores received high marks in the language courses. These findings led many researchers to look for other explanations or variables other than language aptitude that could be positive predictors of student's second language acquisition. While Gardner (1968) continued to argue that language aptitude is related to achievement, he also suggested that complex attitudinal-motivational variables were also related to achievement in a second language. Gardner is cited as one of the first researchers to consider the effects of motivation and interest in learning a second language (Dörnyei, 1994; Gardner & Lambert, 1972; Gardner & Tremblay, 1994; Lu, 2007; Oxford, 1994). Gardner's studies, throughout the 1960's, and 1970's, continued to focus on the role of motivation in learning a second language.

Based upon this body of research, Gardner (1968) drew the following four conclusions: first, attitudinal motivational characteristics of the students were important in the acquisition of a second language; second, the truly successful student is motivated to learn language in order to become integrated with the other language community; third, the integrative motive is derived from attitudinal characteristics in the home

fostered by parent's accepting attitudes toward other language groups; and fourth, second language acquisition involves taking on behavioral characteristics of the other language community. Gardner concluded that second language acquisition was facilitated by integrative motivation, and the development of this motivation was dependent upon a specific "attitudinal atmosphere in the home" (1968, p. 145). These ideas formed the basis of Gardner's second language theory.

Gardner's socio-educational L2 theory identified two types of L2 motivation, integrative motivation and instrumental motivation (Gardner & Lambert, 1959; Crookes & Schmidt, 1991). Gardner (1972) describes integrative motivation as "willingness or a desire to be like representative members of the 'other' language community and to become associated, at least vicariously, with that other community" (p. 14). His definition of instrumental motivation implies a more functional reason for learning the language, such as "a desire to gain social recognition or economic advantages through knowledge of a foreign language" (Gardner & Lambert, 1972, p. 14).

Integrative learners, according to Gardner, view "the learning task as orientated toward representatives of a novel and interesting ethnolinguistic community, or people with whom they would like to develop personal ties" (1972, p. 15). He placed instrumental orientation language learners at the opposite end of the spectrum as "interested mainly in using the cultural group and their language as an instrument of personal satisfaction, with few if any signs of interest in the other people" (p. 15). Gardner (1972) felt that integrative orientated learners are more likely to maintain the long term effort needed to master a second language. Gardner (1973) argued that learners who displayed integrative motivation over instrumental motivation in learning

a second language had parents who exhibited favorable attitudes toward the language being learned by their children. His subsequent research focused primarily upon the link between integrative motivation and attitudes developed in the home.

As a result, Gardner studied the motivation to learn a L2 from the context of students in a bicultural community. Gardner's socio-educational theory fit the majority of the population identified in his studies, but it provides no basis for generalization to other contexts. In other words, Gardner's social educational framework may meet the needs of studying motivation for Canadian students learning French in Canada, a country with a strong Francophone heritage, but may not address the range of motivational orientations students might have in other contexts such as compulsory language learning situations. While the majority of research in L2 learning before 2000 applied Gardner's theoretical framework (1959), L2 researchers began the call to reform and broaden the scope of the L2 theoretical framework to include current educational psychological research on motivation. The top reasons L2 researchers cited for a reform included the overall dominance of socio-educational theory in the field of L2 research, reliance upon single survey studies to determine findings and increasing criticism of its narrow focus on attitudes as the main mediator for motivation (Au, 1988; Crookes & Schmidt, 1991; Dörnyei, 1994b, 2001, 2009a; Ushioda, 2005).

Interest in the role of motivation in second language learning has grown considerably in recent years. When considering motivation to learn a language in the context of compulsory learning, such as that experienced by many students in the traditional U.S. college classroom, Gardner's concepts of integrative and instrumental

motivation seem less robust. In fact, for some of these learners, the only motivation in mandatory or required L2 courses is a definite avoidance or strong defiance to engage.

Keller (1983) defines motivation as choices one makes in the experiences or goals which will be embraced or avoided along with the amount of effort they will put out to reach the objective. Keller's (1983) model included four categories of motivation variables identified as interest, relevance, expectancy and outcomes. Keller's (1983) model associated instructional design strategies for generating learner motivation with each variable category. According to Keller's model, the motivation of the student is subject to many variables which can either attract or repel them from the objective. This explanation helps illuminate the main problem with Gardner's theory in that it linked motivation to attitude toward the target language culture and ignored other variables that can effect motivation in language learning such as cognition, affect, competence, autonomy, relatedness or relevance, future goals, engagement or interest. Given the wide range in learning contexts and variety of reasons for L2 learning, several theories of motivation in educational psychology were identified in the late 1990's as compatible with L2 learning. Some of the more robust theories include self efficacy theory (Bandura, 1977), education orientation theory (Keller, 1983), self- determination theory (Deci & Ryan, 2000; 2002) and possible selves (Markus & Nurius, 1986). Researchers in the field of second language acquisition began utilizing ideas from these theories to develop a L2 motivational framework for L2 learning that is robust to multiple learners and learning settings. Dörnyei was one of the first researchers to attempt to synthesize the socio-educational L2 theory with newer educational psychological research on

motivation, becoming the first to answer the call for the development of a new L2 motivation theoretical framework.

Based on L2 research findings in the late 90's and early twenty-first century, Dörnyei developed the L2 Motivational Self System framework. According to Dörnyei (2009a) the L2 Motivational Self System "represents a major reformation of previous motivational thinking" because the theoretical model is built on the combinations of significant theoretical developments in the areas of L2 learning and conventional psychology (p. 9). The specific catalysts for the model were: 1) the concern expressed by many L2 learning researchers about the limitations of Gardner's concept of integrativeness/integrative motivation, 2) the evolution of more general theories of learning and motivation and 3) the union of motivation and self-theory in conventional psychology.

Theories of Motivation in Learning

This section contains motivation theories that were influential in the development of Dörnyei's L2 Motivational Self System. As mentioned earlier the L2 Motivational Self System (Dörnyei, 2005) developed out of a paradigmatic shift in thinking about L2 motivation theory. This shift began in the late 1990's due to a growing concern that the prevailing theories were not robust to many language learning environments (Dörnyei, 2009a). The inclusion of ideas from more general theories of motivation in learning resulted in a major reformation of L2 motivation theory (Dörnyei, 2009a). According to Dörnyei (2009a) the new paradigm in L2 motivation emerged from the theoretical shift brought on by a union of self theory and motivational theory. Dörnyei (2006, 2009a, 2009b) affirms that the L2 Motivational Self System (L2

MSS) originated from ‘possible selves’ and ‘self-guides’, so we will begin with a review of educational psychological theories which informed L2 motivation and subsequently the design of the new L2 MSS theoretical framework. Second language motivation researchers initiated studies which included components of education orientation theory, self-determination theory (SDT), self theory and self efficacy theories. These theories and supporting research are described below.

Education Oriented Theory (Keller, 1983)

Keller’s (1983) education-oriented theory of motivation and instructional design was among the first motivation theories named by L2 researchers in their attempt to broaden the scope of L2 motivation. Keller’s (1983) model was selected over some of the more mainstream psychology theories of motivation because of its focus on instruction (Crookes & Schmidt, 1991). Keller’s model breaks human motivation into four categories: curiosity or interest, relevance, expectancy and satisfaction (Figure 1). Each of the categories or variables was seen as highly relevant to a learner’s success in a foreign language because each area not only provided a different foundation for motivating learners, but also provided interesting challenges in the design of engaging instructional content to learn a foreign language. The model’s first category, interest, references the state of the learner’s curiosity or attention. It is related to intrinsic motivation and necessary for the initial state of arousal to be maintained over time (Keller, 1983). The second category, relevance, is a necessary component to sustain initial motivation. For this to occur, the learner must feel that instruction and content are related to a personal goal or need. The third category, expectancy refers to the learner’s perception of the “likelihood of success” (Keller, 1983, p. 395). Expectancy is based on

locus of control, self-efficacy and attribution theories (Crookes & Schmidt, 1991; Dörnyei & Ushioda, 2011). Keller (1983) defines satisfaction, the fourth category, as a "combination of extrinsic rewards and intrinsic motivation" experienced by the learner during the outcome of the activity or task (p. 394).

Keller (1983) posits that his model serves three purposes: (1) provides a theoretical base for the integration of strategies to increase motivation; (2) facilitates the integration of motivation theory and strategies with instructional design theory; and (3) promotes a problem-solving approach which can increase learner's motivational levels and their probability of success in the course (pp. 396-398). Keller further delineates each of the four categories and includes five motivational strategies for each. A summary of these suggested motivational strategies is included in figure 1. The role of interest in the instruction of students can be summed up as arousing their curiosity. The subsequent categories of relevance, expectancy and outcomes can best be summed up as "WIIFM" or "What's in it for me" (K. Rager, personal communication, March 2006). The importance of motivation and its inclusion into the design of the learning environment cannot be understated. According to M. D. Roblyer (2000), students who are actively involved in learning have a higher motivation to learn than those who are passive learners (p. 52). In other words, learners who see no relevance, expectancy and outcomes in what they are learning are less likely to be actively involved in acquiring it.

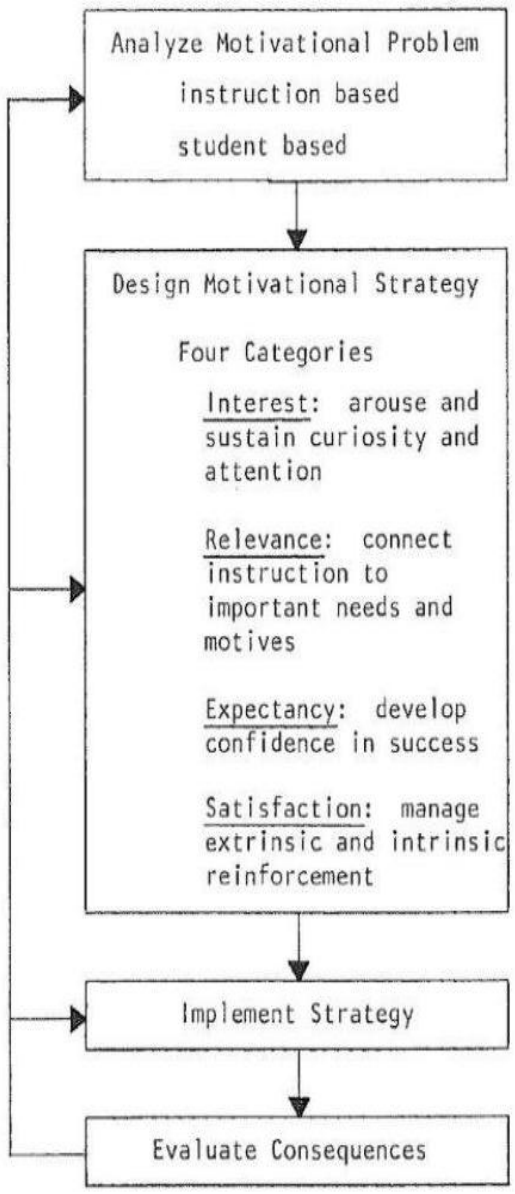

Figure 1. Keller's (1983) Model for designing motivating instruction (p. 396).

Motivational Strategy Summary:

Interest: Gain attention, include an attention getter or a hook as the gap between given and desired state of knowledge. Use novel, incongruous, conflicting, and paradoxical events. An unexpected stimulus. Put the learner in a problem solver mode. Use analogies. Give opportunity to let them learn more about what they already know and like.

Relevance: Appeal to need for power. Provide opportunities to achieve standards of excellence. Provide opportunities for choice and Responsibility. No risk cooperation.

Expectancy: Develop confidence and efficacy. Increase experience with success. Increase expectancy for success, give rubrics. Give personal control, give attribution feedback.

Satisfaction: Build in optimal challenge and feedback. Use task endogenous instead of task exogenous rewards. Endogenous rewards follows the task such as complete a project and get paid. Exogenous reward tied to amount of production, number of articles published. Use unexpected non-contingent rewards. Use verbal praise, motivating feedback. Provide formative feedback or corrective feedback.

Self-Determination Theory (SDT)

The importance of motivation in learning, academic achievement and positive educational outcomes is indisputable (Boggiano et al, 1993; Deci, Vallerand, Pelletier & Ryan, 1999; Reeve, 2002). As individuals are unique in their motivational type, a motivational theory must be broad enough to encompass the motivational diversity. According to Deci and Ryan (2008):

> SDT began with the premise that the most useful theories of motivation would be broad in scope, encompassing a wide range of phenomena; use concepts that have a phenomenological or personal meaning for people; be derived using empirical methods; and have principles that can be applied across life's domains (p. 14).

With its continuum of types of motivation, SDT provides a framework that can be used to identify and comprehend the multiple learning orientations found among university students in second or foreign language learning courses.

Integrating SDT theory with current L2 learning and teaching theory holds promise for the development of language programs. According to Deci et al., (1999) the primary outcomes of SDT when it is applied to education include "promoting in students an interest in learning, a valuing of education, and a confidence in learning" (p. 325). Self-determination theory posits that it is the type, autonomous or controlled, rather than the amount of motivation that is a significant predictor of outcomes for an individual (Deci & Ryan 2008).

The self-determination theory describes three distinct forms of motivation: intrinsic, extrinsic and amotivation (see Figure 2). Extrinsic motivation involves

engaging in an activity because of the consequences one will attain or avoid. Types of extrinsic motivation include external, introjected, identified and integrated. The four types of extrinsic motivation vary in the amount of autonomy or perceived locus of control the individual feels they have in the activity. External regulation, as its name implies, has an external locus of causality. Individuals will engage in behaviors out of compliance to obtain rewards or avoid punishments and receive no pleasure or satisfaction in performance of the activity. Introjected regulation also has an external locus of control. Individuals will engage in an activity out of compliance or because they are required to do so, but also to avoid guilt or boost self-esteem. Unlike external and introjected regulation, identified regulation, has a locus of control that is somewhat internal. Individuals consciously chose to engage in an activity out of a sense of importance or value. Finally, integrated regulation, identified as well-internalized extrinsic motivation, is more self-determined and has an internal locus of control (Deci & Ryan, 2008). An individual would engage in an activity because they value it or it is reflective of their own values.

Intrinsic motivation is described as engaging in or performing a behavior because it is enjoyable, interesting or satisfying (Deci & Ryan, 2008). Extrinsic motivation refers to engagement or performance in a behavior for the purpose of attaining a career goal, an external reward or avoiding punishment (Ryan & Deci, 2000). Unlike intrinsic or extrinsic motivation, amotivation is a state in which the intent to act is absent. Amotivation can result from not valuing an activity, feelings of incompetence, lack of control or seeing no future application in life (Deci & Ryan, 2002).

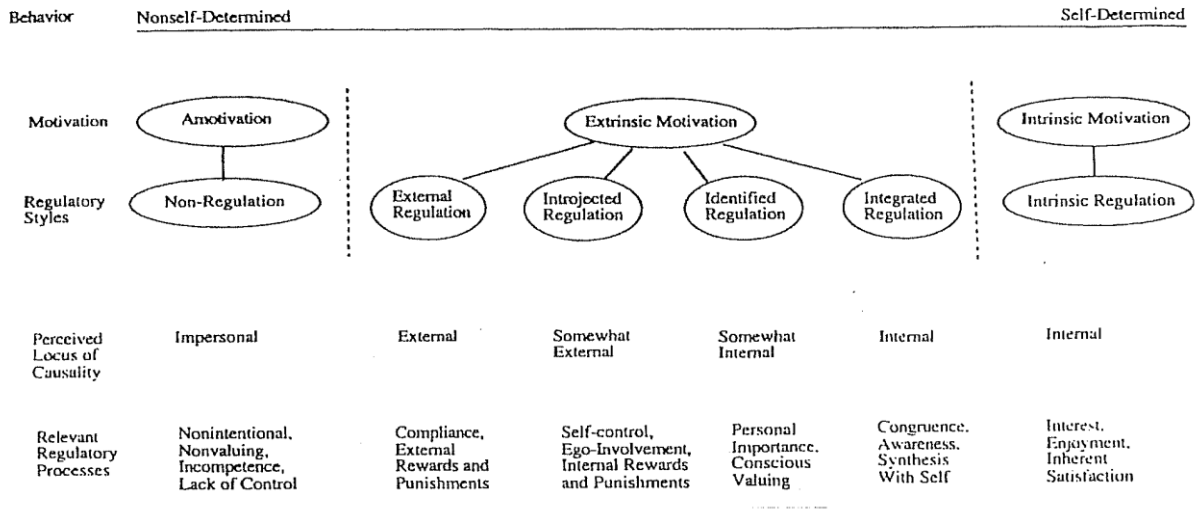

Figure 2. Deci and Ryan's (2000) Self- Determination Continuum (p. 72).

SDT has evolved to include several sub-theories including *organismic integration theory (OIT), causality orientation theory (COT), basic needs theory (BNT)* and *cognitive evaluation theory (CET).* Each of these four sub theories helps explain the phenomena studied through motivation research using the SDT framework. Deci and Ryan argue that the mini-theories are "readily integratable each with the other" (Deci & Ryan, 2002, p. 9).

Causality orientation theory (COT). Causality orientation theory (COT) suggests that tendencies toward self-determined behavior can be consistent in a variety of settings. It is also used to describe the process through which individuals "orient or align themselves to the environment in ways that support their self-determination" (Deci & Ryan, 2002, p. 27). This mini theory is useful in identifying the facets of an individual's personality which are connected to regulation of behavior and experience (Deci & Ryan, 2002).

Cognitive evaluation theory (CET). Cognitive evaluation theory (CET) was the first mini-theory devised. CET attempts to explain how external factors influence internal motivation and as such "addresses the effects of social contexts on intrinsic motivation" (Deci & Ryan, 2002, p. 27). The theory utilizes a framework of social and environmental factors that are conducive in the facilitation of intrinsic motivation through an increase in feelings of competency and sense of autonomy (Deci & Ryan, 2008). According to the theory, contextual elements are either autonomy supportive, controlling or amotivating (Deci & Ryan, 2002). Each of these elements is in turn linked to the individual's type of motivation. In other words, the individual's sense of autonomy is related to their perceived locus of causality. For example, if they feel it is internal, meaning that they are in control, they are more self-determined and intrinsic motivation or intrinsic behaviors increases. However, if they feel the locus of causality is external, meaning that someone or something else is in control, they feel less self-determined and display extrinsic motivation behaviors. The individual's sense of competence can also affect intrinsic motivation. If the individual's experiences reinforce their feeling of competence, intrinsic motivation increases. Likewise, if their experiences lead to feelings of incompetence, intrinsic motivation decreases. To sum up, CET suggests that social and environmental factors can lead to an increase or decrease in perceived autonomy and competence, thereby facilitating or hindering internal motivation.

Organismic integration theory (OIT). Organismic integration theory (OIT) addresses the concepts of internalization and integration and their relationship in the development of extrinsic motivation (Deci & Ryan, 2002). Simply put, it is the study of

the developmental process through which external motivation is integrated into an individual's being. Extrinsic motivation is conceptualized as ranging from low autonomy to high autonomy. The least autonomous learners are motivated primarily by external factors and usually perform an activity to gain an external or tangible reward. Next is introjected regulation, such that an individual engages in an activity due to self-imposed pressures which compel the individual to perform an activity due to self-control, ego, pride or other internal factors such as feeling guilty for behaving inappropriately. Third is identified regulation which is a conscious valuing of or personal importance placed upon the completion or engagement in an action in order to achieve a valued goal. Finally, the most autonomous from of extrinsic motivation is integrated regulation. Integrated regulation most resembles intrinsic motivation in that the learner synthesizes self with values, goals and needs. However their motivation to act is to attain a goal where as intrinsic motivation is the motivation to act for pleasure or inherent enjoyment (Deci & Ryan, 2002; Ryan & Deci, 2000).

Deci and Ryan (2002) posit that OIT "proposes a taxonomy of types of regulation for extrinsic motivation" the difference of which is the degree of autonomy that is represented by each (p. 15). This means that autonomy increases as you move right to left along the self determination continuum (Figure 2) beginning with identified regulation and ending with intrinsic regulation. As mentioned, OIT addresses the relationship of internalization and integration in the development of extrinsic motivation. Increased internalization and regulation is supported by an increase in feelings of autonomy, relatedness and competence (Deci & Ryan, 2002). These three

elements are also included in basic needs theory as the three basic psychological needs necessary for psychological well-being.

Basic needs theory. Basic needs theory developed out of the need to explain the concept of basic psychological needs that is infused throughout SDT and the mini-theories of CET, OIT and COT (Deci & Ryan, 2002). Basic need theory (BNT) argues that humans have innate psychological needs that are essential to psychological health and well-being. BNT posits that the three essential needs of autonomy, relatedness and competence are "innate, essential and universal" (Ryan & Deci, 2000, p. 74). Autonomy is defined as having the ability, choice and decision making flexibility in deciding what we want to do (Reeve, 2005). Autonomy in SDT refers to self-organization and self-regulation (Deci & Ryan, 2000). According to Ryan and Deci (2000) "the experience of autonomy facilitates internalization and, in particular, is a critical element for a regulation to be integrated" (p. 73). Therefore, autonomy plays a crucial role in increasing self-determination, because autonomous behavior is synonymous with self-determined behaviors (Reeve, 2005).

Reeve (2005) identifies competence as a "psychological need that provides an inherent source of motivation for seeking out and putting forth effort necessary to master optimal challenges" (p. 115). Optimal challenges are developmentally-appropriate or at a level of difficulty and complexity that tests the individual's precise level of skill. In other words, it challenges without overwhelming which leads to greater satisfaction in performing the task or challenge. An individual's need for competence can be defined as the need to interact effectively with our surroundings (Reeve, 2005).

Therefore, tasks that are intrinsically motivating lead us to feel competent, while tasks that are extrinsically motivating can increase our feelings of incompetence.

While autonomy and competence are the most powerful influences on intrinsic motivation, relatedness plays a distal role in maintaining intrinsic motivation (Deci & Ryan, 2000). Relatedness refers to the desire to establish close emotional bonds and attachments with other individuals (Reeve, 2005). As Ryan and Deci (2000) state "the need to feel belongingness and connectedness with others is centrally important to internalization" (p. 73). To sum up BNT, the three basic psychological needs of autonomy, competence, and relatedness are important components of intrinsic motivation. Self-determination behaviors and intrinsic motivation increase when these three needs as satisfied while conditions that thwart or inhibit these needs lead to a decrease in both (Deci & Ryan, 2000).

Possible Selves

Oyserman & James (2009) define possible selves as "the future-oriented aspects of self-concept, the positive and negative selves that one expects to become or hopes to avoid becoming" (p. 273). Possible selves are a representation of the individual in the future. The representation may be tied to current or past experiences in the individual's life and can be comprised of perceived social roles, identities (held by the individual or imposed by others) or tied to a current tasks or occupations including that of a student, family member, caregiver or partner. Multiple possible selves can be envisioned by the individual and are along what Oyserman and James (2009) refer to as a continuum of detail, with the vague and more elusive future selves at the weaker end of the vision spectrum while the stronger future selves images are clearer and include vivid details of

what that future self will entail, including how it ties into the individual's future, what it will feel like living in the future possible self and what needs to be done to obtain it.

Marcus and Nurius (1986) introduced the concept of possible selves suggesting a factor in choosing among alternative actions individuals consider three possibilities: what they might become, what they could become, and what they are afraid of becoming. According to this theory each of us has a repertoire of possible selves which represent cognitive manifestations of our enduring goals, aspirations, motives, fears, and threats (Markus & Nurius, 1986). These possible selves serve to congeal these cognitive manifestations giving them their specific, self-relevant form, meaning, organization, and direction. The image of the self in a future situation combined with self-concept provides the image of the self-relevant form and the direction for motivation (McCombs, 2001). The future possible self, mediated by the self-relevant form "provides the essential link between the self-concept and motivation" (Markus & Nurius, 1986, p. 954).

It is the motivational inducement into action by the future possible self that is of most interest. Oyserman & James (2009) argue that in the case of college students trying to obtain the possible self-image of the positive college student or avoid the feared failed college student image is tied to achievement in classes. The possible self-image becomes an effective regulator of behaviors and will lead to an increase in effort in coursework perceived as connected with gaining or avoiding the future possible self (Oyserman & James, 2009).

Self Discrepancy Theory

Higgins et al. (1985) developed a theory of motivation based upon competing views of self within an individual. Self-discrepancy theory identifies three domains of the self, the actual self, the ideal self and the ought self. The actual self (Higgins, 1987) is the representation of attributes that the individual feels they possess or those that someone else feels that individual should possess. The ideal self is the representation of the attributes that either the individual or someone else would like the individual to ideally possess. The attributes of the ideal self might include the superimposed wishes, hopes and aspirations of the individual or of others. The ought self is the representation of the attributes that the individual or someone else believes the individual should or ought to possess reflected in a sense of duty, obligations and responsibilities. Higgins et al. (1985) identifies the difference between the ideal and ought to selves as similar to the "classic conflict between one's 'personal desires' and one's 'sense of duty'" (p. 53).

In Higgins' (1987) model, each of the three domains of the self are broken down into two self-state representations, one based on the individual's (own) or someone else's (other) view: Actual/own, actual/other; ideal/own, ideal/other; ought/own, ought/other (p. 321). Higgins refers to the later four self-representations as self-guides. Self-discrepancy theory suggests that individuals will differ as to the exact self-guide which motivates them as well as which self-guides they posses, as some individuals may possess the ought-to self-guides while others may only possess ideal self-guides. In other words, individuals may or may not possess all four of these self-guides. Additionally, each person can differ in regard to the specific self-guide that will become their personal motivation catalyst. The basic premise of self-discrepancy theory states

"that we are motivated to reach a condition where our self-concept matches our personally relevant self-guides" (Higgins, 1987, p. 321).

Imagery

According to Markus & Nurius (1986) as incentives, possible selves provide the individual with a framework that is useful in making sense of or analyzing past behaviors which in turn provides the scaffolding for new behaviors:

> Possible selves are represented in the same way as the here-and-now self (imaginal, semantic) and can be viewed as cognitive bridges between the present and future, specifying how individuals may change from how they are now to what they will become (p. 961).

In essence, possible selves provide the individual not only with a guide for the future, and the motivation for achieving future goals, but the ability to imagine the future possible self is crucial for engagement in behaviors necessary for their goal. As Markus and Nurius (1986) describe it, "Individuals' self-knowledge of what is possible for them to achieve is motivation" (p. 955). Possible selves illuminate our vision of imagined possibilities which are limited only by our own imagination.

Since possible selves images require some change from the present, the ability to imagine is crucial. Oyserman and James (2009) argue that the way possible selves are imagined "differs by individuals and contexts in critical ways" (p. 374). These critical differences include: difference in details or vividness and how these link to strategies; temporal distance or how far the goal is from the present can impact self-regulation; perceived ability to attain the goal; and valence or the combination of positive and negative future selves and their impact on mood and motivation (Oyserman & James,

2009). Some individuals can only imagine the future by applying imagined changes to what they physically see now, while others have the ability to create an entire future vision within their mind. According to N. Scott Momaday (1976), "The importance of vision lies not only in one dimension of reality, how we see things with the physical eye, but also in how we see it with the eye of the mind" (p. 81). Future possible selves require the ability to imagine with the eye of the mind.

Libby and Eibach (2009) argue that mental simulations of life events are played out by individuals with "imagery in their mind's eye" (p. 359). Kahneman and Tversky's (1982) posit that individuals use mental imagery in their decision making about the future**.** These mental simulations can be easily constructed and are best when they depict plausible or simple scenarios. Carroll and Sheppard (2009) argue that mental simulations become "the basis for forming expectations which enable people to prepare for the future" (p. 427). The simulations not only aid in production of mental imagery of future outcomes, but also aide in temporally sequencing the events that help one prepare for those outcomes in advance necessary to achieve the future goal (Carroll & Sheppard, 2009).

Ruvolo and Markus (1992) investigated the relationship between performance and the representation of what is possible for one's self in the future. The investigation included three studies. Study 1 examined the effects of a guided imagery manipulation on performance. Fifty-six undergraduate students were randomly assigned to one of three groups: success, failure or positive affect control. Students in the success group were asked to imagine themselves in the future as successful and to describe the imagined scene, while students in the failure group were to envision themselves in the

future in failure and to describe the imagined scene. The control group was given a neutral passage to read and given a bag of candy at completion. The students completed two tasks on different days to measure persistence (1A) and effort (1B). The number of participants in each study is as follows: (Success 1A, *n*=22; 1B, n=17), (Failure 1A, *n*=19; 1B, *n*=15) and (Positive Affect 1A, *n*=15; 1B, *n*=17). While the results of an omnibus ANOVA indicate marginal statistical significance (F (2, 57) = 2.3, $p < .10$), subsequent analyses show that the success group persisted in the task longer, than the failure group (F (1, 39) = 4.65, $p < .04$). Results of study 1B suggest that participants in the success group displayed the greatest amount of effort.

Study 2 examined whether envisioning positive or negative futures for one's self enhanced the accessibility of specific possible selves relevant to success or failure. This study used the same three groups used in study 1, but added a fourth where participants were asked to imagine another person being successful. Seventy undergraduate participants were randomly assigned to one of four groups, success (*n*=18), failure, (*n*=17), other person's success (*n*=18) and positive affect control (*n*=17). After the imagery manipulation (see study 1) the students participated in a computerized self-description task to evaluate which self-conceptions were accessible immediately following the imagery manipulation. An overall ANOVA was used for the data analysis. Results of study 2 indicate that when compared to those imagining failure the group who imagined their own success were faster to endorse positive words, and faster to reject negative ones. Participants in the other success group, when compared to the failure group, were faster to respond to success relevant possible selves. The results

indicated that success-relevant possible selves were more accessible after receiving success imagery.

Study 3 utilized the performance measures from studies 1 and 2 to examine the link between possible selves and performance. Ninety-one undergraduate students were randomly assigned to one of four groups, success work (n=34), success luck (n=11), failure work (n=33) and failure luck (n=13). Participants were asked to imagine themselves in the future and write a descriptive paragraph. Success work and failure work were given the same imagery manipulation from study 1 and 2 while success luck and failure luck deleted any references to the individuals work toward the goal substituting in lucky break or bad break. After the imagery manipulation all participants completed the computerized self-description task (study 2), the performance tasks (study) and a version of the Mehrabian (1968) achievement questionnaire to determine how much they valued achievement. The groups did not differ on scores for the achievement scale. An overall ANOVA was used for the data analysis of the remaining tests. The results suggest that the success work group expended more effort than the failure work group, ($F(1,42) = 6.83$, $p < .01$), but only a marginal main effect ($F(3,80) = 2.4$, $p < .08$) for all groups. In the persistence task, the overall ANOVA on the four groups was significant, ($F(3,87) = 2.91$, $p < .04$). The success-work group demonstrated the most persistence ($F(1,65) = 8.57$, $p < .004$). The overall ANOVA for the self-description task showed a significant effect on both possible responses to success relevant words and not possible responses to failure relevant words. As predicted the success work group was faster than the failure work group in responses to both categories of words.

In all three studies, Ruvolo and Markus (1992) found that individuals who imagined themselves as successful in the future out performed those who imagined themselves as unsuccessful in the future. Additionally, those who imagined themselves as successful in the future and who performed successfully were both quicker to endorse a variety of positive, success-relevant possible selves and to reject negative, failure-relevant possible selves. Ruvolo and Markus (1992) argue that the results of the study suggest that the mental or imagined representations of the self "may be importantly implicated in motivation and performance" (p. 117). Ruvolo and Markus (1992) go on to conclude that enhanced performance of the success group was not just a function of the positive feelings one experiences from imagining oneself successful, but rather from imagining "specific self-relevant possibilities that occurred as a consequence of one's own effort" (p. 119).

Markus and Nurius, (1986) agree that possible selves can be achieved through mental simulations, but argue that the ease of formulation does not correspond to the amount of influence it will have on individual's behaviors nor does it indicate the probability of the possible self being realized. In other words, people can envision themselves as receiving all A's in their classes, but it will be little more than a daydream unless they also envision what they need to do to make it happen. Oyserman and Jones (2009) refer to this as linking the present to the future. While individuals can generate a variety of possible selves, the potential possible selves are created from the individual's own experiences which can include sociocultural and historical context or from the prominent models, images and symbols produced by media or by the individual's immediate social experiences (Markus & Nurius, 1986).

Perceived Instrumentality

While the ability to imagine the future possible self is crucial for an individual to engage in behaviors necessary for achieving future goals, the ability to recognize the relationship between the tasks at hand and one's future goal is also important. Greene et al. (2004) found that "perceptions of classroom tasks as meaningful, relevant, and interesting (motivating tasks) also influence the extent to which students perceive current learning as instrumental to their future success" (p. 13). According to Simons, Dewitte and Lens (2004) motivation, persistence and performance are enhanced when students can connect the instrumentality of a present academic task with a future goal or task.

Miller, DeBacker and Greene (1999) focused on the relationship between students' perceptions of the incentive value of course work and how this related to their beliefs that course performance was instrumental in the attainment of personally valued future goals. The results of a regression analysis show that instrumentality (β=.30) and learning goals (β=.43) account for significant and unique amounts of variance in intrinsic value scores. According to the researchers, their findings show that personally valued future goals served to increase the value of the task at hand, if this task was seen as instrumental in achieving the future goal. These findings are once again supported in Tabachnick, Miller and Relyea (2008) and Green et al., (2004). Additionally, Greene et al. (2004) state that a small, but recent body of research "(e.g., Brickman & Miller, 2001; Greene et al. 1999; Miller et al., 1996) has linked effective cognitive engagement to perceived instrumentality" (p. 476).

The perceived instrumentality of the academic task at hand must connect to the student's future goals for an increase in cognitive engagement and motivated learning behaviors to occur. As Greene et al. (2004) emphasize, "When tasks are perceived to be instrumental to personally valued future goals, their incentive value is enhanced through the future goals to which they are connected" (p. 475).

Maehr's (1984) Theory of Personal Investment

Maehr's (1984) Theory of Personal Investment is built upon three components which he identifies as sense of self, goals and action possibilities. Sense of self can be broadly defined as the organized collection of perceptions, beliefs and feelings related to who the individual is. It can be compared to self-efficacy, which is the judgment one makes about one's competence in a domain (Bandura, 1986, 1993), or as Maehr (1984) calls it, "the subjective judgment a person makes about their ability to succeed at a task if they try" (p. 126). Action possibilities are choices the individual perceives as available to them in specific situations or as Maehr (1984) describes them, "*behavioral alternatives"* (p. 124). The actions of the individual will be limited by the opportunities they feel are available to them and the resulting consequences that they anticipate will result from their actions. For Maehr, goals are the motivational focus of the activity, specifically the payoff the person expects to receive for completing the task or performing. It encompasses what the individual perceives the value of the task in relation to them and how they will define success or failure of the task (1984).

Maehr's (1984) goals construct consist of four goal types, including task goals, ego goals, social solidarity goals and extrinsic reward goals. The task goal category encompasses one's confidence in their ability to do their best while ego goals refer to

one's need to outperform others. Social solidarity goals refer to ones' desire to gain social approval, please others or strive be a good person for the sake and enjoyment of doing something. Extrinsic reward goals, on the other hand, are for the sake of an external reward such as a prize or to gain something that the doer finds highly desirable.

According to Maehr (1984) the theory of personal investment can be summarized by two propositions:

> 1) Individuals invest themselves in certain activities depending on the meaning that these activities have for them and
>
> 2) Meaning is composed of three interrelated cognitions: goals, self-concepts and action possibilities (p. 133).

Since the determination of what constituted meaning was a focus for Maehr, his model also contained four antecedents of meaning: the teaching/learning situation, personal experience, information and the sociocultural context. Maehr (1984) suggests that external factors affect these four causal antecedents and three components differently. Personal experience was the sum of meanings that resulted from past experiences. Information antecedent refers to options one believes exist based upon the information or misinformation they have received. The teaching/learning situation antecedent is broken down into two categories, social expectations and task design. This antecedent is based upon the present situation that the individual is in with social expectations including the role the individual plays in a group and the nature of the tasks involved. Tasks that are novel, interesting, unpredictable, meaningful and rewarding are more attractive. The last antecedent Maehr references is the sociocultural context that consists of the set of beliefs, values, and expectations held by significant people in the student's

home, peer groups and school environment. The socio-cultural group plays a significant role in defining tasks as desirable, repulsive or irrelevant as well as defining the meaning of success or failure. Maehr's model (Figure 3) suggests that personal investment in learning is determined by the relevance of one's goals, one's broader sense of self and the perceived possible outcomes. One's goals, sense of self and perceived possibilities are in turn influenced by the teaching learning situation, personal experience, information and the socio-cultural context.

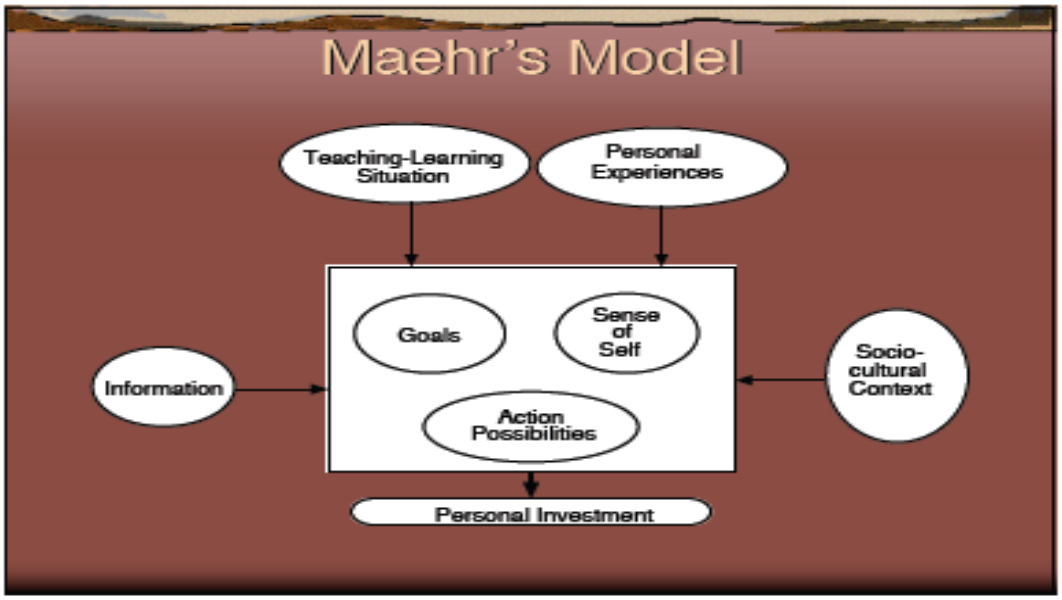

Figure 3. Maehr's Model of Personal Investment (Powerpoint slide image from EIPT 6153 Motivation, Dr. R. Miller, Spring 2008).

Dörnyei's (2004) Model L2 Motivational Self System

Dörnyei and Ushioda (2011) highlight early motivation studies in Hungary by Dörnyei that focused on the five target languages (English, German, French, Italian and Russian), encompassed 12 years and included more than 13,000 student participants as

the being impetus for the new L2 Motivational Self Model (see Dörnyei, Csizér and Németh, 2006 for a detailed discussion of the 1993, 1999 and 2004 studies). Dörnyei's original purpose in the study was to identify the role that the variable he labeled as integrativeness/integrative motive played in the learner's overall motivational disposition. The term integrativeness was based on Gardner's (1959, 1972) concept and refers to the desire to become a member of an L2 community greatly valued by the learner in order to communicate or become like them (Dörnyei, 2009). From the results of the study, Dörnyei concluded that the integrativeness/integrative factor was much broader than originally hypothesized. Dörnyei (2005, 2009a) later conceptualized this as a new concept he described as the learner's ideal L2 self.

The ideal L2 self is one of three components of Dörnyei's (2005) L2 Motivational Self System. Ideal L2 self refers to the L2 specific facet of one's ideal self, representing the attributes an individual would like to possess, such as hopes, aspirations, and desires. Emanating from these findings, Dörnyei (2005) developed the L2 Motivational Self System. Dörnyei's (2009b) goal was to adapt some of the more robust ideas from motivation theories to L2 motivation in order to develop a theory of L2 learning that could be applied in a variety of learning contexts.

Dörnyei's L2 Motivational Self System consists of three components identified as the ideal L2 self, the ought-to L2 self and the L2 learning experience. The first two components, the ideal L2 self and the ought-to L2 self, are future self-guides. The ideal L2 self is the image of one's ideal future self that includes the desire to become competent in a second or foreign language. The ought-to L2 self encompasses the attributes an individual believes they ought to possess in order to meet expectations

imposed on them by others or to avoid future negative outcomes (various duties, obligations or responsibilities). This component is based on Higgin's ought self and is considered to be driven by more extrinsic motivation. Future self guides are described as providing the incentive, direction and impetus for action so that the discrepancy between the current self and the desired future self is reduced (Dörnyei, 2009b).

The third component, the learning experience, is based on L2 motivational research (Dörnyei, 1994) that studied the impact of the learning environment or the classroom learning situation upon the learner's motivation. In his research, the learning environment included the teacher, curriculum, strategies and the learner's group (Dörnyei, 2009a). A learner's group which was too large or functioned at a language level above or below that of the individual learner was found to be one of the main demotivating factors in L2 learning (Dörnyei, 1998).

The three components of the L2 Motivational Self System framework as defined by Dörnyei (2009a) are as follows:

1). *Ideal L2 Self*, which is the L2-specific facet of one's ideal self. If the person we would like to become speaks an L2, the '*ideal L2 self*' is a powerful motivator to learn the L2 because of the desire to reduce the discrepancy between our actual and ideal selves. Gardner's traditional integrative and internalized instrumental motives would typically belong to this component (2009a, p. 29).

2). *Ought-to L2 Self*, which concerns the attributes that one believes one *ought* to possess to meet expectations and to avoid possible negative outcomes. This dimension corresponds to Higgin's ought self and thus to the more extrinsic (i.e. less internalized) types of instrumental motives (2009a, p. 29).

3). *L2 Learning Experience*, which concerns situated, 'executive' motives related to the immediate learning environment and experience (e.g. the impact of the teacher, the curriculum, the peer group or the experience of success) (2009a, p. 29).

Csizér and Lukás (2009) emphasize that the ideal L2 self is a powerful motivator if the person wishes to become a competent speaker of an L2, while the ought-to L2 self may bear little resemblance to a students' own wishes and desires. Dörnyei's third component, L2 learning experience is also seen as a powerful motivational force and includes the various aspects of the individual's L2 learning environment including, the classroom, the teacher, the curriculum, delivery of the curriculum and other learners in the group (Dörnyei & Ushioda, 2011). According to Dörnyei (2009a) "this component is conceptualized at a different level from the two self-guides and future research will hopefully elaborate on the self aspects of this bottom-up process" (p. 29).

Dörnyei (2009b) indicates that the L2 learning experience component is based on L2 research in the 1990's which focused on the motivational impact of what were identified as main components of the classroom learning situation such as the teacher, the curriculum, and the learner group. The L2 learning experience encompasses the direct impact of the students' learning environment which Dörnyei (2009b) argues is the reason it is on a different conceptual level than the other two components: "For some language learners the initial motivation to learn a language does not come from internally or externally generated self images but rather from successful engagement with the actual language learning process" (p. 217).

In his description of the L2 learning experience Dörnyei (2009a) refers to "executive motives" that are related to the immediate learning environment and experience. According to Dörnyei (1994a) executive motives are made up of intrinsic and extrinsic motives and motivational conditions in the following three areas: course-specific motivational components is based on Keller's motivational system and includes

the syllabus, teaching materials, teaching methods and learning tasks; teacher-specific motivational components that include the affiliative drive to please the teacher, teacher's authority type, and direct socialization of student motivation or modeling, task presentation and feedback; and group-specific motivational components including goal–orientedness, norm and reward system, group cohesion and classroom goal structure.

Dörnyei and Ushioda (2011) summarize the L2 Motivational Self System as having three distinct components that function as the primary sources of motivation to learn a foreign or second language. Namely the ideal L2 self or the vision by learners of themselves as an effective L2 speaker, the ought-to L2 self or social pressures to learn a second language that stem from the learner's environment, and the L2 learning environment or positive learning experiences (Dörnyei & Ushioda, 2011). Dörnyei (2009b) further delineates the three components of the L2 Motivational Self System as "three possible attractor basins, one centered around the internal desires of the learner, the second around the motivational regulations of social pressures exercised by significant or authoritative people in the learners environment, and the third around the actual experience of being engaged in the learning process" (p. 218). While Dörnyei has not included a pictorial representation of his model in discussions of the L2 Motivational Self System, Figure 4 depicts the presumed model as based on Dörnyei's descriptions.

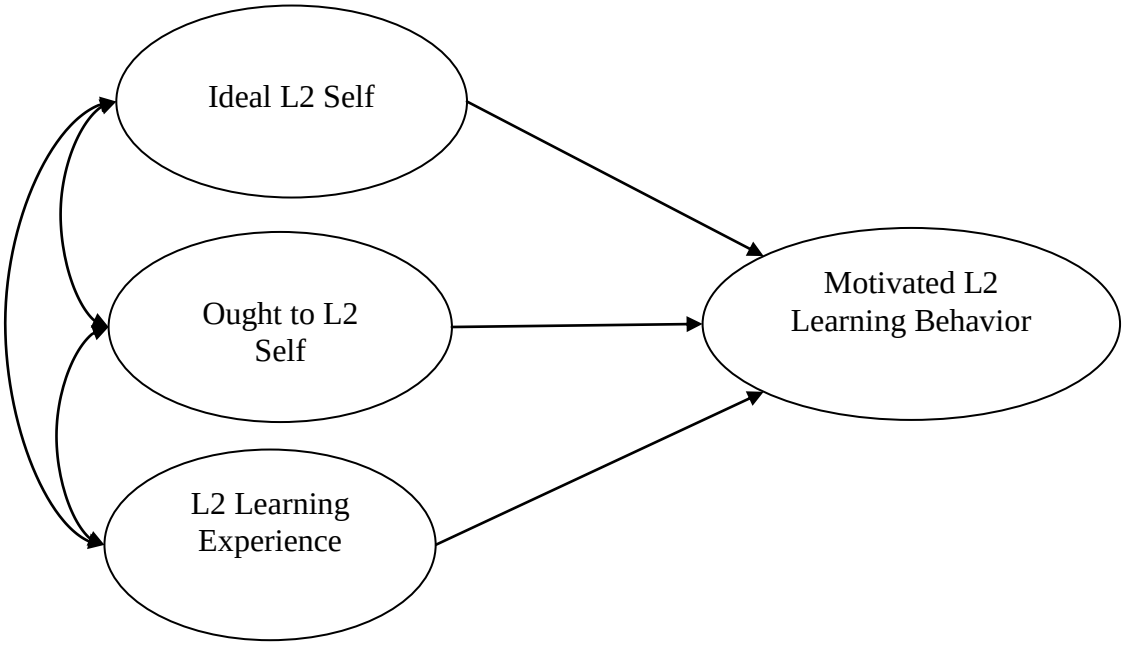

Figure 4. Dörnyei's L2 Motivational Self System with three distinct attractor basins.

The concept of attractor basins is found in cognitive dynamic system theory (DST). According to Rockwell (2005), a dynamic system results from the interaction of conflicting forces of various kinds that "resolve into some kind of partly stable, partly unstable, equilibrium" (p. 28). The relationships between the forces create a range of possible states. The range of possibilities is referred to as the state of space of the system and is composed of a variety of variables that may or may not be acted upon within the system. The change in value of the variables within the system causes them to group into patterns. The patterns of variables contained within the system are known as attractor basins (Rockwell, 2005). The dynamic system can be pulled toward one attractor basin or another. Rockwell indicates that moving from one attractor basin to another will result in a "different complex pattern of behavior in response to that

change" (p. 29). A system can also orbit between two or more attractor basins in a trajectory loop, Rockwell posits that "systems that settle into orbits are usually more complicated than those which settle only into attractor basins" (p. 30).

Dörnyei (2009b) posits that attractor basins can be cognitive, emotional or motivational in nature and suggests that the presence of just one of these attractor basins can provide the influence necessary to sustain direction, vigor and persistence in behavior to attain at minimum a working knowledge of the L2. Likewise, the presence of more attractor basins will result is an increased, cumulative effect on L2 engagement and learning (Dörnyei, 2009b).

Contribution and Influences of Conventional Psychology Motivation Research on the L2 Motivational Self System Model

The components of the ideal L2 self and the ought-to L2 self are based on self theory including both possible selves and self-discrepancy. Dörnyei (2009b) believes the idea of possible selves is useful in framing ideas about motivation in L2 learning stems from its focus upon an individual's future potential. According to Perunovic and Wilson (2009) how we conceptualize our present self is largely a mixture of our past memories and imaginations about our future. Students who envision a possible self in the domain they study have higher feelings of competence and work harder to attain that view of self (Cross & Markus, 1994). With possible selves theory anything can be possible in the future as the mental representations created by the individual are derived from the actual self via images of the past and an envisioned self of the future informed by specific components or antecedents of possible selves. According to Marcus and Nurius (1986):

> Possible selves derive from representations of the self in the past and they include representations of the self in the future. They are different and separable from the current or now selves, yet are intimately connected to them. Possible future selves, for example, are not just *any* set of imagined roles or states of being. Instead they represent specific, individually significant hopes, fears, and fantasies(p. 954).

These hopes, fears and fantasies, as conceptualized by the individual can become what Dörnyei (2009a) calls the "as yet unrealized potential" (p. 11). When this unrealized potential is conceptualized as a positive representation, it can serve as a guide for the individual in his or her quest for this imagined future. For this reason possible selves have been referenced as future self-guides.

As indicated earlier, Markus and Nurius (1986) identified three main types of possible selves: what an individual might become, what they would like to become, and what they fear becoming. Dörnyei (2009) relates Markus and Nurius's first two possible selves to two of his components in L2 Motivational Self System framework, the ideal L2 self and the ought-to L2 self. The ideal L2 self and the ought-to L2 self components, like Markus and Nurius's (1986) possible selves, serve as future self-guides and have the potential to guide the individual toward future goals. Self-guides that exert pressure on the ought self are from external sources such as group norms, serve a normative function, that Dörnyei and Ushioda (2011) argue puts pressure on the ought self to internalize the norms to such an extent that varying degrees of integration occur. This view of graduated internalization of external forces is consistent with Deci and Ryan's (1985) self-determination theory.

While self-discrepancy (Higgins et al., 1985; Higgins, 1987) and possible selves (Markus & Nurius, 1986) theories inform the L2 Motivational Self System, Dörnyei's (2009a) system differs with regard to the conceptualization of the future-oriented selves. For Higgins (1987) each individual has a single *ought* and a single *ideal* self while Markus and Nurius (1986) put forward the idea of multiple possible selves. The concept of multiple possible selves is important because they assume the role of an incentive for our future behaviors (Markus & Nurius, 1986).

According to Reeve (2005) possible selves function as incentives because they project an image of the individual in another realm and "an individual who can envision a possible self in a learning domain engenders feelings of competence and acts to attain the future view of self" (p. 268). The vision or mental imagery of one's self in the future figures prominently in both possible self-theory and the L2 Motivational Self System. Dörnyei and Ushioda (2011) argue that imagery is a crucial aspect in the formation of possible selves. They also believe it is frequently ignored or overlooked. Possible selves are extremely vivid and powerful figments of our imagination:

> Possible selves involve tangible *images* and *senses;* they are represented in the same imagery and semantic way as the here-and-now self, that is they are a *reality* for the individual -- people can 'see' and 'hear' a possible self (p. 81).

According to Markus and Nurius (1986) these generated images of the ideal possible selves "have the potential to reveal the incentive and constructive nature of the self" (p. 954). Markus and Nurius (1986) suggest "if possible selves are assumed to function as incentives for behavior, it is necessary to work with individuals so that they

generate self-conceptions of possibility" (p. 966). In other words, the use of imagery is powerful because a mental image of the future self is a potent motivator. However in order to become a catalyst, the image may first need to be constructed or nurtured. This underscores the importance of formation, ignition and sustaining the image or imaginary of the ideal L2 self that Dörnyei (2009a) includes in his discussions on the L2 Motivational Self System. In short, images and mental representations from imagery are important in the formation of future possible selves and as such are also prominent in the L2 Motivational Self System (Dörnyei, 2009a, 2009b; Dörnyei & Ushioda, 2011).

Along with self-theory, self-determination theory (Deci & Ryan, 1985) is another of the more robust motivational theories which influenced the development of the L2 Motivational Self System (Dörnyei 2009a, 2009b, Dörnyei & Ushioda, 2011). An important element of self-determination theory (SDT) with its internalization of extrinsic regulation can be found in Dörnyei's ideal L2 self, ought-to L2 self and the L2 learning environment. According to Deci and Ryan (2000) greater internalized regulation leads to greater autonomy in actions which in turn is associated with deeper engagement, better performance, and higher quality learning. Of the four self-determination sub theories, organismic integration and basic needs theory have influenced the development of L2 motivation theories the most, influencing the move from a social psychological perspective to a socio-dynamic perspective. Likewise, the broader SDT has influenced the concept of the L2 learning environment because it provides a continuum of types of motivation useful in informing language course design, content and program changes that can lead to increased learner motivation and engagement.

There is also a strong correlation between Dörnyei's (2005) three components of the L2 Motivational Self System and Maehr's (1984) theory of personal investment (Table 1). Maehr (1984) sought to develop a theory of motivation which incorporated the sum total of an individual's past, present and future as an impetus for their current actions. Also, the central focus of both the L2 Motivational Self System and Maehr's theory of personal investment is the motivational powerhouse of the self and future goals. Finally, both Maehr and Dörnyei's goal was to construct a theoretical framework that was acceptable to scholars while being useful to practitioners.

Table 1

Correlation of L2 Motivational Self System Components to Maehr's Theory of Personal Investment Components and Antecedents of Meaning

Dörnyei's (2005) L2 Motivational Self System: Components	Maehr (1984) Theory of Personal Investment: Components	Maehr (1984) Theory of Personal Investment: Antecedents of Meaning
Ideal L 2 Self	Sense of Self	Personal Experience & Information
Ought-to L2 self	Action possibilities	Sociocultural Context
L2 Learning experience		Teaching Learning Situation

In talking about the theory of personal investment Maehr (1984) states, "The theory is neither new nor novel, its intellectual forebears are readily evident, its overlap with other theories all too obvious" (p. 116). Dörnyei's L2 Motivational Self System, like Maehr's theory, was also developed out of attempts to synthesize the important approaches in the field of L2 motivation so that it was more applicable to a wider range of contexts and situations representative in each one. Maehr's goal was to construct a theoretical framework that was acceptable to scholars while being useful to practitioners. Likewise, one of Dörnyei's main goals in developing the L2 Motivational

Self System was to develop a model that could be useful to researchers and of practical use to educators.

Research on L2 Learning and the L2 Motivational Self System

As indicated previously, Dörnyei's L2 Motivational Self System developed out of attempts to synthesize the top approaches in the field of L2 motivation so that it was more applicable to a wider range of contexts and the learners representative in each one. From the 1990's to the present, Kim Noels and associates have continued to research tying self-determination theory to L2 motivation, as such SDT is the front runner of all educational psychology motivation theories that have been applied to L2 learning. As indicated by Dörnyei, the studies and findings are important in the development of the L2 MSS and for that reason a brief discussion of the studies and their findings is included (Dörnyei 2009a, 2009b; Dörnyei & Ushioda, 2011).

Self-Determination Theory (SDT) and L2 Motivation Studies

SDT has frequently been used to explain L2 learning as evidenced by a number of studies (Bakar, Sulaiman, & Rafaai, 2010; Comanaru & Noels, 2009; Goldberg, & Noels, 2006; Jones, Llacer-Arrastia, Newbill, 2009; McIntosh & Noels, 2004; Noels, 2001a; Noels, 2001b; Noels, 2005; Noels, Clément & Pelletier, 1999, 2001; Noels, Pelletier, Clément & Vallarand, 2000, 2003; Pae & Shin, 2011; Pae, 2008; Wang, 2008). Several recent studies on college students demonstrate a strong correlation between high feelings of autonomy, relatedness and competence, to an increase in internalized regulation for L2 learning (Noels, 2005; Noels et al., 1999, 2000/2003, 2001).

According to Dörnyei and Csizér (1998) motivation in L2 learning not only determines the rate and success of acquisition, but also is the catalyst to sustain one through the drudgery that is often associated with learning a language. Without motivation, even gifted individuals who are provided with the best teaching methods and curriculum will not attain native-like fluency in the L2. Dörnyei and Csizér (1998) drive home the significance of motivation in learning with the old proverb, 'you can lead a horse to water, but you cannot make him drink'. While that may be true, one retort to that old proverb is "he'll drink if you salt the oats before he gets there" (Miller, 2010). The salt in this case is the methods, treatments and interventions employed by researchers and teachers that motivate L2 learners, increasing engagement and achievement. Many of the studies by Noels and colleagues focus on this particular aspect of motivation in L2 learning.

Noels, Pelletier, Clément, and Vallerand (2003, *also published in 2000*) were the first to examine the application of Self-determination theory (SDT) in a language learning context and its relation to the current language learning theory. The goals of the study were to develop a new instrument that could be used for assessing learners' L2 orientations from an SDT perspective. Next, to examine the relationship between various subtypes of motivation and variables hypothesized to be related to variations in SDT. They also wanted to determine the validity and reliability of an instrument to assess the subtypes of intrinsic (IM) and extrinsic motivation (EM) scale of L2 learners. A second purpose of the study was to explore the link between IM, EM and AM to the four orientations of Clément and Krudner (1983), including travel, friendship and knowledge and Gardner's instrumental learner orientation.

The participants included 159 English speaking students, who were learning French. Participants completed a questionnaire during class comprised of three scales. Clément & Kruidener's (1983) *learner orientation* was the first scale utilized and included four orientations: instrumental (α= 0.88), knowledge (α= 0.91), travel (α= 0.90), and friendship (α= 0.94). The second scale developed by Vallarand, Blais, Briére and Pelletier (1989) measures intrinsic motivation, extrinsic motivation and amotivation. This scale did not include the extrinsic motivation type of integrated regulation because the instrument by Vallarand et al., (1989) did not demonstrate a clear distinction between the constructs of indentified regulation and integrated regulation. Noels et al., (2003/2000) noted that the participants in the 1989 study may have been too young to have developed an integrated sense of self in relation to school studies. The third scale, *antecedents of consequences of self-determination* was comprised of components from four scales measuring variables related to SDT intrinsic and extrinsic motivation, including *perceptions of competence* (PC) (α= 0.81) by Hartner (1982) and three scales from Ryan and Connell (1989) *freedom of choice* (FC) (α= 0.68), *anxiety* (A) (α= 0.70) and *intention to continue L2 studies* (ICL2) (α= 0.86).

An exploratory factor analysis was conducted to examine the psychometric properties of the scale designed to assess SDT constructs of amotivation, extrinsic (EM) and intrinsic (IM) in L2 learners. Items with loading of < |.30|were eliminated and the correlation matrix reanalyzed. This process was repeated until there were three items representing each motivation subscale. The 21 items representing IM and EM and the subscales were then included in a factor analysis. Results of this analysis yielded seven factors accounting for 67% of the total variance ($\chi^2 = 75.16$, $df = 84$; $p = .74$). Three of

factors labeled knowledge, accomplishment and stimulation represented intrinsic motivation, while three others labeled external, identified and introjected represented extrinsic motivation. The final factor was labeled amotivation.

As hypothesized, amotivation was negatively related to freedom of choice (*N*= 159, -.49 *p*<.05), perceptions of competence (PC) (*N*=159, -.23 *p*<.05) and intention to continue L2 studies (ICL2) (*N*=159, -.57 *p*<.05), but positively related to anxiety (A) (*N*=159, .17 *p*<.05). External and introjected regulation had low or no correlation to the three criterion variables, of freedom of choice (*N*=159, -.01; .09), PC (*N*=159, .03; .06) and ICL2 (*N*=159, .19 *p*<.05; .02). As hypothesized, there was a positive correlation between the three criterion variables and identified regulation, (*N*=159) FC, .58; PC, .35; ICL2, .55, all at *p*< .05. Also as hypothesized there was a positive correlation between the three criterion variables and the three factors representing IM, knowledge ((*N*=159) FC, .51: PC .43; ICL2, .43, all at *p*< .05) accomplishment ((*N*=159), FC, .23: PC, .23*: ICL2, .15*, **p*< .05), and stimulation ((*N*=159), FC, .49; PC, .46; ICL2, .34, all at *p*< .05). The results show that identified regulation was more highly correlated to the three criterion variables than were the three IM subscales. This led the authors to conclude that to foster sustained motivation in L2 learning required that learners not only find the L2 interesting and enjoyable, but also understand the personal relevance of the L2.

Not only did they discover that the SDT motivational principles relevant in other settings parallel many motivational constructs in the L2 domain, but also that SDT intrinsic and extrinsic motivation subtypes can explain language learner motivation. The finding were consistent with predictions of SDT as more internalized reasons for

learning an L2 resulted in student's claims of feeling less anxious and more comfortable and willing to persevere in L2 learning. Results also show that instrumental orientation and SDT external regulation orientation were strongly correlated (N = 159, .74, p< .05). While Noels et al., (2000/2003) posited that Gardner's integrative orientation was similar to intrinsic motivation "in that it emphasizes positive attitudes toward language learning" it was not tested in the model (p. 54).

Noels (2001b) studied learners' motivational orientations and their perceptions of their teachers' communication style. One purpose of the study was to examine how perceptions of autonomy support and informative feedback from teachers engender feelings of autonomy and competence. A second purpose was to examine how Gardner's integrative orientation related to SDT extrinsic and intrinsic motivation.

The study sample consisted of 322 native English speakers in a first-year Spanish course at a California University. The questionnaire designed for the study included three instruments comprised of 11 different scales. The motivational orientation instrument included the *intrinsic and extrinsic orientations and amotivation* scale (Noels et al., 2000/2003) and the *integrative orientation scale* (α= .79) (Gardner, 1985a). The hypothesized antecedents of intrinsic motivation instrument included *self-perceptions of Spanish competence* (α= .87) (Clément, 1988); *self-perceptions of autonomy* (α= .86) (Noels, et al., 1999); *motivational intensity* (α= .76) (Gardner, 1985a); *intention to continue learning Spanish* (α= .81) (Noels et al., 1999); *attitudes toward learning Spanish* (α= .88) (Gardner, 1985a); *frequency of contact with Latino community*; *quality of contact with Latino community* (α= .75) (Clément, 1988); and *ethnic identity* (α= .91) (Clément & Noels, 1992). The third instrument, *student's*

perceptions of their teachers' communicative style utilized items from Gorhman (1998) and Gorhman and Zakahi's (1990) test of generalized immediacy and from four scales developed by the author including *control* (α= .63), *informative feedback* (α= .85), *congeniality* (α= .78) and *negativity*, (α= .83).

A path analysis was used to examine the relationship between perceptions of the teacher, self-perceptions of competence and control, and intrinsic and extrinsic motivation. Results of the path analysis suggest that a link exists between teachers' behaviors, either supportive or controlling, and students' feelings of autonomy and competence in Spanish which Noels contends supports Deci and Ryan's (1985) basic needs theory. The results of path analysis I were statistically significant (χ^2 = 53.24; *df*= 21; *p*< .01) with all goodness of fit indices above the .90 level: *goodness of fit index* (GFI) = .97; *adjusted goodness of fit index* (AGFI) = .91; *Bentler-Bonnet normed fit index* (BBI) = .96; *comparison fit index* (CFI) = .97. Ten paths from the original analysis were not statistically significant so these were dropped and path analysis on the revised model was also statistically significant with model fitting the data well (χ^2 = 66.13; *df*= 31; p< .01; GFI= .97; AGFI= .93; CFI=.97; and BBI= .94) As hypothesized, the more controlling the instructor, the less the students perceived that they were learning on their own accord and the higher their levels of amotivation. Reminding students that s/he was in control of the class and all choices in it or feedback that was negative or criticizing were identified as behaviors considered controlling by students. Informative praise and encouragement by the teacher were linked to greater feelings of competence, language learning and lower levels of amotivation.

Multiple regression analysis indicated that there was a link between the more self-determined forms of intrinsic and extrinsic motivation (independent variables) and Gardner's integrative orientation (dependent variable) (Table 2). Additionally, intrinsic and extrinsic motivation is useful in predicting many L2 variables, including *self-perceptions of Spanish competence*; *self-perceptions of autonomy; motivational intensity*; *intention to continue learning*; *attitudes toward learning Spanish*.

Table 2

Results of Standard Multiple Regression between Integrative Orientation (DV) and SDT Intrinsic Motivation, Extrinsic Motivation, and Amotivation

Equation			Coefficients				
Ind. Variables	R^2	F	B	*T*	*R*	*Pr* (partial)	*Sr* (part)
Intrinsic Mot	.47	55.24*	.37	6.10*	.63	.33	.25
Identified Reg			.36	5.30*	.62	.29	.22
Introjected Reg			.04	0.72	.50	.04	.03
External Reg			-.04	-0.86	.22	-.05	-.04
Amotivation			.02	0.40	-.25	.02	.02

Note. $N = 320$; all zero order correlations are significant at $p < .01$
*$p < .01$

To summarize, the study found evidence that the more enjoyable learning language was, the higher personal values students reported toward learning the language along with an increased desire to have interactions with the members of the target language community. The results also provided evidence that that language learning motivation can be enhanced by the psychological principles of autonomy and perceived competence. In addition, the findings show that SDT intrinsic and extrinsic motivations are useful in predicting a variety of L2 motivational variables including Gardner' integrative orientation. Overall, the findings of Noels et al., (2000/2003) and Noels

(2001b) suggest that Gardner's instrumental orientation was useful in explaining extrinsic motivation as proposed by Deci and Ryan while the integrative orientation was related to the more self-determined orientations of intrinsic and identified regulation, SDT encompasses more L2 variables than Gardner's orientations.

McIntosh and Noels (2004) examined the relation between SDT motivation for language learning, the need for cognition (NC) and language learning strategies (LLS), both direct and indirect. The sample size consisted of 126 undergraduate students in French, German and Spanish courses. Four scales were used including *need for cognition* (Cacioppo, Petty & Kao, 1984) (α= 0.81), *language learning strategies (Oxford, 1990)* (α= 0.92), *L2 achievement* (α= 0.86) and the *self-determination scale* developed by Noels et al. (2000/2003). The scale *language learning strategies* assessed both direct and indirect strategies. Direct strategies included memory (α= 0.72), cognitive (α= 0.76) and compensation (α= 0.82). Indirect strategies included metacognitive (α= 0.86), affective (α= 0.55) and social strategies (α= 0.92).

Both structural equations modeling (SEM) and hierarchical multiple regression were used to analyze the process model in which the authors hypothesized that need for cognition (NC) would influence self-determination to learn an L2, which would in turn lead to the use of multiple language learning strategies and greater L2 proficiency. Results indicated a significant and positive correlation (β=.51, $p \leq .01$) between SDT and NC as well as between NC with LSS cognitive strategies (CS). Self-determination in L2 learning was positively related to 4 of the six language learning strategies including cognitive, compensation, metacognitive and social strategies, but not with memory or affective strategies. These findings further demonstrate the relationship

between SDT and specific language learning strategies of L2 learners identified by L2 literature.

A 2005 study by Noels further examined relationship of language learning motivation and SDT by including the variables of heritage and non-heritage learner motivation, social context and intergroup factors. This study examined the intrinsic, extrinsic, integrative and instrumental reasons for learning a language along with feelings of autonomy, competence, and relatedness in relation to engagement in language learning and intergroup variables of heritage and non-heritage German language learners. Participants included 63 students whose parents had no German language background and 41 students with parents of German speaking background. All participants were enrolled in German classes at two Canadian Universities. The instruments employed included: *intrinsic, motivation, extrinsic motivation* and *amotivation* (Noels et al., 2000/2003); *integrative orientation* (α= 0.79) *and instrumental orientation* (α= 0.66) (Gardner, 1985a); and *antecedent variables: self-perceptions of autonomy, competence and relatedness* (adapted from Noels et al., 2001, 1999). Six other variables thought to be associated with differing motivational orientations were included: *engagement in learning* (α= 0.74); *intention to continue learning German* (α= 0.94); *self-evaluation of German competence* (α= 0.87); *ethnic identification* (German α= 0.79; English α= 0.95); *contact with member of the German community* (α= 0.77); and *German language usage* (α= 0.80). Two different analyses were used including analyses of variance to identify mean differences between the two groups and a factor analysis to identify association of language background with orientation and relation to antecedent and outcome variables.

The results of the study indicated that heritage language learners were more likely to learn the target language than non-heritage due to the relationship with their self-concept (as measured by relatedness) because of their sense of ancestral heritage and the importance of the language to their ethnic identity. The study also indicated that both intrinsic and extrinsic SD motivation and instrumental and integrative orientations cultivated motivation in both heritage and non-heritage learners. External regulation was slightly lower than intrinsic for non-heritage learners, while identified regulation was significantly lower for non-heritage as compared to heritage learners. Contact with the German community was also correlated to increased motivation in learning for non-heritage and even stronger with heritage learners. This study is important as it was the third validation of the intrinsic motivation, extrinsic motivation and amotivation scale developed by Noels et al. (2000/2003). It is also one of the few that compared both of Gardner's motivation orientations with self-determination orientations (intrinsic, extrinsic, introjected and identified regulation and amotivation) and their relation to heritage and non-heritage learners. Finally, the study findings are important as they show that SDT's basic needs, autonomy, competence and relatedness, are important for L2 learning in both heritage and non-heritage language learners. Among both groups, increased levels of autonomy, relatedness and competence are associated with more self-determined motivations that in turn was associated with increased engagement in learning and intention to continue pursuing the language in the future.

Goldberg and Noels (2006) studied *intrinsic motivation, extrinsic motivation and amotivation* using a modified version of an instrument Noels et al., (2000/2003), called "*The language learning orientation scale*". This study investigated the

motivation to learn French with a population of undergraduate and graduate students. This study also used *situated ethnic identify scale* (SEIS) (Noels, Saumure, Pino, Clément, & MacIntyre, 2005) and the *language use index,* which contained four items to evaluate how often participants used French across the four situational domains of the SEIS (with friends, with family, at school and in general public). The aim of the study was to integrate SDT motivational orientations and Gardner's integrative and instrumental orientations with situated ethnic identity approaches in an examination of students who had chosen to continue to learn French in intensive language programs beyond high school.

Ninety-one students from two university campuses were included in the study. Two types of instruments were used including questionnaires with closed-ended questions to assess participant's motivational orientations, ethnic identity and language usage along with one open-ended question concerning motivational orientation. The open ended response was included so that students would have the opportunity to expand on their reasons for learning French to see how their reason aligned with their SDT motivation orientation. The open-ended question response was independently coded by three coders based on Deci and Ryan (1985) motivational orientations or Gardner's (1985a) integrative orientation. Results of the qualitative data revealed a difference between motivation orientations of students from the two universities. Faculté Saint-Jean (FJS) students were identified significantly more in the identified regulation domain than University of Alberta (U of A) students. When FSJ students were given the opportunity to indicate why they were motivated to learn French they

reported it was personally important for them to learn French and likely to help them achieve their long term goals.

Results of the statistical analysis found University of Alberta students to have an anglophone identity while those of Faculté Saint-Jean (FJS) in Edmonton reported a higher francophone association. Students in both groups reported that neither parent spoke French, but FJS students reported significantly more use of French in school and with friends. The authors' hypothesized that students attending a francophone post-secondary university would demonstrate higher self-determined motivation for language learning. While the results show that students in a francophone university were motivated to learn French for more self-determined reasons, the findings between the students at the two institutions were not significant. One interesting pattern identified was that learning French did not have any bearing on students feeling of identity with their culture of origin. This finding was not congruent with Gardner's earlier theories and model of L2 learning. The results of the study indicate that SDT motivation orientations were a better predictor of the students who were more likely to continue to pursue students in French than Gardner's orientations.

The finding by Noels and colleagues support the application of self-determination theory in L2 learning and highlight specifically how it relates to the impact of environmental influences in the L2 classroom upon L2 learner's self-determination motivation level. In a nut shell, these studies have confirmed that L2 motivation is similar to motivation in other subject domains and as such SDT, including sub theories such as of basic needs theory, is useful in the field of L2 learning. According to Dörnyei & Ushioda (2011) research by Noels has also demonstrated the

effects of autonomy in relation to the learner's level of motivation and engagement. Motivation level and engagement to learn the language increase when the L2 learning experience and environment are perceived as autonomous, but they decrease drastically in relation to the student's perceived lack of control in L2 learning. These two areas are important aspects that have informed Dörnyei's L2 learning experience component of the L2 MSS, specifically by highlighting the importance of the classroom learning situation (teacher, curriculum, learner group) on L2 learners' motivation level and engagement with the L2 .

Research on the L2 Motivational Self System

During the last five years various quantitative studies were conducted to test and validate the L2 Motivational Self System in a variety of learning environments (Al-Shehri, 2009; Csízer & Kormos, 2009; Csizér & Lukás, 2010; MacIntyre et al., 2009, Papi, 2010; Ryan, 2009, Taguchi et al. 2009; Yang & Kim, 2011). These studies were conducted in various countries including China, Hungary, Iran, Japan, Saudi Arabia, Korea and Sweden. The combined sample size included more than 6000 participants in four sample groups including secondary students, English major and non-English major university students and adult learners. The studies which tested the relationship between the ideal L2 self and integrativeness found that the two variables across a variety of subsamples produced an average correlation of .50 or greater. Additionally, in other studies the ideal L2 self consistently explained more of the criterion measure, intended effort to learn an L2, (42% of the variance) than integrativeness (32% of the variance). These studies, along with other studies relevant to the L2 Motivational Self System and the tenets of the current proposed study will be addressed below.

L2 Motivaton Self System: Validation Studies

Dörnyei and Csízer (2006) conducted the largest L2 motivation survey ever attempted, which spanned three separate occasions, 1993, 1999 and 2004 and included 13,391 Hungarian youth (6,630 males and 6,532 females) between the ages of 13-14. The main focus of the survey was to explore the relationship between language attitudes and language learning motivation. The researcher used a specially developed Language Disposition Questionnaire, which contained 37 items taken from established and validated motivation questionnaires. Twenty-one of the items required the participants to respond in a grid format for five languages including, English, German, French, Italian and German. The multiple responses yielded 139 variables. Data were analyzed using a variety of statistical techniques including factor analysis and ANOVA. The seven main motivational dimensions analyzed via ANOVA included integrativeness, instrumentality, attitudes toward L2 speakers/community, vitality of the L2 community, cultural interest, milieu and linguistic self-confidence. Criterion measures of intended effort and language choice were also included. See Figure 5 for model depicting the hypothesized interrelationship of the motivational variables and the criterion measures.

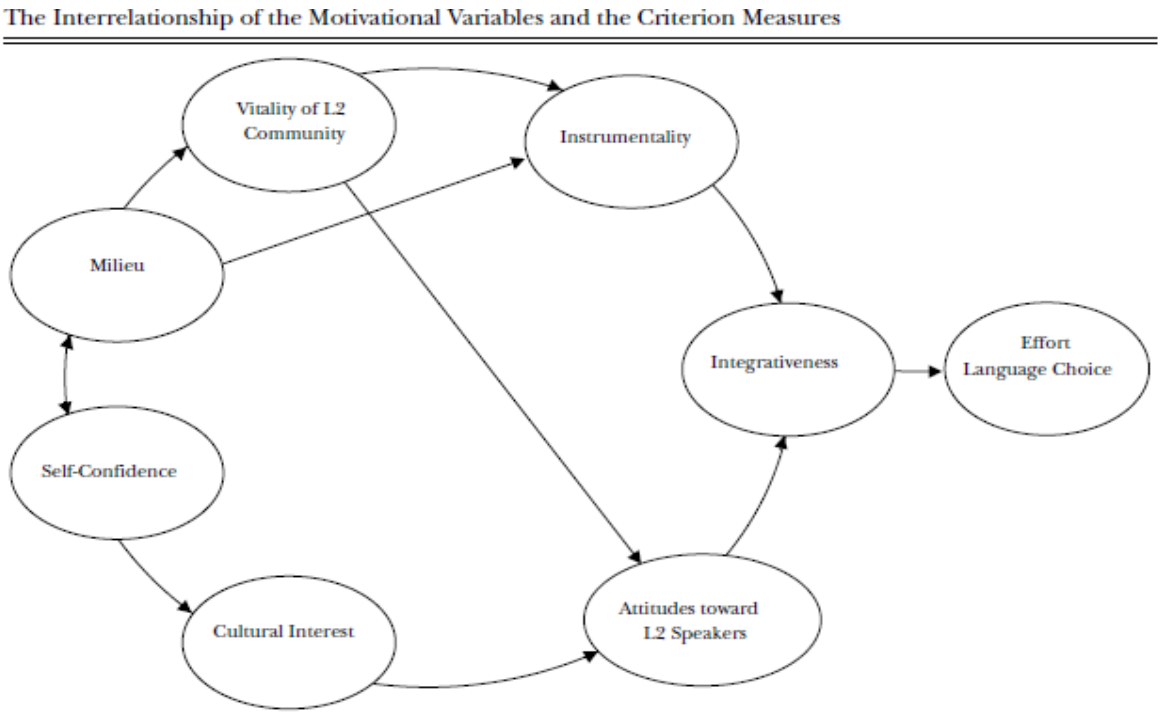

Figure 5. Model depicting the interrelationship of the motivational variables and the Criterion measures.

Data from all three surveys were analyzed using structural equation modeling (SEM) and each language and year was treated separately. Key highlights of the findings include the structure underlying the variable was stable across time and languages; each of the multiple models (1993, 1999 & 2004) produced the same results with only minor variation; and the schematic representation of the final construct (see Figure 5) had excellent goodness of fit indices in all versions. Integrativeness was found to play a key role in L2 motivation and mediated the effects of all other attitudinal/motivational variables on the two criterion measures, *language choice* and *intended effort*, while *attitudes toward L2 speakers/community*, and *instrumentality* functioned as the antecedents of intregrativeness. The last finding is interesting because Gardner theorized that instrumentality and integrativeness as two discrete constructs.

The findings of this study influenced Dörnyei (Dörnyei, Csizér & Németh, 2006) to reframe integrativeness as an aspect of the broader Ideal L2 Self component.

Since the previous validation study by Dörnyei was in Hungary, Taguchi, Magid and Papi (2009) chose a comparative motivational study of learners of English in the three Asian contexts of China, Iran and Japan to validate the L2 Motivational Self System. The participants included 1,586 English learners in Japan, 1,328 learners in China and 2,029 in Iran. Using a convenience sample, the sample participants covered four learner types including secondary students, English major and non-English major university students and working professionals.

The instruments for the study included three versions translated into Japanese, Chinese (Mandarin), and Persian. All three versions of the instrument utilized a six point likert scale and included the same factors. The factors and the Cronbach Alpha for each of the Japanese (*J*), Chinese (*C*) and Iranian (*I*) versions include the Ideal L2 Self (*J*α= .89; *C*α=.83; *I*α=79), Ought-to L2 Self (*J*α= .76; *C*α=.78; *I*α=.75), Family influence (*J*α=.83; *C*α=.70; *I*α=.69, instrumentality-promotion (*J*α=.82; *C*α=.78; *I*α=.67), instrumentality-prevention (*J*α=.73; *C*α=.84; *I*α=.81), attitudes to learning English (*J*α=.90; *C*α=.81; *I*α=.82), Attitudes to L2 community (*J*α=.86; *C*α=.76; *I*α=.76), Cultural interest (*J*α=.77; *C*α=.67; *I*α=.76), integrativeness (*J*α=.64; *C*α=.63; *I*α=.56), as well as criterion measures to assess learners' intended efforts toward learning English (*J*α=.83; *C*α=.75; *I*α=.79).

Data were analyzed using a correlational analysis and SEM. Data subsets were also submitted to AMOS. Fit indices utilized included goodness-of-fit index (GFI), the comparative fit index (CFI) and root mean square error of approximation (RMSEA).

The results of path analyses for the Japanese, Chinese and Iranian models indicated that all paths were statistically significant except for one path in the Iranian model of instrumentality prevention/instrumentality promotion. The results for each three models indicated that the model fit the data well with all goodness of fit indices above the .90 level. The Japanese model, N= 1534, χ^2 (358) = 1777.47, p< 0.0001; GFI =.92; CFI =.94; and RMSEA =.05. The Chinese model, N= 940, χ^2 (284) = 1002.85, p< 0.0001; GFI =.93; CFI =.92; and RMSEA =.05. The Iranian model, N= 719, χ^2 (284) = 748.93, p< 0.0001; GFI =.93; CFI =.93; and RMSEA =.05.

Cross cultural variations were noted in the strengths of specific relationships. Figure 6 shows the comparison of the correlation coefficients and the strength of relationships between the variables for the Japanese, Chinese and Iranian models. The authors note that while there are several cross-cultural differences across the models, two clusters involving the ideal L2 self stand out and include: (1) the interrelationship of ideal L2 self, attitudes to L2 culture and community, and instrumentality-promotion; and (2) ideal L2 self, attitudes to learning English and the criterion measures. Relationship 1 is similar to findings by Dörnyei et al., (1993, 1999 & 2004) in that Gardner's integrativness and instrumental are not discrete variables as both fit within the ideal L2 self component.

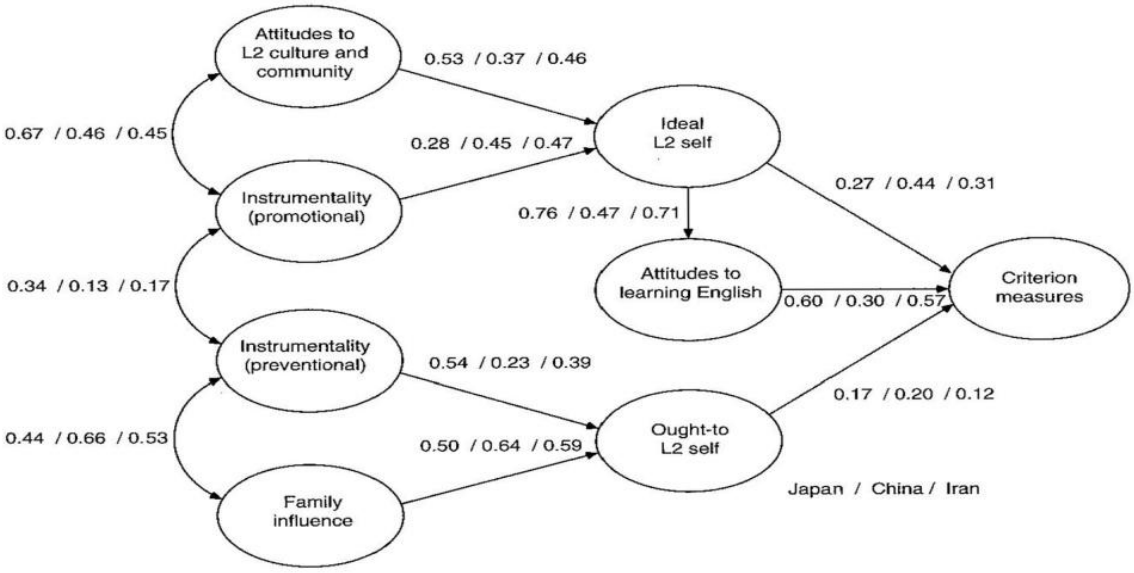

Figure 6. Comparison of coefficients among Japanese, Chinese, and Iranian Models.

Results of the study confirmed Dörnyei's assumption that the Hungarian model based on research by Dörnyei et al., (1994, 1999, 2004) has potential as a prototype of a general foreign language learning context. The SEM analysis confirmed the validity of the tripartite L2 Motivational Self System. Further results indicated that Gardner's integrativeness can be relabeled as the Ideal L2 Self. The study actually found that the Ideal L2 Self had a higher explanatory power in L2 contexts than integrativeness. Gardner's instrumentality can be classified into two distinct constructs, associated with promotion versus prevention tendencies, depending on the extent of internalization of external incentives (p. 88).

Csizér and Kormos's (2009) conducted a study to examine the predictive validity of the L2 MSS via an investigation of the role of the ideal L2 self, the ought-to L2 self and the L2 learning experience in two language learner populations who study English in Hungary. The participants included 202 secondary students, 80 male and 122

females, and 232 university and college students, 73 male and 157 female. The instruments utilized scales from the Dörnyei et al., (1994, 1999 & 2004) including the following predictor variables: parental encouragement, knowledge orientation (how learning the language will help them), and international posture. The antecedent variables included the ideal L2 self, the ought-to L2 self and L2 learning experience. Motivated learning behavior served as the criterion measure. The authors hypothesized that because of extrinsic motivational forces, the ought-to L2 self would be affected by parental encouragement, knowledge orientation and international posture; while ideal L2 self would be affected by international posture, L2 learning experience and the ought-to L2 self; and finally that parental encouragement would contribute the L2 learning experience, knowledge orientation and the ought-to L2 self.

Data analysis included multiple group SEM to evaluate the relations between the various latent variables, followed by combining all variables into a full SEM as well as correlational and regression analyses. Findings revealed that the latent dimensions measuring the ideal L2 self and the L2 learning experience contributed significantly to student's motivated behavior. Results for both groups (secondary and university) demonstrated that motivated learning behavior was partly determined by the ideal L2 self and the extent to which participants could imagine themselves as competent language users in the future. It is notable that L2 learning experience was higher for secondary students than the ideal L2 self, but L2 learning experience was about equal with ideal L2 self for university students. The role of the ought-to L2 self was minimal on both groups, with its contribution to learning behavior weak for secondary students, although it reached level of significance for university students. Figure 7 is the final

model for secondary students and Figure 8 shows the final model for university students.

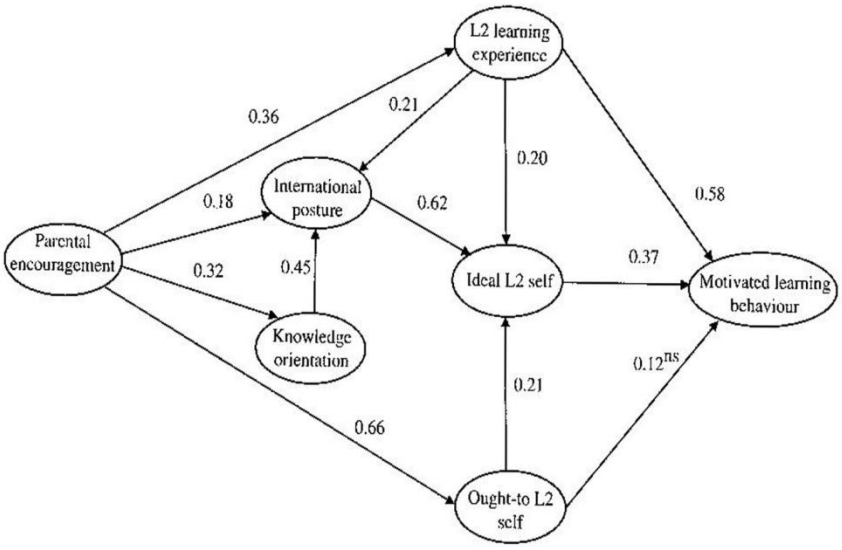

Figure 7. Csizér & Kormos (2009) Final model for secondary students.

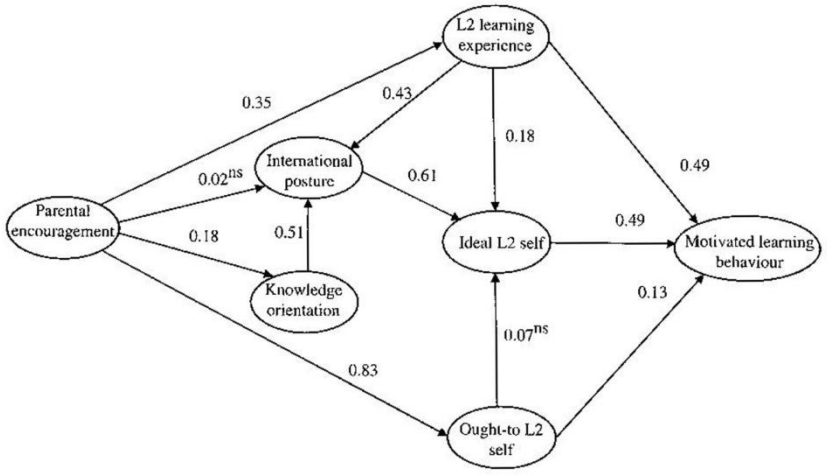

Figure 8. Csizér & Kormos (2009) Final model for university students.

Papi (2010) examined the relationship between emotions and future self-guides. His model (see Figure 9) evaluated the links between the ideal L2 self, the ought-to L2 self, the L2 learning experience, anxiety and intended learning effort. According to Papi (2010) the criterion variable, intended learning effort, is a mediating factor between motivation and success in learning the L2. Papi's (2010) hypothesized model demonstrates that impact of the three L2 MSS variables on English anxiety is based on the assumption that students will experience less anxiety if they are motivated through more "self-determined motivational forms" (470). In the model, the effects of the ideal L2 self and the ought-to L2 self on intended learning effort are mediated through the L2 learning experience.

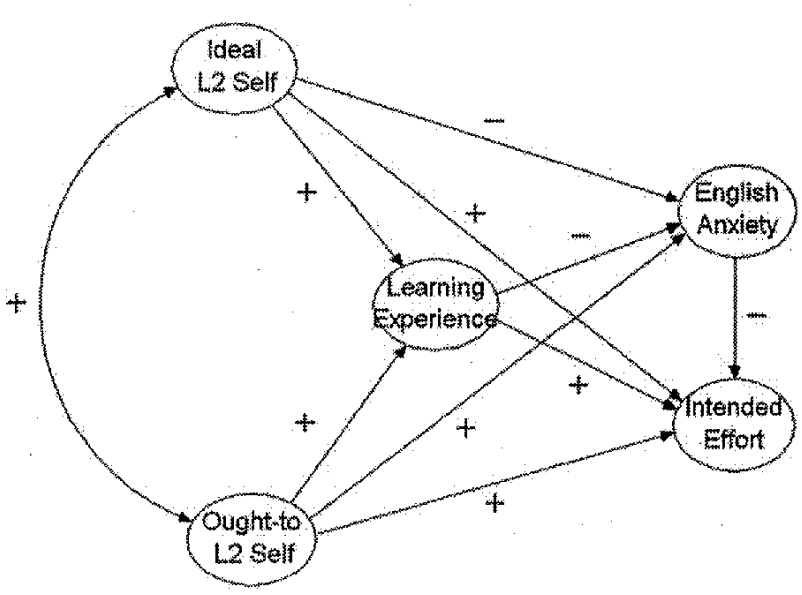

Figure 9. Papi (2010) Hypothesized model of the L2 Motivational Self System, Anxiety to learn English and intended effort. The model shows positive (+) and negative (-) paths.

Participants were selected using a quota sampling method, with high school students serving as the sampling frame with subgroups proportions defined by gender,

year of study, and residential status. Using this technique 1,011 Iranian senior high students were selected, 473 female and 538 males ranging in age from 14-19 years of age with the mean age of 15.7. The students were selected from high schools all over Iran, including rural areas, remote towns and urban cities. All students were studying English as a compulsory subject.

The survey instrument included two parts, with part one being a demographic/ background questionnaire. The second part contained scales developed in Taguchi et al., (2009) to measure the ideal L2 self (α=.77), ought-to L2 self (α=.71), L2 Learning Experience (α=.85) and intended learning effort (α=.80), a new scale was added for English anxiety (α=.67). The instrument was piloted with a representative sample of 100 high school students.

Data were analyzed via a SEM analysis using AMOS. Fit indices utilized included goodness of fit index (GFI), adjusted goodness of fit index (AGFI), normal fit index (NFI), incremental fit index (IFI), relative fit index (RFI), Tucker Lewis index (TLI), the comparative fit index (CFI) and root mean square error of approximation (RMSEA). The results of path analyses for the model indicated that all paths were statistically significant except for the paths between the ought-to L2 self and L2 learning experiences or intended effort. The results indicated that the model fit the data well with all goodness of fit indices above the .90 level, N=1011, χ^2 (170) = 401, p < .001; GFI =.96; AGFI=.95, NFI=.93, IFI=.96, RFI=.92, TLI=.95, CFI =.96; and RMSEA =.037. (See Figure 10).

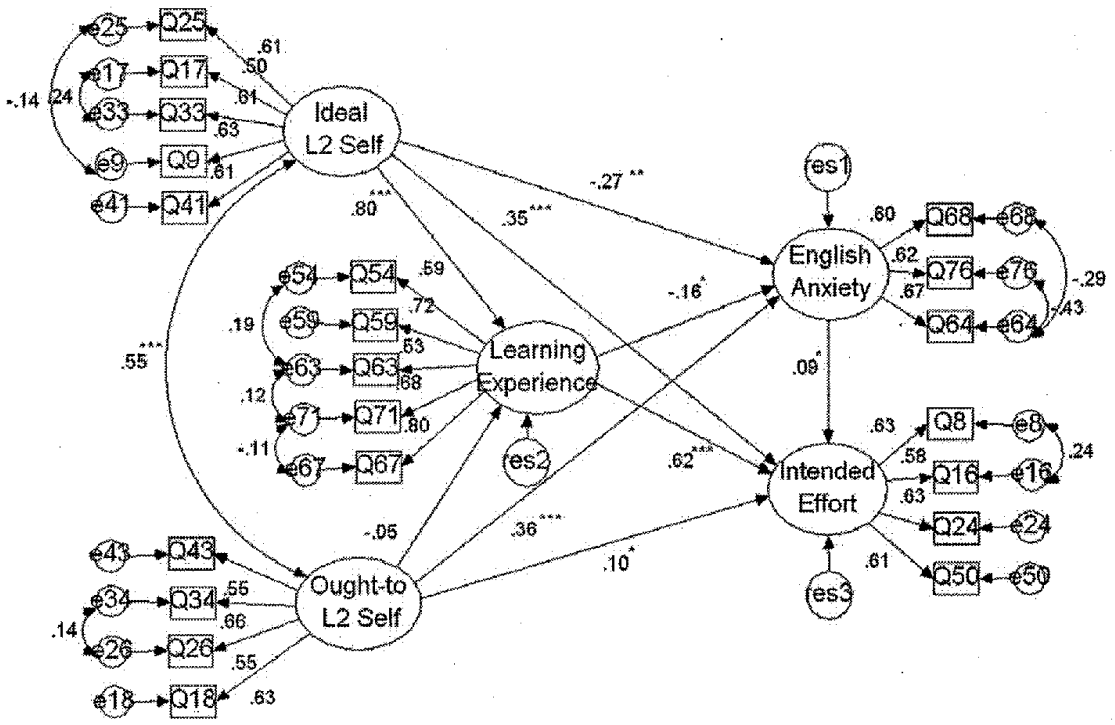

Figure 10. Papi (2010) final model of the L2 MSS, Anxiety to learn English and intended effort. N=1011. Flagged coefficient paths are significant at *p < .05, **p < .01, ***p < .001, χ^2 (170) = 401, p < .001. χ^2 (170) = 401, p < .001.

The results of the study show that L2 learning experience and ideal L2 self were the strongest predictors of intended effort, while the ought-to L2 self was a strong predictor of anxiety. It should be noted that the strongest path is between the ideal L2 self and the L2 learning environment. According to Papi (2010) the results support the assumption that as self-internalized motives and intrinsic motivation of the learner increase, so does their motivation level to learn an L2.

Csizér and Lukács (2010) investigated the ideal L2 and ought-to L2 selves and the L2 language learning experiences of secondary students in Hungary, but added in the caveat of learning English and German simultaneously. The three specific research questions of the study were: What is the difference between the ideal and ought-to

selves of secondary students who are L2 learners of English and L3 learners of German as opposed to L2 learners of German and L3 learners of English?; Are there marked differences between the motivational dispositions of the two learner groups?; What are the cross-effects of the motivational and attitudinal variables concerning the two foreign languages?

Participants included 237 secondary students aged 16-17, 109 males and 126 females. One hundred students listed English as their second language while 132 listed German as their second language. The instrument was an adaption of the instrument used by Dörnyei and Csizér (1994, 1999 & 2004) and Ryan (2005). Other scales were included such as learning anxiety (Csizér & Dörnyei, 2005; Kormos and Csizér, 2008); cultural interest (Dörnyei et al., 2006); direct contact (Dörnyei & Csizér, 2005); and parental encouragement (Kormos & Csizér, 2005).

In order to identify underlying dimensions of attitudinal/motivational variables of the scales and all items the authors conducted a separate analysis for English and German languages using principle component analyses. The results of the analysis for the variables and their cronbach alphas for the English (E) and German (G) are as follows: the ideal L2/L3 self (E α=.86; G α=.92), ought-to L2/L3 self (E α=.07; G α=.01), L2/L3 learning experience (E α=.79; G α=.82), Language learning attitudes towards English/German (E α=.83; G α=.85), English/German use anxiety (E α=.75; G α=.67), English/German class anxiety(E α=.76; G α=.75), parental encouragement(E α=.84; G α=.84) and motivated learning behavior (E α=.70; G α=.84). The next two variables included a scale for England (E), Germany (G), USA (U) and Austria (A): cultural interest(E α=.70; G α=.80; U α=.69; A α=.79), and direct contact with the

L2/L3 speakers (E α=.61; G α=.70; U α=.68; A α=.67). Additionally, the authors applied t-tests to identify differences between the two learner groups and regression analysis to assess the impact of the latent dimensions on the students' learning behaviors. Only one of the variables failed to receive an acceptable cronbach alpha value, the ought-to L2 self, for this reason it was not included in the analysis. The ideal L2 self and L2 learning environment emerged as two distinct latent variables with high reliability coefficients respectively: English α=.86/German α=.92 and English α=.79/German α=.82.

Multiple regression was used to examine the effects of the attitude and motivation variables on the criterion variable, motivated learning behavior. Four groups were identified according to L2 and L3: English for students learning English L2 and German L3 (A); German for students of English L2 and German L3 (B), English for students of German L2 and English L3 (C); and German for students of German L2 and English L3 (D). Of the 8 variables above (L2 ought-to self was excluded), the Ideal L2 Self contributed significantly to motivated learning behavior to all four groups: Group A, β=.56, $p< .001$; Group B, β=.69, $p< .001$; Group C, β=.58, $p< .001$; and Group D, β=.71, $p< .001$. The results of the study show that a learner's view of themselves as future language users is important for motivated L2 learning behavior. According to the authors the findings provide support for the L2 Motivational Self System and the importance of developing an ideal L2 self. While the results of the study also indicated that student attitudes were more favorable toward learning English than German, the ideal L2 self is an important component in motivated language learning behaviors no matter what order the languages were learned.

Ryan (2009) conducted an empirical test of the ideal L2 self, the central component of the L2 Motivational Self System. A second aim of the study was to test the L2 Motivational Self System in the Japanese educational system. Ryan addressed three areas of investigation: 1) to validate Dörnyei's proposal that the ideal L2 self is equivalent to integrativeness; 2) to consider the relative strengths of the ideal L2 self in comparison to integrativeness as a means for explaining motivated language learning behavior; and 3) to compare how the ideal L2 self and integrativeness perform across the main sub groups of the sample. The sample population included 2,397 participants, secondary and university, who were learners of English in Japan. The instrument included 100 six- point Likert type items covering 18 motivational variables: cultural interest, attitudes towards L2 community, instrumentality, international contact, interest in foreign languages, international empathy, fear of assimilation, ethnocentrism, travel orientation, English anxiety, attitudes toward learning English, milieu, parental encouragement, ideal L2 self, L2 self confidence, willingness to communicate (L1/in English), and intended learning effort.

The findings supported the applicability of the L2 Motivational Self System model in multiple language contexts. Ryan found that integrativeness correlated highly with the ideal L2 self ($r = .59$; $p < 0.001$). Gardner (1985) posited that integrative/integrativeness motive was tied to the positive attitude of the language learner toward the target language community, meaning that as positive attitude increased so did effort to learn the L2. The findings of this study do not support that notion. Ryan (2009) found that the correlation of learners attitudes toward the target language speakers (US) was lower ($r = 0.31$, $p < 0.001$) than their attitude toward the

language as an international language (r= 0.51, $p< 0.001$). The findings suggest that integrativeness is just one facet of a more powerful construct, which according to Ryan explains why it has been found lacking in many L2 studies. According to the author, the overall data demonstrated that the ideal L2 self is a more encompassing construct than the previous L2 motivation construct of integrativeness, and as such provides strong empirical evidence for the notion of reinterpreting L2 motivation from a self-perspective.

MacIntyre, MacKinnon, and Clément (2009) also examined the L2 Motivational Self System and the construct of integrativeness in light of the increasing call by L2 motivation researchers to reconceptualize L2 motivation via a possible selves framework. The authors identified three benefits of a reconceptualization of the integrative construct using a possible selves framework citing that: 1). it is an educator-friendly approach, because much of the research conducted on possible selves focuses on increasing motivation in various educational areas; 2) it addresses language contexts outside of Canada, which has been one of the main complaints of Gardner's sociocultural model; 3) it addresses multiple motivations, whereas Gardner's focused on one main motive, integrativeness, the L2 Motivational Self System encompasses many motives which both interact and change over time.

The authors identified six areas they recommended for further research on the construct of possible selves and L2 learning in respect meaning, validity across cultures and stability. These areas include the measurement of possible selves; the naming problem (the authors contend that a coherent theoretical explanation for the role of self is even more confusing than that of Gardner's integrative/integrativeness); cultural

variation in the concept of self, or the impact of culture on the person's self-concept; possible selves as goals; possible selves change over time; and possible selves and identity.

The authors cited three reasons as their basis for their conclusion that the need did exist to reconceptualize L2 motivation via a possible selves framework and the L2 Motivational Self System because of its focus on: the learner in education research contexts, who individuals intend to use language with, instead of a specific cultural group, and its ability to integrate multiple or conflicting motives to learn an L2.

Research on the Use of Imagery in L2 Learning

Al-Shehri (2009) investigates the L2 Motivational Self System and the relationship between imagination, visual learning style, ideal selves and motivated behavior. The author's hypothesis is that "learners with a marked visual learning style preference are likely to exhibit strong capacity for visual imagery and imagination, and that therefore, such learners are likely to develop a more potent ideal language self, given the prominent imagery content of the ideal self" (p. 164). This study stems from Dörnyei's argument that imagery plays a major role in the development of and L2 ideal self. A snowballing sampling strategy was used to recruit students for the study in both the UK and in Saudi Arabia. The study sample consisted of 200 high school graduates and current university students including: 20 students at a Saudi university studying English; 78 Arab students studying English in the UK; and 102 Saudi high school graduates completing a one year government English course.

The instrument consisted of a 41 item questionnaire which focused on four main variables: motivated behavior and effort (criterion measure); ideal L2 self; visual

learning styles; and imagination. Data analysis was performed using SPSS 12.0. A reliability analysis was utilized to check the internal consistency reliability coefficients for each of the four sets of items measuring each variable. The reliability of the final scale was motivated behavior and effort, (α=0.89); ideal L2 self, (α=0.85); visual learning styles, (α=0.80); and imagination, (α=0.65). In order to compute multiple correlations, each scale was then submitted to correlation analysis and regression analysis. Ideal L2 self was strongly correlated to the criterion measure of motivated behavior and effort accounting for 61% of the variance (r= .78, r^2 = .61, p<0.01). This confirmed the author's hypothesis that the ideal L2 language self is a motivational factor. Additionally, the results indicated that a strong correlation exists between having a visual learning style and the ideal L2 self (r =.65, r^2 =.42; $p < 0.01$). Finally, the results also indicate that visual style and imagination together accounted for 47% of the variance in ideal L2 self (r=.69, r^2 =.47; $p < 0.01$). The author posits that this finding confirms Dörnyei's assumption that individuals with a more developed visual/imaginative capacity will have the potential to develop a stronger ideal L2 self. According to the author, the findings indicate that "visual learners are more capable of perceiving a vivid representation of their ideal selves, which in turn is reflected in heightened motivated effort and behavior" (p. 168). A similar finding was also reported in the following study.

In an attempt to extend Al-Shehri's study, Yang and Kim (2011) explored the relationship of perceptual learning style (visual, auditory and kinesthetic), ideal L2 self, and motivated L2 behavior of Chinese, Japanese, South Korean and Swedish high school students. Three questions guided the study: (1) Which of the three perceptual

learning styles (i.e., visual, auditory, and kinesthetic) is most closely related to the learner's ideal self?; (2) From the perspective of the L2 Motivational Self System, are there any differences among the four participating countries (China, Japan, Korea, and Sweden); (3) To what extent can the motivated L2 behavior in the four countries be explained by their perceptual learning styles, imagination, and the ideal L2 self?

The sample included 100 Chinese, 70 Japanese, 104 Korean and 56 Swedish high school students. The study instrument consisted of a modified questionnaire developed by Al-Shehri (2009). The L2 motivational questionnaire had an overall cronbach alpha index of .83. A series of parametric statistical tests were used in data analysis including a Pearson product-moment correlation to identify significant relations between the three subtypes of learning styles and other motivational constructs, ANOVA with the Scheffé test to analyze differences between the ideal L2 self and motivated behavior among the countries and finally a stepwise regression analysis was used to identify predictors of students' motivated behavior.

Descriptive statistics for the four countries indicate that students in China (C), Japan (J) and Sweden (S) show a visual style dominance: (C, M=3.10, SD=.54); (J, M=3.27, SD= .59); and (S, M= 3.50, SD= .52). Students from Korea (K) demonstrated an auditory style dominance (M=3.03, SD=.70). Swedish students demonstrated the highest level ideal L2 self: (S, M= 4.21, SD= .75) (C, M=3.68, SD=.55); (J, M=3.11, SD= .84); and (K, M= 3.60, SD= 1.00). Chinese students demonstrated the highest level of motivated learning behavior: (C, M= 3.78, SD= .62) (J, M=2.52, SD=.90); (K, M=2.96, SD= .83); and (S, M= 3.36, SD= .71). Results of the statistical analysis found

that learners' perceptual learning styles of visual and auditory were significantly correlated with their ideal L2 self and motivated L2 behavior (see Table 3 for results).

Table 3.

Pearson Correlation between Perceptual Learning Styles, the Ideal L2 Self and Motivated Learning behavior, Yang & Kim (2011)

Correlations / Country		Visual	Auditory	Kinesthetic	Ideal L2 self	Motivated L2 Behavior
Visual	China	-				
	Japan	-				
	Korea	-				
	Sweden	-				
Auditory	China	.450**	-			
	Japan	.298*	-			
	Korea	.276***	-			
	Sweden	.221	-			
Kinesthetic	China	.33	.221*	-		
	Japan	-.023	.231	-		
	Korea	.278**	.363***	-		
	Sweden	.086	.225	-		
Ideal L2 self	China	.263**	.254*	.083	-	
	Japan	.361**	.251*	-.011	-	
	Korea	.390***	.061	.024	-	
	Sweden	.371**	.243	.102	-	
Motivated L2 behavior	China	.258**	.281**	.065	.530**	-
	Japan	.360**	.166	.015	.661***	-
	Korea	.352***	-.010	.135	.659***	-
	Sweden	.395**	.286*	.166	.700***	-

Note. * $p<.05$; ** $p<.01$; *** $p<.001$

A stepwise regression analysis indicated that none of the three learning styles were meaningful predictors of motivated L2 learning behavior. Only the ideal L2 self was found to be a meaningful predictor of students' motivated L2 behavior. The study provided evidence that the creation of ideal L2 selves plays a pivotal role in sustaining motivated behavior. While both visual and auditory learning styles were significantly related to the ideal L2 self, only the visual learning style was significantly correlated to both ideal L2 self and motivated L2 behavior in all four countries.

Literature Review Summary

Research results indicate that the constructs of Dörnyei's L2 Motivational Self System correlate highly with motivated L2 learning behaviors and intended effort to learn an L2. Motivated learning behavior and intended effort are tied to proficiency in the target language. Research results also indicate that the L2 Motivational Self System model has been a good fit for all populations tested to date. It has been validated through large scale studies in countries including Hungary, Japan, China, Iran, Saudi Arabia, Korea, and Sweden. The majority of populations studied were learning English as a Foreign Language. To date there has been no validation of the model in a US university English speaking population studying compulsory foreign language.

Self-theory shows that future self-guides can be potent motivators for both learning and behaviors. L2 Motivational Self System research also emphasizes that a strong ideal L2 self equates to increased L2 motivated learning behavior. Self-theory identifies imagery as important in the construction of future self-guides; therefore, Dörnyei posits that the learner's ideal L2 self can be further developed through generation of a language learner vision using imagery enhancement. Work in this area, while minimal, has shown that individuals who perceive a vivid representation of their ideal selves demonstrate a stronger ideal L2 self, and increased motivated effort and behavior. While these results are promising, they do not provide strategies that can be employed by an instructor in the traditional language classroom to increase student motivation to learn an L2.

This study proposes to contribute to the current literature by focusing on two identified gaps in research. First, to provide an empirical validation of Dörnyei's L2

Motivational Self System construct in the context of US College students (English speakers) in mandatory L2 university courses. Second, as imagery is cited as a central element in the creation of future ideal L2 and ought-to L2 self, and as research in this area has been quite limited, this study proposes to test the use of imagery as an influence on motivational variables, perceived task instrumentality, motivated learning behavior and intended effort and on outcome variables of performance.

Additionally, research on Dörnyei's L2 Motivational Self System (Figure 11) has indicated differing results in regard to the explanatory power of the theory's tripartite constructs such as all three as equal predictors of motivated learning behavior (Czisér & Kormos, 2009), and the effects of ideal L2 self and ought-to L2 self on intended effort mediated by the L2 learning experience (Papi, 2010). This study proposes to test a total of six models. Models 1 and 2 (see Figure 12 and Figure 14) are based on Dörnyei's tripartite model with all three constructs, ideal L2 self, ought-to L2 self and L2 learning experiences, being mediated through motivated learning behavior and intended effort, and having the potential to be equal influences on the outcome variable performance. Additionally, Model 2 adds in the direct effects of the ideal L2 self and L2 learning experience. Model 3 (Figure 16) is based on the notion that the imagery treatment (L2 learning experience) should lead to an increase in the ideal L2 self or ought-to L2 self which in turn, mediated by the effects of motivated learning behavior and intended effort, will have an effect on performance. Models 1A (Figure 13), 2A (Figure 15) and 3A (Figure 17) add in the variable of perceived instrumentality.

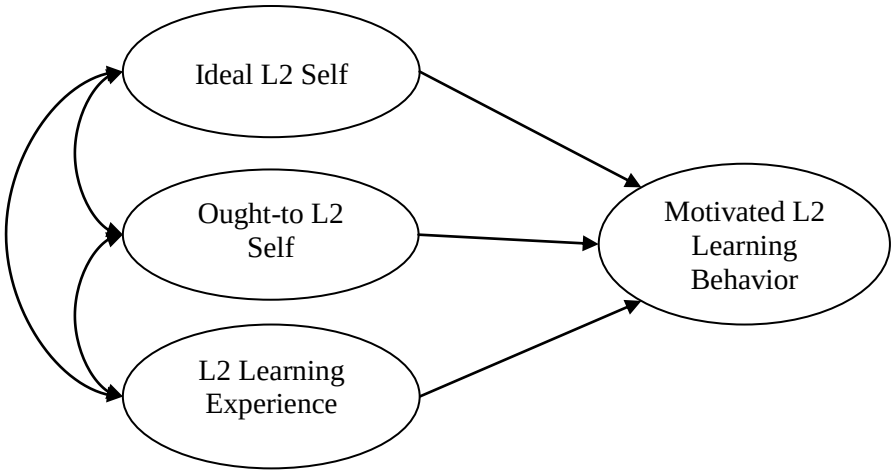

Figure 11. Dörnyei's L2 Motivational Self System.

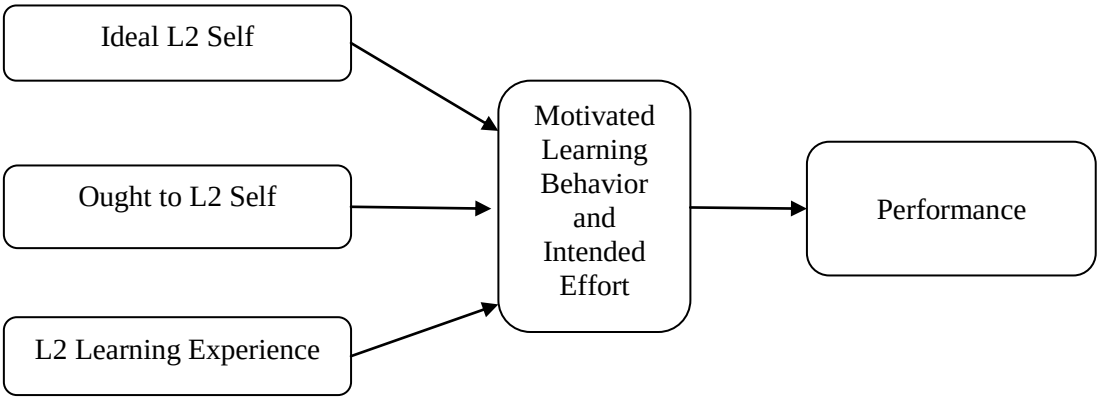

Figure 12. Model 1.

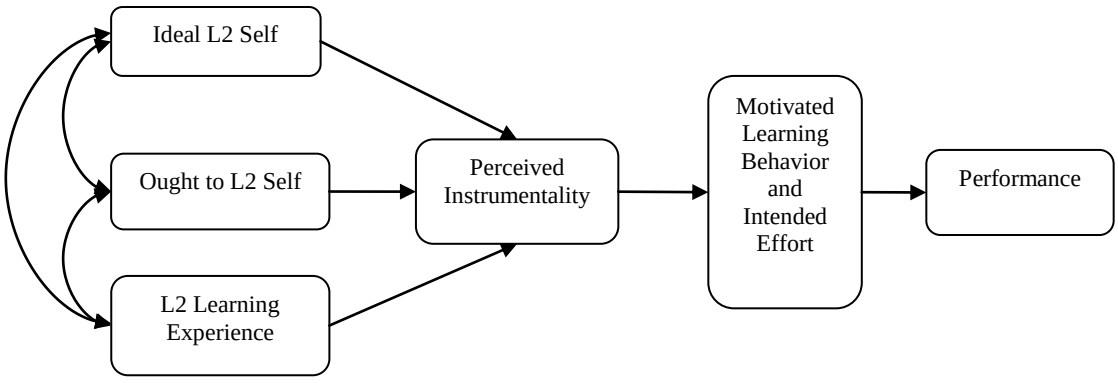

Figure 13. Model 1A.

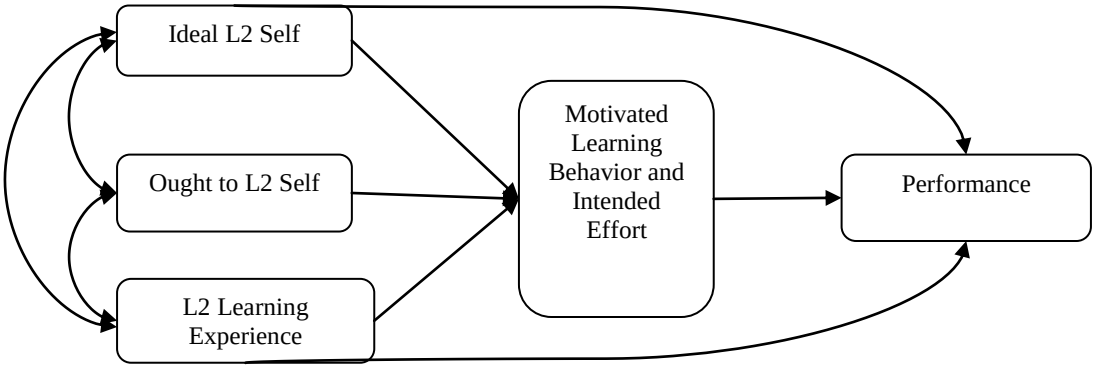

Figure 14. Model 2.

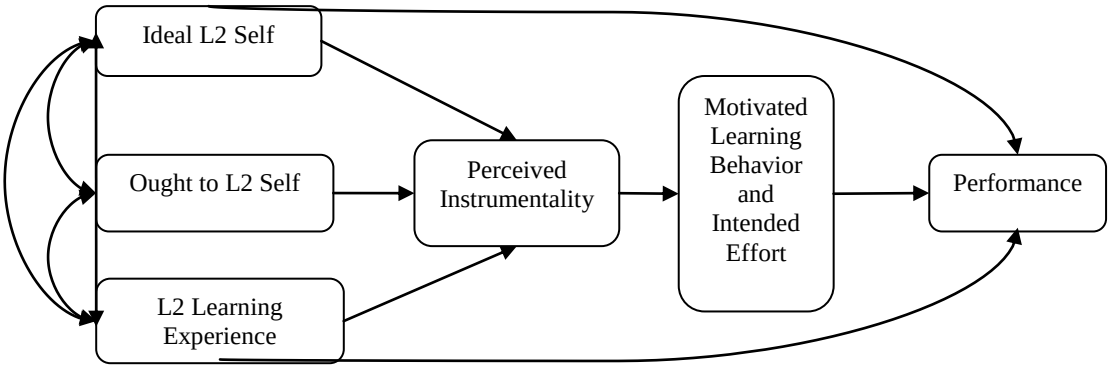

Figure 15. Model 2A.

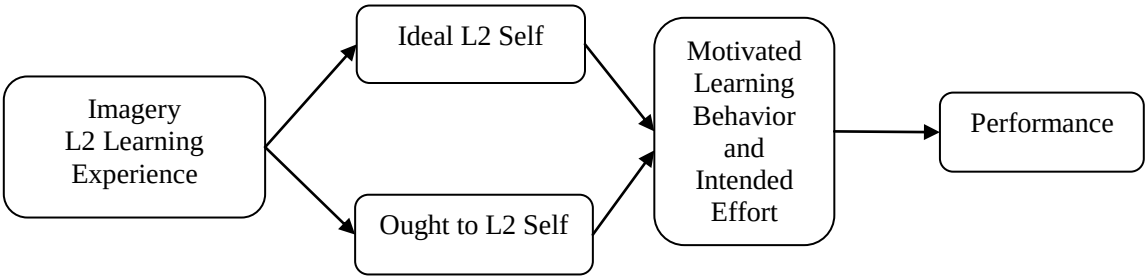

Figure 16. Model 3.

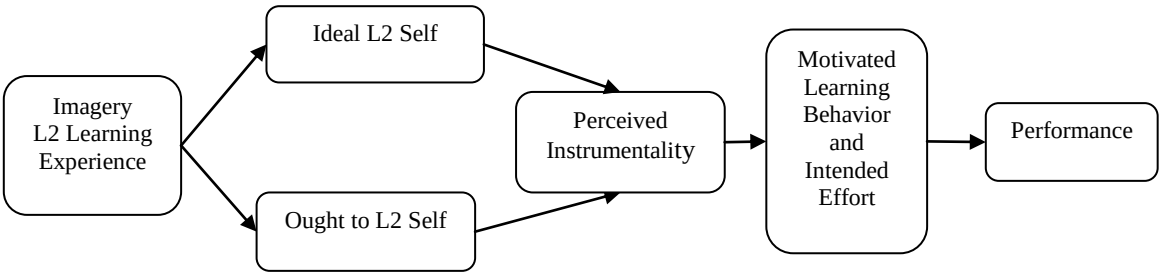

Figure 17. Model 3A.

Research Questions

1. Does the use of future-self based and cultural imagery significantly improve student performance for US college students (English speakers) in mandatory L2 university courses?
2. Are the effects of self-based and cultural imagery on the performance of US college students (English speakers) in mandatory L2 university courses mediated through Dörnyei's motivational variables (future ideal L2 and ought-to L2 self) or are they independent predictors of L2 performance (future ideal L2, ought-to L2 self, and L2 learning experience)? The following models will be tested:
    a. The L2 Motivational Self System variables (future ideal L2, ought-to L2 self, and L2 learning experience) are independent effects on performance mediated through motivated learning behavior and effort (Figure 12 and Figure 14), or
    b. The L2 learning experience -imagery effects on performance are mediated by ideal and ought-to L2 selves, which in turn are mediated by motivated learning behavior and effort (Figure 16).
    c. The L2 Motivational Self System variables (future ideal L2, ought-to L2 self, and L2 learning experience) are independent effects on performance mediated through perceived instrumentality which in turn is mediated through motivated learning behavior and effort (Figure 13 and Figure 15), or
    d. The L2 learning experience -imagery effects on performance are mediated by ideal and ought-to L2 selves, which in turn are mediated by perceived

instrumentality and finally through motivated learning behavior and effort (Figure 17).

Operational Definitions of Major Variables and their Measurement in the Literature

Ideal L2 Self

Definition. The ideal L2 self is defined by Dörnyei (2005) as the specific L2 dimension included in one's ideal future self. Dörnyei posits that if the imagined ideal future self includes speaking an L2 the image of this future ideal self becomes a powerful motivator to learn the L2.

Measurement in the literature. The ideal L2 self has been measured in the literature by Likert-type scales that ask the participant to rate their view of themselves as a successful L2 speaker in the future. The Likert scales have used both a five point scale and a six point scale. A sample five point scale included ratings of: absolutely true, mostly true, partly true partly not true, not really true and not at all true (Csizér & Kormos, 2009). The six point Likert scale included the following for statement-type items: Strongly disagree, disagree, slightly disagree, slightly agree, agree, and strongly agree (Taguchi et al., 2009). The six point Likert scale for question type items included: not at all, not so much, so-so, a little, quite a lot and very much (Taguchi et al., 2009). The ideal L2 self scales (Ryan, 2009) have been designed to explore the learner's vision of themselves as users of the L2 and the strength or intensity of these visions. The scale chosen for this study consists of eight statement type items and utilizes a six point Likert scale. A copy of the scale is included in appendix E. The construct is measured by questions 18, 24, 27, 30, 36, 41, 48 and 51 on the pre and posttest survey.

Ought-to L2 Self

Definition. The ought-to L2 self is defined by Dörnyei (2005) as comprised of the attributes one believes they ought to possess if they are to meet expectations of others who exert influence on them or to avoid negative outcomes in their current or future life.

Measurement in the literature. The ought-to L2 self has been measured in the literature by Likert-type scales that ask the students to rate their perceptions of how important learning an L2 is in the opinion of others. It has also measured the attributes that the environment might expect from the learner (Csizér & Lukács, 2010). This variable has been measured using same five and six point Likert-style scales described in the ideal L2 self variable. The ought-to L2 self has been found to act as a motivator based on family influences or to avoid failure (ie., failing an L2 exam), but its overall effect on learner's behavior is much less than the ideal L2 self (Taguchi et al., 2009). Papi (2010) found it to be more positively correlated to learner emotions of anxiety, rather than intended effort to learn an L2. Csizér and Kormos (2009) found a positive relationship between the ought-to L2 self and parental encouragement, while Dörnyei (2005, 2009) believes that it is related to extrinsic dimensions discussed by Noels (2003). The ought-to L2 self will be measured in light of Dörnyei's assumption that students who display a higher ought-to L2 will also report taking the course because it is a requirement. The scale chosen for this study consists of nine statement type items and utilizes a six point Likert scale. A copy of the scale is included in appendix E. The construct is measured by questions 19, 29, 37, 44, 46, 50, 55, 56 and 61 on the pre and posttest survey.

L2 Learning Experience

Definition. The L2 learning experience is defined by Dörnyei (2005) as the immediate learning environment and experience of the language learner. It encompasses the teacher, curriculum and others within the learner's environment. The L2 learning experience also includes the experiences of success or failure perceived by the learner with the L2. This variable also includes all strategies by the individual in the attempt to acquire the L2 as well as the strategies employed by the instructor to increase engagement and motivation of the L2 learner.

Measurement in the literature. The L2 learning experience has been measured in the literature by Likert-type scales that ask the student to rate the extent to which they like learning an L2 (Csizér & Kormos, 2009); their attitudes toward learning the specific L2 (Ryan, 2009) and (Taguchi et al., 2009); the students attitudes toward learning the specific L2 that can be affected by situation specific motives (instructor, curriculum, peers, teaching strategies or materials, etc.) (Papi, 2010). This variable has also been measured using the same five and six point Likert-style scales described in the ideal L2 self variable. This variable is associated with a strong impact on motivated learning behavior and intended effort in learning the L2 (Papi, 2010). One discrepancy is whether this variable acts as mediator of the effects of the ideal L2 and ought-to self on motivated learning behavior and intended effort according to Papi's (2010) model or functions according to the model by Csizér & Kormos (2009) where all three L2 Motivational Self System constructs can be equal in their effect on the outcome variable. The scale chosen for this study consists of six statement type items and

utilizes a six point Likert scale. A copy of the scale is included in appendix E. The construct is measured by questions 23, 26, 33, 35, 58 and 63 on the pre and posttest survey.

Motivated Behavior and Intended Effort

Definition. Motivated learning behavior and intended effort is defined as the amount of effort learners invest into learning the L2 and how persistent of a language learner they view themselves.

Measurement in the literature. Motivated learning behavior has been measured in the literature by Likert-type scales that measure how much effort learners invest into learning an L2 or the amount of persistence they indicate is expended toward learning the L2 (Al-Sheri, 2009; Csizér & Kormos, 2009; Csizér & Lukács, 2010; Papi, 2010; Ryan, 2009). According to Taguchi et al. (2009) it assesses the learners' intended efforts toward learning the L2. Yang and Kim (2011) measured it as both motivated behaviors and attitudes including questions such as 'I like studying English', 'English language learning is enjoyable' and 'My future goal needs English.'

In contrast, Al-Shehri (2009) developed an eighteen item comprehensive scale that examined motivated behaviors and intended effort of the individuals in learning the L2. In the present study motivated learning behavior and intended effort will measure how much effort learners invest into learning an L2 and the amount of persistence they indicate is expended toward learning the L2. Therefore, the Al-Shehri (2009) scale will be used because the study wishes to examine motivated behaviors, intended efforts and persistence of the individuals in learning the L2 before and after receiving the treatments, and this scale provides a more comprehensive look at the variable. The scale

will include all eighteen statement type items and utilize a six point Likert scale. A copy of the scale is included in appendix E. The construct is measured by questions 20, 22, 25, 31, 34, 38, 39, 40, 42, 43, 45, 47, 51, 52, 57, 59, 60 and 62 on the pre and posttest survey.

Perceived Instrumentality Scale

Definition. Perceived instrumentality is defined as the individual's perception of the instrumental relationship between the value of the tasks at hand and attaining a future goal (Miller et al., 1999).

Measurement in the literature. According to Miller and Brickman (2004) when an academic task is perceived as important for the attainment of a future goal, students are more likely to engage in the task and demonstrate self-regulation strategies in order to accomplish the task. In the case of an L2 learner, if he/she perceives it is part of their future L2 self he/she will demonstrate motivated learning behavior and increased effort to learn the L2. The perceived instrumentality scale is measured by seven point Likert-style scale ranging from strongly disagree to strongly agree and is comprised of five statements which measure the student perception of the instrumentality of the school work or learning task at hand. This scale was developed by Miller and colleagues to predict motivational outcomes in educational settings. The scale chosen for the present study was Miller et al. (1999). A copy of the scale is included in appendix E. The construct is measured by questions 21, 28, 32, 49, and 54 on the pre and posttest survey.

Performance

Definition. Performance is defined as academic achievement on chapter exams, the final exam and overall grade in the course.

Compulsory L2 Learning

Definition. A compulsory course is defined as a general education course that is required for the completion and attainment of a university bachelor's degree. The compulsory course is not a major requirement of the degree, but rather a general education course which is included as part of a well-rounded Liberal Arts education. While Liberal Arts requirements include courses in the areas of English, Foreign Languages, Humanities, Mathematics, Sciences, and Social Studies, for the purpose of this study the focus is on foreign or second languages. While foreign language courses are required, students do have language options from which to choose. Questions are included in the background questionnaire to address why the student selected a particular foreign language and to determine if the course is a degree requirement or an elective course chosen by the student.

Imagery

Definition. Future-self based imagery is defined as an image of an individual who has incorporated the use of a second language in their professional or everyday lives. The imagery will be presented using a multimedia based video vignettes depicting the individual describing how the language was viewed in the past and how it was seen as figuring in their future and how it now figures in their lives, for example opened avenues of opportunities, provides personal enrichment or fulfillment of their future goals which were achieved because of having studied the second language.

Cultural based imagery is defined as an image depicting the traditional culture of the target language home country or countries. It can include descriptive images of the people, traditions, customs, holidays and observances, natural resources, national parks or other images that show the diversity associated within that target language culture.

Measurement in the literature. Imagery is listed as one of the central elements in possible self-theory and in the L2 Motivational Self System. While the ideal L2 self and ought-to L2 self provide the individual with a guide for the future and the motivation for achieving future goals, but the ability to imagine the future possible self is crucial for engagement in behaviors necessary to attain the goal. According to Oyserman and James (2009) vividness, temporal distance, perceived ability and valence are four critical differences that can affect the way an individual imagines future possible selves. The ability to imagine or create the vision of that future possible self in a specific domain is the first crucial step.

While some individuals can create a vision of a future possible self within their mind, others must create the image of the future possible self by applying changes to what they physically see or experience right now. Keeping this in mind, imagery will be measured in this study by its effect on ideal L2 self, ought-to L2 self, motivated learning behaviors and intended effort and performance. In addition, a response instrument, with both quantitative (likert) and quantative (opened- ended) questions, will be used to measure the effectiveness of the future-self based imagery (experimental treatment imagery vignettes) and cultural based imagery (control treatment cultural video).

Conclusion

Although, Dörnyei (2009) concludes that the findings of studies suggest that there exists "robust theoretical and empirical confirmation" in regards to the soundness of the L2 Motivational Self System and states that "possible selves theory is undoubtedly a powerful paradigm" he also cautions that it also raises many questions that need to be addressed (p. 32 & p. 351). While many studies have been undertaken which demonstrate the capability and usefulness of Dörnyei's self-based approach in L2 learning motivation, other areas still remain that must be addressed by research in order for this theory to become a universal motivational framework for L2 learning. This study will address several of the areas of concern, namely the use of imagery to enhance the L2 self and US English speaking student populations in L2 compulsory courses.

Chapter three details the research design and methods used for this study. The study sample, treatment for the experimental group, and measurement tools are also described.

Chapter III Research Methodology

Introduction

The present study proposes an empirical validation of Dörnyei's L2 Motivational Self System model in the context of US college students (English speakers) in mandatory L2 university courses. As imagery is cited as a central element in the creation of future ideal L2 and ought-to L2 self, a second purpose of the present study is to test the use of imagery (multimedia video vignettes or textbook cultural scenarios) as a motivator to enhance or activate the link between the present task of learning the L2 (task instrumentality) to the future L2 self (Dörnyei, 2006, 2009a, 2009b; Dörnyei & Ushioda, 2011).

This chapter includes an explanation of the study design followed by a description of the sample, treatments, instruments used, study procedures, and methods of data analyses utilized.

Design of the Study

To determine the effects of imagery, which models the usefulness of L2 in future possible selves on US college students in compulsory L2 courses, a quasi-experimental nonequivalent control group design was used (see Table 4). This design is appropriate as the students could not be randomly assigned to a treatment or control group, but rather were assigned based on course section enrollments. Also, a quasi-experimental nonequivalent control group design is used when participants are not randomly assigned to the experimental and control groups (Mertens, 2005). The treatments for the study were administered using a non-randomized control group pre-test/post-test design. Both the experimental and control group completed a pre-test survey to judge equivalency of the control and treatments groups. The pre-test survey

included the background/demographic instrument and all scales used in the study. The experimental group received the imagery treatment depicting future L2 uses, while the control received an alternative treatment consisting of traditional cultural videos for that target language. Finally, both groups completed the post-test survey, which included all scales used in the pre-test survey except the background demographic questions.

Table 4

Quasi-experimental nonequivalent control group design

Group	Pre-test (all instruments)	Treatment(s)/ Variable	Chapter exams	Post-test (all instruments except background)	Final Exam
A. Experimental	Y_1	X		Y_1	
B. Control	Y_2	Y		Y_2	

Two main threats for internal validity in quasi-experimental designs are differential selection and experimental mortality. Experimental mortality can become a threat to validity if participants differentially dropout from the experimental and control groups. The use of a pretest controls for differential selection and mortality to some extent by providing a measure of analysis to check for similar means between the control and experimental groups. (Mertens, 2005).

Sample

The participants for the study were current college students attending a public university in the South Central region of the United States who were enrolled in a compulsory L2 course. While students have the option to choose the foreign language they take, the language courses are considered compulsory because they are required components for completion of the bachelor degree. A convenience sample of students

enrolled in beginning (1115) and beginning continued (1225) traditional Spanish language courses was utilized. The classes selected for the study were foreign language courses taught by instructors assigned to teach two or more sections of courses in the same level. One class of each instructor was assigned to the treatment group and one to the control group. A convenience sampling strategy was used since the participants for the study were selected using the set criteria of enrollment in a course whose instructor teaches two or more sections of the same level. While this can result in limiting generalizability and external validity, internal validity should be strong.

The total number of instructors, students and course sections for the proposed study was determined after instructors were assigned to teach specific sections. A total of 19 sections of Span 1115 and 35 sections of Span 1225 were scheduled for the spring 2012 semester. Of the 19 Span 1115 sections, 6 instructors/GTA's were scheduled to teach two sections and of the 35 Span 1225 sections, 14 instructors/GTA's were scheduled to teach two sections of the same course. All 20 of the instructors/GTA's scheduled to teach two sections of the same level were invited to participate in the study. Nineteen of the instructors agreed to participate, 6 taught Span 1115 and 13 taught Span 1225. This gave a total of 38 sections, 12 sections of Span 1115 and 26 sections of Span 1225.

From the 38 sections, there were approximately 800 students present in class who were asked to participate in the study. Seven hundred and thirty-three students agreed to participate in the study and filled out the initial pre-test survey. Of the 733 initial participants who completed the pre-test survey, 371 were in the treatment group and 362 were in the control group. Not all 733 students were present in class the day the

treatment or control imagery was shown. A total of 678 students completed the second phase (treatment) of the study, 348 students in the experimental group viewed and responded to the imagery (self-based vignettes), while 330 students of the control group viewed and responded to the control treatment (cultural video). The post-test survey was completed after the treatments and after the first exam. Of the original 733 students who initially started the study, 594 or 298 students in the experimental group and 296 in the control group completed the post-test survey. Of these students, only 562 students completed the pre-test survey, treatments and post-test survey, 287 students in the experimental group and 275 students in the control group. Of these students an additional 50 students were removed from the study sample because they withdrew from the course before the first exam (12), opted that their grades not be released (25) or failed to take the final exam and did not receive an overall grade in the course (13).

Table 5 shows the distribution and attrition of students agreeing to participate in the study by level (Spanish 1115 or 1225) and treatment group (experimental or control) compared to the number of students who completed all phases of the study (Pre-test, treatment and post-test). For the complete breakdown of students in each treatment group completing each phase, pre-test, treatment and post-test and for each instructor and course section participating in the study by instructor number and by the treatment groups see Appendix A. The attrition rate of the students by sections who did not complete the subsequent phases of the study due to absence from class, who withdrew from the course prior to taking the first exam or did not agree to release grades, who failed to take the final exam and did not receive an overall grade in the course is also in located in Appendix A.

Table 5

Number of students participating in study by the treatment groups at each phase of study

Level	Initial Enrollment	Pre-Test Participation # by Treatment		# completing all phases study		Final Completer pool	
		Exper.	Control	Exper.	Control	Exper.	Control
Span 1115	278	123	124	96	96	84	78
Span 1225	563	248	238	191	179	178	172
Total	841	371	362	287	275	262	250

Comparison of total initial sample pool to study completer pool

Because the study utilized a pre-test, post-test design with an intervention participants were required to complete three components on three different days. The student attrition resulting from withdrawal prior to the first exam was 4.1 percent, (14 in span 1115 and 16 in Span 1225) but the absence rate on either the day of the treatment or the post-test survey was higher at 20.3 percent (seeTable 6). Additionally, some students indicated on the IRB consent form that while they would participate in filling out the surveys and receive the treatment, they did not want their exam or final grades released. While the data from these students can be utilized in some of the research questions of this study it will not be useful in those questions that address performance (see Table 6).

Table 6

Reasons and numbers of attrition by Spanish level

Level of Spanish Course	Initial pool completing pre-test survey	Attrition by absence on day of treatment or Post-test Survey	Attrition by withdrawal before first exam	Attrition by opting to not release exam and final grades.	Attrition by missing final exam and not receiving a grade in course	Total attrition
Span 1115	247	45	14	16	10	85
Span 1225	486	104	16	13	3	136
Total	733	149	30	29	13	221
Percentage of initial pool		20.3%	4.1%	4.1%	1.8%	30.2%

To assess the impact of attrition rate upon the final sample, the demographics of the initial sample agreeing to participate in the study were compared to the final completer sample. Table 46 through Table 57, found in appendix B, compare the demographics of the initial pre-test pool, students who completed the pre-test survey, (*N*=733) to the completer pool, students who completed the entire study, pre-test, treatment and post-test survey (*N* =512).

Because of a high attrition rate, 30.2 percent, which resulted from withdrawal, non- release of grades, absence on the day of either the treatment or post-test survey or failure to take final exam, the demographics of the initial sample agreeing to participate in the study (*N*=733) were compared to the final completer sample (*N*=512), or the students who completed all three components of the research study, pre-test survey, treatment and post-test survey. Comparison of the demographic data for all students completing the initial Pre-test survey (*N*=733) to the demographic data of completers (*N*=513) show very little difference. Slight changes were seen in the areas of academic class make up, a 4.1% increase in lower classmen (Freshman and Sophomores) and a

corresponding decrease in upper classmen (Juniors and Seniors), and slight increase in experiences with languages, including those at an early age, language courses and second language learning experiences.

In conclusion, while there were slight changes noted above, the demographic data of the completers appears to be a representative cross section of the initial student population; attrition did not impact the sample. A more detailed look at the demographics of the students completing the entire study is given below.

Sample demographics of students completing the study

The detailed demographic description of the students who completed all three phases, the pre-test survey, treatments and post-test survey, and were retained in the present study (*N*=512), is referenced as the completer pool in Table 46 through Table 57, in Appendix B. The demographic makeup demonstrated more women than men, mostly white with other races equally represented, the majority were young adults, and most reported a GPA above 3.0 (see Table 47 and Table 48).

The academic class breakdown consisted of 75 percent lower classmen and 25 percent upperclassmen. Less than 1/2 percent of students in the sample were at the post graduate level (Table 50). While students in the sample were representative of all campus majors, the largest number of students listed majors in Science or Pre med (25.5%). Ten percent of students listed a major in the Social Sciences and 3.3 percent listed a major in the humanities. For a break down by majors see Table 51. The majority of students reported an English speaking country of birth (Table 49). Additionally, while the majority of students indicated their primary experience was with English, approximately 25 percent reported significant second language experience at an early

age (see Table 52 and Table 53). Four hundred and forty-one participants, 86.3 percent, indicated they were taking this language course because it was a degree requirement, while 25 (4.9%) indicated they were taking the course as an elective and 13 (2.5%) were taking the course for other reasons (family or native tongue) (Table 56). Approximately 40 percent of the sample indicated that other than a language course, they had no other second language learning experiences, while 60 percent indicated they had experiences. The most common second language experiences were vacationing in a non-English speaking country (28.9%), living with relatives (3.9%), residence in a non-English speaking country (2%), and other experiences, the majority of which were missionary or work related (13%) (see Table 55).

Demographics of treatment groups

The demographic of each treatment group is as follows: Experimental group 263 (51.2%) with 162 females and 100 males; Control group 250 (48.8%) with 156 females and 94 males (see Table 7). The ethnic make-up of the two groups was relatively equal (see Table 8). There was s slight discrepancy in the two groups in native language in country of birth, as 76.9% of the students who indicated they were born in a Non-English speaking country were in the experimental group (Table 9).

Table 7

Distribution of students in treatment groups by gender

			Group Experimental	Control	Total % of Sample
Gender	Female	Count	162	156	318
		% within Gender	50.9%	49.1%	62.1%
	Male	Count	100	94	194
		% within Gender	51.5%	48.5%	37.9%
Total		Count	263	250	512
		% within Gender	50.5%	49.5%	100.0%

Table 8

Distribution of students in treatments groups by ethnicity

			Group		Total % of sample
			Experimental	Control	
Ethnic origin	African American	Count	15	12	27
		% within ethnic origin	55.6%	44.4%	5.3%
	Asian American or Pacific Islander	Count	18	12	30
		% within ethnic origin	60%	40%	5.9%
	Hispanic American	Count	12	9	21
		% within ethnic origin	57.1%	42.9%	4.1%
	Native American	Count	10	13	23
		% within ethnic origin	43.5%	56.5%	4.5%
	White	Count	191	185	376
		% within ethnic origin	50.8%	49.2%	73.4%
	Other	Count	5	6	11
		% within ethnic origin	45.5%	54.5%	2.1%
	Mixture, selected 2 or more	Count	11	13	24
		% within ethnic origin	44.0%	54.2%	4.7%
Total		Count	262	250	512
		% within ethnic origin	51.2%	48.8%	100.0%

Table 9

Distribution of students in treatments groups by Country of Birth

			Group		Total % of Sample
			Experimental	Control	
Country of birth	English speaking	Count	252	247	499
		% within country of birth	50.5%	49.5%	97.5%
	Non-English speaking	Count	10	3	13
		% within country of birth	76.9%	23.1%	2.5%
Total		Count	262	250	512
		% within country of birth	51.2%	48.8%	100.0%

Distribution of students into under and upper classmen was fairly equal between the two treatment groups (Table 10). Again, in the area of academic majors, there is a fairly equal division between the experimental and control treatment groups except in the Humanities where 88.2% of the students selecting this major fell into the experimental group (Table 11).

Table 10

Distribution of students in treatments groups by Academic Class

			Group		Total % of Sample
			Experimental	Control	
Academic class	Freshman	Count	98	87	185
		% within Academic class	53%	47%	36.1%
	Sophomore	Count	99	104	203
		% within Academic class	48.8%	51.2%	39.6%
	Junior	Count	47	36	83
		% within Academic class	56.6%	43.4%	16.2%
	Senior	Count	18	21	39
		% within Academic class	46.2%	53.8%	7.6%
	Post grad	Count	0	2	2
		% within Academic class	.0%	100.0%	0.4%
Total		Count	262	250	512
		% within Academic class	51.2%	48.8%	100.0%

Table 11

Distribution of students in treatments groups by Major

			Group		Total % of Sample
			Experimental	Control	
Major	Humanities	Count	15	2	17
		% within Major	88.2%	11.8%	3.3%
	Sciences	Count	36	37	73
		% within Major	49.3%	50.7%	14.3%
	Mathematics	Count	3	3	6
		% within Major	50.0%	50.0%	1.2%
	Education	Count	14	26	40
		% within Major	35%	65%	7.8%
	Engineering	Count	7	4	11
		% within Major	63.6%	36.4%	2.2%
	Fine Arts	Count	3	3	6
		% within Major	50%	50%	1.2%
	Social Sciences	Count	29	26	55
		% within Major	52.7%	47.3%	10.8%
	Journalism	Count	31	28	59
		% within Major	52.5%	47.5%	11.6%
	Architecture	Count	3	0	3
		% within Major	100.0%	.0%	0.6%
	Pre-Med	Count	28	29	57
		% within Major	49.1%	50.9%	11.2%
	Pre-Law	Count	8	8	16
		% within Major	50.0%	50.0%	3.1%
	Other	Count	48	51	99
		% within Major	48.5%	51.5%	19.4%
	Multiple	Count	36	32	68
		% within Major	52.9%	47.1%	13.3%
Total		Count	261	249	510
		% within Major	51.2%	48.8%	100.0%

Another slight difference between the two groups is seen in the category of native language, as 100% of all native Spanish speakers and native speakers of Spanish who also spoke an additional language are in the control group. While this is significant in terms of percentages within those categories, it is not in terms of the percentage of the total sample percentage (1.4%) or in number as both categories combined encompass 7 individuals (Table 12). Additionally, 380 students responded that no language other than English was spoken by others around them, while 131 students, 71 in the experimental and 60 in the control group indicated that a language other than

English (Spanish, Chinese, French, German or other) was spoken by others close to them (Table 13).

Table 12

Distribution of students in treatments groups by Native Language

			Group		Total % of Sample
			Experimental	Control	
Native Lang	English	Count	255	237	492
		% within Native Lang	51.8%	48.2%	96.3%
	Spanish	Count	0	5	5
		% within Native Lang	.0%	100.0%	1.0%
	Other	Count	7	5	12
		% within Native Lang	58.3%	41.7%	2.3%
	1 & 3	Count	0	2	2
		% within Native Lang	.0%	100.0%	0.4%
Total		Count	262	249	511
		% within Native Lang	51.3%	48.7%	100.0%

Table 13

Distribution of students in treatments groups by Language other than English spoken by Adults around them when they were young

			Group		Total % of Sample
			Experimental	Control	
OLSAY	Spanish	Count	38	30	68
		% within OLSAY	55.9%	44.1%	13.3%
	Chinese	Count	1	2	3
		% within OLSAY	33.3%	66.7%	0.6%
	German	Count	4	2	6
		% within OLSAY	66.7%	33.3%	1.2%
	French	Count	1	1	2
		% within OLSAY	50.0%	50.0%	9.0%
	Other	Count	26	20	46
		% within OLSAY	56.5%	43.5%	74.4%
	None	Count	191	89	380
		% within OLSAY	50.3%	49.7%	1.2%
	Two or more	Count	1	5	6
		% within OLSAY	16.7%	83.3%	100.0%
Total		Count	262	249	511
		% within OLSAY	51.3%	48.9%	100.0%

The distribution of students who had taken a second language course was fairly equal between the two treatment groups (Table 14). Spanish appeared to be the predominate language course taken by students in both treatment groups.

Table 14

Distribution of students in treatments groups by second language courses taken

			Group		Total % of Sample
			Experimental	Control	
LCT	Spanish	Count	209	191	400
		% within LCT	52.3%	47.8%	80.2%
	French	Count	5	2	7
		% within LCT	71.4%	28.6%	1.4%
	German	Count	1	0	1
		% within LCT	100.0%	.0%	0.2%
	Latin	Count	4	4	8
		% within LCT	50.0%	50.0%	1.6%
	Other	Count	5	6	11
		% within LCT	45.5%	54.5%	2.2%
	Spanish & French	Count	14	13	27
		% within LCT	51.9%	48.1%	5.4%
	Spanish & German	Count	2	5	7
		% within LCT	28.6%	71.4%	1.4%
	Spanish & Latin	Count	8	6	14
		% within LCT	57.1%	42.9%	2.8%
	Spanish & Other	Count	8	11	19
		% within LCT	42.1%	57.9%	3.8%
	Spanish + Two Languages	Count	3	2	5
		% within LCT	60.0%	40.0%	1.0%
Total		Count	259	240	499
		% within LCT	51.9%	48.1%	100.0%

A large number of the respondents, 39.8%, 104 in the experimental group and 98 in the control group, indicated they had no second language experiences outside of a language course. Students reporting second language experiences outside of the classroom were fairly equally split between the two treatment groups, with 155 in the experimental and 151 in the control group. The majority of students indicated their second language experience was tied to a vacation (78, E; 69, C), other such as a mission trip (30, E; 36, C) or a combination of two of the five choices (28, E; 25, C). (see Table 15 for greater detail).

Table 15

Distribution of students in treatments groups by second Language Experiences Outside of Language Courses

			Group		Total % of Sample
			Experimental	Control	
OSLAEXP	Residence in a non-English speaking country	Count	2	8	10
		% within OSLAEXP	20.0%	80.0%	2.0%
	Living with relatives	Count	11	9	20
		% within OSLAEXP	55%	45%	3.9%
	Study Abroad	Count	0	2	2
		% within OSLAEXP	.0%	100.0%	0.4%
	Vacations	Count	78	69	147
		% within OSLAEXP	53.1%	46.9%	28.9%
	Other	Count	30	36	66
		% within OSLAEXP	45.5%	54.5%	13.0%
	None	Count	104	98	202
		% within OSLAEXP	51.5%	48.5%	39.8%
	More than 1	Count	28	25	53
		% within OSLAEXP	52.8%	47.2%	10.4%
	More than 2	Count	5	1	6
		% within OSLAEXP	83.3%	16.7%	1.2%
	More than 3	Count	1	1	2
		% within OSLAEXP	50.0%	50.0%	0.4%
Total		Count	259	249	508
		% within OSLAEXP	51%	49%	100.0%

Table 16 gives the distribution of the reasons for enrollment in the current course, while Table 17 identifies the reason(s) the course was chosen if it was not a degree requirement. Ninety-two percent of all respondents selected course requirement as the reason for their enrollment in the course, 241 (47.2%) for the experimental group and 230 (45%) for the control group. In the experimental group 21 students (4.1%) indicated they chose to take the course as an elective or for another reason, while 19

students (3.7%) in the control group chose to take the course as an elective or other reason.

Table 16

Distribution of students in treatments groups by reasons for taking current language course (Requirement, Elective or Other reason)

			Group		Total % of Sample
			Experimental	Control	
Language course	Degree Requirement	Count	241	230	471
		% within Language course	51.2%	48.8%	92.2%
	Elective	Count	14	14	28
		% within Language course	50.0%	50.0%	5.5%
	Other	Count	7	5	12
		% within Language course	58.3%	41.7%	2.3%
Total		Count	262	249	511
		% within Language course	51.3%	48.7%	100.0%

Table 17

Distribution of responses for reasons language course taken as an elective or other reason

			Group		Total % of Sample
			Experimental	Control	
Elective	I hope to spend time abroad	Count	1	1	2
		% within Elective	50.0%	50.0%	5.3%
	For my career	Count	1	1	2
		% within Elective	50.0%	50.0%	5.3%
	Because my family speaks it	Count	0	1	1
		% within Elective	.0%	100.0%	2.6%
	I wish to be fluent	Count	1	1	2
		% within Elective	50.0%	50.0%	5.3%
	Other Goals	Count	0	1	1
		% within Elective	.0%	100.0%	2.6%
	2 of the 7	Count	0	5	5
		% within Elective	.0%	100.0%	13.2%
	3 of the 7	Count	5	4	9
		% within Elective	55.6%	44.4%	23.7%
	4 of the 7	Count	12	2	14
		% within Elective	85.7%	14.3%	36.8%
	5 of the 7	Count	0	1	1
		% within Elective	.0%	100.0%	2.6%
	6 of the 7	Count	1	0	1
		% within Elective	100.0%	.0%	2.6%
Total		Count	21	17	38
		% within Elective	55.3%	44.7%	100.0%

The mean GPA for the Experimental group was 3.36 (*n*= 252, *SD*=.49) and for the Control group 3.25 (*n*=221, *SD*=.48) (Table 18). Thirty-nine or 7.6% of the completer population failed to report their GPA Score. Additionally, the mean and standard deviation for age of each treatment group by gender is listed in Table 19 below.

Table 18

Cumulative GPA mean and standard deviation for each treatment group

	GPA cum			
Group	Mean	N	Missing	Std. Deviation
Experimental	3.3589	252	10	.49085
Control	3.2551	221	29	.48463
Total	3.3104	4473	39	.49019

Table 19

Age mean and standard deviation by gender for each treatment group

Group	Gender	Mean	N	Std. Deviation
Experimental	Female	19.35	160	1.402
	Male	20.01	97	2.143
	Total	19.51	257	1.745
Control	Female	19.68	153	2.438
	Male	20.46	92	2.838
	Total	19.97	245	2.617
Total	Female	19.51	313	1.981
	Male	20.23	189	2.509
	Total	19.78	502	2.219

In conclusion, a fairly equal distribution of the completer sample is found in each of the two treatment groups in terms of gender, race, age, prior experiences with languages and exposure to second languages outside of the classroom. The majority of students in both groups (92.2%) enrolled in the course because it is a degree requirement or a compulsory course. This is an important distinction between the prior studies using scales of the L2 Motivational Self System as a majority of the students learning English as a second language elected to take the course.

Some key differences between the two treatment groups are in the GPA, non-English speaking country of birth, native speakers of Spanish or Spanish and another language, and academic major. Seventy-six percent of all students born in a non-English speaking country, one hundred percent of all student whose native language is Spanish or Spanish and another language and eighty-eight percent of all students majoring in the humanities are in the experimental group. While this should be noted, the number is small and should not impact the study in a significant way. Unlike these differences, the mean GPA for the groups does appear to be a significant difference between the groups. The mean GPA for the Experimental group was 3.36 (*n*= 252,

SD=.49) and for the Control group 3.26 (*n*=221, *SD*=.49) (Table 18). Additionally, 10 students in the experimental group and 29 in the control group failed to report their GPA, amounting to 7.6% of the total number of students in the completer pool.

Treatments

Experimental

According to Oyserman and James (2009) there are four critical differences that can affect the way an individual imagines possible selves in a specific context including vividness, temporal distance, perceived ability and valence. The first crucial step is an ability to imagine the future possible self, but many individuals lack the ability to create the vision of a future possible self within their mind. These individuals can imagine the future self by applying changes to what they physically see right now. For this reason multimedia imagery vignettes depicting the relevancy of L2 in individuals' future possible selves were developed for use with the experimental groups. The imagery vignettes, illustrate uses of L2 in a future possible self, through individuals who have incorporated the use of a second language in their current professional or everyday lives.

The imagery vignettes highlight individuals whose ideal self might use an L2 in the following situations: study abroad immersions (education/exploration); jobs/ profession (for job; or to get a better job); travel purposes (real life knowledge about daily life which could include how to navigate in a country, cultural information to avoid faux pas-false step or social blunder, how to read and order from menus; or navigation of transportation systems). Additionally, Oyserman and James (2009) and Marcus and Nurius (1986) include the feared future self or the self an individual wants

to avoid becoming in the future. So along with the ideal and ought to future self, a third multimedia imagery vignette addresses the feared self through the story of an individual who expresses regrets for not taking advantage of learning an L2 when the opportunity was available.

Description of experimental imagery vignettes. The L2 use imagery vignettes emphasize how foreign language became part of the speaker's vision of their ideal future self and because it became part of their ideal future possible self, how the L2 played a role in obtaining their future goals. In other words, the speakers explain how they envisioned themselves using a foreign language in the future and the possibilities it could create for them. They describe how learning the language or the decision to try to learn it has figured prominently in where they are today. They also reflect on the potential utility learning a language could provide for them in their future and how this knowledge caused them to actively engage in activities that would help them acquire the second language. As indicated above, a third vignette addresses an individual's decision to avoid taking L2 courses and their deep regrets, both personal and professional, for not having L2 ability now as well as how it has impacted their future. For a brief description of the imagery vignettes, seeTable 20. Detailed descriptions of the three imagery vignettes and a sample question script are included in Appendix C.

Control

The imagery treatment for the control group was a video representative of textbook cultural videos which generally depict geographical locations in countries that use the target language, cultural events (bull fight), celebrations (Día de los muertos), cities or tourist locations associated with the target language culture.

Descriptions of control treatment video. The culture video for the control group was similar in length to the imagery vignettes. The length of the vignettes determined the number of cultural videos needed for the control group treatment. Most of the cultural videos included with language textbooks are 4-12 minutes in length. A cultural video associated with the current language textbook was used. Once the culture video was selected for use in the study, the instructors were polled to determine if they had planned to use the same cultural video that was selected for use in the study with their class that semester. If this had occurred, a video from the previously adopted textbook would have been used for the control group. The cultural video selected for the study was 'Lección 5 ¡Vacaciones in Perú!,' part of the Flash Culture videos developed for use with the textbook series *Vistas: Introducción a la lengua española***,** (3rd Ed.), by José A. Blanco and Philip Redwine Donley. The video depicts the archeological ruins of the ancient Incan city of Machu Picchu. The video was primarily in English with Spanish subtitles, but did include a brief amount of Spanish, French and Quechua (indigenous language) spoken by visitors describing their thoughts and feelings about Machu Picchu. For a brief description of the cultural videos see Table 20. Detailed descriptions of the cultural videos included in this study are also included in Appendix C.

Table 20

Descriptions of experimental imagery vignettes and control cultural videos

Imagery Vignettes	1	2	3
Treatment (L2 use imagery vignettes depicting utilitarian uses of the language in the future)	Pleasure, Travel, Study Abroad and Lifestyle	Job	Regrets for not taking FL courses and the impact now felt in both personal and professional life.
Cultural Videos	1		
Control Treatment (Typical textbook cultural videos)	Travel emphasizing cultural history: A visit to Peru, the magnificent Andes Mountain range and Machu Picchu.		

Treatment Procedures

Participants were shown a series of three experimental imagery vignettes or one control imagery video. After watching the vignettes or video students were asked to answer one question, by indicating on a 6 point Likert Scale, to what extent they agreed or disagreed with the following statement, "This vignette/video increased my interest in learning a foreign language." The students receiving the experimental treatment were asked to respond to the question for each vignette. After viewing all three vignettes they were asked to think about the use of foreign language and to write a short response to the relevance for them of knowing an L2 and if in the future they could imagine themselves using a foreign language in a similar or dissimilar situation as those presented in the vignettes. Participants receiving the control treatment were asked to answer the same Likert scale question above and to reflect on the cultural video before writing a short response to what they found interesting in the video. Each participant was given a response sheet to record their responses. A copy of the Vignettes Response Sheet and the Cultural Video Response Sheet is included in Appendix D.

Instrumentation

Participants also completed the L2 Motivation Survey. A copy of the survey, divided into sections by constructs, is included in Appendix E. The instrument for this study was comprised of scales that, with exception of the background/ demographic questionnaire, have been used in previous investigations by researchers in the areas of second language learning or educational psychology and have yielded reliability coefficients ranging from 0.79 to 0.91. All scales have acceptable Cronbach alphas for internal consistency. While a higher alpha is considered more reliable, the general rule of thumb for Cronbach's coefficient alpha as established by Nunnally (1978) is that 0.7 or greater indicate acceptable internal consistency as an indicator of the instrument's reliability. A description of each scale and Cronbach alpha indices of internal consistency is included.

Basic demographic and background information of the participants was obtained from a questionnaire developed by the researcher (see Appendix E). In addition to the background and demographic questionnaire, three instruments measuring the constructs of the L2 Motivational Self System, a measure the of the students motivated learning behavior and effort, and a measure of the perceived future usefulness of the task of learning a foreign language were used in this study. All five of the instruments were developed and used previously in the professional literature, and their psychometric properties are considered to be adequate. These scales are the *Ideal L2 Self scale* (Taguchi, Magid, & Papi, 2009); the *Ought-to L2 Self scale* (Taguchi, Magid, & Papi, 2009); the *L2 Learning Experience Scale* (Papi, 2010); *Motivated Learning Behavior*

and Intended Effort scale (Al-Shehri, 2009); and the *Perceived Instrumentality Scale* (Greene et al., 2004, Miller et al., 1999).

Four of the scales developed specifically to test the constructs and outcomes of the L2 MSS, refer to English as the second language (Ideal L2 Self, Ought to-L2 Self, L2 Learning Experience, and Motivated Learning Behavior and Effort Scales), while the Perceived Instrumentality Scale refers generically to courses. All five scales were modified so that they reference a second language or foreign language. Additionally, the L2 Learning Experience scale in its original form uses question type items and a six-point Likert scale which includes the responses such as: not at all, not so much, so-so, a little, quite a lot and very much. The question type items in the original scale, "do you like . . ." imply a more dichotomous response of yes or no; therefore, this scale was modified from question to statement type items. This also allows for the same Likert scale, anchored by strongly agree and strongly disagree, to be utilized with all scales included in the instrument. Finally, all five scales used a six-point Likert scale. According to Dörnyei and Taguchi (2010) the use of an even number of response options forces respondents to make a choice and avoid being neutral. A copy of the pre-test survey document with all modifications is included in Appendix F. The post-test survey included the five scales, but did not include the background /demographic questionnaire section. A copy of the post-test survey document with all modifications is included in Appendix G. Along with the above instrument; chapter exams, final exam and overall grade in the course were used as an indicator of performance. While a general description of the major scales was included in chapter two, a detailed description and information for each of the instruments concerning their format and

psychometric properties will be discussed in the following sections (see sample items for each scale in Table 21).

Student background/demographics

A demographic questionnaire consisting of 17 questions was used to collect general information about the students including age, gender, ethnicity, major, minor, academic year, GPA, native language, other language experience(s), reason for taking the language course, and desire to continue taking foreign language beyond the degree requirements.

The Ideal L2 Self Scale

The Ideal L2 Self Scale is a scale designed to investigate the students' visions of themselves as a user of a second language (L2) and to measure the intensity or strength of the vision. Students rate their level of agreement with the eight items concerning use of a L2 in their future using a six-point Likert scale (1=Strongly disagree and 6= Strongly agree). Validity and reliability studies have shown that the scale is both valid and reliable (Al-Shehri, 2009; Ryan, 2009; Taguchi et al., 2009). The reliability of the instrument has shown consistency across several large studies with Cronbach Alpha reliability coefficients ranging from 0.79 to 0.89 (Al-Shehri, 2009, α =0.85; Ryan, 2009, α=0.85; Taguchi, Magid, & Papi, 2009, α= .89 *Japanese version*, α=.83 *Chinese version*, α=.79 *Iranian version*) (see Appendix H for a copy of the original instrument).

Ought-to L2 Self

The Ought-to L2 Self Scale is designed to investigate the second language attributes the individual believes they should possess to avoid possible negative

outcomes. The scale measures the expectations, duties, obligations and responsibilities imposed by others that make up part of the students' ought-to L2 self. The students rate their level of agreement with eight statement type items using a six-point Likert scale (1=Strongly disagree to 6= Strongly agree). Validity and reliability studies have shown that the scale is both valid and reliable (Papi, 2010; Taguchi et al., 2009). The reliability of the instrument has shown consistency across several large studies with Cronbach Alpha reliability coefficients ranging from 0.75 to 0.78: α=.76 *Japanese version*, α=.78 *Chinese version*, α=.75 *Iranian version* (Taguchi, Magid, & Papi, 2009) (see Appendix I for a copy of the original instrument).

Table 21

Sample Items from the Scales used in the Present Study

Scale	Sample item
Ideal L2 Self	I imagine myself as someone who is able to speak a second language.
Ought to L2 Self	Learning a second language is necessary because people surrounding me expect me to do so.
L2 Learning Experience	I like the atmosphere of my foreign language classes.
Motivated Behavior and Effort	I am prepared to expend a lot of effort in learning a second language.
Perceived Instrumentality	I do the work assigned in this class because my achievement plays a role in reaching my future goals.

L2 Learning Experience Scale

The L2 Learning Experience Scale refers to items associated with the L2 learning environment or experiences while learning the L2. The L2 Learning Experience encompasses both the L2 learning environment and L2 learning experience and can include the context of the class (online, hybrid, or traditional), teacher, teaching

strategies employed in the course, textbook, curriculum or teaching materials, peer group, and the students perception of their ability to succeed in the course (Papa, 2010; Dörnyei, 2005, 2009a). The scale measures students level of agreement with six statement type items using a six-point Likert scale anchored by strongly disagree at one end and strongly agree at the opposite end (1=Strongly disagree, 6= Strongly agree). The reliability of the instrument has shown consistency across several large studies with Cronbach Alpha reliability coefficients ranging from 0.80 to 0.90 (Papi, 2010, α=0.85; Taguchi, Magid, & Papi, 2009, α= .90 *Japanese version*, α=.80 *Chinese version*, α=.82 *Iranian version*) (see Appendix J for a copy of the original instrument).

Motivated Learning Behavior and Intended Effort Scale

Motivated Learning Behavior and Effort Scale (Al-Shehri, 2009) measures not only the amount of effort the student is willing to expend in order to learn the L2, but also the behaviors which demonstrate motivation to learn the L2. The original scale is comprised of 18 statement type items measured by a five-point Likert scale ranging from Strongly disagree to Strongly agree. For the purpose of congruence with other scales included in the present study, the same six-point Likert scale will be used with anchors of Strongly disagree and Strongly agree (1=Strongly disagree - 6= Strongly agree). Cronbach Alpha reliability coefficient of this instrument is 0.89.

Abbreviated versions of this instrument have also shown consistency across several large studies with Cronbach Alpha reliability coefficients ranging from 0.75 to 0.86 (Papi, 2010, α=0.80; Ryan, 2009, α=0.86; Taguchi, Magid, & Papi, 2009, α= .83 *Japanese version*, α=.75 *Chinese version*, α=.79 *Iranian version*). (see Appendix K for a copy of the original instrument).

Perceived Task Instrumentality Scale

Perceived Task Instrumentality refers to the individual's perception of the instrumental relationship between the value of the tasks at hand (learning the L2) and attaining a future goal. The Perceived Instrumentality Scale, also called College Work Instrumentality (Greene et al., 2004; Miller et al., 1999), contains five items that measure perceptions of the instrumentality of the school work or learning task at hand (e. g. "I do the work in this class because my achievement plays a role in reaching my future goals"). This scale has been used by Miller and colleagues to predict motivational outcomes in educational settings. The original scale, comprised of five statement type items, was measured by a seven-point Likert scale ranging from Strongly disagree to Strongly agree. For the purpose of congruence with other scales in this study it utilized a six-point Likert scale anchored by1= Strongly disagree and 6= Strongly agree. The reliability of the instrument has shown consistency across several studies with the Cronbach Alpha reliability coefficients of 0.91 (Miller et al., 1999), 0.90 (Greene et al., 2004) and 0.92 (Tabachnick, 2005) (see Appendix L for a copy of the original instrument).

Performance/Achievement Measures

Data from the three chapter exams given throughout the semester, the semester final exam and final course grade were also collected. The chapter exam versions are standardized across the department so that all students received the same or a similar exam version. The final exam is also a departmental standardized exam taken by all Span 1115 and Span 1225 students on the same Tuesday evening during finals week.

To ensure that students do not enroll in a language course below their ability level, all students including new transfer students must take a language placement exam to determine their level of language skills and knowledge before enrolling in a L2 course. Students who have taken and passed the first three levels of a language course at another University or College are exempt from the placement exam. The placement exam is used by the department of Modern Languages, Literatures, and Linguistics at the University of Oklahoma to determine that students have mastered the preceding level of a language before enrolling in the subsequent level of the language. Students desiring to enroll in Chinese, French, German, Japanese, Russian and Spanish courses take the placement exams in the Modern Languages Lab, other languages are assessed by university faculty. The computerized language placement exams are adaptive exams created by Brigham Young University under their Webcape project. The number of questions varies depending upon the knowledge of the students. The difficulty level of the question increases in relation to the number of correct responses. The difficulty level decreases in relation to the number of incorrect responses. There is no audio portion as the placement exam uses a multiple choice format and covers basic grammar rules and knowledge of vocabulary. The language placement is an adaptive exam so the amount of time required to complete it varies, but generally it takes students 15 to 45 minutes to complete the exam. The use of the placement exam before allowing students to enroll in language courses should therefore allow the assumption that students in both groups enrolled in a specific level language course will have a minimum proficiency level in that language.

Pilot Test of Survey Instrument

A pilot test of the proposed survey instrument was conducted by interviewing six students for their feedback on the design of the survey and clarity of questions. The purpose of the pilot test was to identify any format issues or ambiguities with the survey instrument questions before the final version was designed. Students in the College of Education who were taking a beginning level foreign language course during the spring 2012 semester were asked to participate in the pilot test of the survey. The students were asked to complete the survey and mark any questions they felt were unclear or ambiguous. After completing the survey each student met with the researcher to go over the two sections of the survey. Beginning with the background information section, the students were asked about each question. Several students commented that a choice of none, should be included as a choice for question 9, "What language(s) other than English did people close to you speak while you were growing up?" This change was reflected in the final version. Section two of the survey instrument contained the questions from the five scales in a random order. Again, the students were asked about each of the questions to determine if they were clear and understandable. Since the survey questions did not reference a specific language and as not all of the students were currently in a language course, several were not clear if they were to answer the questions in this section about foreign languages in general or a specific language course they had taken in the past. The instructions of this section were modified to reflect that the students were to indicate to what extent they agreed or disagreed with the statements regarding the language they were studying now. The format of the survey was also modified from being printed single sided to double sided at the request of the

students. In their opinion, students would prefer the survey to be double sided as this was in line with green practices.

Procedures

Protection of Human Subjects

The study followed all procedures in accordance with the University Protection of Human Research Participants Policy. The study was submitted to the University of Oklahoma's Institutional Review Board (IRB) governing human research participant protection for review and approval (see Appendix M). Additionally, approval and permission for the study was sought from the chair of the Department of Modern Languages, Literatures, and Linguistics, and the chair of the target language included in the study as well as the target language program coordinator (see Appendix N).

Study Procedures

After approval by the IRB, the researcher contacted the language coordinator, responsible for the sections identified for the study, to discuss the logistics of the study. Also, all instructors assigned to teach two or more sections of a language course were asked to participate in the research study. All instructors who respond positively attended a short informational session to receive training on the purpose and objectives of the study. A description of the instructor training and procedures is included in the marked section below.

Finally, before distribution of the pre-test instruments and viewing of the video and vignettes, the researcher, or designee, gave the participants a brief description of the study as well as any associated risks and benefits of participating in the study (see Appendix O for classroom scripts). Participant

responses were anonymous and coded so that scores on each instrument could only be associated for purposes of data analysis. Student confidentiality was assured both verbally by the researcher, or designee, at the beginning of the study and again in the informed consent form. Each participant was required to read and sign an informed consent form (see Appendix P). An additional copy of the informed consent form was given to each participant for their record. After the informed consent was obtained from all students willing to participate in the study, they were given the pre-test instrument to complete.

Course Selection for Study

After instructors were assigned to the spring semester courses, those teaching two or more sections of the same language level were identified and asked to participate in the study. The class sections of instructors who agreed to participate were randomly assigned to either the treatment or control category.

Instructor Training and Information

All Spanish instructors and Graduate Teaching Assistants (GTAs) attend a Modern Languages, Literatures, and Linguistics orientation workshop held the week before classes start each fall and spring semester. The workshops and informational sessions are mandatory for all returning and new instructors and GTAs. The information and training session for spring 2012 was held on January 16th from 10:00am-12:30pm. The meeting was very informal in nature as one of the goals of the Spanish Coordinator for the 1000 level courses was to motivate instructors and GTAs to promote the study of Spanish in their classes. The Spanish Advisor spoke on ways to promote learning Spanish both in and out of the classroom. Because enrollments were still in flux, the

teaching assignments were not finalized before the meeting. I presented an informational session about the study to all instructors and GTAs. During the session the instructors and GTAs received information on the purpose and objectives of the study. The instructors were given a handout that outlined the study and their role. It was explained that due to the design of the study, a quasi-experimental nonequivalent control group design, with treatments administered though non-randomized control group pre-test/post-test design, instructors who were teaching two sections of the same level would receive an email asking them to participate. The study was endorsed by the Spanish Language Coordinator, who encouraged all instructors teaching two sections of the same level to consider participating.

As soon as the final teaching assignments were determined, an email was sent to all instructors or GTAs assigned to teach two or more sections of the same level language course asking them to participate in the research study. Twenty Instructors and GTAs were identified and all but one agreed to participate. A detailed description of the instructor information session and the handout is included in Appendix Q. Instructors were informed that the study would take approximately 60-80 minutes of class time over the course of the semester. During the first two weeks of class, the informed consent form and pre-test survey instrument would be given to students opting to participate and would require approximately 20-miniutes of class time. The treatments and writing prompt would be implemented during the third week of classes and would require 20 minutes of class time. The post-test survey instrument would be completed in class after students had taken exam 1, approximately weeks 6-7 of the course and would require 15-20 minutes. Each instructor was told they would receive a

Panera Bread gift card for a free lunch valued at approximately $10.00 at the end of the study in thanks for their assistance.

Presentation of Research Study in Classes

Students were told that the purpose of the study was to improve the process of learning a foreign language and their help would be asked through participation in the study. Their participation would involve completing two surveys, one now and one after the first class exam, watching a short video and writing a short response to a prompt related to the content of the video. The confidential nature of the study and the steps taken to insure their identity was explained to the students. Students were informed that everyone who completed the entire process, both surveys, viewing the imagery vignettes or cultural video and a written response would be entered in a random drawing for a $25.00 gift certificate to a local eatery. Eight $25.00 gift certificates would be given out. After responding to any questions the students had concerning the study, the students were given two copies of the informed consent form which listed in detail all procedures for the study including anonymity, confidentiality, benefits from the study, and negligible potential negative effects. They were asked to read and sign one of the informed consent forms and keep the second copy for their personal reference. After signing the consent forms the students completed the pre-test survey (see Appendix O for classroom scripts).

Data Collection Methods

The proposed study included multiple data collection points throughout the course of the semester (see Table 22). Since the pre-and post-test survey instruments

were completed during class time paper copies of the instrument were used. Each survey had a cover page that included a line for the students to print their name. A number linked to the instructor and section was included on the cover page and the first page of the survey instrument. The cover page was removed by the student or researcher and clipped separately from the surveys.

The student background questionnaire was combined with the other scales, *Ideal L2 Self Scale, Ought-to L2 Self Scale, L2 Learning Experience Scale, Perceived Task Instrumentality Scale,* and *Motivational Behavior and Intended Effort Scale,* and administered during the first two weeks of course. The student background questionnaire was completed only once with the pre-test survey at the start of the semester. The other scales, *Ideal L2 Self Scale, Ought-to L2 Self Scale, L2 Learning Experience Scale, Perceived Task Instrumentality Scale,* and *Motivational Behavior and Intended Effort Scale,* were combined and administered twice over the course of the semester. The pre-test instrument was given before implementation of treatments for the experimental and control groups and before the first course evaluation or chapter exam. The combined scales were given again as a post-test survey during the weeks following exam 1, approximately weeks 6-7.

Other data collected for the study included exam 1, 2 and 3, final exam, and overall course grades. Three exams, standardized by the department, are given at regularly scheduled times throughout the semester. Additionally, a departmental standardized final exam is given to all students in Spanish 1115 and 1225 on Tuesday evenings from 7:30-9:30 pm during finals week (see Table 23).

Table 22

Data Collection Points

Approx week of course	Weeks 1-2	Week 3	Weeks 4-5	Weeks 6-7	Weeks 8-11	Weeks 11-14	Week 16
Treatment or data collection	Pretest survey	Vignettes/ videos: 1, 2 & 3 and writing exercise	Exam 1	Posttest Survey	Exam 2	Exam 3	Final Exam
Approximate Time	20-25 min	20-30 min		15-20 min			
Setting	In class	In class		In class			

Table 23

Exam and final exam schedules

Level	Exam 1	Exam 2	Exam 3	Final Exam
Span 1115	Week 4	Week 8	Between weeks 12-13	Tues. of Finals week
Span 1225	Week 5	Week 11	Week 14	Tues. of Finals week

Method of Analysis

The data collected was analyzed using a variety of descriptive and inferential statistics. First, Cronbach Alpha values for internal consistency and reliability coefficients were calculated on all scales and subscales of the survey instrument used in this study. Cronbach Alpha is used when scale items might take on a range of values, for example Likert scales in this study (Ary et al., 2006). A summary of the alpha reliabilities is included in the data analysis. Along with reliability, measures of central tendency and normality are included for all scales.

Descriptive statistical procedures used include measures of central tendency and variability (frequency distribution, mean, standard deviation, correlation indexes, etc.). Descriptive statistics were also computed on information for participants in each of the

student groups (treatment- *imagery* and control- *cultural*) including age, gender, GPA, previous language experience for comparison of the two groups and to develop a profile of the students in the present study. Descriptive information about each variable will also be assessed in chapter four including skew and kurtosis.

Inferential statistics were used to address each question of the study. All data was analyzed with SPSS version 19.0. For question one, ANCOVA was used to analyze the difference between the means of the experimental and control groups after the treatments. The use of ANCOVA is beneficial since existing groups were utilized, meaning that prior differences in groups may account for effects regardless of the treatments used. Additionally, use of this method of inferential statistics is useful in eliminating systematic bias, caused by preexisting differences between intact groups, as well as helping explain additional variance in the dependent variable above that explained by the independent variables (Tabachnick & Fidell, 2007, pp. 195-196).

The second research question focused on the effects of self-based and cultural imagery on performance in mandatory L2 courses as mediated through L2 Motivational Self System variables (future ideal L2 self, ought-to L2 self, and L2 learning experience). This question was analyzed first using regression analysis to test for mediation effects on motivated behavior and intended effort and performance. According to Baron and Kinney (1986), variables may function as mediators if they account "for the relation between the predictor and the criterion variable" (1176). The Baron and Kinney procedure (1986) was used to test the relationship of the key variables in the models and also to determine evidence of hypothesized mediation, as

indicated by the models, of one variable through another. Finally, data were analyzed using SEM analyses via Amos version 19.0.

Assumptions

The study assumed that the participants enrolled in the sections of traditional Spanish 1115 and 1225 represented a cross section of typical US university students in compulsory L2 courses and that they responded truthfully to all survey questions.

Chapter IV Analysis and Discussion of the Data

Instrument Reliabilities

Cronbach alpha reliabilities were computed for all scales of the pre-test and post-test survey instrument to gauge the internal consistency of the scales. All scales had acceptable Cronbach alphas for internal consistency with pre-test survey scales ranging from .81 to .95 and the post-test survey scales ranging from .89 to .95. As mentioned earlier, the general rule of thumb for Cronbach's coefficient alpha as established by Nunnally (1978) is that 0.7 or greater indicate acceptable internal consistency as an indicator of the instrument's reliability. Cronbach alpha indices of internal consistency for each pre and post-test survey are included in Table 24.

Table 24

Pre and post- survey scale reliabilities

Scale	Pre-test Survey Cronbach's Alpha	Post-test Survey Cronbach's Alpha	N of items
Second Language Fluency	.81	*	3
Ideal L2 Self	.91	.93	8
Ought to L2 Self	.87	.89	9
L2 Learning Experience	.89	.89	6
Motivated Behavior and Effort	.95	.95	18
Perceived Instrumentality	.89	.91	5

* included in pre-test survey only

Measures of Central Tendency and Normality

Descriptive information about the variables was obtained through SPSS frequencies. Table 25 includes descriptive information about each variable. Several of the variables demonstrated a slight positive skew > .5: T1 Ought-to L2 Self (.89) and T2 Ought-to L2 Self (.53) other variables were slightly skewed or kurtotic, as can be seen in Table 25, but their deviation from normality was of small magnitude.

Table 25

Measures of Central Tendency and normality of Scales N=512

Scale	*N*	Mean	Median	Mode	*SD*	Skew	St. error of skew	Kur-tosis	St. error of kurt.
SecondLang Flue	512	3.67	3.67	3.67	1.34	.004	.11	-.93	.22
IdealL2Self	505	3.27	3.25	2.13	1.28	.07	.11	-.97	.22
OughttoL2Self	506	2.32	2.11	1.44	.97	.89	.11	.58	.22
L2LearnExp	506	3.83	3.83	3.83	1.20	-.29	.11	-.59	.22
MotBehEff	504	3.61	3.61	2.67[a]	1.04	-.14	.11	-.70	.22
PerInst	510	4.22	4.40	6.00	1.22	-.44	.11	-.47	.22
T2IdealL2Self	507	3.38	3.38	1.88[a]	1.26	-.02	.11	-.90	.22
T2OughttoL2Self	506	2.40	2.22	1.00	.98	.53	.11	-.51	.22
T2L2LearnExp	506	3.85	4.00	4.67	1.18	-.34	.11	-.58	.22
T2MotBehEff	502	3.56	3.61	4.11	1.05	-.07	.11	-.71	.22
T2PerInst	509	3.99	4.00	4.00	1.20	-.26	.11	-.57	.22

a. Multiple modes exist. The smallest value is shown.

Relationships among the Variables of Interest

Correlation coefficients were computed among the five scales of the pre-test and post-test survey (Ideal L2 Self, Ought-to L2 self, L2 Learning Experience, Motivated Behavior and Effort and Perceived Instrumentality), Second Language Fluency (pre-test only) , age, cumulative GPA and the performance indicators (exams 1, 2, 3, final exam and overall grade). Using a Bonferroni approach to control for Type I error across the 153 correlations, a *p* value of less than .0003 (.05/153=.0003267) was required for statistical significance. The results of the corrrelational analyses presented in Table 26 show that 68 out of the 153 correlations were statistically significant and were greater than or equal to .35, $p = .000$. The correlation of Age was not statistically significant with any scales. The correlation of GPA Cum was low to moderately correlated with all performance indicators (exams 1, 2, 3, final exam and overall grade).

There are several extremely high correlations .79 and above between T1 and T2 L2 MSS scales: T1 Ideal L2 Self and T1 Motivated Learning Behavior and Effort (.86);

T1 L2 Learning Experience and T1 Motivated Learning Behavior and Effort (.88); T2 ideal L2 Self and T2 Learning Experience (.79); T2 ideal L2 self and T2 Motivated behavior and effort (.88); and T2 Motivated behavior and effort and T2 L2 learning experience (.88). While the correlations of T1 and T2 Ought-to L2 Self with the other L2 MSS scales tended to be lower, they were still significant. These high correlations are cause for concern as two or more predictor variables that highly correlate at .80 or greater are indicative of multicollinearity and will be addressed again after the data analysis for question two. Additionally, the correlation of Second Language Fluency with the T1 and T2 scales of Ideal L2 Self, L2 Learning Experience, Motivated Behavior and Effort and Perceived Instrumentality tended to be higher and significant. In general, the results suggest that the student's reporting a higher Second Language Fluency was strongly correlated with all T1 and T2 scales except, T2 Ought-to L2 self.

Table 26.

Correlations among T1-T2 scales, Age, Cum GPA, Exams and Course Grade

	Age	GPA Cum	Sec Lang Fluency	Ideal L2 Self	Ought to L2 Self	L2 Learning Exp	Motivated beh & Effort	Percv Instrumentality	T2 Ideal L2 Self	T2 Ought to L2 Self	T2 L2 Learning Exp	T2 Motivated Beh & Eff	T2 Perccvd instrumentality	Exam 1	Exam 2	Exam 3	Final exam
GPACum	-19**																
Second Lang Fluency	-.*10	.07															
Ideal L2 Self	-.03	.06	.87**														
Ought to L2 Self	-.004	-.12*	.46**	.49**													
L2 Learning Exp	-.04	.08	,78**	.78**	.41**												
Motivated beh & Effort	-.03	.08	,82**	.86**	.51**	.88**											
Perceived Instrumentality	-.09	.05	.63**	.68**	.47**	.65**	.77**										
T2 Ideal L2 Self	-.02	.13*	.80**	.87**	.47**	.70**	.79**	.61**									
T2 Ought to L2 Self	-.06	-.04	.34**	.38**	.78**	.30**	.40**	.36**	.47**								
T2 L2 Learn Exp	-.04	.12*	.70**	.73**	.41**	.82**	.79**	.57**	.79**	.39**							
T2 Motivated Beh & Eff	.03	.14**	.75**	.80**	.48**	.77**	.87**	.66**	.88**	.49**	.88**						
T2Perceived Instru—mentality	-.07	.10	.54**	.60**	.46**	.55**	.66**	.73**	.68**	.48**	.66**	.76**					
Exam 1	-.23**	.36**	.14*	.17**	.02	.09	.07	.02	.21**	.07	.18**	.16**	.10*				
Exam 2	-.22**	.43**	.12*	.14**	-.04	.12**	.07	.03	.18**	.01	.18**	.15**	.08	.71**			
Exam 3	-.28**	.40**	.12*	.11*	-.05	.08	.08	.05	.17**.	-.02	.14*	.16**	.11*	.63**	.63**		
Final Exam	-.23**	.44**	.19**	.20**	.02	..18**	.16**	.17**	.24**	.07	.23**	.22**	.15**	.55**	.61**	.54**	
Overallgrad	-.25**	.52**	.14*	.13**	-.07	.10*	.08	.07	.19**	-.01	.16*	.16**	.10*	.71**	.80**	.77**	.82**

Note. Listwise *N*=422

* $p < 0.05$, two-tailed. ** $p < .001$, two-tailed.

Analysis of the Research Questions

Initial tests were conducted for each of the research questions to ensure that the data met the appropriate assumptions. The discussion for each research question includes information on the analysis used and results.

Research Question 1

Research question one looked at the use of future-self based and cultural imagery on student performance in mandatory foreign language courses: Does the use of future-self based and cultural imagery significantly improve student performance for US college students (English speakers) in mandatory L2 university courses?

As indicted earlier, the majority of correlations of L2 MSS variables, ideal L2 self, ought-to L2 self, L2 learning experience, motivated learning behavior and intended effort and perceived task instrumentality with the performance variables increased from T1 to T2. Paired-samples *t* tests were conducted to evaluate the effects of the treatments on students' ideal L2 self, ought-to L2 self, L2 learning experience, motivated learning behavior and intended effort and perceived task instrumentality as measured by the survey instruments from time one to time two (see Table 27).

The results of the paired-samples *t* test indicated the mean for T2 ideal L2 self (M = 3.36, SD = 1.27) was significantly greater than the mean for T1 ideal L2 self (M = 3.26, SD = 1.26), $t(466) = 3.11$, $p < .01$. Additionally, T2 ought-to L2 self (M = 2.37, SD = .98) was significantly greater than the mean for T1 ought-to L2 self (M = 2.31, SD = .95), $t(466) = 2.19$, $p < .05$. The results also indicated that the mean for T2 perceived task instrumentality (M = 3.98, SD = -1.19) was significantly less than the mean for T1 perceived task instrumentality (M = 4.22, SD = 1.20), $t(466) = 5.91$, $p < .001$.

The decrease in perceived instrumentality of learning an L2 from T1 to T2, while not a desired result, is one that is seen in subsequent surveys. When multiple goals are attached to a single means, a decrease in the perceived instrumentality of that means will result (Zhang, Fishbach & Kruglanski, 2007). Meaning that students, who originally tied the perceived instrumentality of learning the L2 with a use in their future, could after the first exam, add the additional goal of doing well in the course to keep their high GPA. This can occur when a student's rosy view of speaking the language in the future is confronted with the reality of need for a grade of A to maintain a scholarship or for admittance into a program of study.

Table 27

Paired Samples Statistics T1/T2

		Mean	Std. Deviation	Std. Error Mean
Pair 1	IdealL2Self	3.2590	1.27308	.05897
	T2IdealL2Self	3.3554	1.25686	.05822
Pair 2	OughttoL2Self	2.3073	.95107	.04406
	T2OughttoL2Self	2.3745	.97867	.04534
Pair 3	L2LearnExp	3.8349	1.18612	.05495
	T2L2LearnExp	3.8503	1.15531	.05352
Pair 4	MotBehEff	3.6037	1.04501	.04841
	T2MotBehEff	3.5670	1.03459	.04793
Pair 5	PerInst	4.2234	1.20490	.05582
	T2PerInst	3.9773	1.18597	.05494

Note. $N = 466$

Next, a paired-samples *t* test was conducted to evaluate the differences of the treatments by group (treatment, experimental) on the student's ideal L2 self, ought-to L2 self, L2 learning experience, motivated behavior and effort and perceived task instrumentality as measured by the survey instruments from time one to time two (see Table 28). The results of the paired-samples *t* test by experimental treatment group indicated that only the mean for T2 ideal L2 self ($M = 3.49$, $SD = 1.28$) was

significantly greater than the mean for T1 ideal L2 self (*M* = 3.39, *SD* = 1.27), *t*(239) = 2.312, *p* <.05. The results also indicated that the mean for T2 perceived task instrumentality (*M* = 4.03, *SD* = 1.23) was significantly less than the mean for T1 perceived task instrumentality (*M* = 4.25, *SD* = 1.23), *t*(239) =- 3.239, *p* <.001.

Table 28

Paired Samples Statistics T1/T2 by treatment group (experimental)

		Mean	Std. Deviation	Std. Error Mean
Pair 1	IdealL2Self	3.3889	1.26877	.08207
	T2IdealL2Self	3.4895	1.27872	.08271
Pair 2	OughttoL2Self	2.3459	.96031	.06212
	T2OughttoL2Self	2.4042	1.00471	.06499
Pair 3	L2LearnExp	3.9202	1.23341	.07978
	T2L2LearnExp	3.9582	1.16701	.07549
Pair 4	MotBehEff	3.6758	1.06559	.06893
	T2MotBehEff	3.6499	1.08317	.07006
Pair 5	PerInst	4.2452	1.23082	.07962
	T2PerInst	4.0310	1.22846	.07946

Note. N = 239

Finally, a paired-samples *t* test was conducted to evaluate the differences of the treatments by group (treatment, control) on the student's ideal L2 self, ought-to L2 self, L2 learning experience, motivated behavior and effort and perceived task instrumentality as measured by the survey instruments from time one to time two (see Table 29). The results of the paired-samples *t* test by control treatment group indicated that only the mean for T2 ideal L2 self (*M* = 3.21, *SD* = 1.22) was significantly greater than the mean for T1 ideal L2 self (*M* = 3.12, *SD* = 1.27), *t*(227) = 2.084, *p* <.05. The results also indicated that the mean for T2 perceived task instrumentality (*M* = 3.92, *SD* = 1.14) was significantly less than the mean for T1 perceived task instrumentality (*M* = 4.20, *SD* = 1.18), *t*(227) = -4.73, *p* <.001.

Table 29

Paired Samples Statistics T1/T2 by treatment group (control)

		Mean	Std. Deviation	Std. Error Mean
Pair 1	IdealL2Self	3.1222	1.26602	.08403
	T2IdealL2Self	3.2142	1.22034	.08100
Pair 2	OughttoL2Self	2.2668	.94166	.06250
	T2OughttoL2Self	2.3431	.95170	.06317
Pair 3	L2LearnExp	3.7452	1.12998	.07500
	T2L2LearnExp	3.7368	1.13435	.07529
Pair 4	MotBehEff	3.5278	1.01973	.06768
	T2MotBehEff	3.4797	.97563	.06475
Pair 5	PerInst	4.2004	1.17926	.07827
	T2PerInst	3.9207	1.13950	.07563

Note. $N = 227$

Following the results of the paired-samples *t* test, an ANCOVA procedure was used to test the effect of the imagery treatment used on the experimental and control group. In this analysis, the treatment functioned as the independent variable while performance (exam 1, 2, 3, final exam and overall grades) as the dependent variable. The main effect of imagery (group) on exam 1 scores was statistically significant, $F(1,510) = 4.03$, $p < .05$. The effect size, partial eta-squared was .008 and the power of the test was low at .518. Additionally, the main effect of imagery (group) on the overall course grade was statistically significant, $F(1,510) = 4.29$, $p < .05$, but once again the effect size was .008 and the power of the test was low at .542. Finally, the main effects of imagery (group) on exams 2, 3 and the final exam was not significant, results respectively, $F(1,510) = .445$, $p = .51$; $F(1,508) = 1.40$, $p = .24$; and $F(1,505) = 1.08$, $p = .30$.

There are several covariates identified in previous L2 MSS studies that may need to be controlled including prior GPA (to control for ability differences across the groups), prior experiences with second languages, and gender. In prior studies, Dörnyei et al., (2006) indicated that gender difference did impact achievement in a 1993 studies

conducted on Global English as an FL. The impact of gender difference on intended effort decreased substantially between the 1999 and 2004 study. Based on the discussion of Dörnyei et al, (2006), concerning the impact of gender, Henry (2010) included gender as a covariate in a study of the L2 MSS and simultaneous language learning. When gender was added in three separate regression analyses it was found to have no substantial change on scores. The main effect of gender noted in previous studies was its impact on drop-out rates for males in FL longitudinal studies (grades 6-9) and a lower level of ideal L2 self-reported by boys in grades 4-6 (Henry & Apelgrin, 2008). There are no studies on adult learners of L2 using the L2 MSS that have included gender as a variable.

Ability differences and prior experiences with the L2 (currently being studied) between the groups were identified as two possible covariates. While L2 MSS research studies identified proficiency level as length of time spent studying an L2 by number of years or grade levels in school, this data was not utilized in any of the L2 MSS validation studies (Csizér & Lukács, 2010; Papi, 2010). Additionally, none of the studies referenced ability differences of students. It is important to note that one reason these two covariates were not included in prior studies is that none of the L2 MSS studies to date have included a treatment or strategy intended to increase performance and achievement. The main focus of all prior research was validation of the L2 MSS model, identification of an L2 MSS model as based on results of survey instruments or identification of motivated behavior and intended effort. As one focus of the present study was to determine the effect of self-based or cultural imagery on student's performance in mandatory L2 university courses, controlling for ability and prior

experience in the L2 is important. While data concerning gender, prior experience in L2 for courses included in the study (number of years in high school or college), and ability (as measured by GPA) was collected, due to the study focus of research question 1 on improving student performance, student GPA functioned as the main covariate in the analyses.

An ANCOVA procedure was again utilized to test the effect of the imagery, used on the experimental and control group, on the criterion or outcome variable, performance, including GPA as a covariate. The effect of the covariate, GPA on exams 1, 2, 3, final exam and overall course grade was statistically significant as noted in the following results. The effect of the covariate, GPA, on Exam 1 was statistically significant, $F(1,470) = 72.10$, $p < .001$. The effect size was medium (partial eta-squared= .13) and the power of the test was high at 1.00. The effect of the covariate, GPA, on exam 2 was statistically significant, $F(1,470) = 101.10$, $p < .001$. The effect size was large (partial eta-squared = .18) and the power of the test was high at 1.00. The effect of the covariate, GPA, on exam 3 was statistically significant, $F(1,468) = 86.13$, $p < .001$. The effect size was large (partial eta-squared = .16) and the power of the test was high at 1.00. The effect of the covariate, GPA, on the final exam was statistically significant, $F(1,466) = 112.39$, $p < .001$. The effect size was large (partial eta-squared= .19) and the power of the test was high at 1.00. The effect of the covariate, GPA, on the overall grade was statistically significant, $F(1,470) = 160.34$, $p < .001$. The effect size was large (partial eta-squared= .25) and the power of the test was high at 1.00.

As indicated above, the effect of the covariate, GPA on exams 1, 2, 3, final exam and overall course grade was statistically significant. Therefore, once GPA was

controlled, the effect of treatment on exam 1 and the overall grade was not a significant difference. As it would be anticipated with college level students, those who reported a higher Cumulative GPA were significantly more likely to score higher on the exams and overall grade in the course. An analysis of the specific type of imagery, foreign language future use or cultural, is presented in the following section.

Analysis of Treatment Data: Video and Vignettes

To study the use of imagery in the L2 Motivational Self System, students were shown a culture video or three video vignettes and asked to respond to questions and a written prompt. Students in the experimental group watched a total of three short video vignettes that demonstrated the importance of learning a foreign language while students in the control group watched a culture video that accompanied the language textbook used by their university. After watching each vignette or video all students were asked to answer a question, by indicating on a six point Likert Scale, to what extent they agreed or disagreed with the following statement, "This video/vignette increased my interest in learning a foreign language." The Likert Scale was anchored on each end by strongly disagree (1) to strongly agree (6). The responses to the question(s) were analyzed using SPSS and the results are included in Table 30 through Table 33. The overall mean and standard deviation for each video/vignette can be found in Table 34.

Table 30

Cultural Video Increased Interest in Learning a FL

		Frequency	Valid Percent	Cumulative Percent
Valid	1.00	13	4.8	4.8
	2.00	32	12.8	17.6
	2.50	1	.4	18.0
	3.00	48	19.2	37.2
	4.00	89	35.6	72.8
	5.00	55	22.0	94.8
	6.00	13	5.2	100.0
Total		250	100.0	

Table 31

Vignette 1 Increased Interest in Learning a FL

		Frequency	Valid Percent	Cumulative Percent
Valid	1.00	10	3.8	3.8
	2.00	20	7.7	11.5
	3.00	47	18.0	29.9
	4.00	70	26.8	56.3
	5.00	78	29.9	86.2
	6.00	36	13.8	100.0
	Total	261	100.0	

Table 32

Vignette 2 Increased Interest in Learning a FL

		Frequency	Valid Percent	Cumulative Percent
Valid	1.00	25	9.5	9.5
	2.00	66	25.2	34.7
	3.00	63	24.0	58.8
	4.00	64	24.4	83.2
	5.00	27	10.3	93.5
	6.00	17	6.5	100.0
	Total	262	100.0	

Table 33

Vignette 3 Increased Interest in Learning a FL

		Frequency	Valid Percent	Cumulative Percent
Valid	1.00	20	7.7	7.7
	2.00	18	6.9	14.6
	3.00	52	19.9	34.5
	4.00	85	32.6	67.0
	5.00	57	22.8	88.9
	6.00	29	11.1	100.0
	Total	261	100.0	

Table 34

Mean and Standard Deviation of Video and Vignettes

	Video	Vignette1	Vignette2	Vignette3
N	250	261	262	261
Mean	3.73	4.13	3.20	3.87
Std. Error of Mean	.08	.08	.08	.083
Std. Deviation	1.23	1.29	1.36	1.35
Variance	1.50	1.67	1.84	1.82

The mean scores for Vignettes 1 and 3 were higher than the mean score for the Video which would indicate that the imagery Vignettes were useful in increasing interest in learning a foreign language. The mean score for Vignette 2 was lower than the mean score of the Video. A one-way analysis of variance was conducted to evaluate the relationship between the video and vignettes and the mean score of increase in interest in learning a foreign language. Three dependent variables labeled, InterestVideoVig123, InterestVideoVig13 and InterestVideoVig1 were created by combining the scores of the two groups. The first dependent variable labeled, InterestVideoVig123, was a comparison between the average mean of Vignettes 1, 2 and 3 and the mean of the video. The independent variable was the two groups, experimental (Vignettes) and control (Video). The ANOVA was not significant, $F(1, 508) = .012$, $p = .91$. The second dependent variable, labeled InterestVideoVig13, was a

comparison between the average mean of Vignettes 1 and 3 and the mean of the video. Again, the independent variable was the two groups, experimental (Vignettes) and control (Video). The results of the ANOVA was significant, $F(1, 508) = 6.86$, $p < .01$, n^2 (Partial Eta Squared) of .013 indicates a small effect size. Power was moderate at .74. The third dependent variable, labeled InterestVideoVig1, was a comparison between the mean of Vignette 1 and the mean of the video. Again, the independent variable was the two groups, experimental (Vignettes) and control (Video). The results of the ANOVA were significant, $F(1, 509) = 12.88$, $p < .001$, n^2 (Partial Eta Squared) of .025 indicates a small effect size. Power was high at .95. The means, standard deviations and the 95% confidence intervals for all three ANOVAs are reported in Table 35.

Table 35

Mean, Standard Deviations and 95% Confidence Intervals for each pair

				Std.	95% Confidence Interval for Mean	
		N	Mean	Deviation	Lower Bound	Upper Bound
InterestVideoVig123	Experimental	260	3.7370	1.08410	3.605	3.870
	Control	250	3.7260	1.22635	3.573	3.880
	Total	510	3.7316	1.15489	3.631	3.832
InterestVideoVigAve13	Experimental	260	4.0038	1.16992	3.861	4.147
	Control	250	3.7260	1.22635	3.573	3.880
	Total	510	3.8676	1.20092	3.763	3.973
InterestVideoVid1Vig1	Experimental	260	4.1264	1.29381	3.973	4.290
	Control	250	3.7260	1.22635	3.573	3.880
	Total	510	3.9324	1.27613	3.821	4.043

The results of the one-way analyses of variance are interesting, because when the mean score of all three vignettes is compared to the mean score of the video no statistical difference is noted. When the mean scores of vignettes 1 and 3 or vignette 1 are compared to the mean score for the video there was a statistical significance in favor of the vignettes for increasing interest in learning a foreign language.

While these results show a difference in type of imagery treatment in favor of the future use vignettes, the ANCOVAs comparing Time 1 data to Time 2 data did not show a statistically significant difference between the treatment groups once GPA was factored out. In order to investigate this further, an analysis of the student responses to opened ended prompts about the video or vignettes was performed. The results of the analysis are presented in the next section.

Coding of Responses to Short Response Prompt for Video and Vignettes

Along with answering the Likert Scale question(s), students receiving the experimental treatment were asked to think about the use of a foreign language and write a short response to the following prompts:

a) Do you see the relevance for you of knowing a foreign language?

b) In the future, can you imagine yourself using a foreign language in situations similar or different from those presented in the vignettes? Please explain.

Participants receiving the control treatment were asked to reflect on the cultural video and to write a short response to the following prompt:

What did you find interesting in the video? Please explain.

A copy of the Vignettes Response Sheet and the Cultural Video Response Sheet is included in Appendix D.

The student responses to the Vignettes and Video prompts were transcribed into an Excel file. After transcription of all responses, they were analyzed qualitatively using a coding analytic strategy developed by Miles and Huberman (1994). According to Creswell (2007), the Miles and Huberman strategy is a systematic approach to analysis that uses a multistep process for organizing and analyzing data. Some of the strategies

from Miles and Huberman that Creswell (2007) identifies as pertaining to coding the data include noting patterns and themes, counting frequency of codes, and looking at the relationship between the various themes and subthemes. Although the Miles and Huberman (1994) systematic approach analysis strategy is generally associated with analyzing semi-structured interviews, it is also beneficial in coding and analyzing constructed responses.

After reading through all responses twice to get an idea of how student's replied to the prompts, the researcher developed an initial coding scheme based on the themes and subthemes that recurred frequently in the data of both groups. The researcher performed an initial coding, based on two dominant themes that were noted in the responses 1) Relevance/Interest in learning a foreign language; and 2) Uses (imagined or intended) of a foreign language in the participant's future. While rereading and coding the data the themes were divided into sub-themes. After reading through the coded data two more times a final sub-theme coding scheme was developed. See Table 36 for sample comments of each theme and subtheme. The theme of relevance was coded into four sub-themes:

1) Yes, knowing/learning a foreign language is relevant and or I have increased desire to learn a foreign language.
2) Somewhat or maybe I see the relevance of knowing/learning a foreign language.
3) No, I see no relevance of knowing/learning a foreign language.
4) Did not reference relevance of learning a language, but only referenced what was interesting in the culture video (only with control group).

The theme of imagined or intended uses of a foreign language in the participant's future was divided into seven sub-themes:

1) No uses in future
2) Yes uses, but not specified
3) Use in job or career
4) Use in travel
5) Use in study abroad
6) Use in communication
7) Against learning a foreign language

The coded themes and sub-themes made it possible to analyze the data using SPSS. It was also necessary because many of the students in the control group referenced the relevance of learning a foreign language and listed ways they could use the language in their future.

Table 36

Typical comments for themes and subthemes

Theme & Subthemes	Comments
Subthemes for the Relevance Theme	
Yes, knowing/learning a FL is relevant	Yes, I feel that knowing a foreign language will be very important in my future
Somewhat or maybe	I somewhat see why learning a foreign language is important. However, I still don't think it should be required in college.
	I can see the relevance somewhat, but definitely not in the same situations.
No, see no relevance	I don't see the relevance for me to take a foreign language.
Only referenced culture video	I thought it was interesting that no one knows why it was built or who lived there. Also, no two stones were alike.
Subthemes for the Imagined/Intended Future Use Theme	
No uses	You can't predict what language you will use 5 years from now, so learning a language is now useless.
	No, I will get my required credits and that's it.
	No, I can see myself never needing to know a foreign language.
Yes/Not Specified	I can see myself maybe speaking Spanish in my future.
	I would love to be able to speak Spanish and study using what I have learned.
	Yes, possibly in everyday life.
Job/Career	Yes, knowing a foreign language would allow me to be more marketable when it comes to future careers.
	I can see myself using another language in almost any professional situation.
Travel	Yes, I can see myself using another language while on travel.
	I could see myself using a foreign language during travel.
Study Abroad	Yes, I plan to study abroad in the near future, so a second language would be very helpful with that.
Communication	By learning another language, I will be able to communicate with a great number of people I couldn't before.
Against Language Learning	No, because I could never see myself dedicating that much time to a foreign language in college. Financially, it doesn't make much sense to keep enrolling myself in classes I don't need.
	No, I don't see myself using a foreign language unless I go on vacation or travel to another country. I'll buy a foreign language dictionary.

For the written prompt theme of relevance, there were 262 respondents in the experimental group and 248 respondents in the control group. Two participants in the control group answered the Likert question, but failed to respond to the written prompt. As expected, a high percentage of the participants in the experimental group 93.1% indicated that knowing or learning a foreign language was relevant to them. Another 3% indicated that it was somewhat relevant while 3.8% responded that knowing or learning a foreign language was not relevant to them at all (see Table 37).

While coding the data an interesting anomaly was noted in the responses of the control group. While 90%, or 224, of the participants in the control group referenced what they found interesting in the video 8.1 %, or 20, did not respond to the prompt to explain what they found interesting in the culture video, but rather spoke directly to the relevance of knowing a foreign language and indicated that their interest in learning a language had increased as a result of watching the video. Additionally, of the 248 control group participants who did discuss what they found interesting in the video 32.7%, or 81, listed one way they would use a foreign language including travel (71), study abroad (3), communication (1) and unspecified use (6) and four of these individual's listed a second use of a foreign language, communication (5), travel (3) and jobs/career (1). One individual in the control group listed a total of three ways they envisioned using a foreign language in the future (see Table 38 and Table 39).

Ninety-four percent of the students in the experimental group listed at least one way that they could imagine themselves using a foreign language in their future, while 5.8 % indicated that they could see no use of a foreign language in their future or were against learning a language (see Table 38). Of the 244 students in the experimental

group who envisioned using a foreign language in their future, 55.7% envisioned a second use of a foreign language, while 11.5% envisioned three and 1.2 % listed four imagined uses (see Table 38 through Table 41).

Table 37

Relevance/Interest in Foreign Language Learning

		Yes	Somewhat	No	Video Only	Total
Group	Experimental	244	8	10	0	262
	Control	20	1	3	224	248
Total		264	9	13	224	510

Table 38

Use of a Foreign Language 1

		No	Yes- not specified	Job or career	Travel	Study Abroad	Communication	Against Lang Learn-ing	Total
Group	Experimental	13	16	159	27	25	17	2	259
	Control	10	6	0	71	3	1	0	91
Total		23	22	159	98	28	18	2	350

Table 39

Use of a Foreign Language 2

		Jobs or Career	Travel	Study Abroad	Communication	Total
Group	Experimental	12	42	10	72	136
	Control	1	3	0	5	9
Total		13	45	10	77	145

Table 40

Use of a Foreign Language 3

		Yes-Not specified	Jobs or Career	Travel	Communication	Total
Group	Experimental	1	8	11	8	28
	Control	0	0	0	1	1
Total		1	8	11	9	29

Table 41

Use of a Foreign Language 4

		Job or Career	Study Abroad	Communication	Total
Group	Experimental	1	1	1	3
	Control	0	0	0	0
Total		1	1	1	3

As indicated earlier, the results of the one-way analysis of variance indicated there was no statistical difference in the combined mean score of the three vignettes when compared to the mean score of the video for increasing interest in learning a foreign language, but when the mean score of vignettes 1 and 3 or vignette 1 were compared to the mean score for the video there was a statistical significance in favor of the vignettes. While these results show a difference in type of imagery treatment in favor of the future use vignettes, the ANCOVA's comparing Time 1 data to Time 2 data did not show a statistically significant difference between the treatment groups once GPA was factored out. In light of student responses to the prompts, it appears that the video may have simulated the same future use imagery as the vignettes. Vignette one presented the scenario of future use of a language in traveling, study abroad and the benefits both of these can make in marketing oneself for employment. The cultural video, while presenting the wonders of Machu Picchu, also included comments about the Incan wonder by many tourists who had traveled from all over the world to see it. The tourists used their native language to describe the wonder of Machu Picchu. For many of the students in the control group, seeing the imagery of Machu Picchu and the tourists visiting it invoked the usefulness of knowing a foreign language.

The use of imagery and imagination is identified as one method that can be used to help students connect the relevance of a current learning task to its usefulness in their

future. The connection of a current task at hand, such as learning a foreign language, with its use by the learner in their future can foster interest and engagement in learning (Hulleman, 2007). Of the 248 students in the control group, 8.5 %, or 21, spoke directly to the relevance of knowing a foreign language and indicated increased interest to learn Spanish as a result of watching the video. Additionally, out of the 224 control group participants who did respond to the prompt of what they found interesting in the video 32.7%, or 81, listed at least one way they could see themselves using a foreign language in their future. The majority of these students identified a future use of Spanish in travel. This is consistent with Joynt (2008) who found that authentic multimedia cultural materials had a positive impact by increasing students' interest in L2 culture and persistence in L2 learning with students reporting that the authentic media materials made the language real. It would appear that the subject of the culture video did indeed have this effect.

In summary, results of a paired-samples *t* test indicated a significant mean increase between Time 1 (M = 3.26, SD = 1.26), and Time 2 (M = 3.36, SD = 1.27), t (466) = -3.11, p <.01, for student's ideal L2 self. Further analysis indicated that the increase in mean scores from T1 ideal L2 self (M = 3.39, SD = 1.27) to T2 ideal L2 self (M = 3.49, SD = 1.28), t (239) =-2.312, p <.05, was significant only for the experimental treatment group. While the results of ANCOVAs to specifically test the effect of imagery on the experimental and control groups indicated that the main effect of imagery (group) on exam 1 scores and overall course grade was statistically significant, the effect size was small. Once ability differences (GPA) were controlled the effect of treatment was no longer statistically significant. Additionally, in looking at

student responses to the video/vignette question and prompt response, it appears that they both invoked the use of future imagery, which tied the task at hand of learning a L2 to a future use of the foreign language.

Research Question 2

Research question two addressed various model depictions of Dörnyei's L2 Motivational Self System: Are the effects of self-based and cultural imagery on the performance of US college students (English speakers) in mandatory L2 university courses mediated through Dörnyei's motivational variables (future ideal L2 and ought-to L2 self) or are they independent predictors of L2 performance (future ideal L2, ought-to L2 self, and L2 learning experience)? The following models were tested:

a. The L2 Motivational Self System variables (future ideal L2, ought-to L2 self, and L2 learning experience) are independent effects on performance mediated through motivated learning behavior and effort (Figure 18 & Figure 20), or
b. The L2 learning experience-imagery effects on performance are mediated by ideal and ought-to L2 selves, which in turn are mediated by motivated learning behavior and effort (Figure 22).
c. The L2 Motivational Self System variables (future ideal L2, ought-to L2 self, and L2 learning experience) are independent effects on performance mediated through perceived instrumentality which in turn is mediated through motivated learning behavior and effort (Figure 19 &Figure 21) or
d. The L2 learning experience-imagery effects on performance are mediated by ideal and ought-to L2 selves, which in turn are mediated by perceived

instrumentality and finally through motivated learning behavior and effort (Figure 23).

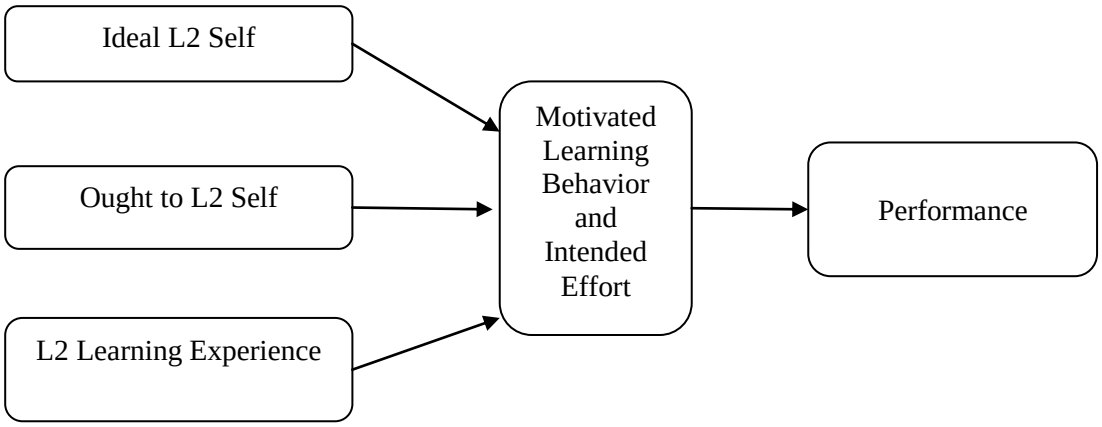

Figure 18. Model 1.

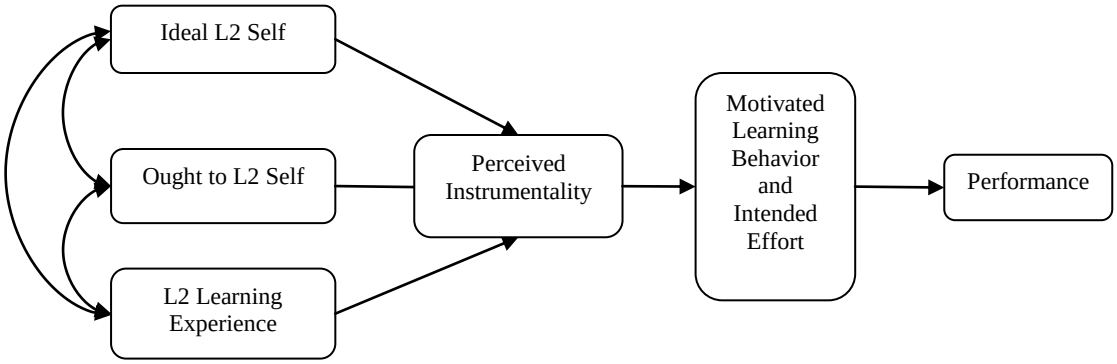

Figure 19. Model 1A.

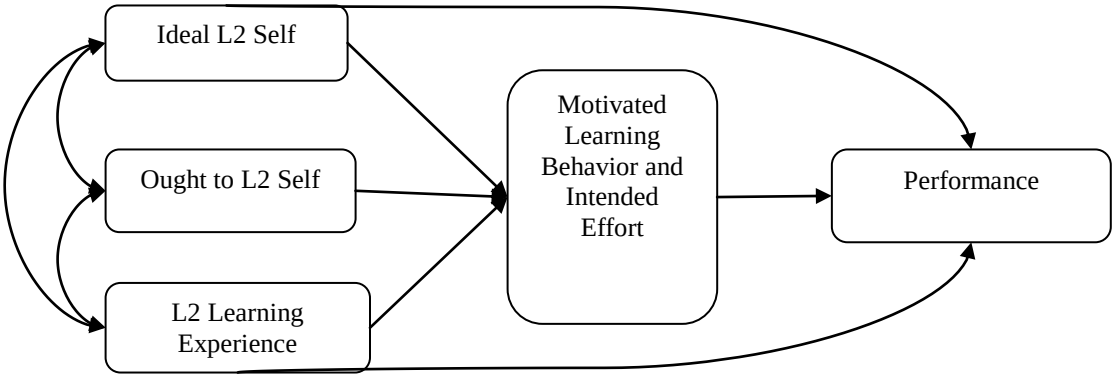

Figure 20. Model 2.

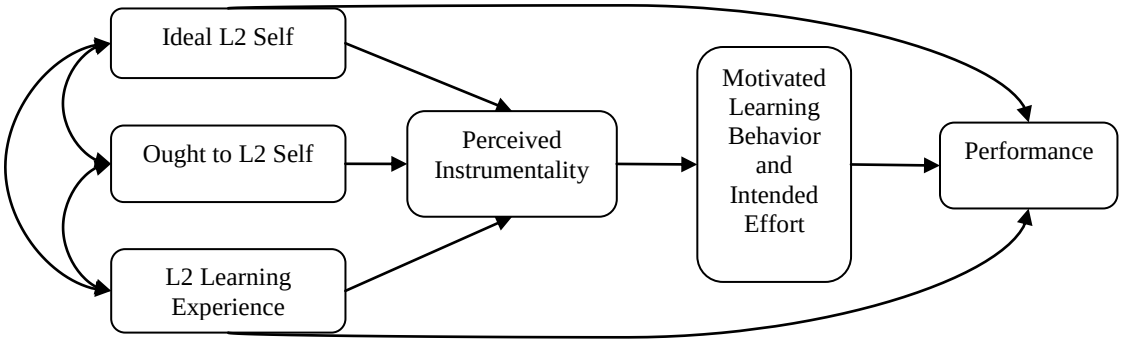

Figure 21. Model 2A.

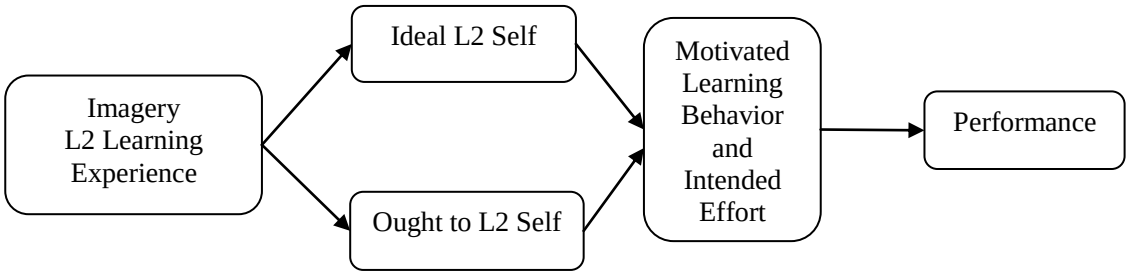

Figure 22. Model 3.

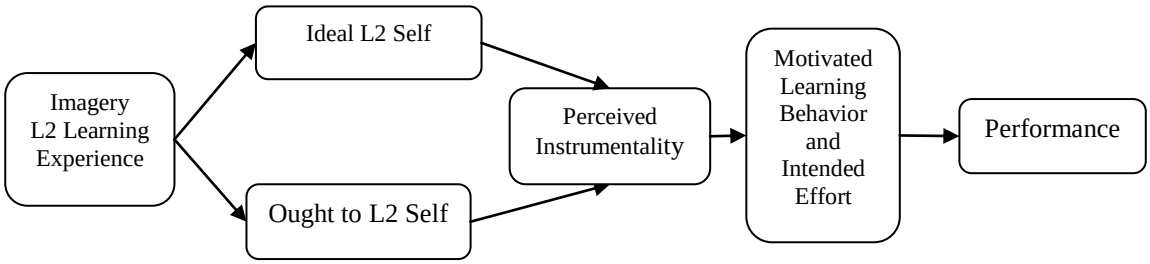

Figure 23. Model 3A.

The second research question focused on the effects of self-based and cultural imagery on performance in mandatory L2 courses as mediated through L2 Motivational Self System variables (future ideal L2 self, ought-to L2 self, and L2 learning experience). This question was analyzed first using regression analysis to test for mediation effects of motivated learning behavior and intended effort on performance. According to Baron and Kinney (1986), variables may function as mediators if they account "for the relation between the predictor and the criterion variable" (1176). The Baron and Kinney procedure (1986) was used to test the relationship of the key variables in the models and also to determine evidence of hypothesized mediation, as indicated by the models, of one variable through another.

A regression approach was utilized to assess for mediation. Regression analysis is useful to examine the relationship between dependent and independent variables and when the intent of the analysis is for prediction. Regression techniques are also useful with a data set that contains several independent variables correlated in varying degrees with each other and the dependent variable (Tabachnick & Fidell, 2007). The regression analysis was performed in the steps as specified by Baron and Kenny (1986). First the mediator variable is regressed on the independent variables. Second, the dependent

variable is regressed on the independent variables, and finally the dependent variable is regressed on the mediator and independent variables.

In the first regression analysis the mediator variable, T2Motivated Learning Behavior and Intended Effort, was regressed upon the independent variables, T2Ideal L2 Self, T2Ought-to L2 Self and T2L2 Learning Experience. The model produced an R^2 of .86 and adj. R^2 of .86, which is statistically significant, F (3,485) =1023.46, $p <$ .001. There is significant predictive relationship between the independent variables (T2Ideal L2 Self, T2Ought-to L2 Self and T2L2 Learning Experience) and T2Motivated Learning Behavior and Intended Effort, respectively (b =.354, t=14.95, $p < .001$); (b =.083, t=4.08, $p < .001$), (b =.461, t=18.95, $p < .001$).

For the second regression analysis the dependent variable, performance (Exam 1) was regressed upon the independent variables, T2Ideal L2 Self, T2Ought-to L2 Self and T2L2 Learning Experience. The model produced an R^2 of .04 and adjusted R^2 of .04, which is statistically significant, F (3,493) = 7.15, $p < .001$. There was significant predictive relationship between the independent variable T2 L2Ideal L2 Self and Exam 1 (b = 1.97, t = 2.47, $p < .01$). The predictive relationship of T2 Ought-to L2 Self and L2 Learning Experience was not significant, respectively (b = -.86, t = -1.25, p = .21) and (b =.55, t =.69, p = .49).

In the third regression analysis, the dependent variable, Exam 1, was regressed upon the independent variables, T2Ideal L2 Self, T2Ought-to L2 Self and T2L2 Learning Experience and the mediator variable, T2Motivated Learning Behavior and Intended Effort. The model produced an R^2 of .05 and adjusted R^2 of .042, which is statistically significant, F (4,484) = 6.361, $p < .001$. There was significant predictive

relationship between T2Motivated Learning Behavior and Intended Effort and the dependent variable, Exam 1, after controlling for the independent variable T2Ideal L2 Self, (b =-3.024, t=-1.958, $p < .05$). The fact that T2Ideal L2 Self was a significant predictor (b =3.158, t=3.246, $p < .001$) alongside the mediator variable, T2Motivated Learning Behavior and Intended Effort, suggests partial mediation.

As recommended by Baron and Kenny, the Sobel test was used to determine if the reduction in prediction was statistically significant. The Sobel test indicated that Motivated Learning Behavior and Intended Effort (z = -1.94, $p < .05$) was a significant mediator of the influence of Ideal L2 Self on the performance variable, Exam 1. Because Exam 1 was the outcome performance variable closest to the treatments it was utilized in the regression analyses and as expected displayed the strongest effects of the treatments upon it. To determine which of the proposed models fit the data best, the data were analyzed using path analysis. Discussions of those analyses are presented in the following section.

Models Tested

Models 1, 2, and 3, were all mediation models, which specified that the effect of the independent variables (Ideal L2 Self, Ought-to L2 Self and L2 Learning Experience) on the dependent variable (performance- exams and overall grade) were transmitted through an intervening variable (Motivated Learning Behavior and Intended Effort-the mediator).

Model 1 (Figure 18), is based on Dörnyei's L2 MSS with ideal L2 self, ought-to L2 self and L2 learning environment as three separate attractor basins (independent effects) on the outcome variable, performance mediated through the variable motivated

learning behavior and effort. Model 2 (Figure 20) extends the idea to include the relationships between ideal L2 self, ought-to L2 self and L2 learning experience, the three attractor basins (independent effects), on the outcome variable separately or as mediated by motivated learning behavior and effort. In model 3 (Figure 22), the L2 learning experience effects on performance are mediated by ideal and ought-to L2 selves, which in turn are mediated by motivated learning behavior and effort. Models 1A, 2A and 3A correspond to the above models, but include perceived task instrumentality as a mediator variable between the predictor variables, ideal L2 self, ought-to L2 self and L2 learning experience and motivated behavior and intended effort (see Figure 19, Figure 21 & Figure 23 respectively).

Data were analyzed using SEM analyses, via AMOS version 19.0. Path analysis was performed to test how well the mediation models, proposed in the present study, fit the data best. Goodness of fit indices include: Normed fit index (NFI); non-normed fit index (NNFI) or Tucker Lewis index (TLI); incremental fit index (IFI); relative fit index (RFI); comparative fit index (CFI); and root mean square error of approximation (RMSEA). Additionally, all path analyses used the maximum likelihood (ML) method of parameter estimation, and all analyses were performed on the variance covariance matrix.

Before analyzing data in AMOS, raw data was examined for missing values. Out of the 10 scales, there were a total of 59 items with missing values. Time 2 Motivated Learning Behavior and Intended Effort had the most with a total of 10 items missing a value, while Time 1 Perceived Instrumentality had the least with only two items missing a value. Table 42 contains the results of the missing values for each scale.

Table 42

Scale items with missing variables

		Ideal L2 Self	Ought to L2Self	L2 Learn Exp	MotBeh Eff	Per Inst	T2 Ideal L2Self	T2 Ought toL2Self	T2L2 Learn Exp	T2Mot BehEff	T2Per Inst
N	Valid	505	506	506	508	510	507	506	506	502	509
	Missing	7	6	6	8	2	5	6	6	10	3

Because all of the scales were measured by more than one item and as all missing values appeared to be missing completely at random, data imputation utilizing a mean replacement method was used to replace the missing values (Kline, 2005; Tabachnick & Fidell, 2007).

Goodness of fit indices, for the various models, are presented in Table 43. Along with the chi square statistic, these indices let us know whether or not the model fits the data. A non significant chi-square (χ^2) value is normally associated with a model fit; however, because this statistic can be unduly influenced by sample size, large sample sizes are likely to yield values that are statistically significant. For this reason chi-square (CMIN in Amos) to the degrees of freedom ratio (χ^2/df) ratios of <5 indicate acceptable fit (Wheaton et al., 1977). According to Carmines and McIver (1981), χ^2/df ratios in the range of "2 to 1 or 3 to 1 are indicative of an acceptable fit between the hypothetical model and the sample data" (p. 80). For normed fit index (NFI), Tucker-Lewis Index (TLI) [also called Gamma Hat or Non-Normed Fit Index, NNFI, in Lisrel or Bentler-Bonnet Non-normed Fit Index in EQS 5.7], Bollen's Incremental Fit Index (IFI), Relative Noncentrality Index (RNI), and Comparative fit index (CFI), again, values ≥ .95 are considered optimal (Schumacker & Lomax, 2004; also see Hu & Bentler, 1999, for RNI, Gamma Hat and IFI), while a less conservative, but still reasonable standard

may be values ≥ .90 (Kline, 2005). For Root Mean Square residual (RMR) and the Root Mean Square Error of Approximation (RMSEA), Hu and Bentler (1999) have suggested RMSEA ≤ .06 as the cutoff for a good model fit.

Table 43

Goodness of Fit Indices

Model	Chi-Square (CMIN)	*df*	*P*	CMIN/*df*	NFI	TLI (NNFI)	IFI	RFI	CFI	RMSEA
Model 1	607.53	6	.000	101.25	.64	.40	.64	.40	.64	.443
Model 1A	687.83	7	.000	96.26	.68	.31	.68	.30	.68	.436
Model 2	1.64	1	.201	1.67	.999	.996	1.000	.99	1.000	.035
Model 2A	14.84	5	.011	2.97	.99	.99	.995	.98	.995	.06
Model 3	367.59	5	.000	73.52	.78	.56	.78	.56	.78	.38
Model 3A	722.13	9	.000	85.79	.64	.40	.64	.40	.64	.41

The path model diagram of Dörnyei's tripart model as well as the diagrams and results of the models that fit the data, models 2 and 2A will be presented here. The path model diagrams for three models that did not fit the data, models 1A, 3 and 3A, can be found in Appendix S. Additionally, because Time 2 data was collected after the treatments it was used in all path analyses.

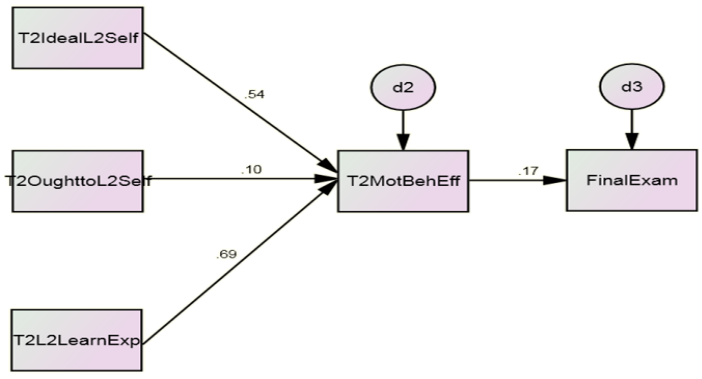

Figure 24. Path Analysis Model 1 (Dörnyei's tripart construct model).

To investigate Dörnyei's tripart constructs as equal predictors of performance (final exam) mediated through motivated behavior and learning effort, path model 1 was tested (see Figure 18). Results indicated that T2 motivational behavior and effort significantly predicted performance (b = 3.113, SE = .779, p < .001, β = .174) and T2 ideal L2 self (b = .350, SE = .013, p < .001, β = .544), T2 ought-to L2 self (b = .081, SE = .017, p < .001, β = .099), and T2 L2 learning experience (b = .469, SE = .014, p < .001, β = .687), were significantly related to T2 motivational behavior and effort. These findings support the hypothesized meditational model 1 (see Figure 24).

As indicated, the results of path analyses for model 1 show that all paths were statistically significant, but the results indicated that the model does not fit the data well as all goodness of fit indices are well below the .90 level, χ^2 (6, N=512) = 607.528, p < .001; GFI =.719; AGFI=.297, NFI=.636, IFI=.638, RFI=.394, TLI=.396, CFI =.638; and RMSEA = .443. (Figure 24).

According to Dörnyei while one of the tripart constructs alone can lead to an increase in knowledge of the L2, "if the three systems are in harmony they will have an increased, cumulative effect" (2009b, p. 218). Path Model 1 was revised to include the correlational interaction of the three predictors in an attempt to investigate whether T2 motivational behavior and effort mediates the relation between, T2 ought-to L2 self, T2 ideal L2 self, T2 L2 learning experience, and performance (final exam). Results of Model 1 Revised indicated that T2 motivational behavior and effort significantly predicted performance (b = 3.113, SE = .601, p < .001, β = .224) and T2 ought-to L2 self (b = .081, SE = .019, p < .001, β = .076), T2 ideal L2 self (b = .350, SE = .023, p < .001, β = .420), T2 L2 learning experience (b = .469, SE = .023, p < .001, β = .520),

were significantly related to T2 motivational behavior and effort. These findings support the hypothesized meditational Model 1 Revised (see Figure 25).

As indicated, the results of path analyses for Model 1 Revised illustrate that all paths were statistically significant. The results indicated that the model fit the data well with all goodness of fit indices above the .90 level, χ^2 (3, *N*=512) = 9.624, *p* = .022; GFI =.99; AGFI=.96, NFI=.99, IFI=.996, RFI=.98, TLI=.99, CFI =.996; and RMSEA = .066.(Figure 25).

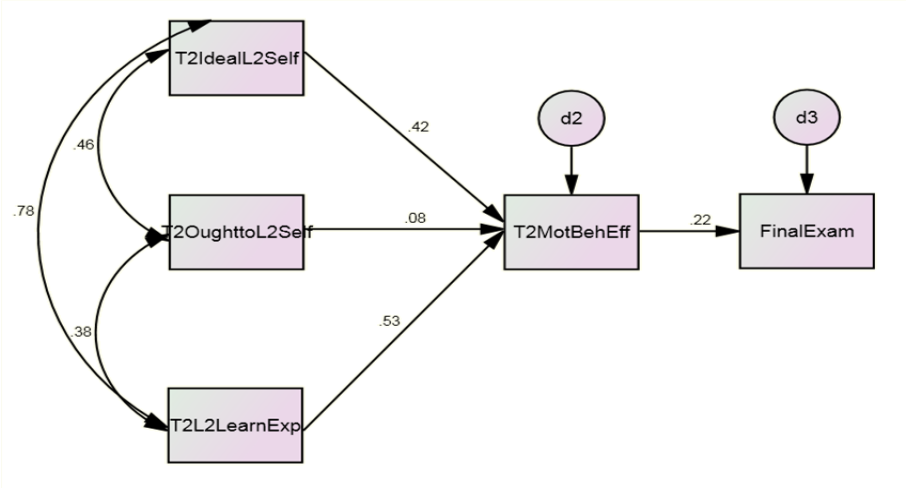

Figure 25. Path Analysis Model 1 Revised.

Figure 25 presents the schematic presentation of Model 1 Revised with standardized path coefficients. As indicated in Figure 25 the L2 learning experience and ideal L2 self through motivated learning behavior and intended effort were the strongest predictors of performance. It should be noted that a strong correlational path exists between the ideal L2 self and the L2 learning environment.

To investigate whether T2 motivational behavior and effort partially mediates the relation between, T2 ought-to L2 self, T2 ideal L2 self, T2 L2 learning experience, and performance (final exam) path model 2 was tested (Figure 20). Results indicated

that T2 ought-to L2 self (b = .081, SE = .019, p < .001, β = .076), T2 ideal L2 self (b = .350, SE = .022, p < .001, β =.420), and T2 L2 learning experience (b = .469, SE = .023, p < .001, β = .530), were significantly related to T2 motivational behavior and effort. While T2 ideal L2 self (b = 2.147, SE = .999, p = .032, β =.185) significantly predicted performance, T2 L2 learning experience (b = 1.987, SE = 1.133, p = .08, β = .161), T2 motivational behavior and effort (b = -1.100, SE = 1.614, p = .495, β = -.079) did not significantly predict performance. These findings do not support the hypothesized meditational model 2.

Estimation of initial model 2 revealed that only the direct path between T2 ideal L2 self and the outcome variable, performance, was significant. All other paths between the predictors and the outcome variable, performance, including those through motivated learning behavior and intended effort, were not statistically significant. These results indicate that the model does not fit the data even though all goodness of fit indices are above the .90 level, χ^2 (1, N=512) = 1.636, p =.201; GFI =.999; AGFI=.98, NFI=.999, IFI=1.000, RFI=.99, TLI=.996, CFI =1.000; and RMSEA = .035 (Figure 26).

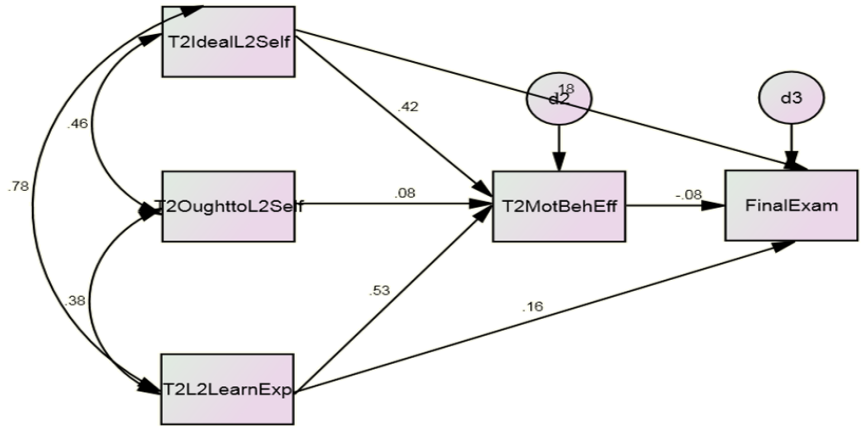

Figure 26. Path Analysis Model 2.

To investigate whether T2 perceived task instrumentality and T2 motivational behavior and effort mediates the relation between, T2 ought-to L2 self, T2 ideal L2 self, T2 L2 learning experience, and performance (final exam) path model 2A was tested (Figure 21). Results indicated that T2 ideal L2 self (b = .332, SE = .049, p < .001, β = .346), T2 ought-to L2 self (b = .241, SE = .042, p < .001, β = .197), and T2 L2 learning experience (b = .313, SE = .049, p < .001, β = .307), were significantly related to perceived task instrumentality. Additionally, T2 motivational learning behavior and intended effort significantly predicted performance (b = 3.113, SE = .601, p < .001, β = .224) and T2 perceived task instrumentality (b = .170, SE = .019, p < .001, β = .196), T2 ideal L2 self (b = .307, SE = .021, p < .001, β = .368), T2 L2 learning experience (b = .417, SE = .022, p < .001, β = .471), were significantly related to T2 motivational learning behavior and intended effort. These findings support the hypothesized meditational model 2A.

The results of path analyses for model 2A indicated that all paths between predictor variables and the outcome variable performance, including those through perceived task instrumentality and motivated learning behavior and intended effort, were statistically significant. The results indicate that the model does fit the data with all goodness of fit indices above the .90 level, χ^2 (5, N=512) = 14.838, p < .01; GFI= 99, AGFI= 96, NFI=.99, IFI=.995, RFI=.98, TLI=.99, CFI =.995; and RMSEA = .06 (See Figure 27).

Model 2A indicated that performance was significantly and positively predicted by ideal L2 self, ought-to L2 self and L2 learning experience as mediated through perceived instrumentality (standardized coefficient =.20, t =9.188) and motivated

learning behavior and intended effort (standardized coefficient =.22, *t* =5.184). In all models tested there was a correlation between ideal L2 self and L2 learning experience (r= .78), between ideal L2 self and ought-to L2 self (r=.46), and between L2 learning experience and ought-to L2 self (r= .38) which indicates that the three predictor variables are not mutually exclusive.

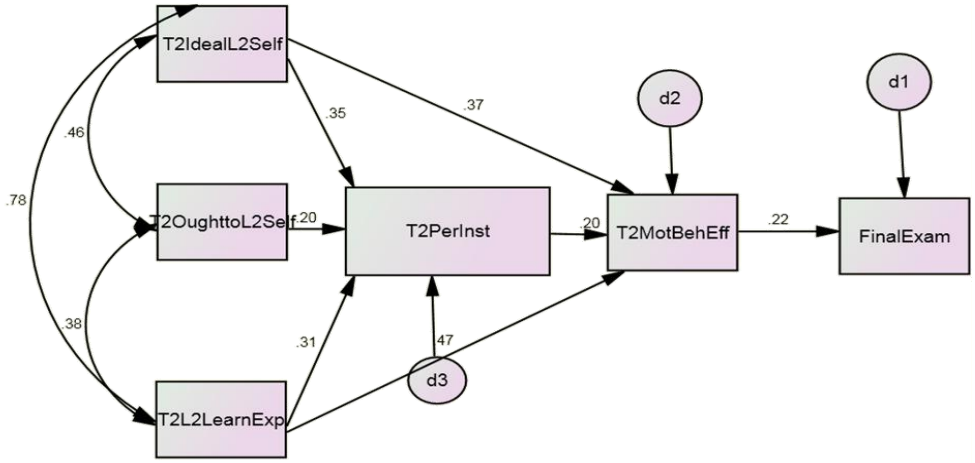

Figure 27. Path Analysis Model 2A.

Despite seemingly better fitting models according to fit indices than model 1, an attempt was made to identify modifications to model 2 that would improve the fit of the model. Examination of the paths' standardized coefficients in model 2 revealed that two paths in the initial model 2 were non-significant. The first non-significant path was the direct path from T2MotBehEff to performance (standard coefficient = -1.100, *t* = -.682) and the second one was the direct path between T2L2LearnExp and performance (standard coefficient = 1.987, *t* = 1. 754). The path between T2MottBehEff was selected for deletion based on its clear lack of significance. As the path between T2L2LearnExp was much closer to significance (*t* values of 1.96 are necessary for *t* to be significant at $p < .05$) and because it was thought that this path may reach significance with model

modification, the path was retained. Path values for all estimated paths are listed in Table 44 for Model 2.

Table 44

Standardized Coefficients and t Values for the Paths in all Versions of Model 2

	Initial Model 2		Model 2 Direct Effects		Model 2 Direct Effects Revised	
Model 2 Paths	St. Coeff.	*T*	St. Coeff.	*T*	St. Coeff.	*t*
Predicted Performance (final exam) from T2Ideal L2 Self	.18*	2.149	.15*	2.186	.18*	2.499
Predicted Performance (final exam) from T2 L2 Learning Experience	.16	1.754	.12	1.749	.12	1.794
Predicted Performance (final exam) from T2 Ought-to L2 Self	n/a	n/a	n/a	n/a	-.07	-1.383
Predicted Performance (final exam) from T2 Motivated Behavior and Effort	-.08	-.682	Dropped	--	Dropped	--
Predicted T2 Motivated Behavior and Effort from T2 Ideal L2 Self	.42**	15.717	.42**	15.717	.42**	15.717
Predicted T2 Motivated Behavior and Effort from T2 Ought-to L2 Self	.08**	4.195	.08**	4.195	.08**	4.195
Predicted T2 Motivated Behavior and Effort from T2 L2 Learning Experience	.53**	20.753	.53**	20.753	.53**	20.753

Note: n/a = not available. Pearson product-moment correlations between T2 L2 Learning Experience and T2 Ideal L2 Self were r =.78; between T2 L2 Learning Experience and T2 Ought-to L2 Self were r =.38; and between T2 L2 Ideal L2 Self and T2 Ought-to L2 Self were r =.46 for all models.

* $p < .05$ level (two tailed test), **$p < .001$ level (two tailed test)

After dropping one non-significant path predicting performance from motivated learning behavior and intended effort, Model 2 (Direct Effects) was tested (see Figure 28). Results indicated that T2 ought-to L2 self (b = .081, SE = .019, $p < .001$, β = .076), T2 ideal L2 self (b = .350, SE = .022, $p < .001$, β = .420), and T2 L2 learning experience (b = .469, SE = .023, $p < .001$, β = .530), were significantly related to T2 motivational behavior and effort. T2 ideal L2 self (b = 1.731, SE = .792, $p < .05$, β

=.149) was significantly related to performance, but T2 L2 learning experience (*b* = 1.468, SE = .839, *p* = .08, β = .119) still did not significantly predict performance. The results of path analyses for Model 2 (Direct Effects) indicated that only the path between T2 Ideal L2 self and the outcome variable, performance, was statistically significant. All goodness of fit indices were above the .90 level, χ^2 (2, *N*=512) = 2.100, *p* = .350; GFI =.998; AGFI=.99, NFI=.999, IFI=1.000, RFI=.99, TLI=1.000, CFI =1.000; and RMSEA =.010. While the fit indices indicate that the model does fit the data, the lack of statistically significant paths between all indicators and performance is concerning.

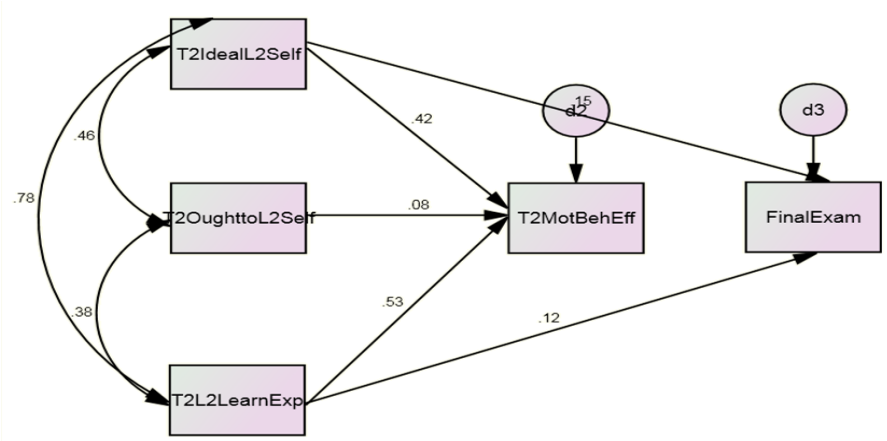

Figure 28. Path Analysis Model 2 (Direct Effects).

While the revisions to original model 2 did indicate that Model 2 (Direct Effects) was a better fitting model than model 2, the path between performance and one of L2 MSS main predictor variables, L2 learning experience, while improved, was still not significant (standard coefficient = .53, *t* = 2.186). Because Dörnyei's L2 MSS theory indicates that all three predictors, ideal L2 self, ought-to L2 self and L2 learning experience should be equal predictors of student success and currently a path did not

exist between ought-to L2 self and the predictor variable, it was thought that adding a path between ought-to L2 self and performance might improve the model.

After adding a path between T2 ought-to L2 self and performance (final exam) path Model 2 (Direct Effects) Revised was tested (see Figure 29). Results indicated that T2 ought-to L2 self (*b* = .081, SE = .019, *p* < .001, β = .076), T2 ideal L2 self (*b* = .350, SE = .022, *p* < .001, β = .420), and T2 L2 learning experience (*b* = .469, SE = .023, *p* < .001, β = .530), were significantly related to T2 motivational behavior and effort. T2 ideal L2 self (*b* = 2.065, SE = .826, *p* < .05, β =.177) was significantly related to performance, but neither T2 L2 learning experience (*b* = 1.5403, SE = .838, *p* = .07, β = .122) nor T2 ought-to L2 self (*b* = -.992, SE = .718, *p* = .17, β = -.067) significantly predicted performance. The results of path analyses for Model 2 (Direct Effects) Revised indicated that only the path between T2 ideal L2 self and the outcome variable, performance was statistically significant. All goodness of fit indices were above the .90 level, χ^2 (1, *N*=512) =.192, *p* = .662; GFI =1.000; AGFI=.998, NFI=1.000, IFI=1.000, RFI=.999, TLI=1.005, CFI =1.000; and RMSEA =.000.

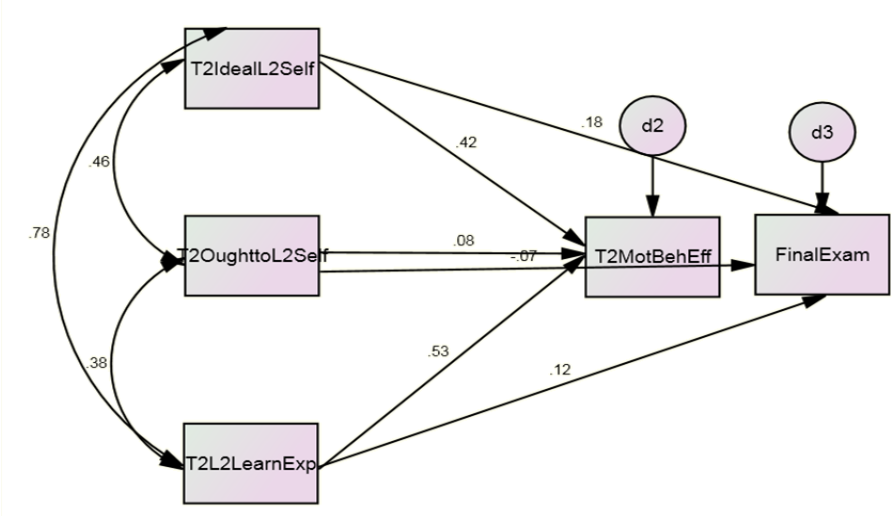

Figure 29. Path Analysis Model 2 (Direct Effects) Revised.

Summary of the Results

In summary, Model 1 Revised, Model 2, Model 2 (Direct Effects), Model 2 (Direct Effects) Revised, and Model 2A demonstrate the best fit with the data. Goodness of fit indices for the retained models, those displaying better fit, are presented in Table 45. In comparing the goodness of fit indices for the models, Model 2 (Direct Effects) and Model 2 (Direct Effects) Revised, the fit of Model 2 (Direct Effect) demonstrated a slightly better fit with the data. An examination of the path standardized coefficients indicates that the only difference between the two models is in the path between T2 ideal L2 Self and performance, with Model 2 (Direct Effects) (b= 1.731, *t* =2.186, p=.029) and Model 2 (Direct Effects) Revised (b= 2.065, *t* =2.499, p=.012). While the RMSEA value for Model 2 (Direct Effects) Revised was .000, slightly less than Model 2 Direct Effects at .010, but as these were not nested models, the best indicator to determine the better fitting model is the Akaike Information Criterion (AIC) index which indicated a slight advantage for Model 2 (Direct Effects) (28.100) over Model 2 (Direct Effects) Revised (28.192).

Table 45

Goodness of fit indices for retained models

Model	Chi-Square (CMIN)	*df*	*P*	CMIN/*df*	NFI	TLI (NNFI)	IFI	RFI	CFI	RMSEA	AIC
Model 1	607.53	6	.000	101.3	.64	.40	.64	.40	.64	.443	625.53
Model 1 Revised	9.624	3	.022	3.208	.994	.987	.996	.981	.996	.066	33.624
Model 2	1.64	1	.20	1.64	.999	.996	1.000	.99	1.000	.035	29.636
Model 2 (Direct Effects)	2.100	2	.35	1.050	.999	1.000	1.000	.994	1.000	.010	28.100
Model 2 (Direct Effects) Revised	.192	1	.66	.192	1.000	1.005	1.000	.999	1.000	.000	28.192
Model 2A	14.838	5	.01	2.97	.993	.986	.995	.979	.995	.062	46.838

In looking at the models with statistically significant paths, Model 1, Model 1 Revised and Model 2A it is clear that the later two models are superior over Model 1. In comparing the goodness of fit indices for the models, Model 1 Revised demonstrated a slightly better fit than Model 2A in all indices but RMSEA, where Model 1 Revised at .066 was above the preferred criteria of less than .06. While the AIC index was significantly lower for Model 1 Revised (33.624) than Model 2A (46.838), both values are much higher than those of either Model 2 (Direct Effects) or Model 2A (Direct Effects) Revised. Finally, Model 1 Revised demonstrated a χ^2/df ratio above 3. While χ^2/df ratio values of about 2-3 or less are considered good, a large sample size can lead to a significant Chi-square result (Bentler & Bonnett, 1980). Model 2A includes perceived instrumentality as an additional mediator variable between the predictors and motivated learning behavior and effort.

Even though all paths between the predictor variables and performance were statistically significant in Model 1 and Model 2A, in comparing only the indices of fit for all Models, Model 2 (Direct Effects) and Model 2 (Direct Effects) Revised would appear to be the better fitting models. Additionally as mentioned earlier, the Akaike Information Criterion (AIC) index for Model 2 (Direct Effects) of 28.100 is much lower than the AIC for either Model 1 Revised, 33.624 or Model 2A, 46.838. According to Kline (2005) the AIC fit index is preferred, because the difference in Chi-square values among the models cannot be used as a test statistic when comparing non-nested models. When comparing AIC fit index of one model to another, the smaller AIC is indicative of a better fitting model (Schreiber et al., 2006). According to the AIC index value, Model

2 (Direct Effects) would be retained as the best fitting model, but if looking at models with significant paths, Model 1 Revised would be.

The model that displayed the best fit for the data was Model 2 (Direct Effects). Because this path model did not behave as expected nor is it consistent with prior results for the L2 MSS in populations of second language learners outside of the US, a factor analysis of the items comprising the five predictor scales was conducted. Chapter five includes the results of the factor analysis along with a summary and results of the analyses of the study.

Chapter V Discussion and Conclusions

The present study sought to provide an empirical validation of Dörnyei's Second Language Motivational Self System Model (L2 MSS) in the context of US College students (English speakers) in mandatory L2 university courses. A second purpose of the study examined the use of imagery to increase motivated learning behavior and effort and ultimately performance in a second language.

Discussion on L2 MSS

Several path analyses models were tested in the attempt to validate the L2 MSS. Path Analysis Model 1 did not fully support the assumption that all three constructs, Ideal L2 Self, Ought-to L2 Self and L2 Learning Experience, are equal predictors of performance. Path Analysis Model 1 Revised of this study demonstrated that the L2 Motivational Self System Model does fit the data, meaning that is does support the assumption that the original L2 MSS model based on Dörnyei's initial study in Hungary can be used in a larger global context including a US context of English speaking students learning a foreign language. As referenced earlier, this is important because prior studies based upon the L2 Motivational Self System demonstrated that the variables included in the model have the potential for helping us explain motivation in L2 learning.

Like Path Analysis Model 1 Revised, all paths in Path Analysis Model 2A were statistically significant, but Model 2A included perceived instrumentality as a mediator variable. The variable of perceived instrumentality was chosen for inclusion in this study because of its importance for an individual to tie the value of the task at hand to a future goal. Dörnyei and Ushioda (2011) highlight the importance of perceived

instrumentality in increasing L2 self motivation for the L2 learner, "personal goals or visions of themselves, influence their motivation in the present and shape the degree to which they perceive proximal goals as instrumental to personally valued distal goals or indeed create proximal guides for courses of action that will lead to distal attainments" (p. 21). Additionally, the inclusion of perceived instrumentality increased the effect of the ought-to L2 self on motivated learning behavior and intended effort. While all paths of models 1 Revised and 2A demonstrated statistical significance, the goodness of fit indices of RMSEA and AIC were not indicative of the best fit when compared to other models tested in this study. Model 1 Revised had a RMSEA value greater than .06, but its AIC value of 33.62 was less than the AIC values of Model 2A, 46.84.

In contrast to this dissertation study, much of the prior research examined the salience of the model's key construct rather than examining the relationships among the constructs and their ultimate impact upon second language learning. According to Dörnyei, the tripart constructs should be equal predictors of performance mediated through motivated learning behavior and intended effort. Papi (2010) also identified the criterion variable, intended learning effort, as a mediating factor between motivation and success in learning the L2.The present study did not find motivated learning behavior and intended learning effort to be a mediating variable between the predictors and performance. The results of Path Analysis Model 2 Direct Effects and Path Analysis Model 2 Direct Effects Revised indicate that the variable motivated learning behavior and intended effort did not mediate (fully or partially) between the three predictors and performance in an L2 once direct paths were added between the predictors and performance. While the fit indices of these two models were indicative of

a good fitting model, only one path between the performance and the predictors was statistically significant. Because the Path Models did not behave as expected and were not consistent with prior results for the L2 MSS in populations of second language learners outside of the US further analysis of the data was conducted.

In looking at the correlation matrix of variable scales, several time one and time two L2 MSS variables are highly correlated. Time 2 variable ideal L2 self is correlated at .79 with L2 learning experience and at .88 with L2 motivated learning behavior and intended effort. Additionally, the L2 learning experience is correlated at .88 with L2 motivated learning behavior and intended effort. Because these three variables are so highly correlated, when used in a path model the shared variance can greatly affect the results as one predictor appears to wipe out the others. This indicates that from a management standpoint there is a problem. While the ideal L2 self is the strongest predictor of performance, there is so much motivational quality built into the scales of the three predictors (ideal L2 self, L2 learning experience and motivated learning behavior and intended effort) that the three combined are predicting about the same, making the L2 motivated learning behavior and intended effort variable superfluous. In terms of measurement, these three predictor variables of motivation may need to be redefined so that L2 motivated learning behavior and intended effort is a better predictor.

As mentioned earlier a factor analysis was conducted to explore the behavior of the path models. The results of the factor analysis indicated that the items comprising the five scales used in the study loaded onto 4 factors. All items from Ought-to L2 Self scale and Perceived Instrumentality scale, with the exception of one Ought-to L2 Self

scale item, loaded exclusively onto their own factors. One L2 Ought-to Self item cross loaded onto the three factors of 1, 3(OTL2S) and 4(PI) and may warrant further refinement or possible removal from the scale. Factor 2 was comprised of four items, 3 from the Motivated Learning Behavior and Intended Effort scale (all dealing with checking understanding) and 1 from the L2 Learning Experience scale (atmosphere of the FL class). Factor 1 was comprised of items from the Ideal L2 Self scale (7 items), Motivated Learning Behavior and Intended Effort scale (8 items) and the L2 Learning Experience scale (1 item). The complete results and brief discussion of factor analysis with both Varimax and Promax rotations including the rotated component, pattern and structure matrix are in appendix T. In summary, while Dörnyei is on to something with the L2 MSS and is moving in the right direction, work is needed to clean-up the items so they measure each construct and only one construct so that measurement issues do not hold back the usefulness of the theory.

Discussion on Imagery

Additionally, this dissertation research examined the use of imagery to increase motivated learning behavior and effort and ultimately performance in a second language. Because Dörnyei's L2 MSS, identifies imagery as a central element in the creation of future L2 self and research in this area has been quite limited, this study examined the use of imagery as an influence on motivational variables and on outcome or performance indicators.

Two types of multimedia imagery were used for the study. Imagery, video vignettes depicting the relevancy of L2 in individuals' future possible selves were developed for use with the experimental group. The imagery vignettes illustrated uses

of L2 in a future possible self, through individuals who explained how they had envisioned themselves using a foreign language in the future and the possibilities they felt the language would create for them. They go on to describe how learning the second language or the decision to try to learn it, figures prominently in their current professional or everyday lives today. The second type of multimedia imagery, a cultural video associated with the current language textbook was used with the control group. Textbook cultural videos generally depict geographic locations, cultural events and holidays or traditional tourist activities associated with the countries of the target language.

Results of the statistical analysis indicated that there was a significant increase in mean scores of the ideal L2 self for students receiving the future L2 use imagery vignettes (experimental treatment) between time 1, ideal L2 self (M = 3.39, SD = 1.27), and time 2, ideal L2 self (M = 3.49, SD = 1.28), $t(239) = -2.312$, $p < .05$. Initial results of ANCOVAs to specifically test the effect of imagery on the experimental and control groups indicated that the main effect of imagery (group) on Exam 1 scores and overall course grade was statistically significant, but the effect size was small. While these results show a difference in type of imagery treatment in favor of the future use vignettes, the ANCOVAs comparing Time 1 data to Time 2 data did not show a statistically significant difference between the two treatment groups once ability differences (GPA) were controlled.

While this study sought to use imagery with the experimental group that invoked L2 future possible selves by depicting individuals who benefited by uses of an L2 or those who expressed regrets for the lack of L2 ability in their future, it appears that the

culture video may have also simulated the same future use imagery as the vignettes for many in the control group. Vignette 1 presented a future use scenario of L2 in traveling, study abroad and the benefits of both in marketing oneself for employment. The cultural video not only presented the wonders of Machu Picchu, but also included comments about the Incan wonder by many tourists who had traveled from all over the world to see it. Several of the tourists used their native language to describe the wonder of Machu Picchu. For many of the students in the control group, seeing the imagery of Machu Picchu and the tourists visiting it invoked the usefulness of knowing a foreign language for travel purposes.

Marcus and Nurius (1986) emphasize that possible selves are represented by images and senses. Dörnyei (2009a) builds upon this by indicating that imagery enhancement techniques can be used to promote ideal L2 self images, thereby strengthening the student's ideal L2 self. The use of imagery and imagination is also identified as a method that can be used to help students connect the relevance of a current learning task to its usefulness in their future. This was indeed the case as 9% of the 258 students in the control group spoke directly to the relevance of knowing a foreign language and indicated increased interest to learn Spanish as a result of watching the video. Additionally, out of the 224 control group participants who did respond to the prompt of what they found interesting in the video 32.7%, or 81, listed at least one way they could see themselves using a foreign language in their future. The majority of these students identified travel as a future use of Spanish.

In looking at student responses to the video/vignette question and prompt response, it appears that they both invoked the use of future imagery, which tied the

task at hand of learning a L2 to a future use of the foreign language. Connecting a current task at hand, such as learning a foreign language, by the learner with its use in their future can foster interest and engagement in learning (Hulleman, 2007). While the culture video was selected because it was part of the current textbook series used by the university, it is clear that it was also a much higher quality of multimedia cultural material than usually associated with language textbooks. The results of this study are also consistent with findings of studies on the use of quality, authentic multimedia cultural materials which lists several positive impacts including an increase in students' interest in L2 culture and persistence in L2 learning as well as students reporting that the authentic media materials made the language real (Joynt, 2008).

The use of the cultural video may have created a utility value intervention, which can be useful to encourage "individuals to make their own, personal connections with the material" (Hulleman, 2007, p. 74). Dörnyei and Ushioda (2010) define the utility value of tasks as "the extent to which the students are able to perceive a clear instrumental relationship between current academic tasks and the attainment of personally valued long-term goals" (p. 19) (Also see McInerney, 2004, and Miller and Brickman, 2004.) Learning a second language becomes the student's proximal goal when their vision of the future includes the use of the language as a personally valued long term or distal goal.

While analysis results as measured by the survey scales from Time 1 and Time 2 do not show a statistically significant difference between the groups in terms of the type of treatment, the analysis results of the imagery video and vignettes response questions and written prompt indicate that the imagery did tie the relevance of learning the

language to a future use of the L2. It is important to note that measurement issues with the L2 MSS scales or items associated with each scale, as well as a possible cross-contamination effect between the two groups (discussed below in the limitations section) may have hampered the outcome of the imagery analyses. As mentioned earlier, students reported that both types of imagery, future use and cultural, increased their interest in learning a foreign language. Although only the students in the experimental treatment group were asked if they saw the personal relevance for knowing a foreign language, nine percent of the students in the control group addressed the relevance of knowing an L2 in their response. Even though only the students in the experimental group were asked to imagine themselves using a foreign language in situations similar or different from those presented in the vignettes in the future, 32.7% of the students in the control group also listed at least one way they saw themselves using a foreign language in the future. Taken together, the results of the path model analyses and imagery analyses are very promising in the quest to increase motivation to learn second languages, but more research is needed before firmer conclusions can be drawn.

Limitations of the Study

Limitations of the study include the use of convenience sampling, the study design, use of self-report measures in the questionnaires, and the use of Likert-type scales. While the size of the sample (N=512) in the study was adequate for the scope of the study, a convenience sampling strategy was chosen because the participants for the study were selected using a set criteria defined by their enrollment in a course taught by an instructor teaching two or more sections of the same level. Use of a convenience

sampling strategy reduces generalizability and external validity, but internal validity should be strong.

A second limitation of the study due to study design was that participating instructors were selected based upon their teaching assignment. All courses in the sample used a common syllabus and participating instructors were provided with implementation instructions, but only instructors who taught two or more sections of the same language level were invited to participate in the study. While this eliminates problems in differences of instructor teaching styles between the control and experimental sections, it can also lead to reduction in the differences between treatment groups. The inability to control the amount of future uses of an L2 presented in control classrooms can lead to cross contamination. Cross contamination occurs when elements intended only for the treatment group are also implemented in the control group (Creswell, 2012). While none of the instructors participating in the study intentionally did this, because of a big push occurring within the department to increase both language majors and minors a theme of global awareness and the importance of learning a second language was prevalent on campus.

A third limitation of the study included the use of self-report measures and questionnaires with Likert scales. While the use of self-report questionnaires are beneficial to address IRB ethical concerns and provide greater anonymity for the participants, they also rely upon honesty of the participant in responses regarding their behaviors and attitudes (Mertens, 2005). Other problems associated with self-report measures include students reporting what they think is wanted or rushing through the survey to complete it and not taking time to consider their responses.

Finally, the study utilized a population of students enrolled in Spanish language courses at one large university. As a result generalizability to other compulsory collegiate Spanish learning is limited and variations among instructors and teaching practices may impact findings. Additionally, these findings may not necessarily be generalizable to learning of languages other than Spanish. Additionally, the sample was from the same geographic location, although many of the students were from various locations in the US and world. Both of these limitations, in terms of generalizability of the data and subsequent findings, may be restricted to similar populations of participants learning Spanish in university compulsory course settings.

Study's Contributions and Implications for Instruction

This study sought to contribute to current literature by focusing on two identified gaps in research. First, to provide an empirical validation of Dörnyei's L2 Motivational Self System construct in the context of US college students (English speakers) in mandatory L2 university courses. While there have been several quantitative studies to test and validate the L2 Motivational Self System in various learning environments, the majority to date have focused on populations learning English as a foreign, global or world language (Csizér & Kormos, 2009; Magid, 2011: Papi, 2010; Ryan, 2009; Taguchi et al., 2009;). This study represents one of the first large scale attempts to validate the L2 MSS in the context of students learning a second language other than English. The results of the study are promising and lend support to Dörnyei's L2 Motivational Self System. Results show that Dörnyei's tripart model does fit the data, and therefore supports the assumption that the original L2 MSS model

based on Dörnyei's initial study in Hungary can be used in a larger global context including a US context of English speaking students learning a foreign language.

Additionally this study, in contrast to prior research, which has focused on the salience of the model's key construct, examined the relationships among the constructs and their ultimate impact upon second language learning by including student achievement over the course of a semester in a traditional US college level introductory foreign language course. According to Dörnyei, the tripart constructs should be equal predictors of performance mediated through motivated learning behavior and intended effort. Once student achievement in the second language course was included, the constructs of the model did not behave as expected. Because the theory is in its infancy with expectations that it will mature into a global L2 Motivation Theory, the results of the study are also important as they provide a crucial indication that the scales are in need of attention as overlap of the items for the main constructs could seriously hamper the usefulness and applicability of the theory.

Magid (2011) commented that, "it would be interesting to validate this system in other countries with learners of other target languages besides English in order to see whether the L2 affects the components of the L2 Motivational Self System" (p. 285). As indicated above, this study sought to do just this. The results while promising do indeed show us that the main components of the L2 Motivational Self System will need to be refined for the theory to gain global usability.

A second contribution of the study is the examination of imagery's role in the creation of the future L2 self. To date several studies have examined imagery or visualization within the framework of the L2 Motivational Self System (Al-Shehri,

2009; Magid, 2011; Yang & Kim, 2011). To date only one other study has utilized an imagery or visualization intervention technique based upon self theory with a large group of participants (Magid, 2011). This study represents the first use of visual multimedia imagery to examine its impact upon the L2 self of L2 learners, motivational variables and achievement or performance indicators. The results of the study are encouraging. While analyses results do not show a statistically significant difference between the groups as measured by the survey scales from Time 1 and Time 2, the analysis results of the imagery video and vignettes response questions and written prompt indicate that the imagery did tie the relevance of learning the language to a future use of the L2. Students reported that both types of imagery, future use and cultural, increased their interest in learning a foreign language. In other words, their interest to learn another language was primed by the visualization of how they envisioned themselves using the L2 in their future, which according to Dörnyei is the first step toward construction of the Ideal L2 Self (Dörnyei, 2009a).

The biggest educational implication of the present study's results for education professionals is the importance of quality imagery materials, both cultural and future use, in priming student's ideal L2 self. Many university students in compulsory L2 courses are amotivated because they do not see a connection between learning a second language and its use in their future. The use of a variety of quality imagery materials allows students to make their own personal connections between the task of learning a second language and the task's perceived instrumentality or value in their future. Responses by students to the video/vignette prompts clearly demonstrated the imagery's power in increasing both the relevancy of learning a second language for their future

and their interest to learn an L2. The ramifications for the use of imagery reach much father than just learning languages.

The mission of the university is the transmission of culture, which according to Ortega y Gasset includes a Liberal Arts education (1944). The benefits of a Liberal Arts education are enormous, but it is important that students understand the value of this spectrum of knowledge and how it fits into their future occupation. It is important that students do not view the liberal education core subjects as compulsory courses that they must drudge through before they begin the sequence of specialized courses in their major.

While proponents of a Liberal Arts education understand the ramifications of students receiving a liberal education, students may not share this global view. Most students will be thinking about the list of courses on their degree sheet and be more concerned with muddling though each one and crossing it off as they race toward the diploma and their future employment. It is important that students do understand how each of the courses in the Liberal Arts education work together to build a rich knowledge base. It is up to educators to introduce the conversations about the importance of a balanced education in future careers. Faculty must be willing to implement imagery into their courses that ties the relevance of the course content to future applications. Imagery such as vignettes, videos, speakers and other multimedia stimulation can help students make the connection between the course content and their future. This will require modifying teaching styles from a traditional class lecture style to one that incorporates a variety of multimedia.

Recommendations for Research

The present study combined L2 Motivational Self System constructs with perceived instrumentality and imagery treatments. Results of the study show that perceived instrumentality of the task at hand is important if students are to develop the perception of the future utility value of learning an L2 so that it leads to an increase in their interest in and thereby engagement to learn the language. Future research is needed that incorporates perceived instrumentality of learning languages, specifically to address the use of imagery and visualization to help L2 learners envision the utility value of L2 in their future. When students with low perceptions of their own competency in a content area make their own connections between the task at hand and their current or future lives the utility value in learning the content becomes more internalized, which results in greater interest and engagement (Hulleman, 2007). The use of a variety of high quality authentic multimedia L2 future use imagery and cultural based videos that emphasize use of language as well as giving scenarios will allow the individual to connect the task of L2 learning to their own lives so that they internalize the utility value of the task.

More research is needed on the impact of the videos and vignettes on the students' ideal L2 self and in the area of the influence of multimedia on student interest and engagement in general. Also, more research is needed to determine what types of imagery are beneficial. So along with the imagery vignettes, which explicitly illustrated the use of L2 in a future possible self, through individuals who have incorporated the use of a second language in their current professional or everyday lives, videos in the target culture that inexplicitly show the L2 used in other situations should be explored

including: study abroad immersions (education/exploration); jobs/profession (doctor, teacher); altruistic uses (helping others, mission trips, give back to community, reaching special populations); travel purposes (real life knowledge about daily life which could include how to navigate in a country, cultural information to avoid a faux pas); or life skills (how to read and order from menus; navigation of transportation systems, or shopping in markets).

Two imagery vignettes produced for this study, which demonstrated the highest means in terms of increasing interest in learning an L2, addressed two of the three future possible selves identified in self theory, the ideal L2 future self and the feared L2 future self. Development of an imagery vignette that features the ought-to L2 future self is needed for implementation in a subsequent study to see if it is useful for motivation of learners who fall into this category.

Along with the use of imagery vignettes, students in the experimental treatment group were asked imagine themselves using a foreign language in situations similar or different from those presented in the vignettes. Future research should also include exercises and interventions that incorporate more visualized or imagined future uses of L2. Additionally, as mentioned by Magid (2011) no research to date has incorporated the L2 Motivational Self System and the impact of imagery upon students who study abroad, so this would be an area of great research potential and interest. Studies are needed which specifically address the L2 self of students as they prepare to study abroad and while they are abroad in conjunction with their achievement and performance in the L2 before, during and after returning from the language immersion experience.

Experience with second languages (L2) at an early age is linked to a significant increase in both motivation and achievement in foreign and native language learning in secondary and post-secondary students (Loewen, Ellis & Hacker, 2006). It would be interesting to implement components of the L2 Motivational Self System, including future L2 use imagery and visualization techniques, with children learning a second language and then examine the results in a longitudinal study.

Also as mentioned in the limitations section, while this is one of the first and the largest to date, validation studies of the L2 Motivational Self System in the context of US L2 learners (English speakers); its generalizability is limited by geographic location and single language (Spanish) factors. In order to maximize generalizability of the results, future studies should be designed that utilize different second languages including Arabic, Chinese, French, German, Italian, Japanese or even Native Languages. Finally, as discussed earlier, more validation studies of the L2 Motivational Self System in the context of US students learning second languages as well as individuals learning languages other than English are needed for the L2 MSS to move from a much needed new and novel language learning theory to a globally validated L2 language learning motivation theory.

Conclusions

The goal of the present study was an empirical validation of Dörnyei's L2 Motivational Self System model in the context of US college students (English speakers) in mandatory L2 university courses. Additionally, as research on Dörnyei's L2 Motivational Self System has indicated differing results in regard to the explanatory power of the theory's tripartite constructs such as all three as equal predictors of

motivated learning behavior (Czisér & Kormos, 2009), and the effects of ideal L2 self and ought-to L2 self on intended effort mediated by the L2 learning experience (Papi, 2010), the study tested a total of six models. While the results of this study do support that the L2 Motivational Self System is viable in a US population of L2 learners and that the three constructs of the model, ideal L2 self, ought-to L2 self and L2 learning experience, were predictors of motivated learning behavior and intended effort they were not equal predictors. Motivated learning behavior and intended effort did not mediate the effects of the three constructs of the model, ideal L2 self, ought-to L2 self or L2 learning experience, with performance. Nor were the three constructs of the model, ideal L2 self, ought-to L2 self or L2 learning environment, equal predictors of performance as only the ideal L2 self significantly predicted performance.

Because imagery is cited as a central element in the creation of a future ideal L2 and ought-to L2 self, a second purpose of the present study was to test the use of imagery (multimedia imagery vignettes and textbook cultural video) as a motivator to enhance or activate the link between the present task of learning the L2 (task instrumentality) with the future L2 self (Dörnyei, 2006, 2009a, 2009b; Dörnyei & Ushioda, 2011). Results of the study show that imagery is a priming factor that can link the utility value of learning a language with a perceived use in an individual's future, resulting in a student reported increase in interest to learn the L2.

The L2 Motivational Self System, unlike it predecessor in the field of L2 motivation theory, is based on modern theories in conventional psychology. It is a refreshing break from the old socio-educational L2 theory which looked at language aptitude and having a favorable attitude toward the target language culture, which

included the desire to integrate with the other language community or to escape from one's own, as the main passages to successfully learn a language. By using ideas from self-determination theory, basic needs theory and self theory, the L2 Motivational Self System offers a glimpse toward future possibilities in L2 motivation, like the potential to enhance motivation in mandatory L2 language settings. Before the L2 Motivational Self System can become a global L2 learning motivation theory more refinement is needed. These include scales that measure the system's constructs on a universal level, the development of visualization and imagery interventions/strategies that can activate and build a strong ideal L2 self, that is not only capable of envisioning future uses of the L2, but also the pathway to obtain them. Markus and Nurius (1986) put it best, "Individuals' self-knowledge of what is possible for them to achieve is motivation" (p. 955).

In this time of rapid globalization, there is a need for individuals who are fluent in multiple languages and knowledgeable of other cultures. Learning a language provides an opportunity to open the eyes, minds, and hearts of individuals to the world around them. While speaking and reading skills develop so will a new perspective of not only a country, but of an entire people. When students learn a second language, they gain an entire education rich in philosophy, history, geography, social studies, literature, myths, and ideology, because studying another language crosses not only disciplines, but also barriers. Learning a language is not easy, because if it were most of us would be bi or even trilingual. Much of the recent work on L2 learning posits that motivation is a powerful impetus for both engagement and learning; therefore igniting motivation is one key to increase L2 learning. However, most universities and secondary schools in

the US have compulsory language learning that can undermine motivation. The L2 Motivational Self System offers the potential to enhance motivation in mandatory settings, positing that if an individual envisions the relevance of an L2 in their future, the future self vision becomes a powerful motivator to acquire proficiency in the L2.

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Appendix A: Number of students participating in study by the treatment groups at each phase of study.

			Pre-Test Participa-tion # by Treatment		Video/ Vignette Participa-tion # by Treatment		Post-Test Participa-tion # by Treatment		# completing all three		Withdrawal before first exam		# opting to not release grade		# no final or overall grade		Total
Instr #	level	Initial Enroll-ment	Ex	Ct	Ex	Ct	Ex	Ct	Ex	Ct	Ex	Ct	Ex	Ct	Ex	Ct	
1	1115	22	18		16		12		11				1		0		10
1	1115	23		18		18		13		13		1		0		2	10
2	1115	24	21		21		18		18		2		4		0		12
2	1115	20		19		17		12		12				1		1	10
3	1115	24	23		22		18		18				0		2		16
3	1115	24		22		2o		21		20		1		0		1	18
4	1115	23	19		18		14		14				1		0		13
4	1115	23		23		20		17		16		2		0		1	13
5	1115	24	21		21		19		19				0		0		19
5	1115	24		20		19		15		14				0		3	11
6	1115	23	21		20		16		16				2		0		14
6	1115	24		22		22		21		21				5		0	16
Tot	**1115**	**278**	**123**	**124**	**118**	**116**	**97**	**99**	**96**	**96**	**2**	**4**	**8**	**6**	**2**	**8**	**162**
7	1225	22	18		18		17		17				0				17
7	1225	19		17		17		15		15				0			15
8	1225	18	22		21		19		19				0				19
8	1225	18		12		8		10		6				0			6
9	1225	24	23		22		21		20				0				20
9	1225	24		18		13		14		11				0			11
10	1225	17	17		15		15		13		1		0				12
10	1225	18		12		12		9		9				0			9
11	1225	21	20		17		16		15				0		1		14
11	1225	23		22		18		18		17				2		0	15
13	1225	24	21		20		17		17		2		0				15
13	1225	24		22		20		15		13				0			13
14	1225	24	23		19		18		16		1		2		0		13
14	1225	24		22		21		17		16				0		1	15
15	1225	24	16		15		12		12				0				12
15	1225	24		23		21		18		16				0			16
16	1225	15	12		12		8		8				0				8
16	1225	24		23		22		23		22				0			22
17	1225	24	23		20		17		15		1		0				14
17	1225	8		7		6		7		5				0			5
18	1225	24	23		22		20		20				2				18
18	1225	24		19		17		17		16		1		0			15
19	1225	24	12		10		7		6				0				6
19	1225	24		18		17		13		12				0			12
20	1225	24	18		18		13		13				3		0		10
20	1225	24		23		22		21		21				2		1	18
Tot	**1225**	**563**	**248**	**238**	**229**	**214**	**201**	**197**	**191**	**179**	**5**	**1**	**7**	**4**	**1**	**2**	**350**
Tot		**841**	**371**	**362**	**347**	**330**	**298**	**296**	**287**	**275**	**7**	**5**	**15**	**10**	**3**	**10**	**512**

Appendix B: Comparison of total initial sample pool (N =733) to study completer pool (N=512).

The following tables compare the demographics of the initial pre-test pool, students who completed the pre-test survey, (*N*=733) to the completer pool, students who completed the entire study, pre-test, treatment and post-test survey (*N* =512).

Table 46

Distribution in treatment groups of initial pre-test pool and completer pool

Group *N*= 733			
		Frequency	Valid Percent
Valid	Experimental	371	50.6
	Control	362	49.4
	Total	733	100.0

Group *N* =512			
		Frequency	Valid Percent
Valid	Experimental	262	51.2
	Control	250	48.8
	Total	512	100.0

Table 47

Distribution by Gender of initial pre-test pool and completer pool

Gender *N*=733			
		Frequency	Valid Percent
Valid	Female	446	60.8
	Male	287	39.2
	Total	733	100.0

Gender *N* =512			
		Frequency	Valid Percent
Valid	Female	318	62.1
	Male	194	37.9
	Total	512	100.0

Table 48

Distribution of Ethnic Origin of initial pre-test pool and completer pool

Ethnic Origin *N*= 733		
	Frequency	Valid Percent
African American	46	6.3
Asian American or Pacific Islander	38	5.2
Hispanic American	38	5.2
Native American	34	4.6
White	529	72.2
Other	17	2.3
Mixture, selected 2 or more	31	4.2
Total	733	100.0

Ethnic Origin *N*= 512		
	Frequency	Valid Percent
African American	27	5.3
Asian American or Pacific Islander	30	5.9
Hispanic American	21	4.1
Native American	23	4.5
White	376	73.4
Other	11	2.1
Mixture, selected 2 or more	24	4.7
Total	512	100.0

Table 49

Country of Birth of initial pre-test pool and completer pool

Country of Birth *N* = 733			
		Frequency	Valid Percent
Valid	English speaking	717	97.8
	NonEnglish speaking	16	2.2
	Total	733	100.0

Country of Birth *N* =512			
		Frequency	Valid Percent
Valid	English speaking	499	97.5
	NonEnglish speaking	13	2.5
	Total	512	100.0

Table 50

Distribution of academic class of initial pre-test pool and completer pool

Academic Class *N*=733			
		Frequency	Valid Percent
Valid	Freshman	240	32.7
	Sophomore	285	38.9
	Junior	137	18.7
	Senior	68	9.3
	Post grad	3	.4
	Total	733	100.0

Academic Class *N*=512			
		Frequency	Valid Percent
Valid	Freshman	185	36.1
	Sophomore	203	39.6
	Junior	83	16.2
	Senior	39	7.6
	Post grad	2	.4
	Total	512	100.0

Table 51

Distribution of Major for initial pre-test pool and completer pool

Major *N*= 733			
		Frequency	Valid Percent
Valid	Humanities	25	3.4
	Sciences	106	14.5
	Mathematics	9	1.2
	Education	52	7.1
	Engineering	16	2.2
	Fine Arts	13	1.8
	Social Sciences	86	11.8
	Journalism	81	11.1
	Architecture	3	.4
	Pre-Med	83	11.4
	Pre-Law	23	3.1
	Other	138	18.9
	Multiple	96	13.1
	Total	731	100.0
Missing	System	2	
Total		733	

Major *N*= 512			
		Frequency	Valid Percent
Valid	Humanities	17	3.3
	Sciences	73	14.3
	Mathematics	6	1.2
	Education	40	7.8
	Engineering	11	2.2
	Fine Arts	6	1.2
	Social Sciences	55	10.8
	Journalism	59	11.6
	Architecture	3	.6
	Pre-Med	57	11.2
	Pre-Law	16	3.1
	Other	99	19.4
	multiple	69	13.3
	Total	510	100.0
Missing	System	2	
Total		512	

Table 52

Distribution of Native Language for initial pre-test pool and completer pool

Native Language *N*= 733

		Frequency	Valid Percent
Valid	English	706	96.6
	Spanish	7	1.0
	Other	16	2.2
	1 & 3	2	.3
	Total	731	100.0
Missing	System	2	
Total		733	

Native Language *N* =512

		Frequency	Valid Percent
Valid	English	492	96.3
	Spanish	5	1.0
	Other	12	2.3
	1 & 3	2	.4
	Total	511	100.0
Missing	System	1	
Total		512	

Table 53

Distribution of Other Languages spoken around the initial pre-test pool and completer pool

Other Languages Spoken Around You *N*= 733

		Frequency	Valid Percent
Valid	Spanish	103	14.1
	Chinese	5	.7
	German	6	.8
	French	3	.4
	Other	64	8.8
	None	541	74.1
	Two or more	8	1.1
	Total	730	100.0
Missing	System	3	
Total		733	

Other Languages Spoken Around You *N*=512

		Frequency	Valid Percent
Valid	Spanish	68	13.3
	Chinese	3	.6
	German	6	1.2
	French	2	.4
	Other	46	9.0
	None	380	74.4
	Two or more	6	1.2
	Total	511	100.0
Missing	System	1	
Total		512	

Table 54

Distribution of Language courses taken by initial pre-test pool and completer pool

Other Language Courses Taken *N*=733

		Frequency	Valid Percent
Valid	Spanish	552	77.4
	French	13	1.8
	German	3	.4
	Latin	12	1.7
	Other	23	3.2
	Spanish & French	43	6.0
	Spanish & German	11	1.5
	Spanish & Latin	20	2.8
	Spanish & Other	25	3.5
	Spanish + Two Languages	7	1.0
	2 Languages (not Span)	4	.6
	Total	713	100.0
Missing	System	20	
Total		733	

Language Courses Taken *N* =512

		Frequency	Valid Percent
Valid	Spanish	400	80.2
	French	7	1.4
	German	1	.2
	Latin	8	1.6
	Other	11	2.2
	Spanish & French	27	5.4
	Spanish & German	7	1.4
	Spanish & Latin	14	2.8
	Spanish & Other	19	3.8
	Spanish + Two Languages	5	1.0
	Total	499	100.0
Missing	System	13	
Total		512	

Table 55

Distribution of other second Language learning experiences of initial pre-test pool and completer pool

Other Second Language Learning Experiences *N*=733

		Frequency	Valid Percent
Valid	Residence in a non-English speaking country	14	1.9
	Living with relatives	31	4.3
	Study Abroad	4	.5
	Vacations	205	28.2
	Other	86	11.8
	None	295	40.5
	More than 1	83	11.4
	More than 2	7	1.0
	More than 3	3	.4
	Total	728	100.0
Missing	System	5	
Total		733	

Other Second Language Learning Experiences *N*=512

		Frequency	Valid Percent
Valid	Residence in a non-English speaking country	10	2.0
	Living with relatives	20	3.9
	Study Abroad	2	.4
	Vacations	147	28.9
	Other	66	13.0
	None	202	39.8
	More than 1	53	10.4
	More than 2	6	1.2
	More than 3	2	.4
	Total	508	100.0
Missing	System	4	
Total		512	

Table 56

Distribution reason for taking class (requirement or elective) by initial pre-test pool and completer pool

Language Course Taken as a Requirement or Elective *N*= 733

		Frequency	Valid Percent
Valid	Degree Requirement	637	87.0
	Elective	37	5.1
	Other	17	2.3
	1 & 2	21	2.9
	1 & 3	14	1.9
	2 & 3	3	.4
	1,2 & 3	3	.4
	Total	732	100.0
Missing	System	1	
Total		733	

Language Course Taken as a Requirement or Elective *N* = 512

		Frequency	Valid Percent
Valid	Degree Requirement	441	86.3
	Elective	25	4.9
	Other	13	2.5
	1 & 2	17	3.3
	1 & 3	10	2.0
	2 & 3	3	.6
	1,2 & 3	2	.4
	Total	511	100.0
Missing	System	1	
Total		512	

Table 57

Responses for reasons taken as an elective by those selecting item 2, 3 or 2 & 3 in question 12 by initial pre-test pool and completer pool

Why taking course as an elective or other? *N*=733

		Frequency	Valid Percent
Valid	I hope to spend time abroad	2	3.7
	For my career	3	5.6
	Because my family speaks it	1	1.9
	I wish to be fluent	5	9.3
	Other Goals	2	3.7
	2 of the 7	7	13.0
	3 of the 7	14	25.9
	4 of the 7	18	33.3
	5 of the 7	1	1.9
	6 of the 7	1	1.9
	Total	54	100.0
Missing	System	679	
Total		733	

Why taking course as an elective or other? *N*=512

		Frequency	Valid Percent
Valid	I hope to spend time abroad	2	5.3
	For my career	2	5.3
	Because my family speaks it	1	2.6
	I wish to be fluent	2	5.3
	Other Goals	1	2.6
	2 of the 7	5	13.2
	3 of the 7	9	23.7
	4 of the 7	14	36.8
	5 of the 7	1	2.6
	6 of the 7	1	2.6
	Total	38	100.0
Missing	System	474	
Total		512	

Appendix C: Sample Script for Imagery Vignettes, Descriptions of Experimental Treatment Imagery Vignettes & Description and Script of the Control Treatment Cultural Video

Sample script questions in the imagery vignettes include*:*

Tell us about your background/experiences with foreign languages before college?
What was your major in college?
What foreign language(s) did you study in college and why?
Why did you choose that language to study in college?
How did you see a second language fitting into your future plans?
What doors did second language study open for you?
How do you use the second language now?

The experimental treatment vignettes were filmed and edited by Amanda Richie in the Dan Rather Studies in New York City, New York.

Vignette 1: (Travel and Job location) Reba took an introduction to Foreign Languages class in junior high. Although the intro class focused on Spanish, Reba decided to take French in High School. Even though she only had two years of French in high school, Reba decided to minor in French in college and completed some of the required courses via study abroad in France. Multiple experiences in travel were opened by having taken French classes. Having the minor in French and the travel abroad listed on her resume opened the door for her to live in her dream location and the chance work at an exciting job in the fabulous city of Manhattan, NY. Reba now lives between Madison and Park Avenue, only 2 blocks from Central Park. She uses French with colleagues at her job as well as with friends she has met in New York.

Vignette 2: (Job) Andrea took foreign language courses in high school and in college because they were required for graduation. Learning the language piqued her interest in traveling so she could see these exciting cultures first hand. Studying the language and the travel experience made Andrea confident that she could do anything. She applied for and landed a dream job working for the NFL. Taking a foreign language and study abroad experience made Andrea's job application stand out. Andrea's job requires her to coordinates many NFL events including the Heisman Trophy Award, NFL Draft and NFL Summer Camps. Putting on the events requires Andrea and NFL football players travel to various cities in the US. Additionally, many of the Summer Camp Events involve working with inner city and underprivileged children whose first language is not English. Andrea enjoys being able to communicate with many of these kids in their native language.

Vignette 3: (Regrets for not studying a foreign language) Amanda took a few years of foreign language in junior high and first year of high school. In college she had the choice to take foreign language or history courses. Since she had not taken language in several years Amanda was afraid to take it in college and chose instead to take history courses. While she loved the history courses, she now regrets that decision. Amanda works for NBC as a broadcast journalist. She works for Dan Rather reports and her job

takes her all around the world. Having knowledge of a second language and culture would not only give Amanda a boost in her job, but also allow her to work directly with individuals on stories inters of having to rely on interpreters. Amanda is struggling to teach herself Spanish and deeply regrets a decision she made in haste during her college years.

Control Treatment Cultural Video:
The cultural video used was Lección 5 ¡Vacacciones in Perú!, part of the Flash Culture series developed for use with the textbook series Vistas: Introducción a la lengua española, (3rd Ed.), by José A. Blanco and Philip Redwine Donley.

Peru famous for its spectacular natural beauty and unique archeological ruins is described as a perfect place to spend a vacation full of adventure and mystery as it boasts of the world's most important archeological treasures, the ancient Incan city of Machu Picchu. The video tours the ancient city providing the students information on the discovery and what is known about the archeological wonder.

Control Treatment Cultural Video Script: Lección 5- Flash Cultura, ¡Vacaciones en Perú!
Correspondent: Omar Fuentes

OF: ¡Bienvenidos a otra aventura de Flash cultura! Today we are visiting Peru, and right now I am in the middle of the magnificent Andes Mountain range.

OF: Peru is famous for its spectacular natural beauty and unique archeological ruins. It is a perfect place to spend a vacation full of adventure and mystery; and of course here you can visit one of the world's most important archeological treasures, a place that was discovered only a century ago. Do you know what place we are talking about?

OF: The lost city of Machu Picchu!

OF: Along the winding Urubamba River, atop the lush, misty mountains, hides the ultimate symbol of the Inca civilization: *Machu Picchu,* which, in Quechua means *old mountain.*

OF: Machu Picchu is famous for being a mystery: no one knows what it was built for, who lived there, or why it was abandoned.

OF: In 1911, a North American explorer named Hiram Bingham made these ruins known to the world for the first time. Today, hundreds of thousands of tourists from all over the world come every year to Machu Picchu to ponder its mystery.

OF: While Michelangelo was painting the Sistine Chapel at the beginning of the 16th century, there were approximately 1,000 people living here; by the time the Spaniards gained control of Peru in 1532, they were all gone.

OF: Machu Picchu, at 2,800 feet above sea level, is the ultimate construction of the Inca empire. It's an example of incredible innovation and intelligence, built on an inaccessible landscape, on the edge of a plunging cliff.

OF: It's amazing how they managed to build on the top of the mountain with these huge blocks of stone.

OF: In Machu Picchu, no two stones are alike; each one of them, as you can see here, was carved individually with very precise angles to fill a predetermined spot.

OF: Machu Picchu is so full of mystery and innovation that most of the visitors choose to hire an expert to guide them through their visit. So we have done the same.

OF: Hemos contratado a Noemí. Noemí es una guía experta, oficial además, del santuario de Machu Picchu.

OF: ¿Cómo estás, Noemí?

Noemí: Hola, Omar. ¿Cómo estás?

OF: Bien, muy bien, contento de estar acá.

Noemí: Qué gusto.

OF: Cuéntanos, ¿cómo estaba dividida la ciudadela?

Noemí: Está dividida en tres sectores. Uno… el sector de cultivo, el sector urbano y el sector religioso.

Noemí: Omar, te cuento que Machu Picchu se salvó de la invasión española gracias a que se encuentra aislada sobre esta montaña, como tú puedes ver. Y también la selva ayudó mucho… lo cubrió rápidamente, y eso también contribuye.

OF: Machu Picchu is so remote and majestic that, when you are here, you feel like you are the only person in the world. In reality, on an average spring day like this one, there is [sic] more than 2,500 tourists from Peru and all around the world. So please join me to find out why they came here.

Turista1: *Machu Picchu is like a… like the Great Wall of China… Seven Wonders of the World… Fantastic! You should come.*

Turista2: *…and a very supreme and religious experience.*

Turista3: Bueno, Machu Picchu es algo que siempre he querido venir [sic]… siempre he querido verlo, porque me parece algo muy bonito, muy interesante… me encantan

las civilizaciones antiguas. Y no sé, pues ya estoy aquí, después de tantos años queriendo venir.

Visitante peruano1: Estoy haciendo un esfuerzo de venir caminando desde Aguas Calientes para disfrutar toda esta nuestra [sic] maravillosa obra de nuestros antepasados.

Turista4: *We're having a tremendous time. It's a beautiful country, the people have been outstanding, and it's been just a fun trip.*

Turista5: ¡*Excelento*! [sic]

Turista6: Parte arte, parte cultura, parte místico… algo que no se siente ya en el mundo. Es algo que tiene uno que subir hasta los Andes para experi… para tener esta experiencia, ¿verdad?

Visitante andino: Tengo sangre andina y me siento orgulloso porque esta cultura quechua ¿no? hizo muchas grandes obras y actualmente podemos ver esta maravilla del mundo que es Machu Picchu.

Turista francesa: Somos una familia francesa y estamos aquí al Machu Picchu que nos encanta muchísimo y damos la vuelta al mundo y Perú es un país muy, muy bonito, de verdad.

Turista7: *Amazing how they ever made it… how they ever built it; it's quite amazing.*

OF: Dinos una frase bonita en quechua.

Visitante peruano: (*habla en quechua*)

OF: ¿Y eso qué significa?

Visitante peruano: Que en Machu Picchu tenemos que estar muy contentos disfrutando de Machu Picchu.

OF: ¿Puedes resumirnos en dos palabras tus sensaciones en Machu Picchu?

Turista8: Historia… Misterio....

Turista9: Magnífico y misterioso...

Turista10: Enigma y misterio...

Turista11: Algo esplendoroso… algo único…

Turista1: Fantástico...

Turista2: Excelente...

OF: This visit to the land of the Incas has been a trip through time. But before we say goodbye, let's review what we've learned in this adventure.

OF: We discovered that Machu Picchu, one of the most important archeological sites in the world, is still today surrounded by mystery. We know it was an Inca city, but we don't know why it was built or abandoned.

OF: We learned that Machu Picchu is an example of the sophistication of Inca engineering, architecture, and culture.

OF: And we learned that Machu Picchu is visited by people from all over the world, but no one appreciates it more than its own people.

OF: Finishing the Inca Trail that leads to Machu Picchu, Omar Fuentes and our wonderful guide Noemí say goodbye. We'll see you in the next adventure of **Flash Cultura.**

Appendix D: Vignette Response Sheet & Cultural Video Response Sheet

Vignette Response Sheet

You will be watching video vignettes today that show the importance of learning a foreign language. We hope these vignettes will increase your interest in learning a foreign language. You will be asked to answer a question for each of the vignettes you watch. After answering the questions you will be asked to reflect on all of the vignettes and write a short reflection statement.

Part I: Vignettes

Please indicate to what extent you agree or disagree with the statement below regarding the vignette and learning a foreign language by using the following scale:

Strongly Disagree **Strongly Agree**

1 2 3 4 5 6

Vignette 1: Reba, metals trader for an international corporation - Foreign language for study abroad and travel.

1.	This vignette increased my interest in learning a foreign language.	1….2….3….4….5….6

Vignette 2: Andrea, NFL programs- Foreign language and a future job.

1.	This vignette increased my interest in learning a foreign language.	1….2….3….4….5….6

Vignette 3: Amanda, NBC Broadcast Journalist - Foreign Language regrets.

1.	This vignette increased my interest in learning a foreign language.	1….2….3….4….5….6

Part II: Reflection

Please think about the use of a foreign language and write a short response to the following statement:

a) Do you see the relevance for you of knowing a foreign language?

b) In the future, can you imagine yourself using a foreign language in situations similar or different from those presented in the vignettes? Please explain.

Cultural Video Response Sheet

You will be watching a video today that shows the culture of a Spanish speaking country. We hope the video will increase your interest in learning a foreign language. You will be asked to answer a question about the video you watch. After answering the question you will be asked to reflect on the video and write a short reflection statement.

Part 1:
Please indicate to what extent you agree or disagree with the statement below regarding the video and learning a foreign language by using the following scale:

Strongly Disagree **Strongly Agree**
1 2 3 4 5 6

Culture Video

1.	This video increased my interest in learning a foreign language.	1….2….3….4….5….6

Part II: Reflection

Please think about cultural video and write a short response to the following statement:

What did you find interesting in the video? Please explain.

Appendix E: L2 Motivation Survey
Second Language Motivation Survey- Construct Scale

We would like to ask you to help us by answering the following questions about learning a second language. This is not a test so there is no right or wrong answer and you do not have to write our name on the questionnaire. The results of the survey will be used for research purposes only so please give sincere responses.

Section I. Part I: General Information
Please select the response that best answers the question, or provide the information requested.

1. What is your gender?
   _____ (1) FEMALE
   _____ (2) MALE

2. What is your age? _____

3. What is your ethnic origin?
   ____ (1) AFRICAN AMERICAN
   ____ (2) ASIAN AMERICAN or PACIFIC ISLANDER
   ____ (3) HISPANIC AMERICAN
   ____ (4) NATIVE AMERICAN
   ____ (5) WHITE
   ____ (6) OTHER *(please list)* _____

4. Is your country of birth
   ____ (1) ENGLISH SPEAKING
   ____ (2) NON-ENGLISH SPEAKING

5. What is your current cumulative GPA? _____

6. What is your current academic classification?
   ____ (1) FRESHMAN
   ____ (2) SOPHOMORE
   ____ (3) JUNIOR
   ____ (4) SENIOR
   ____ (5) POST GRADUATE

7. What area best characterizes your major?
   ___ (1) HUMANITIES
   ___ (2) SCIENCES
   ___ (3) MATHEMATICS
   ___ (4) EDUCATION
   ___ (5) ENGINEERING
   ___ (6) FINE ARTS

___ (7) SOCIAL SCIENCES
___ (8) JOURNALISM
___ (9) ARCHITECTURE
___ (10) PRE-MED
___ (11) PRE-LAW
___ (12) OTHER: (please list) _____

Section I. Part II. Language Experience. The following section contains questions about your language experiences. Please select the response that best answers the question, or provide the information requested.

8. Native Language:
____ (1) ENGLISH
____ (2) SPANISH
____ (3) OTHER: (please list) _____

9. What language(s) other than English did people close to you speak while you were growing up?
____ (1) SPANISH
____ (2) CHINESE
____ (3) GERMAN
____ (4) FRENCH
____ (5) OTHER: (please list) _____
____ (6) NONE

10. What other language courses have you taken?
Please list all beginning with the ones you are currently enrolled in.
___ (1) SPANISH
___ (2) FRENCH
___ (3) GERMAN
___ (4) LATIN
___ (5) OTHER: (please list) _____

11. What other second language learning experiences have you had?

___ (1) RESIDENCE IN A NON-ENGLISH SPEAKING COUNTRY
___ (2) LIVING WITH RELATIVES
___ (3) STUDY ABROAD
___ (4) VACATIONS
___ (5) OTHER: (please list) _____
___ (6) NONE

12. Are you taking this language course as a degree requirement or an elective?
____ (1) DEGREE REQUIREMENT
____ (2) ELECTIVE
____ (3) OTHER: (please list) _____

13. If you are taking this language course as an elective please indicate why by selecting all responses that apply:

____ (1) I ENJOY LEARNING LANGUAGES
____ (2) I HOPE TO SPEND TIME ABROAD
____ (3) FOR MY CAREER
____ (4) BECAUSE MY FAMILY SPEAKS IT
____ (5) BECAUSE OF MY FAMILY HISTORY
____ (6) I WISH TO BE FLUENT
____ (7) OTHER GOALS FOR TAKING THIS LANGUAGE: (please specify):
_____

_____

The following section contains statements which refer to your feelings or beliefs about learning a second language. Please indicate to what extent you agree or disagree with the statements below regarding learning a second language by using the following scale:

Strongly Disagree **Strongly Agree**
1 2 3 4 5 6

14.	Besides my Native language, I consider myself fluent in one or more languages.	1….2….3….4….5….6
15.	Fluency in a foreign language is important to me.	1….2….3….4….5….6
16.	I feel confident in my ability to become fluent in a foreign language.	1….2….3….4….5….6
17.	I plan to study or take more foreign language courses than are required by my current degree.	1….2….3….4….5….6

Section II. Second Language Learning Motivation

The following section contains statements which refer to your feelings or beliefs about learning a second language. Please indicate to what extent you agree or disagree with the statements below regarding the language you are studying now by using the following scale:

Strongly Disagree **Strongly Agree**
1 2 3 4 5 6

Ideal L2 Self Scale

I can imagine myself living abroad and using a foreign language effectively for communicating with the locals.	1….2….3….4….5….6
I can imagine myself speaking a language other than English with international friends or colleagues.	1….2….3….4….5….6
I imagine myself as someone who is able to speak a second language.	1….2….3….4….5….6
I can imagine myself speaking another language as if I were a native speaker of that language.	1….2….3….4….5….6
Whenever I think of my future career, I imagine myself using a second language.	1….2….3….4….5….6
The things I want to do in the future require me to use another language.	1….2….3….4….5….6
I can imagine myself studying in a university where all my courses are taught in a language other than English.	1….2….3….4….5….6
I can imagine myself writing e-mails fluently in a second language.	1….2….3….4….5….6

Ought-to L2 Self Scale

I study a second language because close friends of mine think it is important.	1….2….3….4….5….6
I have to study a second language, because, if I do not study it, I think my parents will be disappointed with me.	1….2….3….4….5….6
Learning a second language is necessary because people surrounding me expect me to do so.	1….2….3….4….5….6
My parents believe that I must study a foreign language to be an educated person.	1….2….3….4….5….6
I consider learning a second language important because the people I respect think that I should do it.	1….2….3….4….5….6

Studying a second language is important to me in order to gain the approval of my peers/teacher/family/employer.	1….2….3….4….5….6
It will have a negative impact on my life if I do not learn a second language.	1….2….3….4….5….6
Studying a second language is important to me because an educated person is supposed to be able to understand more than one language.	1….2….3….4….5….6
Studying a second language is important to me because other people will respect me more if I have the knowledge of another language.	1….2….3….4….5….6

L2 Learning Experience Scale

I like the atmosphere of my foreign language classes.	1….2….3….4….5….6
I find learning a second language really interesting.	1….2….3….4….5….6
I think time passes faster when studying a second language than with other subjects.	1….2….3….4….5….6
I always look forward to my foreign language classes.	1….2….3….4….5….6
I really enjoy learning a second language.	1….2….3….4….5….6
I would like to have more foreign language classes.	1….2….3….4….5….6

Motivated Behavior and Effort Scale

If my teacher announced there were extra opportunities to practice the language I would certainly volunteer.	1….2….3….4….5….6
If another foreign language course was offered in the future, I would take it.	1….2….3….4….5….6
I frequently think over what we have learnt in my foreign language class.	1….2….3….4….5….6
I am prepared to expend a lot of effort in learning a second language.	1….2….3….4….5….6
If foreign languages were not taught in school, I would try to obtain lessons in another language somewhere.	1….2….3….4….5….6
When it comes to foreign language homework, I work very carefully, making sure I understand everything.	1….2….3….4….5….6
I have a very strong desire to learn a second language.	1….2….3….4….5….6
Considering how I study foreign languages, I can honestly say that I really try to learn another language.	1….2….3….4….5….6
Learning a second language is one of the most important aspects in my life.	1….2….3….4….5….6

After I get my foreign language assignment, I always rewrite them, correcting my mistakes.	1….2….3….4….5….6
I am determined to push myself to learn a second language.	1….2….3….4….5….6
When I am in foreign language class, I volunteer answers as much as possible.	1….2….3….4….5….6
If I could have access to foreign language-speaking TV stations, I would try to watch them often.	1….2….3….4….5….6
I am willing to work hard at learning a second language.	1….2….3….4….5….6
When I hear a song on the radio in another language, I listen carefully and try to understand all the words.	1….2….3….4….5….6
It is very important for me to learn a second language.	1….2….3….4….5….6
If I had the opportunity to speak a second language outside of school, I would do it as much as possible.	1….2….3….4….5….6
When I have a problem understanding something we are learning in foreign language class, I immediately ask the teacher for help.	1….2….3….4….5….6

Perceived instrumentality

I do the work assigned in this class because my achievement in this class is important for becoming the person I want to be.	1….2….3….4….5….6
I do the work assigned in this class because my achievement plays a role in reaching my future goals.	1….2….3….4….5….6
I do the work assigned in this class because mastering the content taught in this course will help me in the future.	1….2….3….4….5….6
I do the work assigned in this class because understanding this content is important for becoming the person I want to be.	1….2….3….4….5….6
I do the work assigned in this class because learning this material is important for achieving my dreams in the future.	1….2….3….4….5….6

Appendix F: L2 Motivation Survey (Pre-Test)

Second Language Motivation Survey: Pre-Test Survey

We would like to ask you to help us by answering the following questions about learning a second language. This is not a test so there is no right or wrong answer and you do not have to write our name on the questionnaire. The results of the survey will be used for research purposes only so please give sincere responses.

Section I. Part I: General Information
Please select the response that best answers the question, or provide the information requested.

1. What is your gender?
   _____ (1) FEMALE
   _____ (2) MALE

2. What is your age? _____

3. What is your ethnic origin?
   ____ (1) AFRICAN AMERICAN
   ____ (2) ASIAN AMERICAN or PACIFIC ISLANDER
   ____ (3) HISPANIC AMERICAN
   ____ (4) NATIVE AMERICAN
   ____ (5) WHITE
   ____ (6) OTHER *(please list)* _____

4. Is your country of birth
   ____ (1) ENGLISH SPEAKING
   ____ (2) NON-ENGLISH SPEAKING

5. What is your current cumulative GPA? _____

6. What is your current academic classification?
   ____ (1) FRESHMAN
   ____ (2) SOPHOMORE
   ____ (3) JUNIOR
   ____ (4) SENIOR
   ____ (5) POST GRADUATE

7. What area best characterizes your major?
   ___ (1) HUMANITIES
   ___ (2) SCIENCES
   ___ (3) MATHEMATICS
   ___ (4) EDUCATION
   ___ (5) ENGINEERING

___ (6) FINE ARTS
___ (7) SOCIAL SCIENCES
___ (8) JOURNALISM
___ (9) ARCHITECTURE
___ (10) PRE-MED
___ (11) PRE-LAW
___ (12) OTHER: (please list) _____

Section I. Part II. Language Experience. The following section contains questions about your language experiences. Please select the response that best answers the question, or provide the information requested.

8. Native Language:
____ (1) ENGLISH
____ (2) SPANISH
____ (3) OTHER: (please list) _____

9. What language(s) other than English did people close to you speak while you were growing up?
____ (1) SPANISH
____ (2) CHINESE
____ (3) GERMAN
____ (4) FRENCH
____ (5) OTHER: (please list) _____
____ (6) NONE

10. What other language courses have you taken?
Please list all beginning with the ones you are currently enrolled in.

___ (1) SPANISH
___ (2) FRENCH
___ (3) GERMAN
___ (4) LATIN
___ (5) OTHER: (please list) _____

11. What other second language learning experiences have you had?
___ (1) RESIDENCE IN A NON-ENGLISH SPEAKING COUNTRY
___ (2) LIVING WITH RELATIVES
___ (3) STUDY ABROAD
___ (4) VACATIONS
___ (5) OTHER: (please list) _____
___ (6) NONE

12. Are you taking this language course as a degree requirement or an elective?
____ (1) DEGREE REQUIREMENT
____ (2) ELECTIVE
____ (3) OTHER: (please list) _____

13. If you are taking this language course as an elective please indicate why by selecting all responses that apply:

____ (1) I ENJOY LEARNING LANGUAGES
____ (2) I HOPE TO SPEND TIME ABROAD
____ (3) FOR MY CAREER
____ (4) BECAUSE MY FAMILY SPEAKS IT
____ (5) BECAUSE OF MY FAMILY HISTORY
____ (6) I WISH TO BE FLUENT
____ (7) OTHER GOALS FOR TAKING THIS LANGUAGE: (please specify):
_____

_____

The following section contains statements which refer to your feelings or beliefs about learning a second language. Please indicate to what extent you agree or disagree with the statements below regarding learning a second language by using the following scale:

Strongly Disagree **Strongly Agree**
1 2 3 4 5 6

14.	Besides my Native language, I consider myself fluent in one or more languages.	1….2….3….4….5….6
15.	Fluency in a foreign language is important to me.	1….2….3….4….5….6
16.	I feel confident in my ability to become fluent in a foreign language.	1….2….3….4….5….6
17.	I plan to study or take more foreign language courses than are required by my current degree.	1….2….3….4….5….6

Section II. Second Language Learning Motivation

The following section contains statements which refer to your feelings or beliefs about learning a second language. Please indicate to what extent you agree or disagree with the statements below regarding the language you are studying now by using the following scale:

Strongly Disagree **Strongly Agree**
1 2 3 4 5 6

18.	I can imagine myself living abroad and using a foreign language effectively for communicating with the locals.	1….2….3….4….5….6
19.	I study a second language because close friends of mine think it is important.	1….2….3….4….5….6
20.	If foreign languages were not taught in school, I would try to obtain lessons in another language somewhere.	1….2….3….4….5….6
21.	I do the work assigned in this class because learning this material is important for achieving my dreams in the future.	1….2….3….4….5….6
22.	When it comes to language homework, I work very carefully, making sure I understand everything.	1….2….3….4….5….6
23.	I would like to have more foreign language classes.	1….2….3….4….5….6
24.	I can imagine myself speaking a language other than English with international friends or colleagues.	1….2….3….4….5….6
25.	If I had the opportunity to speak a second language outside of school, I would do it as much as possible.	1….2….3….4….5….6
26.	I always look forward to my foreign language classes.	1….2….3….4….5….6
27.	I imagine myself as someone who is able to speak a second language.	1….2….3….4….5….6
28.	I do the work assigned in this class because understanding this content is important for becoming the person I want to be.	1….2….3….4….5….6
29.	I consider learning a second language important because the people I respect think that I should do it.	1….2….3….4….5….6
30.	I can imagine myself speaking another language as if I were a native speaker of that language.	1….2….3….4….5….6
31.	I am willing to work hard at learning a second language.	1….2….3….4….5….6
32.	I do the work assigned in this class because my achievement plays a role in reaching my future goals.	1….2….3….4….5….6

33.	I think time passes faster when studying a second language than with other subjects.	1….2….3….4….5….6
34.	When I hear a song on the radio in another language, I listen carefully and try to understand all the words.	1….2….3….4….5….6
35.	I really enjoy learning a second language.	1….2….3….4….5….6
36.	Whenever I think of my future career, I imagine myself using a second language.	1….2….3….4….5….6
37.	Studying a second language is important to me because an educated person is supposed to be able to understand more than one language.	1….2….3….4….5….6
38.	If my teacher announced there were extra opportunities to practice the language I would certainly volunteer.	1….2….3….4….5….6
39.	If another foreign language course was offered in the future, I would take it.	1….2….3….4….5….6
40.	Considering how I study foreign languages, I can honestly say that I really try to learn another language.	1….2….3….4….5….6
41.	The things I want to do in the future require me to use another language.	1….2….3….4….5….6
42.	When I am in foreign language class, I volunteer answers as much as possible.	1….2….3….4….5….6
43.	I frequently think over what we have learnt in my foreign language class.	1….2….3….4….5….6
44.	My parents believe that I must study a foreign language to be an educated person.	1….2….3….4….5….6
45.	After I get my foreign language assignment, I always rewrite them, correcting my mistakes.	1….2….3….4….5….6
46.	Studying a second language is important to me in order to gain the approval of my peers/teacher/family/employer.	1….2….3….4….5….6
47.	I am determined to push myself to learn a second language.	1….2….3….4….5….6
48.	I can imagine myself studying in a university where all my courses are taught in a language other than English.	1….2….3….4….5….6
49.	I do the work assigned in this class because mastering the content taught in this course will help me in the future.	1….2….3….4….5….6
50.	It will have a negative impact on my life if I do not learn a second language.	1….2….3….4….5….6
51.	I have a very strong desire to learn a second language.	1….2….3….4….5….6
52.	If I could have access to Foreign language-speaking TV stations, I would try to watch them often.	1….2….3….4….5….6

53.	I can imagine myself writing e-mails fluently in a second language.	1….2….3….4….5….6
54.	I do the work assigned in this class because my achievement in this class is important for becoming the person I want to be.	1….2….3….4….5….6
55.	I have to study a second language, because, if I do not study it, I think my parents will be disappointed with me.	1….2….3….4….5….6
56.	Studying a second language is important to me because other people will respect me more if I have the knowledge of another language.	1….2….3….4….5….6
57.	Learning a second language is one of the most important aspects in my life.	1….2….3….4….5….6
58.	I find learning a second language really interesting.	1….2….3….4….5….6
59.	I am prepared to expend a lot of effort in learning a second language.	1….2….3….4….5….6
60.	It is very important for me to learn another language.	1….2….3….4….5….6
61.	Learning a second language is necessary because people surrounding me expect me to do so.	1….2….3….4….5….6
62.	When I have a problem understanding something we are learning in foreign language class, I immediately ask the teacher for help.	1….2….3….4….5….6
63.	I like the atmosphere of my foreign language classes.	1….2….3….4….5….6

Appendix G: L2 Motivation Survey (Post-Test)
Second Language Motivation Survey: Post-Test Survey

Section I. Second Language Learning Motivation

The following section contains statements which refer to your feelings or beliefs about learning a second language. Please indicate to what extent you agree or disagree with the statements below regarding the language you are studying now by using the following scale:

Strongly Disagree **Strongly Agree**
1 2 3 4 5 6

18.	I can imagine myself living abroad and using a foreign language effectively for communicating with the locals.	1….2….3….4….5….6
19.	I study a second language because close friends of mine think it is important.	1….2….3….4….5….6
20.	If foreign languages were not taught in school, I would try to obtain lessons in another language somewhere.	1….2….3….4….5….6
21.	I do the work assigned in this class because learning this material is important for achieving my dreams in the future.	1….2….3….4….5….6
22.	When it comes to language homework, I work very carefully, making sure I understand everything.	1….2….3….4….5….6
23.	I would like to have more foreign language classes.	1….2….3….4….5….6
24.	I can imagine myself speaking a language other than English with international friends or colleagues.	1….2….3….4….5….6
25.	If I had the opportunity to speak a second language outside of school, I would do it as much as possible.	1….2….3….4….5….6
26.	I always look forward to my foreign language classes.	1….2….3….4….5….6
27.	I imagine myself as someone who is able to speak a second language.	1….2….3….4….5….6
28.	I do the work assigned in this class because understanding this content is important for becoming the person I want to be.	1….2….3….4….5….6
29.	I consider learning a second language important because the people I respect think that I should do it.	1….2….3….4….5….6
30.	I can imagine myself speaking another language as if I were a native speaker of that language.	1….2….3….4….5….6
31.	I am willing to work hard at learning a second language.	1….2….3….4….5….6

32.	I do the work assigned in this class because my achievement plays a role in reaching my future goals.	1….2….3….4….5….6
33.	I think time passes faster when studying a second language than with other subjects.	1….2….3….4….5….6
34.	When I hear a song on the radio in another language, I listen carefully and try to understand all the words.	1….2….3….4….5….6
35.	I really enjoy learning a second language.	1….2….3….4….5….6
36.	Whenever I think of my future career, I imagine myself using a second language.	1….2….3….4….5….6
37.	Studying a second language is important to me because an educated person is supposed to be able to understand more than one language.	1….2….3….4….5….6
38.	If my teacher announced there were extra opportunities to practice the language I would certainly volunteer.	1….2….3….4….5….6
39.	If another foreign language course was offered in the future, I would take it.	1….2….3….4….5….6
40.	Considering how I study foreign languages, I can honestly say that I really try to learn another language.	1….2….3….4….5….6
41.	The things I want to do in the future require me to use another language.	1….2….3….4….5….6
42.	When I am in foreign language class, I volunteer answers as much as possible.	1….2….3….4….5….6
43.	I frequently think over what we have learnt in my foreign language class.	1….2….3….4….5….6
44.	My parents believe that I must study a foreign language to be an educated person.	1….2….3….4….5….6
45.	After I get my foreign language assignment, I always rewrite them, correcting my mistakes.	1….2….3….4….5….6
46.	Studying a second language is important to me in order to gain the approval of my peers/teacher/family/employer.	1….2….3….4….5….6
47.	I am determined to push myself to learn a second language.	1….2….3….4….5….6
48.	I can imagine myself studying in a university where all my courses are taught in a language other than English.	1….2….3….4….5….6
49.	I do the work assigned in this class because mastering the content taught in this course will help me in the future.	1….2….3….4….5….6
50.	It will have a negative impact on my life if I do not learn a second language.	1….2….3….4….5….6
51.	I have a very strong desire to learn a second language.	1….2….3….4….5….6

52.	If I could have access to foreign language-speaking TV stations, I would try to watch them often.	1….2….3….4….5….6
53.	I can imagine myself writing e-mails fluently in a second language.	1….2….3….4….5….6
54.	I do the work assigned in this class because my achievement in this class is important for becoming the person I want to be.	1….2….3….4….5….6
55.	I have to study a second language, because, if I do not study it, I think my parents will be disappointed with me.	1….2….3….4….5….6
56.	Studying a second language is important to me because other people will respect me more if I have the knowledge of another language.	1….2….3….4….5….6
57.	Learning a second language is one of the most important aspects in my life.	1….2….3….4….5….6
58.	I find learning a second language really interesting.	1….2….3….4….5….6
59.	I am prepared to expend a lot of effort in learning a second language.	1….2….3….4….5….6
60.	It is very important for me to learn another language.	1….2….3….4….5….6
61.	Learning a second language is necessary because people surrounding me expect me to do so.	1….2….3….4….5….6
62.	When I have a problem understanding something we are learning in foreign language class, I immediately ask the teacher for help.	1….2….3….4….5….6
63.	I like the atmosphere of my foreign language classes.	1….2….3….4….5….6

Appendix H: Ideal L2 Self Scale (Taguchi, Magid & Papi, 2009**)**

Item	Japanese	Chinese	Iranian
I can imagine myself living abroad and having a discussion in English.	X	X	
I can imagine myself living abroad and using English effectively for communicating with the locals.			X
I can imagine a situation where I am speaking English with foreigners.	X		
I can imagine myself speaking English with international friends or colleagues.		X	X
I imagine myself as someone who is able to speak English.	X	X	
I can imagine myself speaking English as if I were a native speaker of English.		X	X
Whenever I think of my future career, I imagine myself using English.	X	X	X
The things I want to do in the future require me to use English.	X		
I can imagine myself studying in a university where all my courses are taught in English.			X
I can imagine myself writing English e-mails fluently.			X

Appendix I: Ought-to L2 Self Scale (Taguchi, Magid & Papi, 2009**)**

Item	Japanese	Chinese	Iranian
I study English because close friends of mine think it is important.	X	X	X
I have to study English, because, if I do not study it, I think my parents will be disappointed with me.	X		
Learning English is necessary because people surrounding me expect me to do so.	X	X	X
My parents believe that I must study English to be an educated person.	X		
I consider learning English important because the people I respect think that I should do it.		X	X
Studying English is important to me in order to gain the approval of my peers/teacher/family/employer.		X	X
It will have a negative impact on my life if I do not learn English.		X	
Studying English is important to me because an educated person is supposed to be able to speak English.		X	
Studying English is important to me because other people will respect me more if I have the knowledge of English.		X	X
If I fail to learn English, I'll be letting other people down.			X

Appendix J: L2 Learning Experience Scale (Papi, 2010**)/ (**Taguchi, Magid & Papi, 2009**)**

(Papi, 2010**)**

Do you like the atmosphere of your English classes?
Do you find learning really interesting?
Do you think time passes faster while studying English?
Do you always look forward to English classes?
Would you like to have more English lessons at school?
Do you really enjoy learning English?

(Taguchi, Magid & Papi, 2009**)**

Item	Japanese	Chinese	Iranian
I like the atmosphere of my English classes.	X		
Do you like the atmosphere of my English classes?		X	X
I find learning really interesting.	X		
Do you find learning really interesting?		X	X
I always look forward to English classes.	X		
Do you always look forward to English classes?		X	X
I really enjoy learning English.	X		
Do you really enjoy learning English?		X	X
Would you like to have more English lessons at school?			X
Do you think time passes faster while studying English?			X

Appendix K: Motivated Behavior and Effort Scale (Al-Shehri, 2009)

If my teacher wanted someone to do an extra English assignment I would certainly volunteer.
If an English course was offered in the future, I would take it.
I frequently think over what we have learnt in my English class.
I am prepared to expend a lot of effort in learning English.
If English were not taught in school, I would try to obtain lessons in English somewhere.
When it comes to English homework, I work very carefully, making sure I understand everything.
I have a very strong desire to learn English.
Considering how I study English, I can honestly say that I really try to learn English.
Learning English is one of the most important aspects in my life.
After I get my English assignment, I always rewrite them, correcting my mistakes.
I am determined to push myself to learn English.
When I am in English class, I volunteer answers as much as possible.
If I could have access to English-speaking TV stations, I would try to watch them often.
I am willing to work hard at learning English.
When I hear an English song on the radio, I listen carefully and try to understand all the words.
It is very important for me to learn English.
If I had the opportunity to speak English outside of school, I would do it as much as possible.
When I have a problem understanding something we are learning in Englishclass, I immediately ask the teacher for help.

Appendix L: Perceived Instrumentality Scale

Please indicate to what extent you agree or disagree with the statements below regarding
doing the work assigned in your courses this semester by using the following scale:

Strongly Disagree **Strongly Agree**
1 2 3 4 5 6 7

"I do the work assigned in this class because…"

My achievement in this class is important for becoming the person I want to be.
1….2….3….4….5….6….7

My achievement plays a role in reaching my future goals.
1….2….3….4….5….6….7

Mastering the content taught in this course will help me in the future.
1….2….3….4….5….6….7

Understanding this content is important for becoming the person I want to be.
1….2….3….4….5….6….7

Learning this material is important for achieving my dreams in the future.
1….2….3….4….5….6….7

Appendix M: IRB Approval Letters

The University of Oklahoma®

OFFICE OF HUMAN RESEARCH PARTICIPANT PROTECTION - IRB

IRB Number: 13675
Category: 2
Approval Date: December 06, 2011

December 06, 2011

Sherry Cox
College of Education
5602 Shady Lane
Norman, OK 73069

Dear Ms. Cox:

RE: Mandatory Second Language Learning in Post-Secondary Education: The Role of the Ideal Self and Imagery in Motivation and Achievement

On behalf of the Institutional Review Board (IRB), I have reviewed the above-referenced research project and determined that it meets the criteria in 45 CFR 46, as amended, for exemption from IRB review. You may proceed with the research as proposed. Please note that any changes in the protocol will need to be submitted to the IRB for review as changes could affect this determination of exempt status. Also note that you should notify the IRB office when this project is completed, so we can remove it from our files.

If you have any questions or need additional information, please do not hesitate to call the IRB office at (405) 325-8110 or send an email to irb@ou.edu.

Cordially,

Todd Sandel, Ph.D.
Vice Chair, Institutional Review Board

Ltr_Prot_Fappv_X

1816 West Lindsey, Suite 150 Norman, Oklahoma 73069 PHONE: (405) 325-8110

The University of Oklahoma®

OFFICE OF HUMAN RESEARCH PARTICIPANT PROTECTION - IRB

IRB Number: 13675
Amendment Approval Date: January 10, 2012

January 11, 2012

Sherry Cox
College of Education
5602 Shady Lane
Norman, OK 73069

RE: IRB No. 13675: Mandatory Second Language Learning in Post-Secondary Education: The Role of the Ideal Self and Imagery in Motivation and Achievement

Dear Ms. Cox:

On behalf of the Institutional Review Board (IRB), I have reviewed your protocol modification form. It is my judgement that this modification allows for the rights and welfare of the research subjects to be respected. Further, it has been determined that the study will continue to be conducted in a manner consistent with the requirements of 45 CFR 46 as amended; and that the potential benefits to subjects and others warrant the risks subjects may choose to incur.

This letter documents approval to conduct the research as described in:

Amend Form Dated: January 09, 2012
Protocol Dated: January 09, 2012
Consent form - Subject Dated: January 09, 2012
Other Dated: January 09, 2012 Data collection procedures and protocol
Survey Instrument Dated: January 09, 2012 Second language motivation survey: pre-test
Other Dated: January 09, 2012 Classroom script
Other Dated: January 09, 2012 Instructor training protocol
Other Dated: January 09, 2012 Script for vignettes/video
Survey Instrument Dated: January 09, 2012 Vignette response sheet
Survey Instrument Dated: January 09, 2012 Cultural video response sheet

Amendment Summary:

Revised protocol to reflect change in procedures: Change in data collection timeline; use of a vignette/video response sheet instrument; formatting changes to pre-test surveys; remove reference to students receiving bonus points; change in compensation amount; minor editorial changes.
Revised consent form to reflect change in procedure and compensation.

This letter covers only the approval of the above referenced modification. All other conditions, including the original expiration date, from the approval granted December 06, 2011 are still effective.

If consent form revisions are a part of this modification, you will be provided with a new stamped copy of your consent form. Please use this stamped copy for all future consent documentation. Please discontinue use of all outdated versions of this consent form.

If you have any questions about these procedures or need additional assistance, please do not hesitate to call the IRB office at (405) 325-8110 or send an email to irb@ou.edu.

Cordially,

E. Laurette Taylor, Ph.D.
Chair, Institutional Review Board

1816 West Lindsey, Suite 150 Norman, Oklahoma 73069 PHONE: (405) 325-8110

Appendix N: Letters of support –Modern Languages, Literatures and Linguistics

The University of Oklahoma

DEPARTMENT OF MODERN LANGUAGES, LITERATURES, AND LINGUISTICS

November 18, 2011

Members of the OU Institutional Review Board:

Pending approval from the IRB, the Spanish Section of the department of Modern Languages, Literatures, and Linguistics supports the research activity of Sherry Cox in 1000-level Spanish courses for the completion of her dissertation. The section grants this approval with the understanding that no more than 80 minutes of class time during the semester will be dedicated to the research activity.

Cordially,

Nancy LaGreca

Nancy LaGreca
Associate Professor of Latin American Literature
Spanish Section Head

Cc: Pamela Genova, Chair MLLL
Hilde Votaw, First Year Coordinator MLLL

780 Van Vleet Oval, Room 202, Norman, Oklahoma 73019-0250 PHONE: (405) 325-6181

Appendix O: Classroom Scripts & Information Sheet for Consent to Participate in a Research Study

(To be read orally)

Classroom Script read by PI:
My name is Sherry Cox, and I am a Doctoral student in Jeannine Rainbolt College of Education at the University of the Oklahoma. I would like to ask you to participate in a research study titled Mandatory Second Language Learning in Post-Secondary Education: The Role of the Ideal Self and Imagery in Motivation and Achievement. The purpose of the study is to improve the process of learning a foreign language. You were selected as a possible participant because you are currently enrolled in a beginning level foreign language course at the University of Oklahoma.

You must be 18 years or older to participate in the study. If you agree to participate in the study you will be asked to complete two short surveys, one now and one after the first exam, watch a short video and write a short response to a prompt related to the content of the video. All records or data collected during the study will be kept confidential. Your responses will be anonymous and coded so that scores on each instrument can be associated for purposes of data analysis. Your name will not be used, as all items will be identified by a number.

Students who complete the entire study (both surveys, viewing the video(s), and written reflection) will be entered in a random drawing for 8 gift cards to a local eatery. You must complete the entire study to be entered in the random drawings for the gift certificates.

Please read this form and ask any questions that you may have before agreeing to take part in this study.

Classroom Script read by instructor or agent of PI:
You are being asked to participate in a research study titled Mandatory Second Language Learning in Post-Secondary Education: The Role of the Ideal Self and Imagery in Motivation and Achievement. The purpose of the study is to improve the process of learning a foreign language. You were selected as a possible participant because you are currently enrolled in a beginning level foreign language course at the University of Oklahoma.

You must be 18 years or older to participate in the study. If you agree to participate in the study you will be asked to complete two short surveys, one now and one after the first exam, watch a short video and write a short response to a prompt related to the content of the video. All records or data collected during the study will be kept confidential. Your responses will be anonymous and coded so that scores on each instrument can be associated for purposes of data analysis. Your name will not be used, as all items will be identified by a number.

Students who complete the entire study (both surveys, viewing the video(s), and written reflection) will be entered in a random drawing for 8 gift cards to a local eatery. You

must complete the entire study to be entered in the random drawings for the gift certificates.

Please read this form and ask any questions that you may have before agreeing to take part in this study.

Script for showing vignettes

You will be watching video vignettes today that show the importance of learning a foreign language. We hope these vignettes will increase your interest in learning a foreign language. You will be asked to answer a question for each of the vignettes you watch. After answering the questions you will be asked to reflect on all of the vignettes and write a short reflection statement.

Script for showing cultural video

You will be watching a video today that shows the culture of a Spanish speaking country. We hope the video will increase your interest in learning a foreign language. You will be asked to answer a question about the video you watch. After answering the question you will be asked to reflect on the video and write a short reflection statement.

Appendix P: Informed Consent Form

University of Oklahoma
Institutional Review Board
Informed Consent to Participate in a Research Study

Project Title: Mandatory Second Language Learning In Post-Secondary Education: The Role of the Ideal Self and Imagery in Motivation and Achievement

Principal Investigator: Sherry Cox
Department: Jeannine Rainbolt College of Education, ELPS

You are being asked to volunteer for this research study. This study is being conducted at the University of Oklahoma. You were selected as a possible participant because you are currently enrolled in a beginning level foreign language course at the University of Oklahoma.

Please read this form and ask any questions that you may have before agreeing to take part in this study.

Purpose of the Research Study

The purpose of this study is to explore the role of English speaking college students' motivation to learn a second language in compulsory language courses.

Number of Participants

About 600 people will take part in this study.

Procedures

If you agree to be in this study, you will be asked to do the following:

Complete a pre and post survey, watch a short video(s) and answer a question and write a brief reflection statement over the video. All activities associated with the study will be completed in class. The total length of time for participation in the study is approximately 60-80 minutes of class time over the course of the semester.

Length of Participation

The total length of time for participation in the study is approximately 60-80 minutes of class time over the course of the semester.

This study has the following risks:

The study has no risks associated with it beyond the time required to complete the surveys, reflection essay and view a short video.

Benefits of being in the study are

None.

Confidentiality

In published reports, there will be no information included that will make it possible to identify you without your permission. Research records will be stored securely and only approved researchers will have access to the records.

There are organizations that may inspect and/or copy your research records for quality assurance and data analysis. These organizations include the OU Institutional Review Board.

Compensation

You will not be reimbursed for your time and participation in this study. Students who complete the entire study (both surveys, viewing the video(s), and written reflection) will be entered in a random drawing for 8, $25 gift cards to a local eatery. You must complete the entire study to be entered in the random drawings for the gift certificates.

Voluntary Nature of the Study

Participation in this study is voluntary. If you withdraw or decline participation, you will not be penalized or lose benefits or services unrelated to the study. If you decide to participate, you may decline to answer any question and may choose to withdraw at any time.

Request for record information

If you approve, your confidential records will be used as data for this study. The records that will be used include chapter exam, final exam scores and course grade. These records will be used for the following purpose(s): (this data will be used to correlate with students' level of motivation).

_____ I agree for my chapter exams, final exam and course grade records to be accessed and used for the purposes described above.

_____ I do not agree for my chapter exams, final exam and course grade records to be accessed for use as research data.

Contacts and Questions

If you have concerns or complaints about the research, the researcher(s) conducting this study can be contacted at

Principal researcher – Sherry Cox, 325-2238, or by email at scox@ou.edu
Faculty sponsor- Dr. Connie Dillon, 325-5984, or by email at cdillon@ou.edu

Contact the researcher(s) if you have questions or if you have experienced a research-related injury.

If you have any questions about your rights as a research participant, concerns, or complaints about the research and wish to talk to someone other than individuals on the research team or if you cannot reach the research team, you may contact the University

of Oklahoma – Norman Campus Institutional Review Board (OU-NC IRB) at 405-325-8110 or irb@ou.edu.

You will be given a copy of this information to keep for your records. If you are not given a copy of this consent form, please request one.

Statement of Consent

I have read the above information. I have asked questions and have received satisfactory answers. I consent to participate in the study.

Signature Date

APPROVED
JAN 10 2012
OU NC IRB

Appendix Q: Instructor Information and Training Protocol and Handout

Instructors who agreed to participate in the study were told that the purpose of the study was to identify ways to improve motivation (engagement, motivated behaviors and performance) of students in compulsory foreign language courses. The instructors were given a timeline of the study and told that it will take approximately 60-80 minutes of class time over the course of the semester. During the first two weeks of class, the informed consent form and pre-test survey instrument would be given to student's opting to participate and it would require approximately 20-miniutes of class time. The treatments and writing prompt would be implemented during the third week of classes and would require 20-30 minutes of class time. The post-test survey instrument would be completed in class during the weeks following exam 1, approximately weeks 6-7 and would require 15-20 minutes. Each instructor would be given a Panera Bread gift card for a free lunch valued at approximately $10.00 at the end of the study in thanks for their assistance.

Instructors were told that their participation in the study would involve allowing the students to complete two surveys, one at the beginning of the semester and one after the first exam, watch a short video and write a few sentences in response to a prompt related to the content of the video. In the event that more than one class involved in the study meets at the same time it may become necessary for an instructor or a trained graduate student to administer the surveys and/or treatment. Timeline for data collection and administration of surveys and presentation of the videos will be presented to instructors and assistants. See classroom script (Appendix O) and data collection procedures and protocol (Appendix R) for details.

Mandatory Second Language Learning In Post-Secondary Education: The Role of the Ideal Self and Imagery in Motivation and Achievement

Principal Investigator: Sherry Cox

Contact: scox@ou.edu, 325-5377

The majority of second language (L2) learning in post-secondary higher education is compulsory. Many students in compulsory L2 courses demonstrate lower than average levels of achievement and persistence. Because L2 learning is an important component of a post-secondary education in modern society, improving motivation to learn can improve both achievement and retention. Students who are more motivated to learn a second language are not only more likely to achieve at higher rates, but also more likely to adopt worldcentric views and attitudes which are necessary in our increasingly global society.

Dörnyei's L2 Motivational Self System (L2 MSS) has demonstrated promise as a model which can explain L2 motivation. If the model can successfully predict motivation and performance in compulsory L2 settings, then we can design instructional strategies that enhance motivation for L2 learning, improve L2 achievement in college settings and possibly enhance cultural understanding among US college students. The present study proposes an empirical validation of the L2 MSS with US students (English speakers) in mandatory L2 university courses. As imagery is cited as a central element in the creation of future ideal L2 and ought-to L2 self, a second purpose of the study is to test the use of imagery (video vignettes or textbook cultural videos) as a motivator to enhance or activate the link between the present task of learning the L2 to the future L2 self.

The study uses a quasi-experimental nonequivalent control group design, with treatments administered though non-randomized control group pre-test/post-test design. The experimental and control groups will complete pre and post-test surveys (15-20 minutes). The experimental group will receive the imagery treatment (video vignettes) depicting future L2 uses, while the control receives an alternative treatment consisting of traditional textbook cultural video(s) (10-15 minutes).

Students receiving the experimental treatment will view imagery vignettes illustrating the use of L2 in a future possible self, through stories of individuals who have incorporated the use of a second language in their current professional or everyday lives. Students in the control group will view video(s) representative of foreign language textbook cultural videos showing geographical locations, cultural events, celebrations, or tourist locations associated with the target language culture. After watching the videos, the students receiving the experimental treatment will be asked to answer one question about each vignette and to envision themselves using the L2 in similar scenario(s) in the future. They will be asked to write a short description of relevance of the L2 for them in the situations. Participants receiving the control treatment will be asked will be asked to answer one question about the video and to

think about the video and write a short description of video and what they found interesting. The written reflection will take approximately 10-15 minutes.

- The study will follow all University IRB guidelines. Student participation in the study is not compulsory. The study looks to develop a short intervention (10-20 minutes in length) that can be implemented during the first few weeks of beginning level language courses which will lead to an increase in motivation and engagement to learn the language.

  Generally, instructor participation in the study will involve:

  1. Allowing the students to complete two surveys, one at the beginning of the semester and one after the first exam.

  2. Allowing the students to watch a short video(s) and write a few sentences in response to a prompt related to the content of the video.

  3. Provide exam 1 scores for all students participating in the study after exam is graded.

  4. Providing scores for exams 2, 3, final exam and overall course grade at end of semester.

- In the event that more than one class involved in the study meets at the same time it may become necessary for an instructor or a trained graduate student to administer the surveys and/or treatment. Detailed information will be provided in advance to the instructor if this is necessary.

- Each instructor will receive a Panera Bread gift card for a free lunch valued at approximately $10.00 at the end of the study in thanks for their assistance.

Data Collection Procedures and Protocol

The proposed study includes multiple data collection points throughout the course of the semester.

Approx week of course	Week 2	Week 3	Week 4-5	Weeks 6-7	Weeks 8-11	Weeks 11-14	Week 16
Treatment or data collection	Pretest survey	Vignettes/ videos: 1, 2 & 3 and writing exercise	Exam 1 Scores for Exam 1	Posttest survey	Exam 2	Exam 3	Final Exam Scores for Exams 2 & 3, Final Exam and overall course grade
Approximate Time	15-20 min	20-25 min		10-15 min			
Setting	In class	In class		In class			

Appendix R: Data Collection Procedures and Protocol

The proposed study includes multiple data collection points throughout the course of the semester. Please refer to Table 1 for a data collection semester timeline.

Approx week of course	Weeks 1-2	Week 3	Weeks 4-5	Weeks 6-7	Weeks 8-11	Weeks 11-14	Week 16
Treatment or data collection	Pretest survey	Vignettes/ videos: 1, 2 & 3 and writing exercise	Exam 1	Posttest survey	Exam 2	Exam 3	Final Exam
Approximate Time	20-25 min	20-30 min		15-20 min			
Setting	In class	In class		In class			

Data Collection Timeline

Pretest/post test surveys

1. Classroom script will be read to students (before pretest survey only).

2. After responding to any questions the students might have concerning the study, the students will be given two copies of the informed consent forms which list in detail all procedures for the study including anonymity, confidentiality, benefits from the study, and negligible potential negative effects. They will be asked to read and sign one of the informed consent forms and keep the second copy for their personal reference. After the signed forms are collected the students will complete the pre-test survey. The pre-test survey will have a cover page which includes a line for the students to print and sign their name and sign. The signature page and the first page of the survey will be numbered. The number will be linked to the instructor and section. The post-test survey and Vignette/Video response sheet will include a cover page which will list the students name and the same number along with a line for the student to print and sign their name. The same identification number will be listed on the first page of the survey instrument and Vignette/Video response sheet. After signing and printing their name the students will be instructed to remove the cover page and place in a separate envelope from the survey.

Treatments (Vignettes and Videos) and Vignette/Video response sheet

Participants in each group (experimental or control) will be shown a series of three short videos approx 10-12 minutes in total. Before viewing the videos, each participant will be given a Vignette (experimental) or Video (control) response sheet with a cover page that lists the students name and the same number used on each survey along with a line for the student to print and sign their name. The same identification number will be listed on the first page of the vignette/video response sheet. After signing and printing their name the students will be instructed to remove the cover page and place in a separate envelope from their vignette/video response sheet. Students receiving the

experimental treatment will view imagery vignettes illustrating the use of L2 in a future possible self, through stories of individuals who have incorporated the use of a second language in their current professional or everyday lives (descriptions of the imagery vignettes are included below). Students in the control group will view video(s) representative of foreign language textbook cultural videos showing geographical locations, cultural events, celebrations, or tourist locations associated with the target language culture. After watching the videos, the students receiving the experimental treatment will be asked to answer one question about each vignette and to envision themselves using the L2 in a similar scenario in the future. They will be asked to write a short a short description of relevance of the L2 for them in each of the situations. Participants receiving the control treatment will be asked will be asked to answer one question about the video and to think about the video and write a short description of video and what they found interesting.

Exam Scores and final course Grade

At the end of the semester the three exam scores, final exam and final course grade will be obtained from each instructor or from the language program coordinator.

Appendix S: Path diagrams for models 1A, 3 and 3A

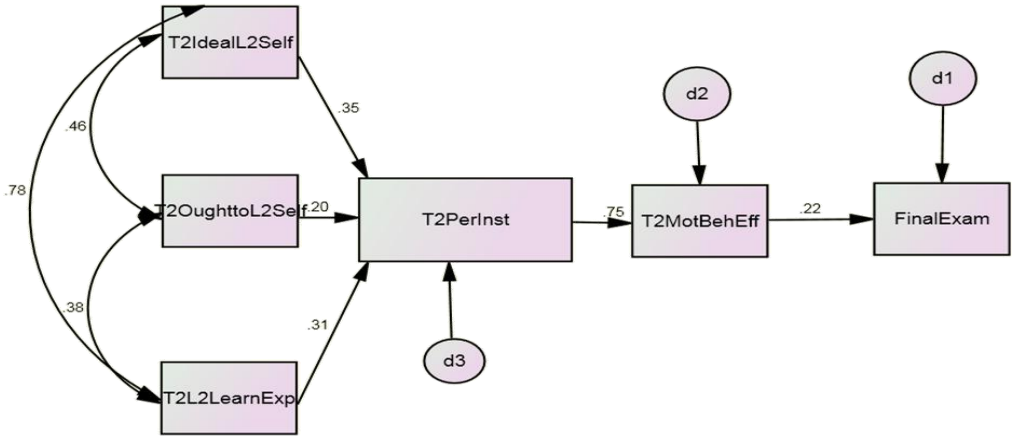

Figure 30. Path Analysis Model 1A, χ^2 (7, N=512) = 687.831, $p < .001$.

To investigate whether T2 perceived task instrumentality and T2 motivational behavior and effort mediates the relation between, T2 ought-to L2 self, T2 ideal L2 self, T2 L2 learning experience, and performance (final exam) path model 1A was tested (see Figure 19). Results indicated that T2 ought-to L2 self (b = .241, SE = .042, $p < .001$, β = .196), T2 ideal L2 self (b = .332, SE = .049, $p < .001$, β = .346), T2 L2 learning experience (b = .313, SE = .049, $p < .001$, β = .307), were significantly related to perceived task instrumentality. Additionally, T2 Perceived Instrumentality (b = .653, SE = .025, $p < .001$, β = .751) significantly predicted T2 motivational behavior and effort and T2 motivational behavior and effort (b = 3.113, SE = .601, $p < .001$, β = .224) significantly predicted performance. These findings support the hypothesized meditational model 1A. Although the results of path analyses for model 1A indicated that all paths between predictor variables and the outcome variable performance, including those through perceived task instrumentality and motivated behavior and intended effort, were statistically significant. The model does not fit the data as all goodness of fit indices were below the .90 level, χ^2 (7, N=512) = 687.831, $p < .001$; NFI=.675, IFI=.677, RFI=.304, TLI=.306 CFI =.676; and RMSEA = .436.

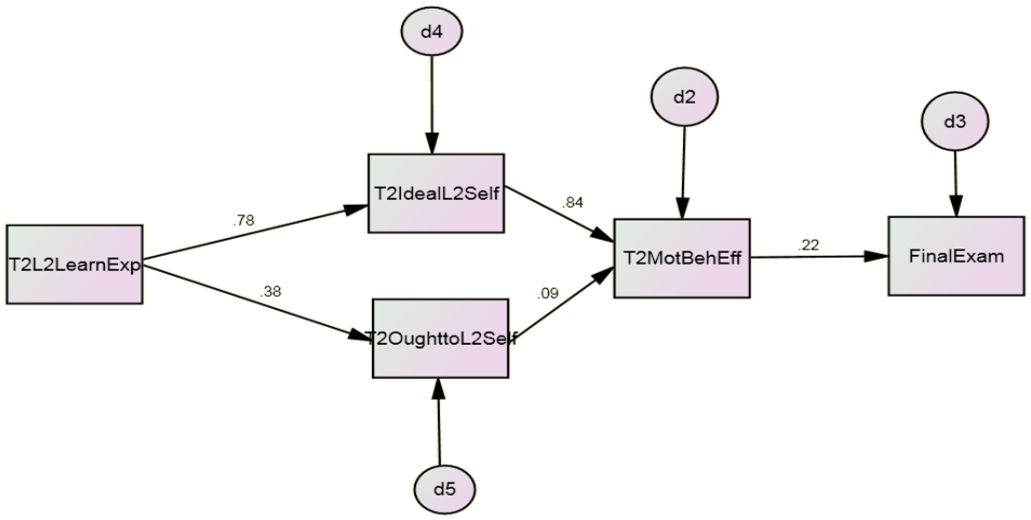

Figure 31. Path Analysis Model 3, χ^2 (5, N=512) = 367.589, $p < .001$.

To investigate whether T2 ideal L2 self, T2 ought to L2 self, followed by T2 motivational behavior and effort mediate the relation between, T2 L2 learning experience and performance (final exam) path Model 3 was tested (see Figure 22). Results indicated that T2 ideal L2 self (b = .824, SE = .029, $p < .001$, β = .777) and T2 ought-to L2 self (b = .313, SE = .034, $p < .001$, β = .377) were significantly related to T2 L2 learning experience. T2 ideal L2 self (b = .690, SE = .019, $p < .001$, β = .837) and T2 ought-to L2 self (b = .093, SE = .024, $p < .001$, β = .089) were significantly related to T2 motivational behavior and effort. Additionally, T2 motivational behavior and effort (b = 3.113, SE = .608, $p < .001$, β =.221) was significantly related to performance. While these findings support the hypothesized meditational Model 3,the results of path analyses for Model 3 indicated that that the model does not fit the data as all goodness of fit indices are below the .90 level, χ^2 (5, N=512) = 367.589, $p < .001$; NFI=.780, IFI=.782, RFI=.560, TLI=.563, CFI =.782; and RMSEA = .377.

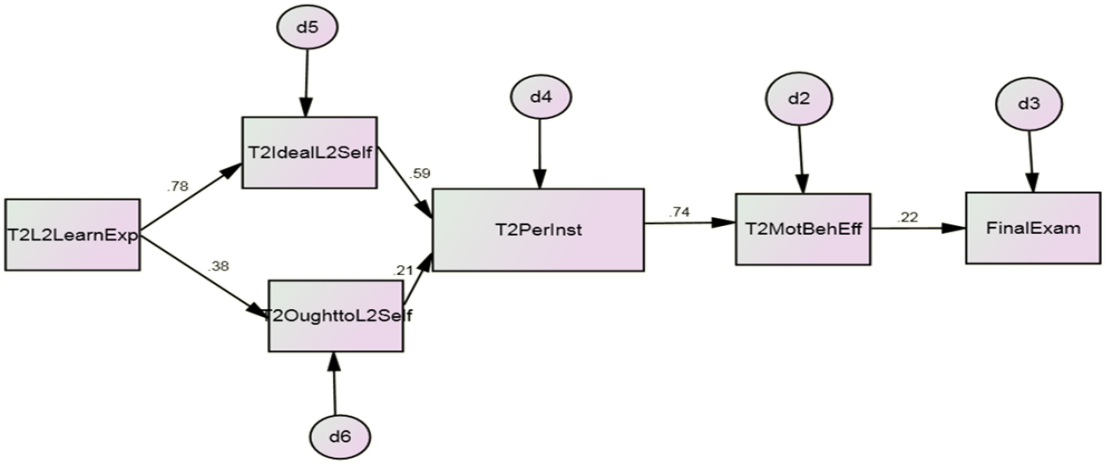

Figure 32. Path Analysis Model 3A, χ^2 (9, N=512) = 772.130, $p < .001$.

To investigate whether T2 ideal L2 self, T2 ought-to L2 self, mediated by T2 Perceived Instrumentality and then T2 motivational behavior and effort mediates the relation between, T2 L2 learning experience and performance (final exam) path Model 3A was tested (see Figure 22). Results indicated that T2 ideal L2 self (b = .824, SE = .777, $p < .001$, β = .789) and T2 ought-to L2 self (b = .313, SE = .034, $p < .001$, β = .377) were significantly related to T2 L2 learning experience. T2 ideal L2 self (b = .558, SE = .032, $p < .001$, β = .594) and T2 ought-to L2 self (b = .249, SE = .041, $p < .001$, β = .207) were significantly related to T2 perceived instrumentality. Additionally T2 perceived instrumentality (b = .653, SE = .026, $p < .001$, β = .744) was significantly related to T2 motivational behavior and effort and T2 motivational behavior and effort (b = 3.113, SE = .607, $p < .001$, β =.221) was significantly related to performance. While these findings support the hypothesized meditational Model 3A, the goodness of fit indicators tell us that the model does not fit the data as all goodness of fit indices are below the .90 level, χ^2 (9, *N*=512) = 772.130, $p < .001$; GFI = .791, AGFI = .512, NFI=.635, IFI=.638, RFI=.392, TLI=.395, CFI =.637; and RMSEA =.407.

Appendix T: Results of a factor analysis with both Promax and Varimax rotations

Data were subjected to a factor analysis. A scree test indicated that approximately three to five factors were present in the data. As there was reason to believe that correlation might exist among the factors, both varimax and promax rotations were used to examine the data. Using as eigenvalue cutoff of 1.0 and the scree plot, five factors were initially retained. Comparing the output from the three to five factor solutions, with both the varimax and promax rotations, suggested that a four factor solution provided the best fit for the data. Both Promax and varimax solutions for loading of items indicated that factor 5 had only two items loading onto it and therefore, will not be retained. This decision is based on Russell (2002) "at least three items per factor are required for a factor model to be identified" (p. 1632). See Table 59 and Table 60 for varimax loading for the orthogonal rotation and promax pattern and structure matrixes for the oblique rotations.

The extracted eigenvalues indicate that factor 1 had an eigenvalue of 21.457, while factor 2 had an eigenvalue of 3.935, factor 3 had an eigenvalue of 2.106 and factor 4 had an eigenvalue of 1.477. The four factors accounted for 62.99 % of the total variance explained (see Table 58). All items with structure coefficients at $\geq$ |.40| were retained as maker variables of the factors. As all items were above the cut off value of |.40| they were initially retained; however, in looking at all matrixes several items are complex variables loading on more than one factor. As they loaded onto more than one factor at a |.40| or higher value and unclear which dimension the variable was describing they were discarded. These included the following items from 4 of the L2 MSS scales: T2L2LE26, T2MBE31, T2L2LE33, T2MBE38, T2MBE40, T2IL2S41, T2MBE42,

T2MBE45, T2MBE47, T2OL2S50, T2L2LE58 and T2MBE59. Note that T2 indicates the data were collected at Time 2 while T2IL2S indicates the item is from the Ideal L2 Self scale, T2OL2S indicates the item is from the Ought to L2 Self scale, T2L2LE indicates the item is from the L2 Learning Experience scale, and T2MBE indicates the item is from the Motivated Behavior and Effort scale.

Findings for the data in both the promax and varimax rotations are fairly consistent. While the varimax and promax rotations both indicate that the four factors account for 62.91 % of the variance explained by all factors together, they differ in the correlations between the observed variables and the factors. The promax (oblique) rotation allows the rotated factors to be correlated with one another, while the varimax (orthogonal) rotation allows them to remain uncorrelated. The factors have been named based on the theme of the items that loaded onto each one. The 16 items loading onto Factor 1 had a dominant theme of imagined use of an FL in the future or strong desire to learn an FL so factor one will be labeled future use motivation. Factor 2 had 4 items loading onto it with a theme of understanding. Factors 3 had 8 items loading onto it with a dominant theme of ought to L2 self. Factor 4 had 5 items loading onto it with a dominant theme of perceived instrumentality of a FL. See Table 61 through Table 64 for the items in factors 1-4, their loading values, original scale and question number identifier for this study. Columns 1 and 2 of each table are the promax pattern and structure matrixes for the oblique rotations, while column 3 is the varimax loading for the orthogonal rotation.

Table 58

Total Variance Explained by both Unrotated and Varimax Rotated Factors

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	21.457	46.646	46.646	21.457	46.646	46.646	12.322	26.786	26.786
2	3.935	8.554	55.200	3.935	8.554	55.200	5.851	12.719	39.505
3	2.106	4.578	59.778	2.106	4.578	59.778	5.457	11.863	51.368
4	1.477	3.210	62.998	1.477	3.210	62.998	5.345	11.621	62.988

Extraction Method: Principal Component Analysis.

Table 59 *Rotated Component Matrix*

Rotated Component Matrix[a]

	Component			
	1	2	3	4
T2IL2S18	.728	.114	.099	.167
T2OL2S19	.281	.041	.544	-.047
T2MBE20	.707	.270	.126	.165
T2PI21	.321	.274	.191	.689
T2MBE22	.130	.609	.048	.372
T2L2LE23	.725	.322	.118	.208
T2IL2S24	.815	.256	.111	.196
T2MBE25	.734	.354	.134	.156
T2L2LE26	.573	.562	.107	.113
T2IL2S27	.756	.291	.087	.220
T2PI28	.393	.354	.222	.630
T2OL2S29	.120	.188	.787	.121
T2IL2S30	.755	.200	.162	.192
T2MBE31	.418	.485	.054	.486
T2PI32	.141	.272	.141	.765
T2L2LE33	.449	.476	.158	.118
T2MBE34	.505	.315	.148	.072
T2L2LE35	.678	.520	.110	.214
T2IL2S36	.703	.170	.199	.393
T2OL2S37	.299	.106	.541	.299
T2MBE38	.562	.406	.259	.203
T2MBE39	.781	.335	.085	.230
T2MBE40	.485	.533	.000	.379
T2IL2S41	.496	-.029	.316	.531
T2MBE42	.409	.524	.130	.169
T2MBE43	.394	.630	.164	.235
T2OL2S44	.129	.128	.763	.108
T2MBE45	.325	.380	.219	.165
T2OL2S46	.121	.034	.768	.231
T2MBE47	.518	.473	.139	.486
T2IL2S48	.694	.092	.179	.194
T2PI49	.334	.304	.146	.691
T2OL2S50	.299	-.084	.473	.410
T2MBE51	.740	.375	.137	.314
T2MBE52	.690	.158	.252	.104
T2IL2S53	.769	.211	.140	.202
T2PI54	.243	.285	.189	.740
T2OL2S55	.035	.043	.792	-.024
T2OL2S56	.178	.103	.735	.149
T2MBE57	.591	.146	.330	.350
T2L2LE58	.560	.566	.083	.245
T2MBE59	.578	.468	.104	.423
T2MBE60	.661	.271	.266	.434
T2OL2S61	-.007	.060	.826	.122
T2MBE62	.166	.666	.073	.087
T2L2LE63	.207	.603	.018	.149

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

Table 60 *Promax Rotation Pattern and Structure Matrix*

Pattern Matrix[a]

	Component			
	1	2	3	4
T2IL2S18	.914	-.163	-.059	-.045
T2OL2S19	.304	.007	.565	-.255
T2MBE20	.805	.071	-.013	-.091
T2PI21	.008	.065	-.005	.788
T2MBE22	-.263	.686	.006	.310
T2L2LE23	.786	.110	-.045	-.024
T2IL2S24	.962	-.018	-.073	-.061
T2MBE25	.802	.165	-.021	-.112
T2L2LE26	.508	.471	.002	-.127
T2IL2S27	.848	.056	-.089	-.013
T2PI28	.115	.155	.046	.642
T2OL2S29	-.071	.174	.815	-.015
T2IL2S30	.892	-.070	-.009	-.032
T2MBE31	.144	.375	-.094	.433
T2PI32	-.272	.102	-.042	.959
T2L2LE33	.367	.399	.081	-.076
T2MBE34	.547	.185	.076	-.147
T2L2LE35	.631	.364	-.036	-.023
T2IL2S36	.742	-.133	.005	.250
T2OL2S37	.184	-.057	.467	.236
T2MBE38	.461	.328	.152	-.038
T2MBE39	.851	.093	-.099	.003
T2MBE40	.266	.445	-.143	.265
T2IL2S41	.454	-.342	.129	.533
T2MBE42	.245	.524	.078	-.048
T2MBE43	.137	.639	.092	.051
T2OL2S44	-.026	.091	.789	-.016
T2MBE45	.178	.367	.198	-.024
T2OL2S46	-.057	-.051	.758	.167
T2MBE47	.289	.305	-.042	.414
T2IL2S48	.842	-.169	.029	-.005
T2PI49	.019	.094	-.047	.789
T2OL2S50	.241	-.308	.356	.411
T2MBE51	.744	.130	-.042	.108
T2MBE52	.833	-.057	.143	-.166
T2IL2S53	.909	-.067	-.034	-.022
T2PI54	-.115	.087	.011	.874
T2OL2S55	-.084	.054	.861	-.155
T2OL2S56	.057	.017	.727	.049
T2MBE57	.595	-.121	.168	.227
T2L2LE58	.439	.451	-.053	.057
T2MBE59	.414	.305	-.056	.280
T2MBE60	.602	-.003	.073	.309
T2OL2S61	-.204	.067	.867	.049
T2MBE62	-.122	.803	.094	-.088
T2L2LE63	-.037	.617	-.028	.078

Extraction Method: Principal Component Analysis.
Rotation Method: Promax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

Structure Matrix

	Component			
	1	2	3	4
T2IL2S18	.748	.405	.245	.463
T2OL2S19	.360	.153	.571	.202
T2MBE20	.782	.540	.278	.503
T2PI21	.594	.515	.354	.828
T2MBE22	.410	.679	.163	.546
T2L2LE23	.824	.602	.284	.559
T2IL2S24	.880	.572	.284	.561
T2MBE25	.830	.624	.295	.530
T2L2LE26	.732	.745	.251	.486
T2IL2S27	.839	.586	.258	.565
T2PI28	.673	.603	.394	.833
T2OL2S29	.354	.272	.816	.384
T2IL2S30	.819	.501	.321	.533
T2MBE31	.661	.694	.222	.716
T2PI32	.443	.461	.288	.816
T2L2LE33	.608	.626	.276	.434
T2MBE34	.595	.490	.257	.368
T2L2LE35	.841	.766	.282	.600
T2IL2S36	.825	.497	.374	.686
T2OL2S37	.489	.289	.625	.522
T2MBE38	.731	.625	.399	.552
T2MBE39	.877	.637	.264	.594
T2MBE40	.696	.737	.168	.649
T2IL2S41	.641	.275	.461	.702
T2MBE42	.595	.664	.252	.470
T2MBE43	.637	.769	.300	.557
T2OL2S44	.336	.218	.789	.354
T2MBE45	.493	.506	.316	.416
T2OL2S46	.335	.155	.803	.432
T2MBE47	.764	.722	.320	.769
T2IL2S48	.735	.382	.319	.486
T2PI49	.607	.545	.315	.833
T2OL2S50	.448	.136	.561	.548
T2MBE51	.886	.678	.323	.675
T2MBE52	.741	.425	.382	.443
T2IL2S53	.833	.517	.303	.544
T2PI54	.542	.507	.349	.847
T2OL2S55	.197	.081	.776	.191
T2OL2S56	.378	.220	.773	.394
T2MBE57	.732	.432	.477	.634
T2L2LE58	.754	.771	.245	.590
T2MBE59	.791	.724	.286	.726
T2MBE60	.843	.586	.446	.750
T2OL2S61	.210	.112	.825	.313
T2MBE62	.387	.686	.156	.337
T2L2LE63	.410	.654	.114	.374

Extraction Method: Principal Component Analysis.
Rotation Method: Promax with Kaiser Normalization.

Table 61

Factor 1 items

Survey question #	Scale		Promax Pattern matrix	Promax Structure matrix	Varimax Rotated matrix
18	Ideal L2 Self	I can imagine myself living abroad and using a foreign language effectively for communicating with the locals.	.910	.748	.728
24	Ideal L2 Self	I can imagine myself speaking a language other than English with international friends or colleagues.	.956	.880	.815
27	Ideal L2 Self	I imagine myself as someone who is able to speak a second language.	.848	.839	.756
30	Ideal L2 Self	I can imagine myself speaking another language as if I were a native speaker of that language.	.890	.819	.755
36	Ideal L2 Self	Whenever I think of my future career, I imagine myself using a second language.	.740	.825	.703
48	Ideal L2 Self	I can imagine myself studying in a university where all my courses are taught in a language other than English.	.849	.735	.694
53	Ideal L2 Self	I can imagine myself writing e-mails fluently in a second language.	.904	.833	.769
23	L2 Learning Experience	I would like to have more foreign language classes.	.789	.824	.725
20	Motivated Behavior & Effort Scale	If foreign languages were not taught in school, I would try to obtain lessons in another language somewhere.	.804	.782	.707
25	Motivated Behavior & Effort Scale	If I had the opportunity to speak a second language outside of school, I would do it as much as possible.	.806	.830	.734
34	Motivated Behavior & Effort Scale	When I hear a song on the radio in another language, I listen carefully and try to understand all the words.	.528	.595	.505
39	Motivated Behavior & Effort Scale	If another foreign language course was offered in the future, I would take it.	.858	.877	.781
51	Motivated Behavior & Effort Scale	I have a very strong desire to learn a second language.	.738	.886	.740
52	Motivated Behavior & Effort Scale	If I could have access to foreign language-speaking TV stations, I would try to watch them often.	.839	.741	.690
57	Motivated Behavior & Effort Scale	Learning a second language is one of the most important aspects in my life.	.588	.732	.591
60	Motivated Behavior & Effort Scale	It is very important for me to learn a second language.	.604	.843	.661

Table 62

Factor 2 Items

Survey question #	Scale		Promax Pattern matrix	Promax Structure matrix	Varimax Rotated matrix
22	Motivated Behavior & Effort Scale	When it comes to foreign language homework, I work very carefully, making sure I understand everything.	.647	.679	.609
43	Motivated Behavior & Effort Scale	I frequently think over what we have learnt in my foreign language class.	.617	.769	.630
62	Motivated Behavior & Effort Scale	When I have a problem understanding something we are learning in foreign language class, I immediately ask the teacher for help.	.786	.686	.666
63	L2 Learning Experience	I like the atmosphere of my foreign language classes.	.672	.654	.603

Table 63

Factor 3 Items

Survey question #	Scale		Promax Pattern matrix	Promax Structure matrix	Varimax Rotated matrix
19	Ought- to L2 Self	I study a second language because close friends of mine think it is important.	.551	.571	.544
29	Ought- to L2 Self	I consider learning a second language important because the people I respect think that I should do it.	.819	.816	.787
37	Ought- to L2 Self	Studying a second language is important to me because an educated person is supposed to be able to understand more than one language.	.467	.625	.541
44	Ought- to L2 Self	My parents believe that I must study a foreign language to be an educated person.	.790	.789	.763
46	Ought- to L2 Self	Studying a second language is important to me in order to gain the approval of my peers/teacher/family/employer.	.759	.803	.768
55	Ought- to L2 Self	I have to study a second language, because, if I do not study it, I think my parents will be disappointed with me.	.864	.776	.792
56	Ought- to L2 Self	Studying a second language is important to me because other people will respect me more if I have the knowledge of another language.	.737	.773	.735
61	Ought- to L2 Self	Learning a second language is necessary because people surrounding me expect me to do so.	.877	.825	.826

Table 64

Factor 4 Items

Survey question #	Scale		Promax Pattern matrix	Promax Structure matrix	Varimax Rotated matrix
21	Perceived Instrumentality	I do the work assigned in this class because learning this material is important for achieving my dreams in the future.	.783	.828	.689
28	Perceived Instrumentality	I do the work assigned in this class because understanding this content is important for becoming the person I want to be.	.658	.833	.630
32	Perceived Instrumentality	I do the work assigned in this class because my achievement plays a role in reaching my future goals.	.959	.816	.765
49	Perceived Instrumentality	I do the work assigned in this class because mastering the content taught in this course will help me in the future.	.784	.833	.691
54	Perceived Instrumentality	I do the work assigned in this class because my achievement in this class is important for becoming the person I want to be.	.881	.847	.740