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**A DESIGN-BASED RESEARCH STUDY EXAMINING THE IMPACT OF MOTIVATIONAL
EMAILED MESSAGES TO FIRST YEAR STUDENTS**

by

SARA E. KACIN

DISSERTATION

Submitted to the Graduate School

of Wayne State University,

Detroit, Michigan

in partial fulfillment of the requirements

for the degree of

DOCTOR OF PHILOSOPHY

2013

MAJOR: INSTRUCTIONAL TECHNOLOGY

Approved By:

Advisor

Date

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DEDICATION

To my Mom, Sheryll Mithen, words can not express my appreciation for all the sacrifices you made for our family, the ones known and unknown to me. The greatest gift a mother can give their child is unending love and the ability to believe they can do anything. I thank you for both and hope to pass those qualities along to our four children. I love you Mom!

To my father, John Teetsel, for you're never ending support and unquestioned assistance during scheduled and unscheduled times. I thank you for your support and your love. I love you Dad!

To my husband, Mark, my unflinching ally in the face of adversity. You my dear made it possible for me to complete this project, gave me the opportunity to learn as much as I could and from whom I have learned what the meaning of true love is. I love you!

I also dedicate this work to our children Anna, Benjamin, Emily and Samantha in the hope that it may inspire all of you to always reach higher in achieving your own dreams no matter how difficult it may feel at times. May you all grow to have a love of learning and take it to heights in the likes of which

I've never dreamed.

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CHAPTER ONE

PROBLEM STATEMENT

Introduction

A challenge confronting universities involves undergraduate students starting college courses at the freshman level and the significant decrease of students who complete their academic goals of graduation (Lau, 2003; Humphrey, 2005-2006; Mann, Hunt, & Alford, 2003-2004). Studies have shown that a greater number of undergraduate students tend to leave the university after completion of their first year as opposed to leaving any other year (Keup, 2005-2006). Moreover, only 25% of students complete their bachelor's degree at the college they originally attend (Pan, Guo, Alikonis, & Bai, 2008). Retaining students to complete program degrees is fundamental to maintaining the university's societal standing (Yorke & Longden, 2004; Arredondo & Knight, 2005-2006), quality, and economic stability (Gupta, 1991) within the individual academic departments and the university. Research suggests that undergraduate students who do not complete their programs will most likely earn a lesser salary in comparison to those students who completed their undergraduate degree requirements (Shultz, Colton, & Colton, 2001). Despite all this negative information surrounding undergraduate retention, university acceptance and enrollments are at an unprecedented high (Kramer, 1993).

Students entering college begin their higher education career with good intentions, but in many cases they have little understanding as to why they have even gone to college (Tinto, 1987a). Students are in an unfamiliar environment, and may be exposed to various obstacles that occur alongside a demanding academic schedule. In addition, many educational theorists believe that undergraduates begin college at a disadvantage in that their primary education did not prepare them for the academic demands placed on them in higher education (Gutmann, 1987;

Howe, 1997). As new students attempt success in higher education, not only do they have to adjust to their new academic demands, they are also thrown into an unfamiliar environment. The way in which the students respond to this event will have ongoing implications all through their lives (Evans, Forney, & Guido-DiBrito, 1998). In other words, if the student does not make a successful transition to college, the failure may have such an impact on the student they might not ever recover or might not live to their full potential based on how they perceive the academic failure. Students leave their comfort zone of family and friend relationships and in many cases an environment that they have lived in for many years to attend college. Not only are students in an unfamiliar new environment, if they want to succeed they are forced to adjust to a new learning system at whatever school they attend all the while attempting to build new relationships and support systems (Tinto, 1975).

There are major motivational factors that have been identified that have an impact on student success during this difficult adjustment time, including: positive sense of self, perceived academic control and social sense of belonging (Perry, Hladkyj, Pekrun, Clifton, & Chipperfield, 2005). In the 2011 National Freshman Attitudes Report, it was discovered that one out of every three freshmen students lacked confidence in their preparation to attend college (Noel & Levitz, 2011). According to Keller (1987a, 2010), confidence is a crucial component of building student motivation. As students enter into this difficult adjustment period from high school to college, an outside influence can provide direction and assistance to help students create goals to achieve and have something to focus on so that they believe they can achieve their goals. This will increase the opportunity for the student to have a connection with motivation and academic success (Gagne' & Medsker, 1996). In addition, much of the motivational research focuses on the learner as having full responsibility for self-sufficiently creating and sustaining their personal

motivation levels. Personal motivation literature floods current journals and little research has been conducted with regard to how outside instructional interventions can enhance student motivation through the course of a semester. (Keller & Litchfield, 2002).

The purpose of this research is to determine if the use of Keller's ARCS instructional model to design timely motivational emails sent in combination of a traditional face to face class can enhance and maintain student motivation through the course of a semester.

Statement of the Problem

Motivating students in a prolonged way throughout the entire semester is a continuing challenge in undergraduate courses (Keller, Deimann, & Liu, 2005). Student's motivational capacity to sit through one class is different from the individual motivation it requires for a student to be persistent throughout an entire semester of classes (Keller, 1987b). It is much easier to maintain motivation throughout one class period while enticed by interventions rich with novelty effects than to persist through an entire semester of classes while maintaining motivation (Clark, 1983). This study discusses the creation of engaging motivational emails to assist students in maintaining motivation and persistence throughout an entire semester.

Purpose and Research Questions

The purpose of this research study was to examine the impact of emailed motivational messages on student motivation and persistence. The set of research questions that guided this study were:

Q1. What is the current level of motivation for undergraduate students?

Q2: To what extent do the ARCS based motivational emails impact the undergraduate perceptions of motivation?

Q3: What is the difference in perception of motivation, if any, between the experimental group and control group?

Q4: Does the iterative process of this design-based research study improve the strategically timed motivational message dispersed throughout the semester?

The specific outline of this design-based research study was to: (a) determine baseline motivation levels of undergraduate students; (b) determine if there are statistically significant differences between two groups with the experimental group receiving the ARCS based motivational emails and the control group groups receiving the ARCS based motivational messages and the group not receiving the ARCS based motivational emails; (c) determine if the ARCS based strategies produce a statistically significant difference in the ARCS subsections of attention, relevance, confidence and satisfaction; and (d) determine if the strategies produced a statistically significant difference in overall student motivation as intended by the ARCS intervention.

Students were sent motivational emails created with the intention to expose undergraduate student's concepts that will help them finish a course. Concepts include general overall support, study skills, and time management/organizational skills. The instructional motivation model that was used to create the rich, engaging motivational messages was built from the ARCS motivational model created by John Keller (Keller, 1983). Keller's ARCS model is used as a motivational overlay to instructional systems design. In this case, I used the model to create four separate motivational emails loaded with student success strategies to help student persist to complete their courses. Incorporating the ARCS format within the emails involved embedding the following elements into the motivational emails: increasing the learner's attention, showing the relevance of the content to the learner, build the learner's confidence and ensuring that the

learner feels satisfied through the content of the motivational design (Keller, 1983). These four categories were derived from the synthesis of motivation research and a specific research study conducted by Keller and students (Keller, 2009). Keller's model provided the necessary step-by-step elements that consider student motivational needs and support into my instructional design of motivational emails.

In summary, the intent of this study was to increase traditional student motivation and performance through the application of the ARCS-based motivational messages intervention in order to drive persistence within the students to increase their academic motivation.

Theoretical Constructs

There are four broad-based categories that incorporate how learning theorists approach motivation: the behavioral view, the cognitive view, the humanistic view and the achievement motivation theory view. For the purposes of this study, the main focus will be on the behavioral view, which is the foundation of the ARCS motivational design strategy. A major influence on instructional design from the behavioral perspective and programmed instruction was B.F. Skinner (Richey, Klein, & Tracey, 2011). Skinner's development of conditioning participant's response to deprivation and reinforcement in intermittent schedules based on the researcher who then would provide an extrinsic reward, is the foundation of motivational behavioral learning theory (Skinner, 1966). Skinner discovered that in order to create a more effective learning environment, the instructor needed to identify the desired behavior and then create situations where success can occur and be achieved through the use of reinforcement. When participants were given a reward (reinforcement) for their behavior or action, it would increase the chance that the participant would repeat the action. This, in turn, created behavior change based on positive reinforcement (Richey et al., 2011). McClelland (1985) confirmed Skinner's (1966)

findings on the importance of the distinction between predicting operant and respondent behavior patterns. An operant response happens as a result of stimuli provided by the researcher or in this case a teacher. A respondent involves a natural response that occurs without any stimuli or 'reward' from the researcher. This finding indicates that in addition to their own personal motivation, they can be motivated through instructional design strategies created with an intended purpose. Secondly, the possibility that students can be motivated by instructional design does not mean that the students will choose to be motivated by instructional design. Skinner is suggesting that providing a stimulus or reward (a motivator) to students may have an impact that assists students to achieve their academic goals (1966).

Carl Rogers (1951) and Abraham Maslow (1954) approached motivational learning theory from a humanistic perspective, which looks at motivation as a product of free will and implies that once a student's basic needs are met they will naturally move into an individual drive for self-actualization. Motivation is a common debate among learning theorists and whether motivation belongs in a cognitive or affective domain will most likely remain in dispute. Song believes that motivation "can come from all the human psychological constructs, either in the affective or cognitive domains that influence the direction and intensity of behavior" (1998, p. 30).

Perhaps the first learning theorist to come to this conclusion was Albert Bandura. He was a social theorist who found implications from the student's natural process of observing behavior. He observed students watching a specific behavior and recorded how the student perceived the outcome. If students responded with positive response therefore the student would identify with the positive response and want to experience the same positive outcome again. In this situation, the person would imitate the observed behavior with a want or need to replicate the positive

academic outcomes that they observed (Richey et. al., 2011). Bandura (1969) made a case for combining the two motivational sectors of behavioral and cognitive in that both the individual's free will and the environment contributed to learning and motivation. Robert Gagne (1985) supported Bandura's findings suggesting that both internal and external conditions influence learning and motivation. The internal conditions that students bring to learning and motivation consist of behavior or skills that were previously mastered at another time and should be considered independent of the instruction. Conversely, the external conditions are in fact the instructional materials, interventions, messages, etc. that the student is exposed in order to achieve preferred outcome. Keller states that a student's motivation can be looked at as a result of a student's engagement with his surroundings and "is in part a function of the characteristic choices a person will make for one type of goal over others" (Keller, 1979, p. 28). A current viewpoint in the field is based on the idea that a student's motivation to succeed in higher education can be viewed as a noncognitive element of the persistence phenomenon (Allen, 1999). This information is supportive of behavioral cognitive learning theory in that it means that there are other variables that impact student motivation. In other words, it will not be enough for a professor to just offer students job aids and study habit tips; the motivational approach will need to approach the student from a more internal perspective. The influence of noncognitive dimensions is present in the literature (Keller, 2008). Most importantly, student aspirations or motivational factors are important to student persistence and retention rates and should be incorporated as relevant targets of research for motivational learning theory (Ramist, 1981).

Traditionally, university members have placed fault on student's for not being motivated enough to complete their courses. When in fact many other reasons such as how the role of the university impacts a student's decision to stay or leave school.

Research regarding motivation is evident in the literature; however studies on motivation in regard to student's psychological factors such as: intrinsic motivation, self-regulation and confidence have been disregarded with popular support focusing on the sociology of student retention (Bean and Eaton, 2001/2002). This study explores how student psychological factors can be influenced by motivational instructional design strategies.

Assumptions

Based on my experience with the undergraduate students who are participating in this study, I had two assumptions that I felt might have an impact. I have to assume that all students have varying differences in their individual motivation levels. The second assumption relies on the idea that my presence in the classroom in order to deliver the motivation surveys may in fact inadvertently increase student motivation levels.

Limitations

The main limitation of this study is that it does not address how the students can transfer or increase motivation into future classes to ensure graduation. Another consideration is that students will enter into the study with many levels of expertise and experience, and the individual student backgrounds might have an effect on motivation and performance. In addition, this course is required for students in the program, because it is not the students choice to take the class, a result could be that student will not try as hard as they are not particularly interested in the content. A practical limitation is time and money. An additional limitation surfaced while completing the study. When using an iterative process for developing emails, it

would have been better to send out the first motivational email to a first group of participants, obtain their feedback, determine the most and least motivated, survey those extremes, take their suggestions to revise the email. Ideally, the next iteration would go out an entirely new group. In the real world I did not have access to unlimited time and money, or participants; therefore my study was cropped to fit my immediate needs. While my lifelong interest in motivational strategies will add value to the instructional interventions, it is also important to acknowledge that past experiences may also inhibit or allow for potential liability through biased judgment regarding the intervention design. Triangulation of the data will be incorporated into the study in order to provide overall reliability.

Rationale and Significance of the Study

The rationale behind this study emerged from my desire to determine the best methods of creating, developing, implementing and assessing a quality motivational intervention for undergraduate students who historically are identified as not having enough motivation. The literature indicates that a gap exists between perceptions of how students should be motivated and how professors think students are motivated. Traditionally universities were quick to place blame on the student indicating that if a student does graduate the fault is on the student alone. Literature suggests that student's psychological factors such as intrinsic motivation, self-regulation and confidence have been disregarded with popular support focusing on the sociology of the student (Bean and Eaton, 2001/2002).

The goal is to examine what the current levels of motivation for undergraduate students are and to increase and maintain student motivation in order to minimize the gap between students who start college with high aspirations and students who do not complete their academic goals. This study was conducted at one university; many universities experience similar challenges with

student motivation. Developing a low-cost strategy to increase student motivation and maintain students would provide a practical solution to such a common challenge and provide insight to overall motivation theory. After an extensive review of the literature there is evidence that there is a lack of research concerning the needs of the student (Astleitner & Keller, 1995; Gabrielle, 2003; Means, Jonassen & Dwyer, 1997; Shellnut, Knowlton & Savage, 1999; Visser & Keller, 1990). With student enrollment in universities at an all-time high (Kramer, 1993) this study explores an up to date, easy, cost effective strategy to assist students to increase and maintain their motivation levels throughout the semester.

Definitions and Key Terms used in the Study

Attention. Keller (2010) explains attention as “capturing the interest of learners; stimulating the curiosity to learn” (p. 45). The individual areas of attention include: (a) the student’s perceptual arousal and what is needed to capture their interest, (b) Inquiry arousal in order to maximize the learning opportunity, and (c) Instructional variability throughout the timeline of the instruction.

Confidence. Keller (2010) explains confidence as “helping the learners believe/feel that they will succeed and control their success” (p. 45). The individual areas of confidence include: (a) the students learning requirements, (b) the opportunities the student sees for success, and (c) the student’s personal control in the situation.

Extrinsic Motivation. Students are motivated to complete a task in order to attain something or an outcome. This motivation comes from external factors outside the student. Rewards such as money and grades are considered extrinsic.

Instructional Design. Reigeluth (1983) states that instructional design “is concerned with understanding, improving and applying methods of instruction” (p. 7). It is important to

consider the Smith and Ragan (1999) definition as well. For them, instructional design is “translating principles of learning and instruction into plans for instructional materials, activities, information, resources, and evaluation” (p. 2). Both are mentioned because Reigeluth really views learning theory and instruction development as two different processes, but for the purposes of this study, both learning theory and instructional development need to be placed into consideration in the design strategy if learner motivation will be impacted.

Intrinsic Motivation. Students are motivated by an interest in a task by itself or for the enjoyment of the task. It is inside the individual from the beginning. Students with high intrinsic motivation correlate academic success with their own control (autonomy) and believe that own personal individual skills help them achieve their goals and not external factors.

Motivation. Keller (2010) explains motivation as “what people desire, what they choose to do, and what they commit to do” (p. 3) Motivation in this study attempts to explain why students do the things they do.

Motivational Message. Simpson (2003) explained motivational messages as any communication which merges the student’s sense of community within the class environment where the professor incorporates compassion for the student’s difficulties and demonstrates confidence and interest in the student.

Relevance. Keller (2010) explains relevance as “meeting the personal needs/goals of the learner to affect a positive attitude” (p. 45). The individual areas of relevance include: (a) goal orientation, (b) motive matching in order to provide student’s choice and responsibility in their learning, and (c) familiarity into the student’s live to impact significance with learning.

Satisfaction. Keller (2010) explains satisfaction as “reinforcing accomplishment with rewards (internal and external)” (p. 45). The individual areas of satisfaction include: (a) natural

consequences that students experience in acquiring a new skills, (b) positive consequences from their successes, and (c) student equity and being able to anchor feelings about their accomplishments.

Visual Message Design. A designer incorporates appropriate considerations of learner's visual perceptions when designing an email. The learner's interpretation of the picture is based on their prior experiences, culture, etc. The purpose is to strategically gain the learner's attention, create meaning for the learner, and facilitate learning retention (Jones, 1993).

Summary

This study looked at the significant challenge higher education is faced with to assist students in increasing or maintaining motivation throughout the course of a semester. Personal motivation theories suggest students should be able to create and maintain their own motivation levels throughout the semester. The intention of this study was to create a motivational email full of specific motivational strategies to help increase and maintain their motivation levels through the course of a semester. The four overarching questions which guided this study were: (1) What is the current level of motivation for undergraduate students, (2) To what extent do the ARCS based motivational emails impact the undergraduate perceptions of motivation, (3) What is the difference in perception of motivation, if any, between the students receiving the motivational emails (experimental group) and the students who do not receive the motivational emails (control group), and (4) Does the iterative process of this design-based research study improve the strategically timed motivational messages dispersed throughout the semester? The conceptual framework for this study includes motivational theory as it relates to instructional design. In turn, the research questions, created from recent literature related to motivational learning theory guided this research study. A review of the pertinent definitions and key

terminology was discussed previously. The next chapter consists of a review of the literature related to the research topic.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This study was designed to aid instructional designers and educators in determining the impact of motivational emails for undergraduate students in higher education. This literature review incorporates a funnel strategy beginning with the overarching topic of motivation and narrowing to the specific instructional strategy of motivational messages. The first part of the literature review covers pertinent historical theories ranging over the last 50 years including foundational definitions of motivation. The second part of the literature review places the ARCS motivational design strategy within the instructional design literature. And finally, the third part of this chapter describes research about motivational emails and what kinds of studies have been conducted on the topic to date.

Motivation to Learn

Capability, opportunity, and motivation have been identified as three main categories that can influence performance (Gilbert, 1978; Brache & Rummler, 1990). Over the years, literature has shown that motivation is critical to student learning and instructional design (Keller, 1979, 1987a, 1987b; Means, Jonassen & Dwyer, 1997; Moller, 1993; Song & Keller, 2001). Research shows that individual student motivation starts at one particular point but can range anywhere from 16% to 38% at any given time over the course of the semester (Means, Jonassen, and Dwyer, 1997). In other words, if a student begins the semester with a motivation level of 100%, there is a possibility that their motivation level will drop to 62% at some point in the semester. Theories and discussions of motivation offer a chance to explain, predict and possibly influence student behavior. There are extensive motivation theories used to explain student behavior in an

educational context and each perception sheds light on student learning and the relationship with motivation.

Motivation is fundamental in learning as it can sustain human behavior by way of arousing and directing students consistently (Glynn, Aultman, & Owens, 2005). It has been researched for centuries, and yet, professors often lack the knowledge and preparation to incorporate effective motivational instructional strategies in their classrooms (Keller, 2010). Professors may not be trained to motivate and have competing motivations of their own which often detract from their original intent of motivational effectiveness (Brewer & Burgess, 2005). Practitioners tend to view motivation as a separate approach which is not in the control of the designer, assuming motivation is derived from student perceptions and from their personality (Keller and Burkman, 1993) and professors easily place accountability on the students to explain any reason for lack of motivation (Wlodkowski, 1999). Motivation in and of itself is difficult to assess, just because of its intangible nature and the concept of student motivation illustrates a valuable aspect of learning that requires further research. In its raw format, motivation can not be precisely or directly measured as it must be deduced from what the student does. In the educational environment, persistence and completion of class courses are indicators of a student's motivation to learn (Wlodkowski, 1999).

There are several definitions of motivation in the instructional technology field, and they hone in on the learner's desire or effort to obtain something. For example, according to Reiser and Dempsey, motivation refers to a student's desire or persistence to pursue a goal or complete a task. (Reiser & Dempsey, 2007) Another definition focuses on a student's effort or persistence such as "the length and direction of effort expended by the learner in pursuit of achievement" (Moller, Huett, & Holder, 2005). Keller defines motivation as "a student's desire to attain a goal

or perform a task, which is manifested by the student's choice of goals and his effort in obtaining those goals" (Keller, 2009). Keller agrees with the idea that motivation requires effort, but suggests that designers need to consider the variable that students make choices. For example, when a student has a list of tasks in front of them, they will most likely rank them in order from most likely to complete to least likely to complete. And within those task choices, some tasks on the list will be given more effort by the student than others.

With definitions of motivation utilizing words like desire and effort, many scholars in the field disagree that motivation is essential to instructional design. It has been a long term assumption that motivation should come directly from the learner and that the designer does not need to incorporate motivational strategies within instructional design in order to motivate the student. Because of this discrepancy, there is a lack of research regarding the motivational needs of learners (Astleitner & Keller, 1995; Gabrielle, 2003; Means, Jonassen & Dwyer, 1997; Shellnut, Knowlton & Savage, 1999; Visser & Keller, 1990) as they relate to motivational design strategies.

A commonality between all definitions of motivation is that motivation emerges within the student (effort, desire, achievement, performance, choices); therefore, it is an instructional designer's responsibility to create mechanisms that encourage or stimulate the students to maintain motivation in order to complete their academic goals.

Individual Motivation Theories

The earliest record of responses to the question "what motivates people and what keeps them going" has been discussed at least since ancient Greece. Thousands of years ago, Plato was keenly aware of the difficulty in motivating students to learn for themselves. He directly addresses these issues in the Meno. Courses to teach motivation have been around less than 100

years, and the first textbook about motivation was not written until 1964. And yet, many years later, we are trying to figure out what motivates learners and how we can incorporate motivating methods into instruction.

Maslow's Hierarchy of Needs. An early attempt and perhaps the most influential motivational research completed to explain human motivation is derived from the work of Abraham Maslow (1954). Maslow's theory of motivation is a one dimensional viewpoint of how motivation originates from within an individual person. He approached researching motivation by examining positive characteristics of successful people. In previous research studies that examined motivation the focus was placed on biology to predict behavior (Huitt, 2011) as well as the examination of the characteristics of deviant behavior, more specifically dysfunctional people. Maslow determined that once certain basic needs were met (safety, belonging, love, respect, self-esteem) through a hierarchical structure, a person could then focus on needs that were individualized to that person. Once a person satisfies a basic need, they pursue the next higher need until each current need is satisfied.

The five general levels of needs are:

1. Physiological needs: Food, water, shelter
2. Safety needs: Protection against danger, threats, deprivation
3. Social needs: Giving and receiving of love, friendship, affection, belonging, association
4. Ego needs: Achievement, adequacy, strength, freedom
5. Self-actualization needs: The need to realize one's potential for continued self-development

The lowest level of need according to Maslow is Physiological needs. Basic needs such as food, water, and shelter are shelved here. People cannot exist without basic needs and filling

primary requirements. A person who is hungry will look for food; once they find food, their need has been satisfied and they can move onto Maslow's next need level.

The second need level according to Maslow's hierarchy is a need for safety. Once a person has had something to eat and they are not worried about eating, they will begin to worry about when they will eat next and what they can do to ensure consistent availability of food, water shelter etc. They will then work to fill the need for job security, stability and protection. Once people satisfy the basic needs, and their safety needs are met, they will no longer be motivated for those needs and they will move onto the third need level.

The third need level of Maslow's hierarchy includes love and belongingness. People want to be in groups and develop their need for affiliation. They are motivated to look for good places to live, friends and family. People want to feel respected and loved and build their esteem. Once a person has fulfilled this need, they will be able to move on and focus on the final need.

The fourth level of the need hierarchy focuses on the need to build self-esteem and confidence. People are motivated and want to build respect for one another and to obtain respect from others.

The final need that motivates people is the need to find self-actualization. Once all the other levels of the hierarchy of needs have been met, people will be motivated to accomplish their dreams or bring themselves or their lives full circle. A visual of Maslow's Hierarchy of Needs Theory is demonstrated in Figure 1.

Figure 1. *Maslow's Hierarchy of Needs Theory*

Maslow's Hierarchy of Needs (1954)

A theme that is important to instructional design that can be derived from Maslow's need hierarchy is that as people go through the process of satisfying each need level, once they move onto the next level, they are not motivated anymore for the previous levels. In other words, a satisfied need is not a motivator of behavior and once a lower level need is satisfied, the next higher-order level of needs becomes the most important need to satisfy.

Students who make the decision to obtain an undergraduate degree most likely fall in the position of completing the first four levels and are moving onto the fifth level of the self-actualization portion of Maslow's hierarchy. It would then be the instructional designer's job to help student maintain the motivation that got them to apply to the university and eventually enroll into classes. Keller (1983) indicates that students' levels of motivation fluctuate as a result of a countless number of unexpected and expected challenges or events that they face throughout the semester. It would be difficult for a designer to identify all variables that could impact student motivation. Therefore, instructional designers would face an impossible challenge if they tried to create a motivational design that was a one size fits all approach. Students come to

higher education with a variety of backgrounds, experiences and values. As challenges arise, students' persistence will be increased or decreased based on their perceptions of the outcomes of the challenges they face. Keeping the fragile relationship between student perceptions of how they work through challenges and the way it impacts student persistence in mind, the instructor can supplement with motivational instructional strategy in order to support students and help them persist and maintain motivation levels.

One problematic factor with Maslow's model is that the model does not consider the wide range of the students of today. His research findings were based on information obtained from white middle class participants as he researched people who were successful in order to collect his data. Historical figures such as Albert Einstein, Abraham Lincoln, and Ludwig van Beethoven were part of his study. These figures encompass only a small portion of the demographics of today's students.

A second problematic factor is that not all students enter school moving from Maslow's fourth level to the fifth level in the hierarchy. That means that each set of students have a different motivational need. Students, who are highly motivated, need strategies to help maintain their motivation levels. Students who are not as motivated may need more support.

Intrinsic Motivation. Personal motivation has many ranges and depths for each student. A person can have no motivation or have extrinsic or intrinsic motivation (Deci & Ryan, 2000; Vansteenkiste, Lens & Deci, 2006). Intrinsic motivation emerges for the student from the activity itself or from the inherent satisfaction that the task brings to the student rather than for any other consequence (Deci & Ryan, 2000). The physical actions a student undertakes while working on or completing an activity creates enough pleasure or satisfaction for the student to maintain or persist with their additional learning activities. The roots of intrinsic motivation are

derived from elements of Weiner's (1974; 1980; 1986) attribution theory, self-efficacy theory from Albert Bandura (Bandura, 1977; 1993), and many other foundational backgrounds including goal orientation (Pintrich, 2001). According to Deci and Ryan, intrinsic motivation can be modified or changed by the student's academic context (2004). When students perceive academic success as an element they can control internally (attribution theory), the student's intrinsic motivation will inevitably increase (self-efficacy). Motivation has been found as a predictor of academic achievement (Tavani & Losh, 2003) which in turn leads to the idea that intrinsic motivation can be a determinant of academic success (Wilson & Corpus, 2005). Therefore, it can be said that if motivation is important to learning outcomes, then it would be important to incorporate rich intrinsically motivating interventions within the academic environment to assist students and enhance and promote academic achievement. One of the challenges with considering intrinsic motivation as a motivational element alone for students is that in order for a student to maintain intrinsic motivation, it requires constant persistence and effort on the student's behalf. Not all students are readily interested in every subject area contained in their course of study. In this case, students can have high intrinsic motivation in some areas of study, but not in all their areas of study. In some situations students may believe that they are capable of understanding much of the content area in their programs. However, they might come across a course that they do not feel comfortable taking, or they might not believe in themselves. According to Bandura, the motivation of a student has an impact on the student and can be further increased when the student holds the belief that they are capable and competent (self-efficacy) of reaching their academic goals (Bandura, 1977; 1993; Marsh, Walker, & Debus, 1991). In other words, when students feel in control, they will persist and try, which will result in belief in themselves. By combining these two elements, the feeling of being in control and the

ability to try, the students will be in the position to be successful learners (Alexander, 2006). An example of intrinsic motivation is a student taking an extra class in their program to obtain a greater foundation in the area that they are studying. They may not get credit for the course, but they know that once they have acquired that additional information from the extra course, they will have a better understanding and will be able to move forward with their degree. At times when students have high self-efficacy for certain courses that are required for their degree, they will most likely be fine in completing the course requirements. Sometimes those students are exposed to course material that they are not comfortable with. In this case, the student might have trouble maintaining motivation because their belief that they can complete the course material might not be high. In this case, it would have the reverse effect of what Bandura was stating. If a student does not believe that they can complete the course work, in turn it will decrease their motivation and they will not persist with their original goals. This demonstrates that instructional designers and teachers cannot rely on students alone to create and maintain their own motivation levels. Consideration needs to be present for those students who have difficulties outside of the classroom that create additional challenges for students. These challenges steer student's energy away from being motivated for academic purposes and place the energy in other areas.

Based on the literature, persistence can be seen as having a direct relationship with a high level of student motivation. It would be beneficial to create a condition or stimulus such as a motivational email for students who need assistance tapping into their intrinsic motivation to help them to persist with their goals. Literature suggests that intrinsic motivation can increase in students through the use of strategic motivational instructional strategies when a correlation is

presented with the educational materials and in increase in student performance will occur (Parker & Lepper, 1992; Chabay & Sherwood, 1992, Cordova & Lepper, 1996).

Extrinsic Motivation. Extrinsic motivation emerges from external consequences or rewards that are presented or given to a person as a reward. Examples of extrinsic motivation include: student recognition, a paycheck, or a promotion. Consider a sales employee who is offered a \$1,000 bonus for selling five cars that week. In addition to the sales employee's paycheck, if the goal of selling five cars a week, is met, the employee will have an additional amount of \$1,000 in the weekly paycheck. In higher education colleges use grade point averages (gpa) as a form of extrinsic motivation. The idea is based on the notion that when students make every effort to learn, they are rewarded in an external way (high gpa for completing work) or penalized (low gpa for not completing work) when they do not strive for learning. A challenge with the gpa system is that when students are rewarded externally all the time, their internal motivation may not be fully developed. As a result, the students internal personal commitment to their education may not develop fully. Developing internal personal commitment is vital in maintaining persistence and desire to achieve when challenges arise. The real challenge here is that motivating a student through extrinsic rewards can only go so far and is not a long term solution to maintaining student motivation.

Expectancy. Another viewpoint of motivation theories comes from the student's expected outcome or end-result. While observing people in therapy, in the 1960's, Rotter learned a few important concepts about how students perceive certain behaviors. Most importantly, he learned that when students are given similar learning conditions each student will perceive the information differently and learn different things. He also found that some students are predictable in the way that they respond to reinforcement. In other words students will make

choices in school based on what reinforcements are placed in front of them and based on their perceptions about what the results of their behavior are likely to be. The students weigh the choices by assigning value and determining an option's worth. A student who has internal locus of control is prone to believe that personal decisions guide their effort and behavior. This particular person sees value and a link between their behavior as a student and the reinforcement that is placed in front of them (Miltiadou & Savenye, 2003). A student who has external locus of control is more prone to believe that fate guides their behavior. This particular student would not see a clear link between their behavior and the reinforcement. They would therefore have a more general expectancy (Miltiadou & Savenye, 2003). This information adds to the idea that student beliefs about themselves play a huge role in the actions students will take when completing a course. For example, in the past universities have believed that all students have an internal locus of control and therefore make immediate connections between their hard work and their outcomes, however, many students are not hard wired to make this immediate connection and have a viewpoint more like the external locus of control.

Attribution. A more recent theory of motivation comes from the work of Bernard Weiner (1992). Weiner studies motivation and how it relates to causal attribution. Weiner fused casual attribution and motivational theory in order to focus on how a student perceives or interprets situations or outcomes as opposed the actual end result of student performance. In other words, Weiner is focusing on how the perceptions students have about their outcomes will inevitably impact the students' abilities, their effort provided in the task, their perceived difficulty of the task, and whether or not luck was involved and defined these as achievement attributions. This focuses in on the idea that students can become highly motivated if they perceive an outcome as positive and as a result they will feel good about themselves. This idea

fuses the ideas behind cognitive learning theory and Bandura's self-efficacy research in that it places importance on the student's individual perceptions and how they influence the student's interpretation of the outcome whether it was a success or failure of their efforts. This can then result in a behavioral change since it is likely that the perceptions will provide a strong enough link that the student will continue the behavior whether it was positive or negative. Weiner further identified the causal dimensions of stability, controllability and locus of control (Weiner, 1992). Again, this is another motivational theory that places emphasis on how student perception has an impact on how the student's behavior can change during a course depending on whether or not the student has one perception about a situation or another.

Motivation in the Classroom

Motivation in the field is often thought of as a product of the student's personality and perceptions, which implies that student motivation is not in the control of the professor or instructional designer (Keller & Burkman, 1993). Many scholars in the field disagree with this assessment and feel that instructors can play a huge role in motivating students. Upon review of the motivational theories, many researchers have worked to create motivational strategies to increase the motivation of students in the classroom and provide insight into what areas of student motivation will most help theory and practice. Keller suggests that elements that are stable in motivation can be influenced and "even some of the unstable elements are predictable" (2010, p. 47). He elaborates that professors can manage and modify the student's learning environment in order to create and maintain motivation to assist with student's internal motivation. In regard to the context he says "It is abundantly clear that the environment can have a strong impact on both the direction and intensity of a person's motivation" (2010, p. 47). In addition, motivational problems "located within the individual (conditions) and those located

within the instruction (method)” (p. 398) have been identified by Keller (1983). For example, if the student experiences critical motivational challenges it is not likely that any instructional intervention or materials will be able to address the student’s problems. I think the important point here is that motivational instructional design models do not guarantee learning; they do however provide appropriate conditions to support the student’s internal learning process. Motivational research studies attempting to guide theory help provide explanation and prediction into student behavior. Teachers and designers can use specific motivational instructional design strategies to manipulate the learning environment in order to change student behavior to increase or maintain motivation. Incorporating specific components into the design, such as gaining the learners’ attention, challenging the students, or the teacher having high expectations from the students can impact student motivation. It is important to consider that instructional design strategy is not the only variable that can impact students. If a student does not respond to the strategies or has a severe motivational problem, any motivational strategy used to increase student motivation will most likely not be successful (Keller, 2010).

There are many instructional design strategies published in the field. However, for the purposes of this dissertation, three motivational strategies will be briefly reviewed. These include Gagne’s Conditions of Learning (Gagne’ 1985), Brophy’s Expectancy and Goal model (Brophy, 2004), and Keller’s ARCS motivation model (Keller, 1987a, 1987b, 1987c).

Gagne’s Nine Events of Instruction. The overarching goal of Gagne’s conditions of learning is creating instruction with the idea that each student incorporates their own individual level or type of learning. Gagne’ identified five emergent learning domains categories of verbal information, intellectual skills, cognitive strategies, motor skills and attitudes. The idea is that

different conditions such as internal or external are used for each category of learning. Nine events that Gagne's suggests to incorporate into instruction include are presented in Table 1.

Table 1 *Gagne' Nine Instructional Events and Cognitive Processes*

Instructional Event	Internal Mental Process
1. Gain attention	Stimuli activates receptors
2. Inform learners of objectives	Creates level of expectation for learning
3. Stimulate recall of prior learning	Retrieval and activation of short-term memory
4. Present the content	Selective perception of content
5. Provide "learning guidance"	Semantic encoding for storage long-term memory
6. Elicit performance (practice)	Responds to questions to enhance encoding and verification
7. Provide feedback	Reinforcement and assessment of correct performance
8. Assess performance	Retrieval and reinforcement of content as final evaluation
9. Enhance retention and transfer to the job	Retrieval and generalization of learned skill to new situation

An instructor would incorporate many if not all of these events into instruction in order to establish appropriate conditions for the students to learn and provide foundation for the design of the instruction and media selection (Gagne', Briggs, & Wager, 1992). It was concerning that an explanation of the student's motivation to learn was not readily available through these elements. The model focuses specifically on intellectual skills and does not take into account what is going on in the student's lives outside of the classroom. And I think the greatest consideration is that the list of strategies is basic and does not provide alternative strategies for the students of today. Therefore, I think this model is more teacher centered or design centered and not learner or student centered.

Good and Brophy. According to Good and Brophy there are four prerequisites that are necessary in order to develop student's motivation to learn (Good & Brophy, 1996). The prerequisites include a safe learning environment, objectives that are meaningful, the use of a variety of instructional methods, and instigating challenges to students that are appropriate for each student. Once these prerequisites are met, all other motivational components will automatically emerge into the instruction. Good and Brophy's prerequisites are framed from expectancy theory time's value theory (Good & Brophy, 1996). In this light, students will participate in learning to a degree in that their expectation to succeed is multiplied by the future benefits or pay offs in learning. Ideally this concept is applicable to students who are studying material that will be on a test, or when they are looking to increase ACT scores or even when they are attempting to increase a grade by the end of a semester. On the other hand, some students will not apply effort because they have lesser expectations of themselves. In these situations, the student will see that the test is the next day and they do not expect to get a better grade, so they do not study, or they see the ACT as too big and feel that a good score is unattainable. The rewards in both cases are not perceived the same as some students do not believe they can pass the test and receive a passing score. In these situations incentives will not work.

In 2004 Jere Brophy published a list of strategies based on the four prerequisites that instructors can use in their classrooms to create, enhance and maintain student motivation. (See Table 2)

Table 2

Motivational Strategies Based on Expectancy and Value Model

Strategies related to Expectancy Issues	Strategies to help learners appreciate the value of engaging in academic activities
<p>1. Build a learning community Make teacher and classroom attractive to the learners</p> <ul style="list-style-type: none"> • Be an authoritative manager and a socialize for students • Use an appealing communication strategy <p>Help students achieve their individual and collaborative goals Teach things that are worth learning</p> <ul style="list-style-type: none"> • Plan with major goals in mind • Adapt instructional material to goals • Develop powerful in depth ideas and structure activities and assignments around them <p>Use authentic activities</p> <p>2. Build learner confidence With curriculum: build curricula that challenges students, yet make it possible for them to succeed with guidance With instruction: help students to set goals, evaluate their progress and recognize effort-outcome linkages</p> <ul style="list-style-type: none"> • Set mastery and learning goals • Provide useful performance appraisal and feedback • Encourage students to develop the habit of self-reinforcement • Help students to recognize effort-outcome linkages <p>With assessment: emphasizing informative feedback, not grading or comparing students</p> <p>3. Strategy for low achievers Attribution retraining: change students' tendencies to attribute their failure to lack of ability to the remediable cause such as lack of effort and strategies Efficacy training: Provide students modeling, instruction, feedback to increase their confidence in successfully performing tasks Strategy training: teach students problem solving strategies</p>	<p>1. Provide Extrinsic incentives Effectively praise students</p> <ul style="list-style-type: none"> • Focus students' attention to a life application of what they are learning • Appropriately use competition <p>2. Provide intrinsic incentive Respond to students' autonomy needs</p> <ul style="list-style-type: none"> • Encourage students to function as autonomous learners • Allow learners to make choices <p>Respond to students' competence needs</p> <ul style="list-style-type: none"> • Active response • Immediate feedback • Game like activities <p>Respond to students' relatedness needs</p> <ul style="list-style-type: none"> • Emphasize cooperative learning formats <p>3. Gain students' interest <ul style="list-style-type: none"> • Induce curiosity or suspense </p> <p>4. Other strategies related to helping learners value:</p> <ul style="list-style-type: none"> • Project based learning • Coaching • modeling • scaffolding to minimize performance anxiety • make abstract concept more personal, concrete, or familiar • induce metacognitive awareness and control of learning strategies

Used with permission. (Brophy, 2004)

The challenge with this detailed list of strategies is that it does not provide teachers with guidelines on which situations require which motivational strategies. This comprehensive list also does not provide explanations about how to implement the strategies provided or how to manipulate and arrange them for different courses. The main focus of this strategy is based on the teachers and not on the learners. This is consistent with past research, which suggests that research efforts have been focused on students as the entire problem when they experience low levels of motivation and assigns no responsibility to the university instructors.

The framework of motivational strategy that is most important for this study in order to incorporate motivational strategies in instructional design is the ARCS Motivation Model (Keller, 1983). The ARCS motivational model is “probably the best-known and most complete motivation-based instructional design model in the United States” (Bohlin, 1987, p. 11) It is a systematic approach that synthesized earlier research and requires knowledge of human motivation. It helps the designer to progress from learner analysis to solution design (Keller, 1987c). The foundational base of the model stems from expectancy-value theory (Tolman, 1932; Lewin, 1935). This theory presents motivation as a result of the established values of the learner and expectancies of the student. The student’s perception (expectancy) of achieving a goal is affected by their previous successes and failures. For example, if a student has been successful their first semester of college, they will perceive this experience as positive and will have a high expectancy for the second semester. If the second semester does not go as well and the student perceives the semester as a failure, this could result in a negative experience for the student. This idea is consistent with Bandura’s self-efficacy (1977) research. As already indicated in the theoretical perspective of this proposed study, Bandura found that the way a student perceives himself may depend on his their past experiences regardless of whether they were positive or

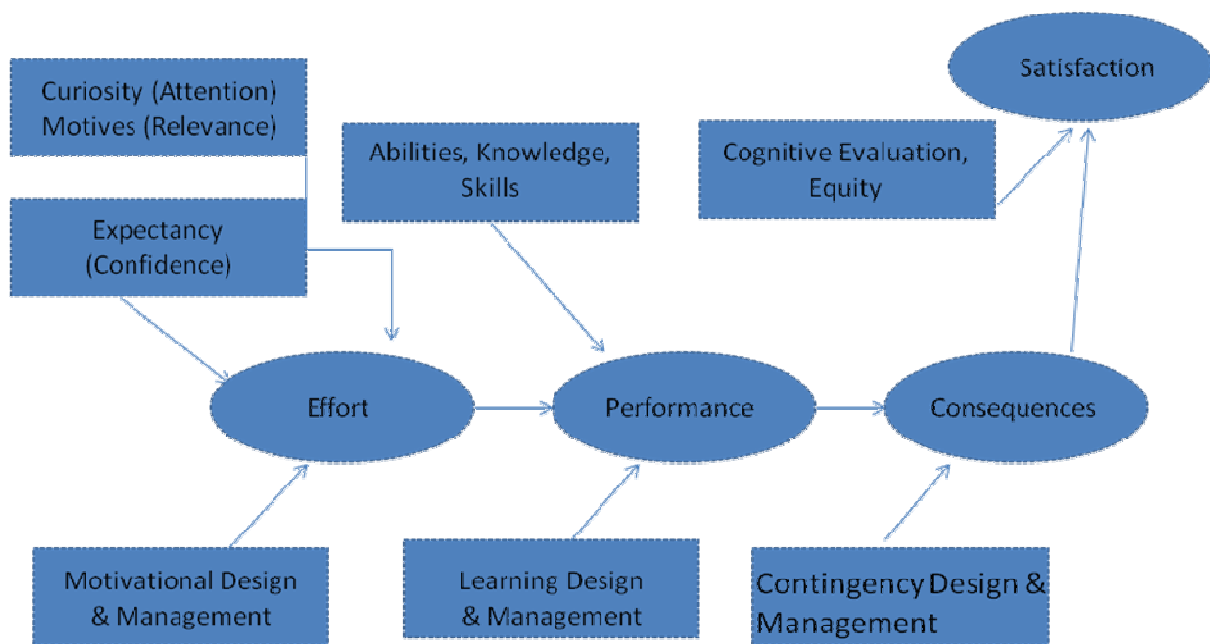
negative (1977). The “value” in Expectancy-Value theory is described as the process a student undergoes to assess a set of outcomes and the process used to determine which result they prefer or which goals they want to accomplish. As students make choices towards their academic goals, based on the information provided or experiences they go through, their motivation levels are affected. Some goals will have precedence over other goals and in turn will be ranked in a higher completion order than others. Keller’s (2010) argument then is that because the students are involved in a decision making process, other variables can affect their decisions and in turn instruction can impact what decisions students make. For example, if a student is going through this decision making process and attends a class that has been developed using the ARCS motivational model, there is a chance that the exposure to the highly motivational instruction may impact that student’s decisions.

Keller’s Macro Model of Motivation and Performance. Keller says that the ARCS model is used to manage and stimulate motivation for students to assist in the learning process (Keller, 1979, 1987a, 1987b, 2010). The four categories that emerged from Keller’s research include: (1) Attention, (2) Relevance, (3) Confidence, and (4) Satisfaction. Throughout the rest of this dissertation proposal, the acronym ARCS will be used when discussing Keller’s motivational design (Keller, 2010). The ARCS model combines behavioral, affective and cognitive learning theories in order to show that the student can have motivational influences that are external and can influence internal motivation (Moller, 1993). The model itself has three assumptions that are incorporated into systematic motivational design. (See Figure 2) The first assumption is that people’s motivation can be influenced by external events. The second assumption is that motivation, in relation to performance, is a means, and not an end. And the third assumption is that systematic design and implementation can predict and measure influence

on motivation (Keller, 2010). The model assists the designer through the following process in order to design instruction with ARCS motivational strategies in a systematic way: (a) know and identify the elements of human motivation, (b) conduct a learner analysis in order to know and identify elements of human motivation, (c) identify instructional materials and processes that stimulate motivation, (d) select the appropriate motivational tactics, and (e) apply specific tactics and evaluate. Once the systematic elements have been identified, the designer should focus on incorporating the following components with the entire instructional intervention. A visual of the Macro Model of Motivation and Performance is found in Figure 2.

Figure 2

Macro Model of Motivation and Performance



Adapted from "Motivational Design for Learning and Performance, The ARCS Model Approach. Keller, 2010

These five components supported this study as the ARCS motivational model was used to design motivational messages in order to increase and maintain student motivation throughout

the course of the semester. There is evidence in the literature that incorporating motivational messages into an online setting has proven successful (L. Visser, 1998).

Attention. The first category in the ARCS model is attention. This is the process of gaining and keeping the learner's attention throughout the instructional intervention. The underlying strategies for attention include: sensory stimuli (perceptual arousal), inquiry arousal, and variability. According to Keller, gaining attention in one session is fairly easy to accomplish. However, it is not sufficient since the real challenge is to gain the students attention and sustain it at a satisfactory level throughout the course (Keller, 1983). Strategies used to gain the learners attention include providing student's with specific examples, using humor and involving the learners with role-plays, games or other ways to get the students involved with the content. The instructor needs to not only gain their attention, but maintain that attention level at the student's optimal level after capturing their attention. The instructor's job is to keep the student from succumbing to bored feelings and work to not over stimulate (arousal) the student. Table 3 is a visual of Keller's components of Attention. The instructor should ask three pertinent questions of their instruction in order to make sure they are working to gain the learners attention throughout the lesson. For example, to create perceptual arousal, the instructor should ask the question, "What can I do to capture their interest?" The strategy used to support attention for this question is to attach a surprise element or emotional elements to elicit attention from the students. To stimulate attitude, the instructor would ask the students a lot questions and consistently challenge the students. The third element of Attention is to create instruction that varies. The instructor can counteract this by strategically varying their presentation style, and incorporating human interest examples.

Table 3

Keller's Components of Attention

Subcategories and Process Questions	Main Supporting Strategies
Perceptual arousal What can I do to capture their interest?	Create curiosity, wonderment by using novel approaches, injecting personal and/or emotional material
Inquiry arousal How can I stimulate an attitude inquiry?	Increase curiosity by asking questions, creating paradoxes, generating inquiry, and nurturing thinking challenges
Variability How can I maintain their attention	Sustain interest with variations in presentation style, concrete analogies, human interest examples, and unexpected events

Note: From "Motivational Design for Learning and Performance," by J.M. Keller, 2010 p. 47.

Relevance. Relevance incorporates helping the students find significance or relevance of the instructional content in relation to their own life. The foundation of relevance includes: goal orientation, motive orientation, and familiarity. Relevance can be shown in many ways to the learner. Before instruction the designer can identify the perceived future needs of the students in order to vary the instructional methods. This allows the instructional designer to incorporate the social benefits and the individual challenges that students face into the learning process. According to Keller, the designer will need to constantly revise the instruction with questions like and ask questions like "what's in it for the student" (Keller, 2010). The most important aspects of relevance include connecting the student's experience with the content in the context of today and the future, matching the content with specific learner needs and modeling. Table 4 is a representation of components of relevance that Keller has identified as most important. As an instructor designs their instruction, they need to ask "How can I best meet my learner's needs?" A strategy to answer this as Keller has identified is to define goals for students or to have learners assist in defining them. Another area that encompasses relevance is considering "How and when can I provide my learners with appropriate choices, responsibilities, and

influences?” A strategy to support this is to provide learners with personal achievement opportunities, and access to positive role models.

Table 4

Keller’s Components of Relevance

Subcategories and Process Questions	Main Supporting Strategies
Goal Orientation How can I best meet my learner’s needs? (Do I know their needs?)	Provide statements or examples of the utility of the instruction and either present goals or have learners define them
Motive Matching How and when can I provide my learners with appropriate choices, responsibilities, and influences?	Make instruction responsive to learner motives and values by providing personal achievement opportunities, cooperative activities, leadership responsibilities, and positive role models
Familiarity How can I tie the instruction to the learners’ experiences?	Make the materials and concepts familiar by providing concrete examples and analogies related to the learners’ work

Note: From “Motivational Design for Learning and Performance,” by J.M. Keller, 2010 p. 48.

Confidence. The third component of Keller’s model is confidence. The components needed to develop confidence include: learning requirements, success opportunities, and personal control. As students work to develop new skills, motivation will decrease if the student loses confidence, feels that the task will take too much effort, or if they are put in a position where they feel embarrassment. To help student build confidence and master a new skill the designer needs to include a degree of risk in the instruction in order to push the student to their peak performance (Keller & Kopp, 1987). This is consistent with Bandura’s (1993) findings that motivation can be further increased when the student believes that they are capable and competent, resulting in a higher level of self-efficacy. Once the student has established a baseline of understanding that they can do something, they believe that they can duplicate the outcome. Table 5 shows Keller’s components of confidence. As an instructor review content to include confidence building strategies, they will first ask “How can I assist in building a positive

expectation for success?” A strategy to determine if the instruction includes this element is to establish trust with the students as soon as possible and to explain expectations immediately. An instructor should ask “How will the learning experience support or enhance the students’ beliefs in their competence?” A strategy to support this is to provide challenging experiences to increase learner success. A third question to ask of instruction is “How will the learners clearly know their success is based upon their efforts and abilities?” A strategy to elicit this performance is to allow learner control whenever possible and provide feedback that attributes success to the student’s personal effort.

Table 5

Keller’s Components of Confidence

Subcategories and Process Questions	Main Supporting Strategies
Learning Requirements How can I assist in building a positive expectation for success?	Establish trust and positive expectations by explaining the requirements for success and the evaluative criteria
Success Opportunities How will the learning experience support or enhance the students’ beliefs in their competence?	Increase belief in competence by providing many, varied and challenging experiences that increase learning success
Personal Control How will the learners clearly know their success is based upon their efforts and abilities?	Use techniques that offer personal control (whenever possible) and provide feedback that attributes success to personal effort

Note: From “Motivational Design for Learning and Performance,” by J.M. Keller, 2010 p. 50-51.

Satisfaction. The final component a designer needs to incorporate into motivational instructional design is satisfaction. This involves incorporating a combination of both intrinsic and extrinsic motivational strategies to meet the learner’s anticipation. Simply stated, there needs to be a reward (satisfaction builder) from the learning experience, to make it worthwhile and mean something to the learner (Keller, 1983). Strategies designers use to create instructional design with satisfaction building include intrinsic reinforcement and extrinsic rewards. A designer can do this by providing opportunities in the instruction that allow the learner to try out

their newly acquired skills as soon as possible within an environment as close to the authentic setting as possible. The instructor will need to provide feedback and reinforcement of the behavior to assist in sustaining the intended behavior. This is consistent with Skinner (1966) in that if a designer can create conditions in which a stimulus is provided (motivational email) the resulting behavior should produce manipulated behavior (increased motivation) with reinforcements (intrinsic or extrinsic rewards). Overall if the student feels good about what they are learning, they will most likely be motivated to learn. In conclusion, if the student is attentive, they will most likely find relevance and if the student has confidence, they will naturally have satisfaction based on the challenging tasks they are presented with. Table 6 is a visual representation of Keller's components for satisfaction. With concern for satisfaction, an instructor should ask "How can I provide meaningful opportunities for learners to use their newly acquired knowledge/skill?" To support this, instructors should provide problem, simulations or work samples that are as close to an authentic or real world situation as possible. In addition instructors should ask "what will provide reinforcement to the learners' successes?" A strategy to elicit this is to consistently use verbal praise, offer incentives and reward students for their successes whether it be intrinsic or extrinsic rewards. A final question instructors should ask of their instruction is "How can I assist the students in anchoring a positive feeling about their accomplishments?" A strategy an instructor could use for this is to align performance requirements with stated expectations and apply consistent measurement standards for all learners.

Table 6

Keller's Components for Satisfaction

Subcategories and Process Questions	Main Supporting Strategies
Natural Consequences How can I provide meaningful opportunities for learners to use their newly acquired knowledge/skill?	Provide problems, simulations, or work samples that allow students to see how they can now solve real-world problems
Positive Consequences What will provide reinforcement to the learners' successes?	Use verbal praise, real or symbolic rewards, and incentives or let students present the results of their efforts ("show and tell") to reward success
Equity How can I assist the students in anchoring a positive feeling about their accomplishments?	Make performance requirements consistent with stated expectations and provide consistent measurement standards for all learners' tasks and accomplishments

Note: From "Motivational Design for Learning and Performance," by J.M. Keller, 2010 p. 53.

Keller's ARCS motivational model is an instructional strategy to be used by instructors in order to present content in an engaging way to increase student persistence and motivation during instruction (Keller, 2010). As mentioned earlier, Keller believes that students have a baseline motivation level and depending on what the student experiences during the semester, the experiences can either strengthen or weaken the student's persistence or motivation levels. Instruction embedded with ARCS can strengthen a student's motivation, which will most likely provide a positive experience for the student so that they will make the decision to stay in school. When challenges confront the students, they are more likely to persist or stay motivated or complete their academic goals as long as they have a solid baseline of persistence or motivation. Keller's (2010) baseline is motivation. Without motivational strategy embedded into instructional design, the student may lose motivation and in turn make a choice to leave and not finish the course. ARCS is a tool used to identify motivational challenges within a course, it is to be used as an overlay model to general instructional design. According to Main (1993) "the

ARCS model provides a framework for motivation considerations in each of the five phases of design” (p, 43) and serves as a supportive role.

Motivational Messages/Emails

One way to encourage student motivation in a face-to-face course is to incorporate motivational messages into the overall course design. The term “motivational messages” emerged out of the work of L.Visser (1998) in reference to a Motivational Messages Support System (MMSS) that she developed and utilized during her dissertation study. Simpson (2003) explained motivational messages as any communication which merges the student’s sense of community within the class environment where the professor incorporates compassion for the student’s difficulties and demonstrates confidence and interest in the student. L. Visser (1998) believes that motivational messages embedded with the four components of ARCS should be part of the entire course system that integrates quick motivational messages to students at pre-determined critical points during the course of the semester. Keller agrees and posits that students require more from their instructors and universities than just content to learn. A variety of instructional methods are needed to motivate and encourage students to persist through the completion of a course. Motivating students is essential to instructional design in that students start with a particular level of motivation and as the course continues their motivation may suffer as a result of a variety of challenges that students are faced with daily. “People tend to persist longer, or more intensely for a shorter period, at tasks when they are motivated than when they are not” (Keller, 1983, p. 388). It is on this premise that students will “persist longer” when they maintain motivation that the design of this research study emerged. Motivational messages were therefore developed as motivational emails and sent through the university email system. Emails are already constantly used for undergraduate students and they are cost effective. This research

study incorporated the instructional design strategy of Keller's (1983) ARCS model in order to create motivational emails designed with the intent of increasing student motivation and perhaps overall student aspirations (Keller, 1983). Next I will discuss research in motivational messages and what was utilized for the design, development, and implementation of this dissertation study.

Using all four Components of ARCS in Motivational Messages. Research studies on ARCS in general have proven support and validity of the model when the motivational strategy is used in its entirety (J. Visser, 1990; J. Visser & Keller, 1990; Means, Jonassen, & Dwyer, 1997; Small & Gluck, 1994). Research available on motivational messages is rich in guidance about how to implement a study using motivational messages. A crucial distinction was determined early in the research that all four components of the motivational instructional design model (ARCS) need to be incorporated into the design of the instruction or the desired effects of the motivational message may not be achieved (J. Visser, 1990; J. Visser & Keller, 1990; L. Visser, 1998, 2002; Gabrielle, 2003). The studies that only incorporated one or two components of ARCS (Naime-Diefenbach, 1991; Moller, 1993; Huett, 2006) were not able to show a relationship between the motivational message and the studies' overall research questions. The messages in J. Visser & Keller's (1990) study were designed in a visually appealing way similar to a greeting card or letter and incorporated instructional content including assignment summaries and test feedback. The participants provided feedback indicating that incorporating visually appealing motivational messages helped the students stay motivated throughout the semester. In this study, a student motivational analysis was incorporated in order to uncover the motivational challenges the students are facing at that moment in time. Motivational messages designed with the learner feedback were sent to the students in order to stimulate the motivational levels and provide solutions to the challenges the learners identified from the

survey. Incorporating motivational messages designed using the ARCS motivational model presents many advantages in that Keller's ARCS model includes strategies to assist designers to analyze student motivational challenges and incorporate appropriate strategies immediately.

The studies discussed to this point use the strategy of motivational messages in a distance education context and have been well documented; however, incorporating the ARCS motivational model into motivational messages for the purpose of motivating students in a face to face context has never been applied. The ARCS motivational model will be integrated into this study as a framework to create motivational messages for first year undergraduate students.

Delivery format of the Motivational Message. Many pioneers in motivational message research used either the U.S. Postal service or the method of hand delivery as the distribution method of the motivational messages (J. Visser, 1990; J. Visser & Keller, 1990; Naime-Diefenbach, 1991; Moller, 1993, L. Visser, 1998). The use of the postal service as a method of delivery in general was described as slow and not the preferred method of distribution, at the time of these studies internet access was nonexistent or much more limited than it is today. A benefit to hand delivering the messages in L. Visser's study is that it allowed the instructor to obtain feedback very quickly (1990). All of the researchers in these studies recommended the use of email as a delivery format of the motivational messages. Motivational message research that occurred after the 1990's incorporated the use of email as the delivery system with adequate results (Gabrielle, 2003; Huett, 2006). Gabrielle conducted a study with a sample of almost 800 students. Throughout the course, students were emailed motivational messages on new topics or lessons related to the course. The significant results of this study are a proponent of the use of technology (email) as a successful delivery media of the instructional strategy, showing that technology as a medium for delivery is an effective means for increasing student motivation,

performance and learning. Gabrielle (2003) collected qualitative data in the form of open-ended surveys. Based on student responses to the questions, Gabrielle found that students benefited from the motivational strategy experience and felt that it impacted their motivation in the course. As a result, the researcher was able to validate the ARCS model as a tool to create instruction Technology-Mediated Instructional Strategies (TMIS) with the intent of incorporating motivational messages. Another group of researchers had success with implementing motivational messages via email. In 2008 Huett, Kalinowski, Moller & Huett conducted a study that sent timely motivational emails. The goal of the study was to find out more information to assist online learners with their motivational needs and to increase overall retention within the academic online programs. These studies utilized email as a media delivery system (Gabrielle, 2003; Huett et al., 2008) for the motivational messages and found it to be a good source of delivery. Based on the literature cited above, this research study used ARCS motivational design to develop motivational emails for students. The motivational emails were delivered via email to reach the students at a much quicker rate.

In the design of this study, I searched the literature to find evidence to explain what variables I should use in the research design and development of this project. This next section explains the compiled evidence indicating what factors were most important to this study.

Length of Studies Incorporating Motivational Messages. One of the major themes I identified for this project was the importance of the length of the study and how the length can impact student motivation. In most cases, the research lasted for a semester; however each context incorporated a different length of time to define the semester. Significant results were found in studies that were conducted for an entire semester (J. Visser, 1990; J. Visser & Keller, 1990; L. Visser, 1998; Gabrielle, 2003). In the cases where the studies lasted less than 5 weeks

or even 20-45 minutes it was determined by each of the researchers that not enough time had passed for the intervention to have meaning for the students involved (Naime-Diefenbach, 1991; Moller, 1993; Huett, 2006).

A study conducted by Naime-Diefenbach (1991) looked at measuring instructional materials created by the use of Keller's (1987abc) ARCS motivational instructional design and whether or not the message impacted confidence and attention for students using Keller's Instructional Materials Motivation Survey IMMS as a measurement tool. At the start of the class, students were given 10 minutes to answer pretest questions. Once the students completed the survey, they were randomly assigned to one of three sections: the attention group (n=39), the confidence group (n=38), and the control group (n=34). Once the groups were assigned, the students were given a timeframe of 45 minutes to go through and read the instructional materials that were provided. The researcher found that providing instructional materials with messages designed to address confidence and attention did not increase the relevance or satisfaction categories. The overall results of the study did not identify any differences among the three groups in regard to overall achievement from the posttest scores as the researcher's hypothesis suggested.

Moller (1993) looked at whether or not instructional materials created with the use of the ARCS Motivational design model could in fact increase learner confidence and in turn increase student academic achievement. Moller identified the specific component of confidence within Keller's (1987abc) ARCS motivational model to move forward with her quasi-experimental study. The design of the study included a pretest and post-test in order to collect data to show change in student achievement. A post-test was used to look at the confidence component between the experimental (receives the intervention) and control groups (does not receive the intervention). The instructional materials were learner centered and designed specifically around

the “C” or confidence component of Keller’s (1987) ARCS motivational model. The motivational intervention did not have any impact on student achievement. In other words, the students in the class were unaffected by the intervention. The researcher also pointed out that the study was limited to one short learner centered lesson. The total time length of the lesson was approximately 20 minutes for the control group (the group not receiving motivationally enhanced instruction) and about an hour for the experimental group (the group receiving the motivationally enhanced instruction). According to the researcher, since attitudes are shaped throughout time and taking into consideration that the longer a student has an attitude, the stronger the attitude will become, it might have been unrealistic to assume that a significant amount of measurable change could be found in a short design study. Taking into consideration that college students in general have some level of motivation, the researcher speculated that the students would already have some motivation to complete their work for a grade, so when the researcher had them complete a non-graded assignment that was quick, it would most likely not play a significant role. The bottom line here is that the students who participated in the study did not have an opportunity to feel unconfident, so there really was not a chance to increase something that didn’t need to be increased to begin with.

The results were consistent with the previously reviewed study Naime-Diefenbach (1991) showing that between the experimental group and control group there was nothing that indicated statistical significance. Naime-Diefenbach (1991) and Moller (1993) implemented their studies using a short instruction during one class period, which may have impacted the study and not given the students enough opportunity to form opinions and perceptions about learning and motivation. Additionally both researchers conducted their studies incorporating sections of the ARCS motivational model and not the model in its validated form. This research project utilized

all four validated categories of the ARCS motivational model throughout an entire semester of course work (15 weeks) with the intention of increasing and maintaining student motivation throughout the course of the semester.

Consistent with length of study is the total number of motivational messages sent throughout the course of the study. This became an important characteristic for several studies. As with the length of the study, the studies that incorporated a larger number of messages within the study time frame had consistent results that showed a relationship between increased motivation and student performance (J. Visser, 1990; J. Visser & Keller, 1990; L. Visser, 1998; Gabrielle, 2003; Huett, 2006). The studies that utilized fewer motivational messages and sent them in an inconsistent way did not find significant results (Naime-Diefenbach, 1991; Moller, 1993). During this research study I sent motivational emails every 2-3 weeks throughout the semester, providing total of 6 messages during the semester.

The Use of Control/Experimental Group in Studying Motivational Emails.

Recent research shows that significant findings occurred when the use of an experimental and control group was used. In 2008 Huett, Kalinowski, Moller & Huett conducted a study that looked at sending motivational emails created using Keller's (1987abc) ARCS motivational model. The students were given the option to register for either an online section of the course or a face-to-face section of the course. Based on enrollment, two of the sessions were offered as online courses and the remaining session was offered as a traditional face-to-face course. All three sessions were taught by the same instructor. One of the online courses was used as the control group and the other online course was used as the experimental group. The experimental group received motivational mass emailed interventions throughout the semester, while the control group received nothing. Just for comparison sake, the researchers incorporated the same

motivational design for the face-to-face course as for the experimental online course. All three classes worked on the same material and the only difference among the three courses was that the face-to-face traditional classroom allowed the students to visually see the teacher. The overall results of the study indicated there is a significant difference in means between the experimental group and control group for attention ($p < .001$), confidence ($p = .001$), satisfaction ($p < .001$), and overall motivation ($p < .001$). Significance was not found within the relevance category ($p = .122$). The researchers suggested that this is not surprising due to the fact the emails were not designed to support relevance because the e-mails were not created to show students how the materials used during the course are relevant to their lives. There was no difference between the face-to-face group who received motivational e-mails and the online course that received motivational e-mails. The researchers believe this was because the motivational emails could have created a sense of community within the online students and therefore assisted in their engagement and persistence. It is encouraging to find that these results are consistent with other findings (J. Visser, 1990; J. Visser & Keller, 1990; L. Visser, 1998; L. Visser, 2002).

This research study incorporated the use of randomly assigned experimental and control groups similar to Gabrielle (2003). A sample of students from two introductory courses totaling approximately 800 students represented a control and experimental group. The control group did not receive motivational emails while the experimental group did receive motivational emails. This study incorporated a much larger sample resulting in a higher power where as many of the other studies reviewed were based on classes that included a much smaller combined sample size. Another difference is that this study was conducted at a public urban tuition-based university whereas in Gabrielle's study the setting was a tuition-free school.

Iterative Data Collection in Studying Motivational Emails. Participants in L. Vissers (1998) study appreciated the visual aspect of the messages, but perhaps could have benefited from a process that involved immediate feedback. L. Visser (1998) made the suggestion that additional research be done that includes the use of motivational messages using Keller's (1987abc) ARCS motivational model with the ability to incorporate rapid feedback, as opposed to sending the motivational messages through the postal service. J. Visser and Keller (1990) determined that obtaining the opinion of the students exposed to the motivational message would be helpful in future studies. As the researchers continued motivational message research, they determined that the process of creating different motivational emails was productive in helping students achieve their goals (1990). To do this J. Visser collected data from students in the form of a personal assessment in order to change or adapt the survey to meet the needs of the students at that particular moment in time. The result of this effort was that some students received a personalized motivational message that particular week, while other students received mass group motivational messages. Students found this part of the design helpful and in turn made decisions about their persistence based on the emails they received. Based on this research framework J. Visser and Keller also found that students appreciated the overarching motivational components that involved the entire course that they were completing and not just that particular week. Feedback provided by students suggested that this overall approach assisted with maintaining overall motivation levels. As a final evaluative measure, J. Visser and Keller (1990) collected data to determine whether or not students were even looking at the motivational messages.

In 2008, Kim and Keller used diagnostic surveys to design personalized motivational messages. Once the messages were designed, they were sent to individual students with personal

messages with specific content for that student. In comparison to the control group, the experimental group showed significantly higher levels of motivation, particularly in confidence levels.

In this research study, I incorporated similar elements. Students were surveyed monthly in order to determine their perceptions on motivation and their feelings at that moment in time. Based on the student's feedback, the motivational email created with Keller's (1987abc) ARCS motivational design was designed with the student's current needs in mind in a way to assist the students in maintaining their overall motivation for the entire semester. Once students provided real time feedback about the environment, I revised and adjusted the emails accordingly based on their input. As a final evaluative measure based on J. Visser and Keller's work I created the motivational emails to be sent via the university's email system.

Mass Emails Used to Create General Motivational Messages. For convenience purposes, in an effort to make this process as easy as possible for the instructor of the courses, an attempt to include the general needs of the entire class was incorporated into mass emails (L. Visser, 1998). Although L. Visser found that the individualized emails may have produced a slightly more significant difference in motivational levels in regard to group messages, she also found that it was somewhat inconvenient to the instructor to send out the messages. In turn, L. Visser lost part of her sample because one of the instructors did not send out the personalized messages. For convenience purposes for this study and in an attempt to collect as much information as possible, the motivational emails were created in order to appeal to the masses as opposed to individuals.

Summary

This research study is designed to aid instructional designers and educators in higher education determine the impact of motivational emails for undergraduate students. This literature review incorporated a funnel strategy starting with the overarching topic of motivation and narrowing to the specific instructional strategy of motivational messages. The first part of the literature review discussed the pertinent historical theories over the last 50 years including the foundational definitions of motivation. The second part of the literature review placed the ARCS motivational instructional design strategy within the instructional design literature. And finally, the third part of this chapter describes the important research about motivational messages that were used in the design for this study.

This research adds to the literature in utilizing Keller's ARCS motivational model (1987abc) as a framework for the creation of instructional motivational messages to fill in holes that previous literature fails to address regarding individual student motivation and ways that universities can work to increase and maintain student motivation.

CHAPTER THREE

METHODOLOGY

Introduction

The purpose of this design based descriptive research study was to determine baseline motivation levels for undergraduate students in a university environment and to find out if motivational emails sent to students significantly impact the students' motivation levels throughout the course of the semester. The goal of the study was to design, develop, implement and evaluate the effects of a motivational email designed with Keller's ARCS motivational instructional strategy (Keller, 2010). This was a design based research approach including mixed method data collection of qualitative and quantitative research methods. It was an exploratory study that takes the approach of guiding questions as opposed to theories and hypotheses. The results of the study can direct further research and help to develop a deeper understanding of the literature. The research evolved through two phases; a quantitative phase and a qualitative phase in an attempt to answer the following research questions:

Q1. What is the current level of motivation for undergraduate students?

Q2: To what extent do the ARCS based motivational emails impact the undergraduate perceptions of motivation?

Q3: What is the difference in perception of motivation, if any, between the classes receiving the motivational emails (experimental group) and the classes who did not receive the motivational (control group) emails?

Q4: Does the iterative process of this design based research study improve the strategically timed motivational message dispersed throughout the semester?

This section provides an overview of the study's research methodology and includes specific information on: (a) rationale for design-based research, (b) experimental design, (c) triangulation, (d) sampling procedures, (e) research design, (f) pilot study instrumentation, (g) main study instrumentation (h) data collection procedures for the pilot study, and (h) data collection for the main study. Furthermore, a pilot study was conducted, which comprised of the development of a prototype of the first motivational email. The next section will present a brief summary of the research study's methodology. Prior to conducting this study, permission was obtained from Wayne State University's Internal Review Board (Appendix A).

Design-Based Research

Wang and Hannafin (2005) define design-based research as “a systematic but flexible methodology aimed to improve educational practices through iterative analysis, design, development, and implementation, based on collaboration among researchers and practitioners in real-world settings, and leading to contextually-sensitive design principles and theories” (p. 6). Five characteristics that Wang and Hannafin derived from the literature that are elements of design-based research include: “Pragmatic, Grounded, Interactive, Iterative and Flexible, Integrative and Contextual” (p. 7). This study was pragmatic because the overall goal of the research study was to unearth solutions to a real-world motivational problem that universities face daily with students. Thus, data collection looked to expand theory and reframe design principles consistent with grounded theory (Design-Based Research Collective, 2003). Student perceptions were collected in an authentic environment (Wang & Hannafin, 2005) in order to closely replicate the complexities and challenges that arise in the real-world (Collins, Joseph & Bielaczyc, 2004; Wang & Hannafin, 2005). After students received the motivational email intervention, feedback was collected from the students identified as most motivated and the

students identified as least motivated students. For this study three iterative data collection cycles occurred to promote an iterative and flexible flow process throughout the study and to allow for participant and researcher collaboration (DBRC, 2003; Wang & Hannafin, 2005). In this study multiple data collection methods in addition to a pilot study were used to inform the larger research effort of the main study during the Fall 2012 semester. The use of quantitative and qualitative data collection methods and a pilot study were incorporated to validate and enhance the validity of the overall findings from the study (Wang & Hannafin, 2005). The use of design based research allowed for the foundational building of a case that supports the theoretical principles and underpinnings of motivational theory. At the final stages of this research study, based on evidence collected, the characteristics of a student tested motivational email was found. This solution can be seamlessly incorporated into higher education courses, as it is a practical solution to helping motivate students. In this way, the study's results can be "connected with both the design process through which results are generated and the setting where the research is conducted" (Wang & Hannafin, 2005, p. 12).

Experimental Design

Statistical Package for Social Sciences (SPSS) was used to analyze this research data. SPSS is a platform or program developed by IBM to be used in research analysis. Students in this study were randomly assigned into two groups. Creswell states that random assignment has been considered one of the most rigorous kinds of studies for social science research (Creswell, 2005). Random assignment assigns the participants at random to create two groups. As opposed to completing random sampling by hand, SPSS provided a random sample based on an approximate percentage of the 316 participants. Of the 316, 50% were selected to be part of the control group and 50% were selected by SPSS to be in the experimental group. The use of

random sampling was a priority in order for this study to be classified as a true experiment using a between-groups design. Half of the students were selected by SPSS to be in the experimental group, which means that they were part of the experiment and received the motivational emails. The other half of the students were included in the control group. All students in the study completed the same pre-test and post-test surveys that measured student motivation levels two times during the semester. The students in the control group did not receive the motivational intervention or participate in further data collection.

Triangulation

This study employed quantitative and qualitative data collections as self-reports of student motivation and final evaluations of the motivational emails to triangulate the data. The strategy of triangulating the data provides a richer description of the phenomenon by looking at the data from several viewpoints. Student motivation was assessed through student responses collected via the Course Interest Survey (CIS) (Appendix D), the Background Survey Questions (Appendix E), the Student Motivation Opinion Survey (Appendix F) and the Revised Semi-Structured Interview to Survey called the Student Design Motivated Survey (Appendix J). I used a pre-test CIS (Appendix D) to determine the current motivation level of the students. I incorporated the pre-test/post-test in a systematic manner so that the pre- and post-test could be used as a comparative analysis of student motivation levels of what actually happened and not just what I hoped would happen by the end of the research study. In other words, student motivation levels of the experimental group who received the intervention of motivational emails were compared to the control group who did not receive the motivational emails.

In addition, I collected quantitative and qualitative data throughout each stage of the mixed method study. As the researcher investigating motivational outcomes in six separate

sections involving four different instructors, I had little control over the treatment and variables being studied (Shadish, Cook, & Campbell, 2002). The variables to consider in this study were the dependent variable and the independent variable. The dependent variable serves as the predicted outcome, what I am expected to happen. In this study I expected students in the experimental group's motivation to increase. Students' motivation levels were collected two times during the course of one semester in both the experimental group and the control group in order to gauge an understanding of how the students' motivation levels change over time. Student opinions in regard to the intervention were collected from the experimental group throughout the course of the semester. In other words, quantitative and qualitative data were collected intermittently across several stages of the study (Burke Johnson and Onwuegbuzie, 2004). Qualitative data collected represents a detailed look into participants' perceptions of motivation (Ruona, 2005). The goal is to search the data to find in depth meaning of participants' words (Ruona, 2005). The quantitative data collected served as a viewpoint into student self-reports about their own motivation in order to inform the design of the next motivational email. The independent variable is the intervention. In this case, the motivational email as it was designed and redesigned serves as the independent variable.

Sampling Procedures

The population for this study was drawn from undergraduate students enrolled in two courses in the School of Business Administration at Wayne State University. Undergraduate students were chosen for the study because in past research studies this time period in the students' lives has the greatest possibility for shaping persistence decisions (Astin, 1993; Pascarella and Terenzini, 1991; Tinto, 1987b) which correlates with the goal of this study to maintain student motivation through an entire course. In addition, I chose students in the School

of Business Administration (SBA) for convenience purposes as the Department Chair offered access to the students in BA1010, Critical Thinking for Consumer Decisions and BA2020, Introduction to Business during one semester, and because these classes have the largest enrollment of classes offered to undergraduate students. BA1010 and BA2020 are core courses in the SBA program and most undergraduate students take these two courses within the first year of school. BA101, Critical Thinking for Consumer Decisions is open to all business students. The course focuses on the ‘development of critical thinking skills and the application of these skills in evaluation and decisions for a broad range of consumer issues including advertising interpretations, purchase decisions, job applications and consumer protection’ (SBA website). BA2020, Introduction to Business focuses on “Functions of modern business management, information systems, marketing, ethics and social responsibility (SBA website).

At the start of the term this group had 953 participants. I obtained permission from the Department Chair to contact the four instructors teaching the 6 sessions of two courses BA1010 and BA2020. The professors were contacted via email prior to the start of the study to gain consent for participation. Contact between the Department Chair and the instructors of the classes occurred throughout the semester via email messages.

Research Design

The design-based research study included a true experimental design with pretest posttest data collection of quantitative and qualitative data across the course of the study. This study was carried out in two phases, a quantitative phase and a qualitative phase. The qualitative phase was designed to identify the real-time motivational needs of the students who are identified as least motivated, and to collect feedback on the design of the email from the students who were identified as most motivated.

To determine the potential for maintaining and even increasing student motivation, I felt that looking at what happens in the gap between the most motivated students and the least motivated student would help inform the study. I remember reading about Thomas Gilbert who created the Behavioral Engineering Model (BEM) in 1978. I thought it was fascinating that he compared the difference between the typical performers and the exemplary performers in a work setting. Gilbert looked at the difference in behavior and conditions that can be identified for deficiencies which could be manipulate employee behavior to improve performance. I could see similarities between Gilbert's model designed to increase employee performance and Keller's model to increase student motivation and wondered if I could use this comparison strategy in my study because Keller (2010) states that motivated students are already motivated and just need maintenance. This concerned me as I did not want the most motivated students in the class to not get anything out of the motivational emails. Further literature searches emerged Maslow's Hierarchy of Needs (1954). He determined human motivation levels by looking at successful people such as Albert Einstein to determine what qualities successful people had. It was then that I decided that the only way I could include both the most motivated students and the least motivated students was to create an email that would appeal to both groups of students.

Findings from the qualitative phase were used to begin answering the research question of what the motivational needs of undergraduate students are, in order to design a motivational email for undergraduate students. Two surveys designed to collect qualitative data were constructed to collect information from students the Student Motivation Opinion Survey (Appendix G) and the Student Design Motivated Opinion Survey (Appendix J) One quantitative survey was used to measure student motivation levels: (a) the CIS (Appendix D). Students in the experimental group completed the CIS, and were sent motivational emails throughout the

semester and provided feedback within each iterative cycle of redesign. A visual representation of the design appears in Table 7. A summary of Research Questions, instruments, and statistical analysis can be found later in the chapter in Table 10.

Table 7

Summary of Design and Data collection

Group	CIS	Background Survey Questions	Student Motivation Opinion Survey	Student Design Motivated Survey	Overall Evaluation	Emails	Background Survey Questions	CIS
Control	X	X					X	X
Intervention	X	X	X	X	X	X	X	X

Note: CIS=Course Interest Survey

The overall goal of this study was to establish an empirical base for the creation of an effective standard highly motivational email for undergraduate students. I used the ARCS Motivational Model (Keller, 2010) to design the motivational emails based on incorporating the strategies of attention, relevance, confidence and satisfaction. The experimental group (the group receiving the motivational messages) received four motivational emails throughout the semester. The first motivational email was created using information obtained from the pilot study and Keller's ARCS motivational instructional design.

Pilot Study Instrumentation

Course Interest Survey. This study involved a pretest and posttest strategy collecting student motivation levels two times across the semester called a Course Interest Survey (CIS). (Appendix D) The CIS was developed by Keller (1987abc) in order to gain insight as to student perceptions of motivation in the classroom. The purpose of using this instrument for this study was to measure student's perceptions of motivation at the start of the semester, and at the end of the semester. The CIS has been validated and proven based on past research studies (Keller,

2010). Dr. Keller granted permission to designers and instructors to use the instrument as long as copyright and attribution were noted. The course interest survey (Keller, 1987abc) includes 34 questions designed as statements. Each question has five possible answers, which are set up as a Likert-type scale of numbered responses from 1-5. All questions pertain to the four categories of ARCS and are measuring the current levels of student's attention, relevance, confidence and satisfaction.

For example, the first question on the instrument was placed there to obtain an understanding of the student's perceptions of the instructor in order to gauge the student's attention levels in regard to motivation.

1. The instructor knows how to make students feel enthusiastic about working towards this degree.

A= Not True

B=Slightly True

C=Moderately True

D=Mostly True

E=Very True

The CIS is set up to incorporate both positive and negative statements. For positive statements, the most motivated response is a 5. The negative statements, students would answer with the lowest possible number of 1.

The scoring guide measurement process for the CIS instrument is located in Table 8. Keller explains that there is not one type of normal result for this survey because it is situational and therefore the researcher cannot assume that there would be a normal distribution of

responses (Keller, 2010). The process of determining scores for this survey does not change. The responses for each question are added together for each subscale and then for the total scale.

Table 8

Scoring Guide for Course Interest Survey (CIS)

Attention	Relevance	Confidence	Satisfaction
1	2	3	7 (reverse)
4 (reverse)	5	6 (reverse)	12
10	8 (reverse)	9	14
15	13	11 (reverse)	16
21	20	17 (reverse)	18
24	22	27	19
26 (reverse)	23	30	31(reverse)
29	25 (reverse)	34	32
	28		33

The main goal of collecting the Course Interest Surveys (Appendix D) twice across the semester was to determine if the motivation levels of the students had changed from the beginning of the semester to the end of the semester, and whether or not there was a difference in motivation levels between the two groups. As with any survey, the internal consistency estimates need to be checked to determine if the results were satisfactory. Table 9 represents the internal consistency estimates for the CIS.

Table 9

CIS Internal Reliability Estimate

Scale	Reliability Estimate (Cronbach's α)
Attention	0.84
Relevance	0.84
Confidence	0.81
Satisfaction	0.88
Total Scale	0.95

Pilot Study Background Study Questions. The pilot study Background Survey Questions (Appendix E) were developed in order to obtain descriptive statistics from undergraduate students and to determine if any changes to the motivational emails need to occur based on background information. For example, if demographic information collected surprisingly determined that the mean age group for the students was 50 years old, the motivational email would need to be designed differently than if the sample was a mean of 20 years old. I expected the mean to be around 20, but wanted the evidence before moving forward with the main study in fall 2012. The questions for the questions came from the 2010 U.S. Census Bureau (2010). I used the quick facts section located under the Michigan to determine what demographic questions were asked of Michigan residents. Questions asked in the census collected demographic information on age, gender, how one would classify themselves, if the person was working, dependents, how many hours per week, yearly household income. Other questions on the survey connected to the student's relationship with Wayne State University. Questions surrounded the idea of whether the job the student held was part of the work study

Pilot Study Evaluation. As the pilot study intended to inform the much larger study in the fall, the evaluation survey designed for the study evolved as a result of the pilot study and changed from one time to the next. The purpose of the final evaluation survey (Appendix L) was an attempt to collect data on the pilot study motivational email in order to use the information to redesign a motivational email for the larger study in the fall of 2012. The questions for the pilot study were based on evaluation questions that were utilized in a previous dissertation study (Robb, 2010). This was a total of 9 qualitative questions in the evaluation survey. The overall goal of the survey was to collect information on the students' initial reactions to receiving the email, their perceptions of the email (content, lay out) and what the students would like to see in future emails. Table 11 provides an explanation of the design of the pilot study evaluation in relation to ARCS.

Table 11

Summary of Pilot Study Evaluation Design in relation to ARCS

Question	Criteria
When you opened your email account and saw message in Blackboard, what was your immediate reaction?	Attention
What did you think about the email message in general?	Relevance
Was the message sent in Blackboard motivating?	Attention, Relevance, Confidence, Satisfaction
What impact did the message have on your overall motivation to complete your degree?	Relevance, Satisfaction
What did you like the most about the message and why?	Design
What did you like least about the message and why?	Design
Did the receipt of this email impact your day in anyway?	Relevance, Satisfaction
Overall, what would you have liked to see in the emails that you think would have helped motivate you to persist and complete your degree?	Confidence

Main Study Instrumentation

Course Interest Survey. This study involved a pretest and posttest strategy collecting student motivation levels two times across the semester called a Course Interest Survey (CIS). (Appendix D) The CIS was developed by Keller (1987abc) in order to gain insight as to student perceptions of motivation in the classroom. The purpose of using this instrument for this study was to measure student's perceptions of motivation at the start of the semester, and at the end of the semester. The CIS has been validated and proven based on past research studies (Keller, 2010). Dr. Keller granted permission to designers and instructors to use the instrument as long as copyright and attribution were noted. The course interest survey (Keller, 1987abc) was reviewed in the pilot study instrumentation section.

Background Survey Questions. My Background Question Survey changed from the pilot study to the main study. After I collected the data from the pilot study, I contacted a statistician (A. Lorenz, personal communication, July 31, 2012) to help me interpret the data collected. Upon further review of the Background survey questions, I determined that the questions would not be getting the answers that I really needed. Questions 8 and 12 were not relevant to my study as they would help inform to overall student retention in a program which was an original focus of mine, but I narrowed the study to maintaining student motivation within a course. In addition the statistician suggested that I change the answer choices that students had available to them as some of the questions could result in duplicate choices (A. Lorenz, Personal Communication, July 31, 2012) for example in the pilot study question 1 asked:

1. What is your age? (Circle One Answer)
 - 18-19
 - 20-21
 - 21-22
 - 22-23
 - 23-24
 - 24+

Akiva immediately noticed that when coding responses to find descriptive statistics a person might select 20-21 because they are 21 years old, and the same person could have chosen 21-22 for the same reason. Because of this challenge the question was changed so that participants in the much larger study would be able to write in their age as opposed to select from a set of options. A full example of the redesigned survey is located in Appendix F and a summary of the changes applied to the Background information from the pilot study to the main study is explained in Table 12.

Table 12

Summary of Changes made to Background Information Instruments

Pilot Study Questions	Main Study Questions	Identification of changes
What is your age? (Circle One Answer) 18-19 20-21 21-22 22-23 23-24 24+	What is your age? (Write _____ Answer)	Based on the feedback from the statistician this question would be much easier to code when offering participants the opportunity to fill in their own age.
What is your gender? (Circle One Answer) Male Female	What is your gender? (Circle Correct Answer) Female Male	This question stayed the same.
How would you classify yourself? (Circle One Answer) White Alone Black Alone Native American Alone Asian Alone Pacific Islander Alone Other Race Alone	How would you classify yourself? (Circle One Answer) Asian Black Hispanic Multiethnic Native American Pacific Islander	Based on the statistician review, he felt the responses needed to be changed to how they were written in social research, which was different then how they appeared on the U.S. Census (personal communication, Akiva)

Multiracial	White	
	<p>What is the main language you speak? (Write Answer)</p> <p>_____</p> <p>(Example: English, Spanish, etc.)</p>	<p>The statistician recommended this question as if the information collected suggested that the students spoke a majority of a different language, I could then either modify the original email to reflect those customs or have the email sent out in a different language.</p>
<p>What is your current status with WSU? (Circle One Answer)</p> <p>Part-time Full-Time</p>	<p>What is your current status with WSU? (Circle Correct Answer)</p> <p>Part-time Full-Time</p>	<p>This question stayed the same.</p>
<p>How many dependents do you claim on your federal taxes? (Circle One Answer)</p> <p>0 1 2 3 More than 3 Do not complete federal taxes</p>	<p>Did you file a federal tax return in 2011? (Circle Correct Answer)</p> <p>No Yes</p> <p>If no, skip question #7.</p> <p>If yes, how many dependents did you declare? (Write Answer)</p> <p>_____</p>	<p>The first question assumed students would be completing federal taxes, the statistician felt that not all undergraduate students would do this and it would be more appropriate to first ask if they are. And dependent question.</p>
<p>Are you currently working? (Circle One Answer)</p> <p>Yes No</p>	<p>Are you currently employed? (Circle Correct Answer)</p> <p>No Yes</p> <p>If no, skip question #9.</p>	<p>Statistician recommended a wording change from “working” to “employed” as that is a more appropriate term for social research.</p>
<p>If Yes, How many hours per week? (Circle One Answer)</p> <p>Full-time 40+ hours a week Part-time <40 hours per week Not working</p>	<p>If yes, how many hours? (Write Answer)</p> <p>_____</p>	<p>Again, statistician recommended that this question be posed as a write in instead of locking the students into one choice or another. For example, students might be working 35 and another 10 and they would be placed in the category when there is a big difference between 10 and 35 hours.</p>
<p>Is your current job part of the work study program at WSU? (Circle One Answer)</p> <p>Yes No</p>	<p>Deleted</p>	<p>N/A</p>

Yes	No	No	Yes	
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Student Motivation Opinion Survey. The purpose of the Student Motivation Opinion Survey (Appendix G) was to gather information and content in order to create the motivational emails. I wanted to make the motivational email more effective for the students in the class as a whole and I needed a tool that would help draw their current perception, concerns and challenges during the course of the semester. The intent was to gauge the general feeling of the undergraduate students in the class and include it in a redesign of each motivational email. J. Visser and Keller (1990) found that identifying student needs in real-time and addressing the needs immediately had a significant impact on individuals in the course. To create the survey I used Keller's ARCS Motivational Instructional Design Strategy. Once I had the survey completed I asked 2 instructional designers and 2 instructors to take a look at the survey and provide me with feedback about the tool. One change was made to the instrument based on expert feedback. This concept was consistent with design-based research since I was interested in finding out if students were motivated and wanted the best tools to collect that information. A summary of the design of the Student Motivation Opinion Survey is located in Table 13

Table 13

Summary of Motivation Opinion Survey Design

Question	Criteria
What kinds of challenges as a student are you facing this week?	Stayed the same
How do those challenges get in the way of completing your coursework?	Stayed the same
How do you work through some of the challenges you experience?	Stayed the same

What can the College of Business do to help you work through those challenges?	Stayed the same
What motivates you in your daily life?	This question was changed to: What is one thing in your life right now that is motivating you to keep working towards your degree?
What do you need right now to help you stay motivated in order to achieve your course requirements in order to complete this course?	Stayed the same

Student Design Semi-Structured Interview. The purpose of the Semi-Structured Interview (Appendix H) was to collect student thoughts in regard to the design of the email. I came up with the interview questions with focus on ARCS instructional design strategy (Keller, 2010). I wanted to know whether or not the motivational emails were consistent with the ARCS motivational instructional design strategy. Did the emails grab the students attention, was the content in the email was relevant, how it attributed to their confidence and satisfaction in the course and finally about the design of the email. Did the email look contemporary or more traditional, how they would describe the email? As I created the questions for the semi structured interview, I asked 2 instructional designers and 2 instructors to take a look at the questions to let me know if they thought the questions would provide the answers I was looking for. One change was made to the instrument based on the subject matter expert's opinions. For example, the first draft of the semi-structured interview was written in third person, and based on feedback given by one of the instructional designers; I changed the questions to first person.

Table 14

Summary of design of Student Design Semi-Structured Interview

Questions	Criteria
Did you like the email that sent on (insert date here)?	Relevance
Follow Up Question: What was your impression or immediate reaction to the motivational email sent to you on (insert date here)?	
If you could describe the email sent to you in three words, what would they be and why?	Attention
Did you learn anything from the email? If so, what?	Satisfaction
Did the e-mail grab your attention? Was it visually pleasing? Why or why not?	Attention
Did you find the email relevant to your student life? How so?	Relevance
Did you find the email relevant to your class? How so?	Relevance
Did the email help build your confidence in the course? How so?	Confidence
Did the email help you to feel satisfied with the course you are taking? Or with the program you are in? (School of Business Administration)	Satisfaction
Were you able to make connections between the information in the email and your daily or student life?	Relevance
Was receiving the email helpful to you? How so? or Why Not?	Confidence Satisfaction
Did you like the format of the email? Yes or no?	Design
Follow-Up Question: What did you like most? Why?	
If you could make changes to the format of the email, what would they be?	Design
Thinking about graduation and obtaining your degree, what do you need from the College of Business to help you achieve your goals and complete your degree?	Design
What do you think your peers would like to help motivate them?	Design

Student Design Motivated Survey. As the Fall 2012 semester started, it became clear that scheduling time with students even on the telephone, with Skype, or in person would be an unachievable task. After two weeks of trying to contact five people repeatedly, within two

separate iterations, I decided to use some of the leading questions focusing on ARCS in the semi structured interview to create an online survey. (Appendix J) The questions were derived from the semi structured interview which had already been vetted by 2 instructors and 2 instructional designers so I moved the information to the online survey format and sent it out. A summary of the changes from a Semi-Structured Interview to the online Student Design Motivated Survey are located in Table 15

Table 15

Summary of the Changes from a Semi-Structured Interview to the online Student Design Motivated Survey

Semi-Structured Interview Questions	Student Design Motivated Survey	Description of Changes made
Did you like the email that sent on (insert date here)? Follow Up Question: What was your impression or immediate reaction to the motivational email sent to you on (insert date here)?	What was your impression or immediate reaction to the motivational email?	Attention
If you could describe the email sent to you in three words, what would they be and why?	If you could describe the email in three words, what would they be?	Attention, Relevance, Confidence, Satisfaction
Did you learn anything from the email? If so, what?	Did you learn anything from the email? If so, what?	Satisfaction
Did the e-mail grab your attention? Was it visually pleasing? Why or why not?	Did the e-mail grab your attention? Was it visually pleasing? Why or why not?	Attention
Did you find the email relevant to your student life? How so?	Did you find the email relevant to your class? How so?	Relevance
Did you find the email relevant to your class? How so?		Deleted
Did the email help build your confidence in the course? How so?	Did the email help build your confidence in your academic abilities? How so? If it did not help build your confidence, what in your life	Confidence

	helps to build your confidence?	
Did the email help you to feel satisfied with the course you are taking? Or with the program you are in? (School of Business Administration)		Deleted
Were you able to make connections between the information in the email and your daily or student life?	What kinds of connections were you able to make after viewing the email between the information in the email and your daily student life?	Deleted
Was receiving the email helpful to you? How so? or Why Not?		Deleted
Did you like the format of the email? Yes or no? Follow-Up Question: What did you like most? Why?	Did you like the format of the email? Why or why not?	Deleted
If you could make changes to the format of the email, what would they be?	If you could make changes to the format of the email, what would they be?	Deleted
Thinking about graduation and obtaining your degree, what do you need from the College of Business to help you achieve your goals and complete your degree?	Thinking about graduation and obtaining your degree, what do you need from the College of Business to help you achieve your goals and complete your degree?	Deleted
What do you think your peers would like to help motivate them?		

Main Study Final Evaluation. At the conclusion of the semester after all four emails were sent to student in the experimental group, all students were sent a revised version of the final evaluation. The survey had to change from the pilot study, as all participants in the pilot study received one motivational email in order to provide feedback from the much larger study in fall 2012. Students in the experimental group of the main study were exposed to four motivational emails throughout the semester. The purpose of the Main Study final evaluation (Appendix K) was to obtain overall feedback from the students about the process of receiving

motivational emails. Because this final evaluation was evaluating perception of four motivational emails as opposed to just one, I had to create a new draft of the survey and solicited the same 2 instructional designers and 2 teachers to review the new survey. Based on feedback from two of the subject matter experts, several changes were made to the questions. Question 5 asked “Considering the messages sent, which one is your favorite and why?” The experts mentioned that I should remind the students what the subject heading were for the course of the semester. As a result of that feedback, the question was changed to: “ Considering the messages sent, which one is your favorite and why? (Long Road Ahead, Study Skills, Organizational Moments, Bumps in the Road)? Likewise, question 7 asked “Considering the messages sent, which one did you like the least and why?” Based on the feedback provided, this question was changed to: “Considering the messages sent, (Long Road Ahead, Study Skills, Organizational Moment, Bumps in the Road) which one did you like the least and why?” In addition question 7 asked: “One of the emails was about study skills, have you incorporated any of the study skills listed in the emails into your daily life? Why or why not?” Based on feedback provided from SME’s the question was changed to include examples from that particular email “One of the emails was about study skills, have you incorporated any of the study skills listed in the emails into your daily life (use your time in class wisely, participate, take good notes, etc.)? Why or why not?” And finally, the same type of addition was made to question 8, the original question asked “Did you incorporate any of the skills provided to help organize the end of your semester? Why or why not?” Which was changed to “Did you incorporate any of the skills provided to help organize the end of your semester (look at what you have left for the semester, break assignments into little tasks, use your down time, create a study guide, etc.?) Why or why not?” based on the feedback provided by SME’s.

A summary of the design changes between the pilot study evaluation to the main study evaluation is contained in Table 16.

Table 16

Summary of Design Changes from Pilot Study Evaluation to Main Study Evaluation

Main Study Evaluation	Design Implications
What was your impression or immediate reaction to receiving motivational emails?	
If you could describe your overall feelings about the emails in three words, what would they be and why?	
Were the messages sent through WSU email motivating? Why or why not?	The pilot study evaluation was sent through Blackboard, however, this version was sent to the student through the WSU email system
What impact did the messages have on your overall motivation to complete your degree?	Relevance, Satisfaction
5. Considering the messages sent, which one is your favorite and why (Long Road Ahead, Study Skills, Organizational Moments, Bumps in the Road)?	(Long Road Ahead, Study Skills, Organizational Moments, Bumps in the Road)
6. Considering the messages sent, (Long Road Ahead, Study Skills, Organizational Moment, Bumps in the Road) which one did you like the least and why?	(Long Road Ahead, Study Skills, Organizational Moment, Bumps in the Road)
7. One of the emails was about study skills, have you incorporated any of the study skills listed in the emails into your daily life (use your time in class wisely, participate, take good notes, etc.)? Why or why not?	(use your time in class wisely, participate, take good notes, etc.)
8. Did you incorporate any of the skills provided to help organize the end of your semester (look at what you have left for the semester, break assignments into little tasks, use your down time, create a study guide, etc.)? Why or why not?	Transfer (look at what you have left for the semester, break assignments into little tasks, use your down time, create a study guide)
9. Did the emails impact your motivation throughout the semester? If	

so how, if not, what motivates you?	
10. Overall, what would you like to see in an email that you think would help motivate you to persist and complete your course? And what would you like to see in an email that you think would help motivate you to complete your degree?	

Data Collection Procedures

Mixed methods of quantitative and qualitative data were used in this design based research study to provide triangulation of the data collected. This approach using qualitative data to support and reinforce quantitative analysis underlies the importance of the dynamic field of mixed methods social inquiry, a perspective that emphasizes the rationale, purposes, and potentialities of mixing methods in social research and evaluation (Greene, Caracelli & Graham, 1989) The results, analysis and conclusions must be interpreted with caution as I might not have been able to foresee or uncover all the themes present. In addition, there are no hundred percent guarantees for validity of the data used. However, the integration of the qualitative and quantitative results gives a better perspective and understanding of the complex phenomenon of student's motivation and persistence.

The quantitative methods used for data collection were the CIS and the demographic information collected. The demographic information collected was used as a secondary data source and will not attempt to answer any of the research questions. The qualitative methods used for data collection were the student motivation opinion surveys, student design semi-structured interviews, redesign of semi-structured interviews, and the final email message evaluation. The outcome of the qualitative phase was used to identify real time motivational needs of the students in order to redesign the next motivational email for the experimental group.

The data collection methods discussed aligns with the four research questions, data sources, and data analysis in Table 17.

Table 17 *Summary of Research Questions, Data Sources, Collection Methods, and Data Analysis*

Research Questions	Collection Method	Data Sources	Dependent Variable	Independent Variable	Analysis Method
Q1: What is the current level of motivation for undergraduate students?	Course Interest Survey	Students	Student Motivation Levels	Demographic	SPSS: Descriptive Statistics: Measures of central tendency
Q2: Do the ARCS-Based emails improve the student's perceptions of motivation?	Course Interest Survey Student Motivation Opinion Survey Student Iterative Design Survey	Students	Student Motivation Levels	Independent Groups	ANOVA Qualitative Data Analysis
Q3: What is the difference between the experimental group and the control group?	Course Interest Survey Student Motivation Opinion Survey Student Iterative Design Survey	Students	Student Motivation Levels	Groups	ANOVA Qualitative Data Analysis
Q4: How effective is the use of the design based research process in the iterative process of creating motivational emails?	Student Design Motivated Survey Student Motivation Opinion Survey Student Iterative Design	Students	Design-Based Research Process	Mixed Methods Process, Experimental and Control Groups	Analysis of Qualitative data

	Survey Final Email Message Evaluation				
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Data Collection Time Line

Pilot Study: May-June 2012. Prior to conducting any research, approval was obtained for the pilot study from the Human Investigative Committee (HIC) (Appendix A) and from the School of Business Administration (SBA) (Appendix C). A total of three instruments were used for data collection during this phase of the study: CIS (Appendix D), Background Survey Questions (Appendix F), and the Final Evaluation Pilot study survey capped (Appendix L). All pilot study data collection instruments were secondary data sources that I used in order to strengthen the consistency and transferability of the findings (Ruona, 2005) and were not used in addressing any of the four research questions.

The first motivational email for the larger study in the fall of 2012 was created based on feedback collected from participants in the pilot study. Modifications to the motivational emails were made, and I obtained the appropriate approvals for my dissertation study human investigations committee (Appendix A) and from the School of Business Administration (Appendix C).

Phase 1 Quantitative Data Collection: September 1–December 12, 2012

During the first two weeks of class I visited each of the 6 participating sections of the courses and distributed the research information sheet (Appendix B) and administered the CIS (Appendix D) and the Background Survey Questions (Appendix F).

Phase 2 Qualitative Data Collection: September 1-December 12, 2012

Four data collection instruments were used for data collection during this phase of the study: (1) Student Motivation Opinion Survey (Appendix G), (2) Student Design Semi-Structured Interview (Appendix H), (3) Student Design Motivated Survey (Appendix J), and (4) Final Email Message Evaluation (Appendix K).

Pilot Study. The pilot study involved both quantitative and qualitative data collection but did not incorporate an experimental design. After receiving approval from the Wayne State University Human Investigative Committee (Appendix A) and the School of Business Administration (Appendix C) I contacted the instructor of the course to begin scheduling the data collection visits. The same course BA2020 and an additional course BA1010 were used for the larger study in the fall of 2012 for the research study. I read out loud to each class the approved script (Appendix M) by Wayne State University IRB. Students were informed of their rights as research participants (Appendix B), and given the Background Survey Questions (Appendix F) and CIS (Appendix D) to complete.

During this meeting I passed out all materials and gave students 15 minutes to complete the CIS and demographic information. All thirteen students enrolled in the course volunteered to participate in the study. About two weeks into the semester after visiting the class face to face, I sent the students a motivational email (Appendix N) created using ARCS motivational instructional design strategy (Keller, 2010). This email was designed with all four elements of Keller's ARCS motivational instructional design in order to obtain the students attention, show students relevance of school to their lives, and help build the students' academic confidence and satisfaction (Keller, 2010). The email contained a picture of a long road with beautiful trees on either side and no apparent destination. The email contained a message written by me "You

might feel like there's a long road ahead as you work towards finishing your degree. And yes, there will be some bumps in the road. With hard work and determination you can work straight through those bumps and successfully achieve your academic goals". In addition there was a quote "Map out your future-but do it in pencil, the road ahead is as long as you make it. Make it worth the trip" –Jon Bon Jovi. I emailed each student a blind copy of the email. Once the students received the email, they had to click on the link to download the content in order to view the email (Appendix N). In addition to the motivational email attached, I also included a link to the 9 question qualitative evaluation survey intended to collect information on the students' initial reactions to receiving the email, their perceptions of the email (content, lay out) and what the students would like to see in future emails. (Appendix L) The evaluation link was through the free service of surveymonkey.com. A week after I sent the motivational email with the link to the 9 question evaluation, the instructor reminded the students to complete the evaluation survey. At the end of the spring/summer semester, I went to the pilot study class for the second time and asked students to complete the same CIS that they completed in the first week of class. Table 18 is a visual representation of the research design of the pilot study.

Table 18

Summary of design and data collection for pilot study

Group	Research Information Sheet	CIS- Test	Pre-	Motivational Email #1	Overall Student Evaluation	CIS Post-Test
Experimental	X	X		X	X	X

Main Study Fall 2012. Once Wayne State University's Human Investigative Consent requirements were met for the larger study (Appendix A) and I obtained consent from the School of Business Administration (Appendix C) I contacted the instructors to schedule two face to face

visits within each of the classrooms. Once the meetings were scheduled, I emailed each instructor a confirmation of the agreed upon meeting times. To prepare for each face to face meeting time within the classroom I made 300 copies of the Course Interest Survey (CIS) (Appendix D), Background Survey Questions (Appendix F) and the approved research information sheet (Appendix B). During the second week of classes I visited all 6 face-to-face sections of BA1010 and BA2020 to inform students about the study with the research information sheet (Appendix B) and to administer the CIS (Appendix D) and Background Survey Questions (Appendix F) in the face-to-face environment in an attempt to collect more responses. These courses are 14 weeks long and instructors in the program advised me that sometimes the class list takes a week to figure itself out, so based on that information and their recommendation I chose to visit the classroom the second week as opposed to the first week in the hopes of collecting more responses. At the first meeting, which I will refer to as Time 1, I reviewed the HIC Information Sheet (Appendix B) and read the prepared script already approved by HIC (Appendix M). The visit took about 30 minutes. I explained student rights with regard to volunteering in the study and I explained via the script what I was doing in their classroom through the course of the semester. The explanation took about 10 minutes, and I used another 20 minutes to pass out all the surveys, and provide students enough time to complete the 34 statement CIS and the last 5 minutes were used to collect the surveys from the students.

After I visited all 6 courses that week, I took the Time 1 data home and began entering the data into an SPSS spreadsheet. The background variables (Appendix F) I collected include student's age, gender, student status (are they full or part time), employment status, number of dependents, clarification that they are first time students, high school gpa, and academic intent.

The dependent variable in this study was the motivation levels of the students as measured by the CIS.

After all the data collected from Time 1 was entered into the SPSS template I used “R” in SPSS to create randomized experimental and control groups. This was important because I did not want all the students to receive the motivational emails. The experimental group (group receiving motivational emails) comprised of half of the students and the other half of the students in the class represented the control group (student’s not receiving motivational emails). In addition to determining the experimental and control groups with the Time 1 data, I also had SPSS generate a list of individual student motivation levels from most motivated to least motivated.

About two weeks after visiting the 6 classrooms with the CIS, I sent the Motivational Email #1 to the students who were in the experimental group (Appendix O) through the university email system. Email #1 was different from the pilot study as it was redesigned based on the information collected from the pilot study. A detailed explanation of how the first motivational email from the pilot study was redeveloped is described in Chapter Four. Based on Keller’s research, the first motivational email was designed as a welcome letter. (Appendix O) The content included a welcome to the course, an inspirational picture and a motivational quote. The quote in the first motivational message was “Map out your future- but do it in pencil. The road ahead is as long as you make it. Make it worth the trip” by Jon Bon Jovi. The top of the email was used as a branding technique so that throughout the semester when students saw this format, they would immediately identify that these emails were coming from me. In the first email, the banner at the top of the embedded email to students said “Long Road Ahead”. This was the only

motivational message that was pre-designed before the start of the course using the information collected in the pilot study.

After Motivational Email #1 was sent out I ran the student information into SPSS in order to determine the mean score from the Course Interest Survey. The finished product was a listing of student in order from the highest score of 170 to the lowest scores in the area of low 50's. Even though Keller there really is not a normal distribution to the scale (Keller, 2010) it was still quite clear that a student who scored a 170 based on the Course Interest Survey was more motivated than the student who scored a total score of 52 on the Course Interest Survey. . During this study those students who had a score of 70 or less were considered "least" motivated and students who had a score of 130 or more were considered "most" motivated. Once the list was prepared, I look at the experimental group member only and selected the first five students who had the lowest scores on the list. These students who were identified as having the least amount of motivation were sent the Student motivation opinion survey (Appendix G) via the university email system.

The questions on the Student Motivation Opinion Survey were designed to gauge real-time motivation for the students. It was an attempt to really find out what the current needs of the least motivated students in the class were so that I could then redesign the next motivational email to help motivate them. The least motivated students' perceptions were used to gain a better understanding of what content needed to be placed in the motivational emails. I wrote a short message within the email to the student indicating that the message was from Sara, the graduate student who came to class a few weeks ago and I mentioned that some of the students would be asked to complete additional surveys and that this email was what I was referring to.

Within the email, I included an embedded link to the Student Motivation Opinion survey via [surveymonkey.com](https://www.surveymonkey.com).

Five students who were in the experimental group and listed at the top of the list were identified as highly motivated were contacted via email and telephone in order to conduct a Student Design semi-structured interview (Appendix H). The questions that were part of the semi-structured interview were questions about the design of the email. Again these students already have high motivation based on the Course Interest Survey results; my goal was to determine the best format for the motivational emails and to see if there was anything I could do to help maintain the student's motivation. The most motivated students' perceptions were used to gain a better understanding of how to better design the motivational emails and the least motivated students input provided a better understanding as to what content needs to be incorporated within the emails to reach the largest number of students. Connecting with undergraduate students in this study proved to be quite difficult. I started with five students who were most motivated from the CIS Time 1 (Appendix D) and started to connect by calling the number each student wrote on their background survey questions. After two days since I had not heard back from any of the messages that I left, I emailed each student again asking for the student to participate in an interview. A day after that, when I still had not heard from even one of the five students who were most motivated for this study, I tried calling again and leaving another message. At this point in time, I made the decision to make a fourth attempt to reach the most motivated students as designed-based research is iterative in nature. As a researcher, I had to make the decision to redesign my data collection methods on the spot. While at the same time I was trying to collect interview data from the most motivated students, I was also collecting data from the least motivated students via a survey through [surveymonkey.com](https://www.surveymonkey.com). The least motivated

students were responding and answering the questions via the surveymonkey.com link. Because of the success with using the surveymonkey.com link, I reviewed the questions that I had created for the semi structured interview and redesigned them into a 10 question survey via surveymonkey.com. A detailed explanation surrounding the differences between the semi-structured interview and the newly design 10 question survey can be found in Chapter 3. Students responded to the emailed survey and I now had data to use in designing motivational email #2

Based on the qualitative feedback provided by highly motivated and the least motivated students on motivational email #1, I was able to create a more meaningful motivational email #2 (Appendix P) with the current real time needs of the students in mind. With a better understanding of participants' interpretation of motivational email #2, I used the emerging themes from the data to design an email specifically about Study Skills.

During the second month of class, I sent Motivational Email #2 to the students in the experimental group via the university email system (Appendix P). Motivational Email #2 was designed specifically from the data collected from the most motivated students and the least motivated students from the CIS Time 1. A week after I sent Motivational Email #2 "Study Skills" was sent; I contacted five students who were identified as most motivated from the CIS Time 1 data collection via telephone at the number that they provided on the demographic sheet. After one day without any response from the first message left, I sent all five students an email asking them to participate in a semi-structured interview regarding the email sent. Two days later I still had not heard from any of the five students, so I decided to leave one more message before I sent them the revised survey (Appendix J) via the surveymonkey.com link. After one week, when I had not heard back from any of the students after repeated attempts, I sent the five

students the 10 question survey via surveymonkey.com the (Appendix J) that I had created a month earlier due to no response from students.

At the same time, I sent the six question survey (Appendix G) to the students who were identified as least motivated via the CIS Time 1 data collection. The goal of my research design was to collect data from 3-5 students during each iterative cycle. However, it proved to be quite difficult to get students to respond to my survey requests. I had success the first round, but the second round of data collection the students were not responding by completing the online survey. Many were not interested in participation or just did not even reply or call me back. As a result, I had to send out additional emails to other students in order to try to gain participants' perceptions of their current real time motivational needs.

This act of constantly resending data collection requests became a common theme throughout the study and as I later found out, getting a high response rate from undergraduate students can be quite difficult. Once I finally had students responses from both the most motivated and least motivated students to Motivational Email #2, I was able analyze the data to determine what themes were prevalent in the students' lives in order to design a third email that met their motivational needs. The third motivational email "Time Management" (Appendix Q) was created based on the qualitative data collected from the most motivated students and the least motivated students' feedback of the second motivational email.

After the email was sent out, I made a decision, due to the lack of response from students returning my phone calls during the first two design iterations of the study that I would just move forward and have the students provide data via surveymonkey.com. About a week after the third motivational email "Time Management", I sent the survey questions about the design of the email to the students who were identified as most motivated from CIS Time 1. I sent the

students who were identified as least motivated from the second CIS data collection a survey asking questions about how to motivate them. Once data was collected from both groups, I was able to analyze it to incorporate the themes that surfaced into the final Motivational Email #4, “You Can Do It”. (Appendix R) I sent the last Motivational Email #4 to students on a Monday during the second to last week of class.

The last week of class, before the semester ended, I went back to each of the six courses in order to collect the CIS (Appendix D) for the second time. At this time in the semester, I entered the data for the purposes of using it to analyze student motivation levels throughout the semester.

Three days after my last face-to-face visit, I sent all of the students in the experimental group a final overall evaluation (Appendix K) of the semester with all the motivational emails that were sent to students throughout the semester (Appendix O, P, Q, R) attached. The aim of the email evaluation was to obtain ongoing feedback to go towards the continuous process of the motivational email intervention.

Qualitative Data Analysis. The process of data analysis and reduction started immediately after the pre-test was collected and continued until the final data collection of the post-test. According to Cohen, the process of data analysis “involves organizing, accounting for, and explaining the data” (Cohen, 2004). In its natural format the analysis is an iterative process (Miles & Huberman, 1994; Bogdan & Biklen, 1992). It involves organizing and working with the data while chunking the information into controllable units, and then searching for patterns in order to uncover what is important and needs to be learned (Bogdan & Biklen, 1993). Once all data was collected for both the pilot study and the main study, information was organized in several ways.

Familiarization

Step 1: Chunk Data by Question Response. For each iterative cycle in this design-based research study I followed the same process for analyzing the data. Round One of Data Analysis included chunking the data by question (Appendix S). To do this I opened a Microsoft Word document and created a table with three columns and seven rows. For the motivation opinion survey, I placed each question in the first column using six of the rows for the six questions and the top row was labeled question. The second column was reserved for all student responses to that question. I organized this by labeling each response with Student 1, Student 2, Student 3, etc. The third column was reserved for my notes and observations. Once the data was placed per question on the chart, I began by reading through the data without marking anything. Then I let a couple hours go by and my second read through of the data I underlined words that stood out to me. During my third read through of the data, I began to write down words that showed behavior, thoughts and actions. Once I had the words written down for each participant who responded, on a separate sheet of paper, I began to work through the information to see if there was any organization to the information.

Step 2: Chunk Data by Participant Response. The next step involved viewing the data from a different perspective. Now I was on a time limit as the design of the next email was put on hold until I analyzed that data, but I purposely waited a week to look at the data again so that I would be looking at it with fresh eyes. Looking at the same data from a different perspective involved a similar organization process. I created a new Word document and started another table. For Round two of data analysis, I chunked the information by participant. To do this I created a table with four columns and 7 rows. The first column contained the question, the second column was all Student 1 responses next the appropriate question, the third column was

all Student 2 responses next the question and so on. The final column was blank for my observations and notes. Then I created another Word document and chunked the data by participants. The first time I reviewed the information in this format, I just read through it. By the time I was working with Round two data, and this was consistent with each iterative cycle, I had to move through the data much more quickly as time was of the essence to get the next motivational email out. So I was unable to wait as long in between reviews and the second time I looked at the data I underlined words that stood out to me. During the third run through of Round two data, I began to write out statements where I detected emerging themes.

Step 3: Compare Documents. The final phase of the qualitative data analysis involved comparing themes found from Round 1 to themes found from Round 2. I did this by putting the final themes produced from each data analysis round side by side and checking to see if consistent themes had emerged (Appendix T).

These 3 steps occurred three times throughout the study. The first time was after Motivational Email #1, the second time was after Motivational Email #2 and the final data analysis occurred after Motivational Email #3. I felt it was important to see if there were any overall themes that emerged for all student data collected over the course of the study so I incorporated a final analysis.

The final analysis involved creating another Word document that included all three iterations of student answers to the questions. In the first column I had the question, the second column was titled Time 1, the third column was titled Time 2 and the fourth column was titled Time 3. This gave me an overview of the entire picture so that I could see if there were any larger themes that emerged from the compiled data that I might not have seen with the data left

out individually or per time. This process helped to identify how the overarching themes of the entire study changed throughout the study to inform future studies.

Open-Ended Questions. The choice to use open-ended questions was used in order to extract a wealth of information from student responses. It is important to consider that not all students are able to express their thoughts on paper in the same way. In fact when students are able to get their opinion on paper, they are able to articulate a response in open ended questionnaires and most importantly they will have enough time to articulate their attitudes in their response (Geer, 1988). This process allowed me to dig deeper and obtain a better understanding of the information, feelings, and attitudes that students reflected when answering the survey questions. In other words, I gained insight about the students' true feelings regarding the motivational emails. On another note, because these questions were open ended it provided a challenge in that before I could even figure out categories within the student responses, I had to search the data to uncover the themes or categories.

Qualitative data collection is about retaining and understanding the data collected. I envision it as an abstract filing system. The main reason for selecting qualitative coding was to be able to reflect on what the data tells me about the categories I am looking at and what it means to my research questions. I have a main theme such as my topic question and derive from the data other themes that come out of the conversation. I approached coding through identifying grounded codes. With A Priori codes the researchers starts with a set of standards that they are looking for in the data. With grounded coding, I had to put my own experiences or knowledge aside in order to look at the data without prejudice to be able to focus on identifying new themes in the data. Generally to do this, I was looking for behaviors, or wording that implied specific acts from the participants, constraints, and any general strategies that arose from the data (Strauss, 1987;

Mason, 1996; Charmaz, 2003 and Gibbs, 2006). Specific research suggests to look at the following in order to code:

- Situation codes such as the student's view on the motivational emails
- Student descriptions of the motivational emails
- Student perceptions on different subject areas such as the instructor or SBA as a whole
- The students process of thinking about objects or people, such as the student view of the emails, and a researcher coming into their class.

Summary

This was a design-based research study that consisted of three iterations for the purpose of investigating the use of motivational emails for undergraduate students in order to increase and maintain student motivation throughout the course of a semester. Chapter three provided an overview of the study's research methodology and included specific information on: (a) rationale for design based research, (b) experimental design, (c) triangulation, (d) sampling procedures, (e) Research Design, (f) Instrumentation, (g) Data Collection Procedures, and (h) Qualitative Data Analysis. Furthermore, detailed information about the pilot study was presented, which comprised the development of a prototype of the first motivational email. The next section will present a brief summary of the research study's results.

CHAPTER FOUR

RESULTS

The general aim of this study was to determine the effects of motivational emails on undergraduate student motivation levels throughout the course of a semester. The specific purpose was to examine the process of utilizing design-based research efforts for the creation of real time emails in order to meet the motivational needs of undergraduate students. Qualitative and quantitative data were collected to examine any relationships between the motivational email and student motivation levels. The purpose of this chapter is to present the results. Based on a review of the literature and the results of the pilot study, the following four research questions guided this study:

Q1. What is the current level of motivation for undergraduate students?

Q2: To what extent do the ARCS based motivational emails impact the undergraduate perceptions of motivation?

Q3: What is the difference in perception of motivation, if any, between the experimental group and control group?

Q4: Does the iterative process of this design-based research study improve the strategically timed motivational message dispersed throughout the semester?

Analysis from the data collected in all phases of the project uncovered several overarching themes. This chapter is divided into four sections that discuss the results of the study from all phases. The first section will review the pilot study quantitative and qualitative results, followed by the main study quantitative and qualitative results.

Pilot Study Data Analysis

Quantitative- Pilot Study. Demographic information was collected from participants in the pilot study to develop a general understanding of first year student motivation levels and to inform the design of motivational email #1 for the larger study in Fall 2012. Eleven students completed the pilot study while 2 students did not complete the final evaluation; it is not known why the students did not complete the pilot. In addition to the pilot study, demographic data was collected in class. I used SPSS version 17 statistics software for the HP computer to analyze the data. Participants in the pilot study were 13 (8 male, 5 female) BA2020 students. More than half of the students (8) who participated in the pilot study were between the ages of 18 and 21. Five students were over the age of 24. 46.2% of students identified themselves as Caucasian, 23.1% identified as multi-cultural, 15.4% identified themselves as African American, 7.7% identified as Asian, and 7.7% identified themselves as Other. 76.9% of students stated that they were not working, and 23.1% stated that they were. Among the students who stated that they were working, 61.5% of participants are part-time workers and the other 38.5% work full-time. 69.2% of those students work less than 40 hours per week and on average are taking 2.92 courses during this semester. Below is a summary of the quantitative coding used to identify results in Table 19.

Table 19

Summary of codes used for data analysis Background Survey for Pilot Study

Question	Responses
PS_001 = What is your age?	1 = 18-19
	2 = 20-21
	3 = 21-22
	4 = 22-23
	5 = 23-24
	6+ = 24+

PS_002 = What is your gender?	1 = Female 2 = Male
PS_003 = How would you classify yourself?	1 = White Alone 2 = Black Alone 3 = Native American Alone 4 = Asian Alone 5 = Pacific Islander 6 = Other Race Alone 7 = Multiracial
PS_004 = What is your current status with WSU?	1 = Part-Time 2 = Full-Time
PS_005 = How many dependents do you claim on your federal taxes?	0 = 0 1 = 1 2 = 2 3 = 3 4 = More than 3 5 = Do not complete Federal Taxes
PS_006 = Are you currently employed?	0 = No 1 = Yes
PS_007 = If yes, how many hours per week?	0 = Not Working 1 = Full-Time 2 = Part-Time
PS_008 = Is your current job part of the work study program at WSU?	0 = No 1 = Yes
PS_009 = What is your current household income in U.S. dollars?	0 = Would rather not say 1 = Under \$10,000 2 = \$10,001-\$19,999 3 = \$20,000-\$29,999 4 = \$30,000-\$39,999 5 = \$40,000-\$49,999 6 = \$50,000-\$74,999 7 = \$75,000-\$99,999 8 = \$100,000 +
PS_010 = What is your overall academic goal at WSU?	0 = Not Sure 1 = Associate's Degree 2 = Bachelor's Degree 3 = Certificate

PS_011 = How many total classes are you enrolled in this semester?	4 = Other Type Response
PS_012 = What was your high school GPA?	Type Response
PS_013 = Is this your first year at WSU?	0 = No 1 = Yes
PS_014 = Have you attended college before starting at WSU?	0 = No 1 = Yes

The quantitative data collected from the Course Interest Survey was coded in the following format. Coding used to analyze the CIS data collected from students during Time 1 and Time 2 was the same for both data collected. Each Question from 1 – 34 was documented with the following codes: 1 = Not True, 2 = Slightly True, 3 = Moderately True, 4 = Mostly True, 5 = Very True. For the reverse questions, the same number from 1 to 5 (Not True to Very True) was typed in. Once all data was entered, the SPSS syntax command was used to automatically change the order so that the response of 5 on a reverse question will become 1, 4 becomes 2, 3 stays the same at 3, 2, becomes 4 and 1 becomes 5.

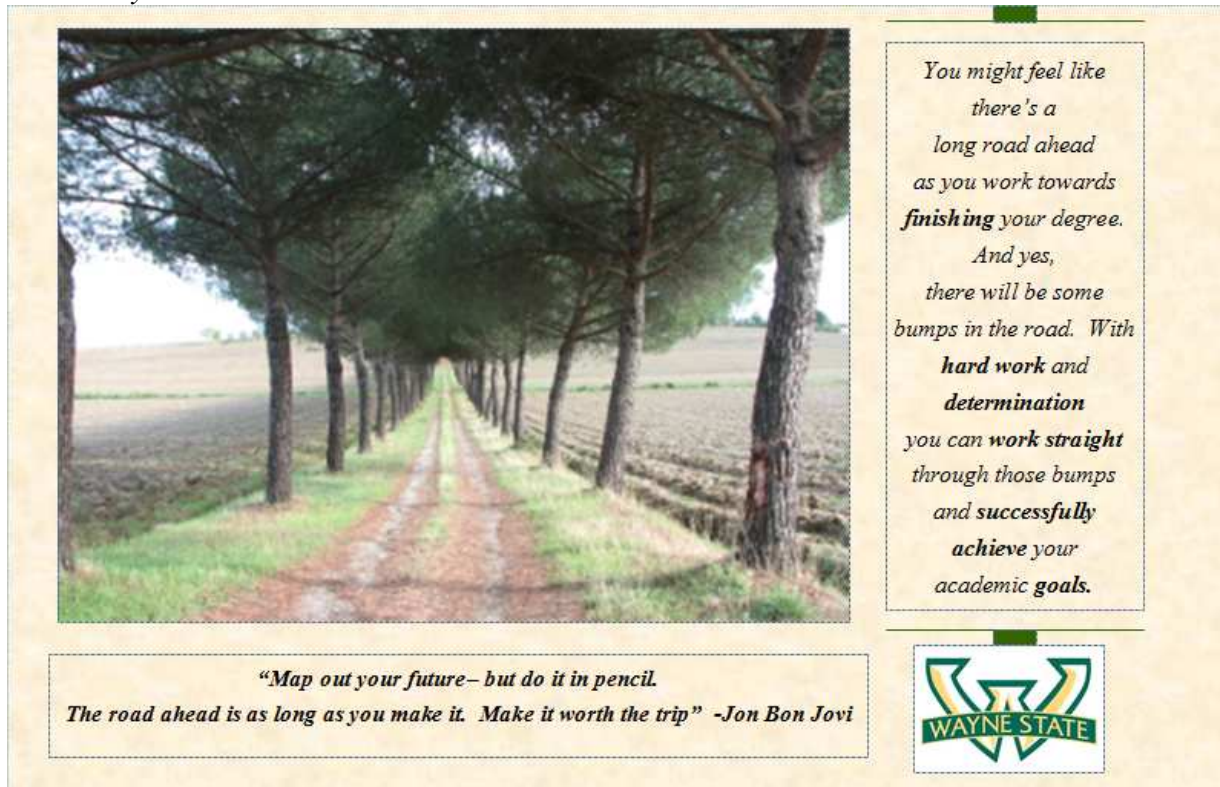
Qualitative-Pilot Study

The pilot study was used as a beginning point to collect feedback from all of the students in the pilot study motivational email in order to inform the process for the main study in the Fall. Students enrolled in BA2020 were the sample for the pilot study course. BA2020 is the Introduction to Business course that most students take during their first year. There were a total of thirteen students enrolled in the course. Each student agreed to complete a pretest, sign the CIS consent to receiving a motivational email created by me, complete a pilot study overall evaluation (Appendix D), and complete the post test, which was the same Course Interest Survey that I used at the beginning of the course. Once the participants in the study received the

motivational email, they were asked to provide feedback about the motivational email in order to inform the much larger study in the Fall of 2012. An image of the first motivational email is shown in Figure 3.

Figure 3

Pilot Study Motivational Email



Students were asked to provide feedback on the overall design of the first motivational email. Six themes emerged from the feedback students provided: content variation, personal touch, timing, visual appeal, convenience and motivation. The first theme content variation is in reference to each motivational email. Students provided feedback stating that the motivational email should contain various kinds of content related to students. The second theme, personal touch refers to the how the content in the pilot study motivational email was a personal message from me. The third theme, timing, was a suggestion from the students to strategically time the

emails with relevance to important dates during the semester. The fourth theme was important because students said that they liked the email, but thought that it could visually look better. The fifth theme arose as students felt it would be easier not have to open the email to see the message. As in the pilot study the students had to click on the message to see it. The final theme collected from the pilot study qualitative data was that the student felt the email was helpful to increase motivation. Table 20 is a representation of the themes that emerged, a few quotes from students to provide evidence of the theme and how the feedback changed the next motivational email.

Table 20

Summary of Themes Extracted from Pilot Study Qualitative Data Collected

Emerging Themes	Reasoning	Student Evidence	Changes
Content Variation	Students generally brought this topic up and provided 3 to 4 examples of emails they would like to see	“Messages should have varying content based on the timing of the message relative to what week they are sent in the semester.”	The students shed light on topics that I did not even think of, such as study tips, stress relief tips and strong messages that in themselves just say “you can do this”
Personal Touch	Of the 11 students in the pilot, 6 specifically mentioned the text that I wrote	“The text was thoughtful” “It is very uplifting and inspiring to the students, because it is very important to not give up on an education” “I like the thoughtfulness and thought-provokingness, and also the positivity that is accompanied by realism”	Incorporated a personal message from me within each email
Timing	Students indicated that the content in the email and the timing of the email was important	“It came at a good time since finals will be in 2 weeks. It made me look at what is the long term goal of completing my	Requested the syllabus from both instructors of BA2020 and BA1010 to strategically send the

		degree” “well timed messages at various intervals would help motivate me”	emails based on important dates in the semester.
Visual Appeal	Throughout several questions the students indicated that they liked the idea, they just wanted the email message to look better. Over half of the participants liked the picture and suggested other pictures.	“the only thing I was not particularly fond off was the aesthetic of the background. I would have chosen a different border” “That it didn’t take up the whole page, because it seemed empty.” “The picture and message worked well together for me instead of just having words.” “I liked the picture because it looked peaceful”	Hired a graphic designer to help visually enhance the content to meet the student’s needs.
Convenience	Several students liked the convenience of having a link to the evaluation survey immediately and did not want to have to download the email, they wanted to see it in the email message	“I liked the part with the link to the survey” “I wish the email was easier to get to and I didn’t have to download it”	Will send the first message in Fall 2012 with the motivational email within the email so that the students do not need to download anything. Surveys will be included on an embedded link
Motivating	10 of the students specifically said this email was motivating when asked if the email impacted their motivation	“It reinstated my motivation” “It put a little more fuel in my tank. I’ll probably need another fill up soon because I am low.” “It made me want to finish it.” “That there is light at the end of the tunnel” “It is making me register for classes. I was going to take a break” “I felt encouraged to finish my schooling.” “I think that as a motivational email, this	Evidence that students appreciate overall motivation and will keep that strategy in the next motivational email

		message really achieved its purpose”	
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Pilot Study Evaluation Instrument. As a result of analyzing the students’ responses to the pilot study evaluation survey, several changes were made to the evaluation for the main study (Appendix K) in order to obtain optimal results for the much larger study of participants in Fall, 2012. After reviewing how students answered the questions, I realized that some of the questions in the survey were a little too vague, and because of the vagueness, I might not be getting all the information I was looking for. Moving forward I decided to revise several questions on the instrument. In the first iteration, the question “If you could describe the email in three words, what would they be?” was changed in the second survey to “What did you think about the email message in general?” Question three asked the question “was the message sent in Blackboard motivating?” and that question was changed because it allowed the students to have an opportunity to just answer with “yes” or “no”. To overcome this issue in the next survey, I added the additional words of “why or why not?” An example of the new evaluation can be found in Appendix K.

The second and final CIS survey and background survey questions were handed out to 12 students on the final day of class in order to obtain information about the motivation levels of the students and whether there was any change throughout the semester. One student did not show up for the final class and therefore information from that student was not collected.

Based on the results of the SPSS analysis of the Pre/Post test data from the pilot study the reliability or internal consistency for the pre-test (first CIS taken by students) was 0.91 and the reliability for the post-test (the second CIS taken by the students) was 0.92. This indicates good internal reliability. Interestingly enough, if I dropped question #7 in the CIS instrument, the scores could be improved to 0.93 for the pre-test and 0.93 for the post-test. Question 7 from the

CIS was “I have to work hard to succeed in this course”. However, the small gain is not enough justification to delete the question.

The original research design did not connect students with identifiers so I was unable to connect students to their pre-test scores and their post-test scores. Therefore because there were no identifiers for the demographics I was unable to use a Paired-Samples T Test, or its nonparametric equivalence, the Wilcoxon-Signed Ranks Test. Because of this error I will not be able to discuss the results in terms of pre-test and post-test gains. This insight was very helpful as it demanded a complete redesign of the larger study in the Fall of 2012 to include identifiers in order to connect the pretest and post test scores in the main study.

I was able to run the data at two separate data points. Because I could not do any of the pre-test/post-tests, I was forced to conduct an Independent-Samples T Test or its nonparametric equivalence, the Wilcoxon Rank-Sum Test also known as the Mann-Whitney U. These results are somewhat limited by the fact that the denominator is wrong because in the independent T-test, the denominator implies that people in the first group are not the same as in group 2. In this study it is the same group of people in the first group and the second group.

Using the independent-Samples T Test shows that there has been a mean score increase of 1.67 points ([Group 1 Pre-Tests was 143.08] and [Group 2 Posts-test was 144.75]). However, with an overall $p=.78$ the results are not significant at the 0.05 alpha level. In other words there was no significant difference between the first group pre-test scores and the second group 2 post-tests scores. This may be due to having to use the different statistical test because of not having the identifiers for the post-tests to match with the pre-tests. Using the Wilcoxon Rank-Sum Test using exact statistics the results is $p=0.88$ which is also not statistically significant.

Data Analysis of Main Study: Quantitative

Descriptive Statistics. Based on either the mean or mode, the typical study participant is a white, English speaking male age 21, who works 24 hours per week. The mean earning is \$11,991.33 per year. The typical participant is in his first year at Wayne State University is enrolled in 4 classes working towards a Bachelor of Science (B.S.) in Business Administration. Additionally the average participant has filed a 2011 tax return and has no dependents.

The demographic data included Nominal, Ordinal and Ration data; therefore it was important to use the appropriate Measure of Central Tendency in order to describe the data (i.e., mode for nominal and ordinal data, and mean for ratio data). The descriptive information was based on the Demographic data from Time 1, as the participation in Time 2 became less informative. Table 21 is a representation of the coding process used to analyze the demographic background variables collected from the students.

Table 21

Summary of codes used for data analysis Background Survey for Main Study

Question	Responses
Student_ID	Student Identifier (i.e. 00001, WSU ID No. etc.)
Intervention	0 = No (Control Group) 1 = Yes (Experimental Group)
BT1_001 = What is your age?	Type Response
BT1_002 = What is your gender?	1 = Female 2 = Male
BT1_003 = How would you classify yourself?	1 = Asian 2 = Black 3 = Hispanic 4 = Multiethnic 5 = Native American 6 = Pacific Islander 7 = White

8 = Other

BT1_004 = What language do you speak?

1 = Arabic
 2 = Chinese
 3 = English
 4 = Farsi
 5 = German
 6 = Hebrew
 7 = Japanese
 8 = Russian
 9 = Spanish

BT1_005 = What is your current status with WSU?

1 = Part-Time
 2 = Full-Time

BT1_006 = Did you file a federal tax return in 2011?

0 = No
 1 = Yes

BT1_007 = If yes, how many dependents did you declare?

0 = No dependents

1 = 1

2 = 2

3 = 3

999 = Left field blank despite having filed a federal tax return (Question BT1_006)

Leave Blank = when student did not file a federal tax return

BT1_008 = Are you currently employed?

0 = No
 1 = Yes

BT1_009 = If yes, how many hours?

Type Response
 999 = Left field empty despite having noted that they are currently employed (Question BT1_008)
 Leave field blank when the study is currently not employed

BT1_010 = What is your yearly income in U.S. Dollars?

Type Response

BT1_011 = What is your academic goal at WSU?

1 = Bachelor of Science (B.S.) in Business Administration
 2 = Bachelor of Arts (B.A.) in Business Administration
 3 = Business Minor
 4 = Master of Business Administration (MBA)
 5 = Master of Science in Accounting (MSA)
 6 = Master of Science in Taxation (MST)

7 = Doctor of Philosophy in Business Administration
 8 = Other
 9 = Not sure

BT1_012 = How many classes are you enrolled in this semester? Type Response

BT1_013 = Is this your first year at WSU? 0 = No
 1 = Yes

BT1_014 = Have you attended college before starting at WSU? 0 = No
 1 = Yes

Student responses to the descriptive questions from the Background Question Survey (Appendix F) resulted in the analysis of the following descriptive statistics.

Table 22 summarizes the student response to “what is your age”, the control group has a total of 158 valid responses with a mean (average) age of 21.36 years and the experimental group had 157 valid responses with a mean (average) age of 20.80 years, missing one response where the question was left blank, or student missed the question, or perhaps the students specifically choose not to answer the question or was unwilling to participate by providing an answer.

Table 22

Frequencies of Student Age by Groups

Group	Total Responses	Mean	Median	Mode	Standard Deviation	Range
Control Group	158	21.36	20.00	18	5.590	30
Experimental Group	157	20.80	20.00	18	7.173	28

Table 23 summarizes the student’s response to “What is your gender?” the control group had 157 valid responses with missing just one response. The mode gender for the control group was primarily (57.3%) male. The experimental group had 157 valid responses and their gender

was a mode of (51.6%) male and was missing one response. One student in each group the control group and experimental group did not answer a question. Either the question was intentionally left blank, or the student missed the question, or perhaps the students specifically choose not to answer the question or were unwilling to participate by providing an answer.

Table 23

Frequencies of Students Gender by Groups

Group	Total Responses	Mean	Median	Mode	Standard Deviation	Range
Control Group	157	1.57	2.00	2	.496	1
Experimental Group	157	1.52	1.52	2.00	2	.591

Table 24 summarizes the student's response to "How would you classify yourself?" the mode for the control group primarily (49.4%) classifies itself as white and the mode for the experimental group primarily (42.9%) classifies itself as white. All students in the control group completed the question however; four students in the experimental group did not complete the questions. This could be because the question was intentionally left blank; students missed the question, or were unwilling to participate by providing an answer.

Table 24

Frequencies of Student Classification by Group

Group	Total Responses	Mean	Median	Mode	Standard Deviation	Range
Control Group	158	4.72	7.00	7	2.573	0
Experimental Group	154	4.20	4.00	7	2.611	0

Table 25 summarizes the student's response to "What is the main language you speak?" where the control group had 158 valid responses with their primarily language of English at 88.6%. All students completed the question in the experimental group. The experimental group had 154 valid responses. The missing students could be because the question was intentionally left blank; students missed the question, or were unwilling to participate by providing an answer. Their primary language was English with a mode of 94.3%.

Table 25

Frequencies of Main Language Students Speak by Group

Group	Total Responses	Mean	Median	Mode	Standard Deviation	Range
Control Group	158	3.48	3.00	3	2.571	16
Experimental Group	154	3.45	3.00	3	2.346	18

Table 26 summarizes the student's response to, "What is your current status with WSU?" The control groups had 158 valid responses with all participants answering the question. The students were primarily enrolled at Wayne State University as full time students with a mode of 85.4%. The experimental group had 156 valid responses with missing two participants. This could be because the question was intentionally left blank; students missed the question, or were unwilling to participate by providing an answer.

Table 26

Frequencies of Students Current Status

Group	Total Responses	Mean	Median	Mode	Standard Deviation	Range
Control Group	158	1.05	2.00	2	.354	1
Experimental Group	156	1.88	2.00	2	.321	1

Table 27 summarizes students' responses to "Did you file a federal tax return in 2011?" The control group had 156 valid responses and the mode of 53.8%, indicating the majority filed a tax return. There were two missing responses from the control group as students intentionally left the question blank, missed the question, or were unwilling to participate by providing an answer. The experimental group had 156 valid responses; with the majority 62.2% filed a tax return. The experimental group was missing two responses as well, possibly a result of been either students specifically choosing not to answer the question or they accidentally missed one.

Table 27

Frequency of Student Response to Filing a Tax Return

Group	Total Responses	Mean	Median	Mode	Standard Deviation	Range
Control Group	156	.54	1.00	1	.500	1
Experimental Group	156	.62	1.00	1	.487	1

Table 28 represents the student's response to the follow up question "If yes, how many dependents did you declare?" The control group had 91 valid responses with the majority with a mode of 68.1% did not have dependents. The experimental group had 107 valid responses and the majority of 75.7% did not have dependents. The control group was missing sixty-seven responses and the experimental group was missing fifty-one responses. The students were directed to only answer this question if they acknowledged that they had dependents in the previous question. Therefore it was expected to have less participation for this question. Other missing answers could be because the question was intentionally left blank; students missed the question, or were unwilling to participate by providing an answer.

Table 28

Frequency of Dependents Students Declared

Group	Total Responses	Mean	Median	Mode	Standard Deviation	Range
Control Group	91	.48	.00	0	.874	4
Experimental Group	107	.32	.00	0	.653	4

Table 29 summarizes the student's response to "Are you currently employed?" The control group had 155 valid responses resulting in three students who did not answer the question. The majority of the control group 64.5% identified themselves as employed. The experimental group had 156 valid responses; with the majority 65.4% of the group identifying themselves as employed. Missing answers could be because the question was intentionally left blank; students missed the question, or were unwilling to participate by providing an answer.

Table 29

Distribution of Students Who are Currently Employed

Group	Total Responses	Mean	Median	Mode	Standard Deviation	Range
Control Group	155	.65	1.00	1	.480	1
Experimental Group	156	.65	1.00	1	.477	1

Table 30 summarizes the responses of the participants who answered the follow-up question, "If yes, how many hours?" The control group had 112 valid responses, missing 46 responses. The average number of hours a person worked resulted in a mean score of 25.2857 hours. The experimental group had 117 valid responses missing 41 responses. The average

number of hours a person worked was 22.8120 hours per week. Students were directed to only answer this question if they acknowledged that they worked in the previous question. Therefore, it was expected to have less participation for this question. In any case though, this could be because the question was intentionally left blank, students missed the question, or were unwilling to participate by providing an answer.

Table 30

Distribution of the Amount of Hours per Week Students Work

Group	Total Responses	Mean	Median	Mode	Standard Deviation	Range
Control Group	112	25.2857	25.5000	10.00	13.34568	60.00
Experimental Group	117	11291.8295	5000.0000	999.00	17485.68699	13004.00

Table 31 represents data collected from students when asked “What is your yearly income in U.S. dollars?” The control group had 128 valid responses, missing 30 responses with an average yearly mean income for the control group of \$12,696.30. The experimental group had 129 valid responses missing a total of 29 responses. The average yearly income was \$ 11,291.83 for the experimental group. It was expected to have missing participants for this question as not all students are working. Some students do collect money from scholarships, fellowships and other areas in which that would be considered income. Other students may not have answered because they intentionally left the question blank; they may have missed the question, or were unwilling to participate by providing an answer.

Table 31

Frequency of Student Yearly Income in U.S. Dollars

Group	Total Responses	Mean	Median	Mode	Standard Deviation	Range
Control Group	128	12696.30	7100.00	999	17001.4653	100050
Experimental Group	129	11291.82	5000.00	999	17485.6869	13004

Table 32 indicates student responses to “What is your academic goal at WSU?” The control group had a total of 155 valid responses and was only missing 3 responses. The majority of students in the control group indicated that they were pursuing a Bachelor of Science (B.S.) in Business Administration coming in at 23.75%. The experimental group had 156 valid responses missing just two responses. The majority, 23.7% were pursuing a Bachelor of Arts (B.A.) in Business Administration. In regard to loss of participants, this could be because the question was intentionally left blank; students missed the question, or were unwilling to participate by providing an answer.

Table 32

Frequency of Students Academic Goals

Group	Total Responses	Mean	Median	Mode	Standard Deviation	Range
Control Group	155	4.32	4.00	1	3.022	0
Experimental Group	156	4.07	4.00	2	2.923	0

Table 33 represents a visual of the question “How many classes are you enrolled in this semester?” The control group had 157 valid responses missing just one response. The average

number of classes per semester a student was enrolled in was 4. The experimental group had 155 valid responses, missing just 3 responses. The average number of classes per semester a student in the experimental group was enrolled in was 4. In regard to loss of participants, this could be because the question was intentionally left blank; students missed the question, or were unwilling to participate by providing an answer.

Table 33

Frequency of the Amount of Classes Students are Enrolled in

Group	Total Responses	Mean	Median	Mode	Standard Deviation	Range
Control Group	157	3.97	4.00	4	1.080	6
Experimental Group	155	4.04	4.00	4	.813	5

Table 34 discusses the statistics in regard to the question “is this your first year at WSU?” The control group had a total of 158 valid responses. For most students (50.6%) this was not their first year. The experimental group had a total of 156 valid responses, missing just two respondents. For most students (53.8%) this was their first year at Wayne State University. Missing answers could be because the question was intentionally left blank; students missed the question, or were unwilling to participate by providing an answer.

Table 34

Frequency of the question “is this your first year at WSU”

Group	Total Responses	Mean	Median	Mode	Standard Deviation	Range
Control Group	158	.49	.00	0	.502	1
Experimental Group	156	.54	1.00	1	.500	1

Table 35 compiles the results of the final question “Have you attended college before starting at Wayne State University?” The control group had 158 valid responses. Most students with a (61.4%) said that they did not attend any college before starting at Wayne State University. The experimental group had a total of 156 valid responses, missing just two participants. Most students (57.7%) did not attend college before starting at WSU. In regard to loss of participants, some students still may have chosen, intentionally left blank; students missed the question, or were unwilling to participate by providing an answer.

Table 35

Frequency of Students Who Have Attended College before Starting as WSU

Group	Total Responses	Mean	Median	Mode	Standard Deviation	Range
Control Group	158	.41	.00	0	.609	5
Experimental Group	156	.47	.00	0	.676	5

To summarize, the above results represent student characteristics on variables associated with demographic statistics collected from both the experimental and control groups. Based on either the mean or mode, the typical study participant is a white, English speaking male age 21, who works 24 hours per week. The mean earning is \$11,991.33 per year. The typical participant is in his first year at Wayne State University, is enrolled in 4 classes, and is working towards a Bachelor of Science (B.S.) in Business Administration. Additionally the average participant has filed a 2011 tax return and has no dependents.

Coding used to analyze the CIS data collected from students during Time 1 and Time 2 was the same for both data collected. Each Question from 1 – 34 was documented with the following codes: 1 = Not True, 2 = Slightly True, 3 = Moderately True, 4 = Mostly True, 5 =

Very True. For the reverse questions, the same number from 1 to 5 (Not True to Very True) was typed in. Once all data was entered the SPSS syntax command was used to automatically change the order so that the response of 5 on a reverse question will become 1, 4 becomes 2, 3 stays the same at 3, 2, becomes 4 and 1 becomes 5.

Reliability. Reliability assures that the measurement is consistent. According to Gall, Gall and Borg (1996), reliability is the “degree to which evidence and theory support the interpretation of test scores entailed by proposed uses of tests” (p. 191). A Cronbach Alpha, a measure of internal consistency reliability was high at 0.897 and indicates that it is appropriate to keep the analysis on the Total Scores rather than having to complete an analysis of individual data points. A visual of this is located in Table 36.

Table 36

Reliability Statistics	
Cronbach's Alpha	N of Items
.897	34

Univariate Analysis of Variance. A treatment versus comparison pretest posttest design (Analysis of Covariance) with Time 2 being the dependent variable, Time 1 as the Covariate, and Intervention vs. not as the grouping factor, was used to identify whether there was any statistically significant difference between the students who received the motivational emails and the students who did not. Since the data met the criteria for ANOVA, grouping was acceptable as opposed to checking individually. At Time 2, the control group included 109 students with a mean total score of 116.24, and the intervention group included 107 students with a mean total score of 116.94. These results can be seen in Table 37 below.

Table 37

Descriptive Statistics

Dependent Variable: Time 2 Totals

Did Student receive intervention?	Mean	Std. Deviation	N
Control Group	116.24	21.247	109
Intervention	116.94	21.280	107
Total	116.59	21.217	216

Levine's Test (Table 38) shows that the underlying assumption of Homogeneity, a condition necessary for classical parametric statistical tests was met.

Table 38

Levene's Test of Equality of Error Variances^a

Dependent Variable: Time 2 Totals

F	df1	df2	Sig.
.091	1	214	.763

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + QT1_Total + Intervention

Table 39

Tests of Between-Subjects Effects

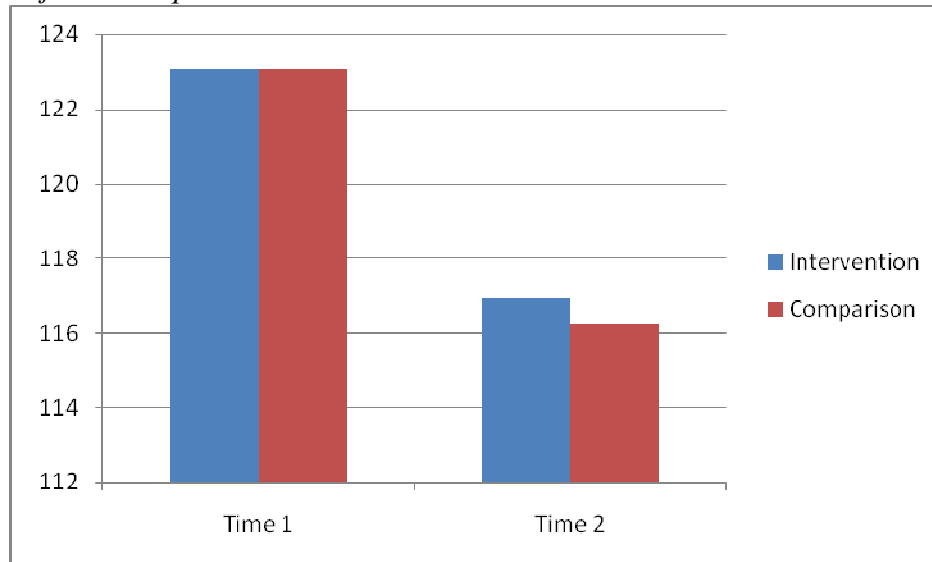
Dependent Variable: Time 2 Totals

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	23183.885 ^a	2	11591.943	33.548	.000
Intercept	11425.784	1	11425.784	33.067	.000
QT1_Total	23157.018	1	23157.018	67.018	.000
Intervention	102.185	1	102.185	.296	.587
Error	73598.444	213	345.533		
Total	3032817.000	216			
Corrected Total	96782.329	215			

a. R Squared = .240 (Adjusted R Squared = .232)

The Covariate (total score at Time 1) was statistically significant ($F = 67.01$, $df = 1, 213$, $p = .000$), but the test for effects, total score at Time 2, was not statistically significant ($F = .30$, $df = 1, 213$, $p = .587$). The results of a t-test showed no statically significant mean difference between the experimental and control group for overall motivation levels collected from the CIS from the pre test to the post test. A visual of this is located in Table 39. Table 40 is a visual of the adjusted R square indicates that 23.2% of the variance was explained.

Table 40

Adjusted R Square

In other words, the effect dissipated with the passing of time. Although it was not statistically significant, nevertheless as indicated in the figure above, the intervention did not recede as fast as the control group.

Regression

Table 41

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.479 ^a	.230	.223	18.554
2	.517 ^b	.267	.254	18.176
3	.543 ^c	.295	.276	17.904
4	.566 ^d	.321	.296	17.659

- a. Predictors: (Constant), Time 1 Totals
- b. Predictors: (Constant), Time 1 Totals, How many classes are you enrolled in this semester?
- c. Predictors: (Constant), Time 1 Totals, How many classes are you enrolled in this semester?, Are you currently employed?
- d. Predictors: (Constant), Time 1 Totals, How many classes are you enrolled in this semester?, Are you currently employed?, What is the main language you speak?

A regression analysis was conducted to find the best model fit given Time 1 data (Block 1) and Demographic information (Block 2). Stepwise regression was used on the demographic information (Block 2), because there were no a priori hypotheses. All non significant variables were excluded. The only significant demographic variables found were “How many classes are you enrolled in this semester?”, “Are you currently employed?”, and “What is the main language you speak?”. The resulting standardized regression formula was: $y' = 52.21 + (\text{Time 1} * 0.52) + (\text{How many classes are you enrolled in this semester} * -0.19) + (\text{Are you currently employed} * 0.17) + (\text{What is the main language you speak} * 0.16)$ The adjusted R square indicated this model explains 29.6% of the variance. A visual of this is in Table 42.

Table 42

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	52.721	11.313		4.660	.000
	Time 1 Totals	.523	.090	.479	5.803	.000
2	(Constant)	69.238	13.047		5.307	.000
	Time 1 Totals	.527	.088	.482	5.963	.000
	How many classes are you enrolled in this semester?	-4.382	1.827	-.194	-2.399	.018
3	(Constant)	59.005	13.742		4.294	.000
	Time 1 Totals	.550	.088	.503	6.268	.000
	How many classes are you enrolled in this semester?	-4.300	1.800	-.190	-2.389	.019
	Are you currently employed?	8.850	4.208	.169	2.103	.038
4	(Constant)	52.210	13.962		3.739	.000
	Time 1 Totals	.568	.087	.520	6.534	.000
	How many classes are you enrolled in this semester?	-4.330	1.775	-.192	-2.439	.016
	Are you currently employed?	8.890	4.150	.170	2.142	.034
	What is the main language you speak?	1.296	.640	.160	2.026	.045

a. Dependent Variable: Time 2 Totals

Factor analysis

A scree plot (Table 43) indicated that there were four factors. Further analyses showed that six variables (QT1_002, QT1_011, QT1_012, QT1_016, QT1_018, and QT1_019) loaded on two or more factors and therefore are candidates for exclusion. Below, the four factors, and the variables that load on each factor, are compiled in Table: Rotated Component Matrix □ Second Round. After reviewing the meaning attached to each factor, an appropriate name can be given to each in this four factor solution.

Table 43 shows the Scree Plot for this factor analysis.

Table 43

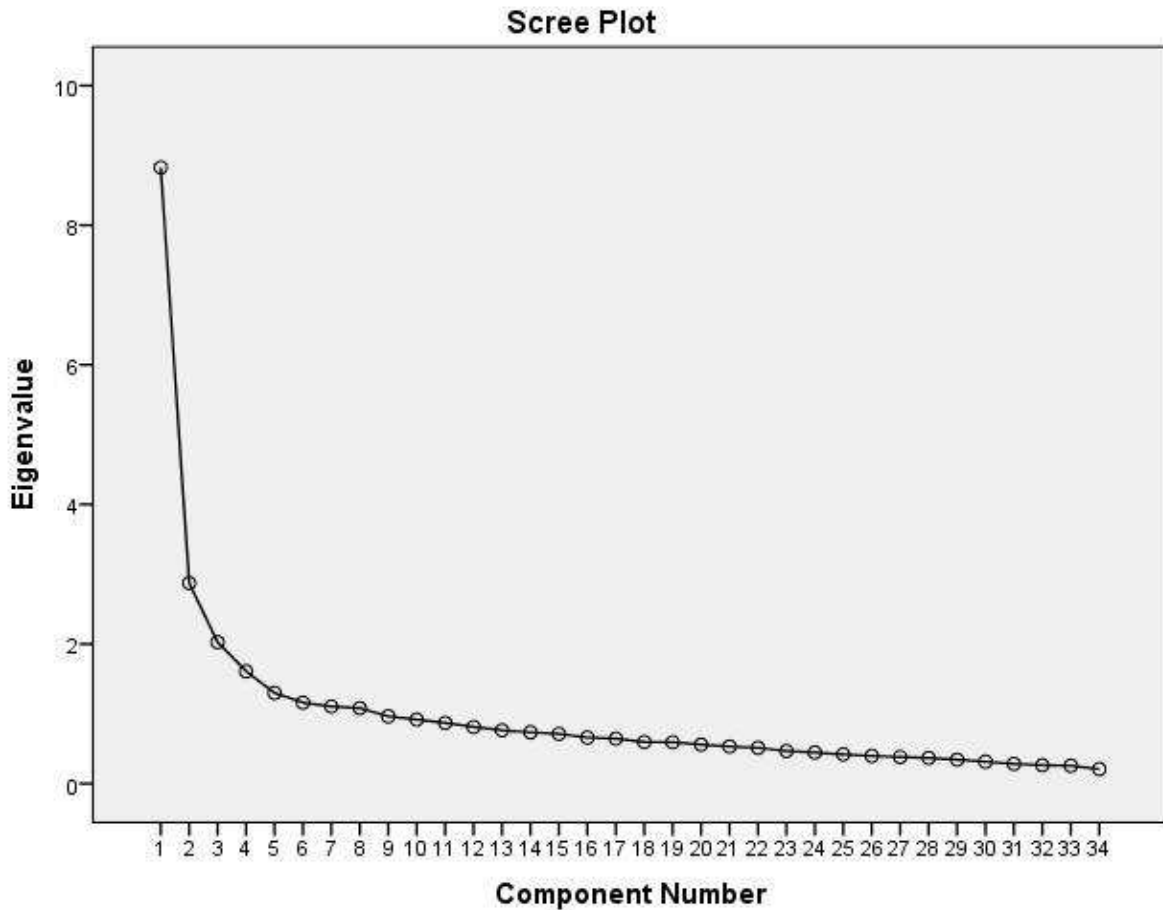


Table 44 shows the factor loadings for the CIS. According to Costello and Osborne, .40 is the minimum loading for research and if a category is less than .40 it may not be related to the other items or it may represent an additional factor that has not been identified (Costello & Osborne, 2005). The factor loading supported Keller's (2006a) ARCS subscales. The extraction method used was Principal component analysis and the rotation method, varimax with Kaiser Normalization over a rotation converged in 6 iterations. This is the confirming and validating the four categories of Keller's model (ARCS) Attention, Relevance, Confidence, Satisfaction.

Table 44

Summary of Factor Analysis Results for CIS

Rotated Compo				
Question	A	R	C	S
	1	2	3	4
The Instructor knows how to make us feel enthusiastic about the subject matter covered in this program?	.692			
I feel confident that I will do well in this course				.471
The class has very little in it that captures my attention			.667	
The instructor makes the subject matter of this program seem important	.442			
You have to be lucky to get good grades in this course			.501	
I have to work hard to succeed in this course				
I do NOT see how the information I am learning in this course relates to anything I already know			.674	
Whether or not I succeed in this course is up to me				
The Instructor creates suspense when building up to a point	.700			
In this course, I try to set and achieve high standards of excellence		.708		
I feel that the grades or other recognition I receive are fair compared to other students in the course				.495
The students in the course seem curious about business matters				
It is difficult to predict what grades the instructor will give my assignments				.517
I am pleased with the instructor's evaluations of my work compared to how well I think I have done				.593
The content of this course relates to my expectations and goals		.550		
The instructor does unusual or surprising things that are interesting	.704			
The students actively participate in this class	.438			
To accomplish my goals it is important		.613		

that I do well in this course				
The instructor uses an interesting variety of ways to motivate me throughout the semester	.722			
I do NOT think I will benefit much from this course			.717	
I often daydream while in this class			.513	
As I am taking this class, I believe that I can succeed if I try hard enough		.654		
The personal benefits of this course are clear to me		.548		
My curiosity is often stimulated by the questions asked or the provided in the given on the subject matter in this class	.578			
I find the level of challenge in this course to be about right; neither too easy not too hard				
I feel rather disappointed with the business course			.638	
I feel that I get enough recognition of my work in this course by means of grades, comments or other feedback				.678
The amount of work I have to do is appropriate for this type of course				.457
I get enough feedback to know how well I am doing				.673

Main Study Data Analysis: Qualitative Data Collection

This was a design based research study where I created motivational emails based on the feedback collected from the most motivated and least motivated in the class. There were a total of three iterations of data collection for this study. The first motivational email represented as Figure 4, Motivational Email #1 was created based on the pilot study data collected and reported earlier in the chapter.

Figure 4 *Motivational Email #1*

LONG ROAD AHEAD



“Map out your future — but do it in pencil. The road ahead is as long as you make it. Make it worth the trip.”

— Jon Bon Jovi

HELLO BA1010!

Congratulations! Your road to success starts here! My name is Sara Kacin, we met a few weeks ago in class.

As you complete your academic journey, you may come across unexpected bumps in the road. Be prepared and tread lightly through whatever is in your path, adjust your plans accordingly and move on.

Remember with hard work and determination you can work straight through those bumps in the road and successfully achieve your academic goals.

Many people at Wayne State University care about you and your academic success. Should you need any assistance or help with working through any bumps in the road, feel free to contact any of the following:



Dan Yeakel
Email: yeakel@wayne.edu

Sara Kacin
Email: skacin@wayne.edu

Good Luck to all of you!

First Iteration

The first data collection round resulted in three themes from the feedback collected from the least motivated students and three themes from the feedback collected from the most motivated students. For this iterative cycle, results of the least motivated students will be presented followed by the results from the most motivated students and concluding with how the feedback was implemented into the motivational emails.

Least Motivated Students

Study Skills. Students had a lot to say about the work load they had to complete during the course of the semester. For example, when asked what challenges the student was facing, all responses were specific to the classroom, such as “studying for exams, writing papers”, “Exams”, and “Lots of exams in this class”, “studying”. Students were identifying that it was difficult to complete the work in front of them. To work through these challenges, students coped by “make more time to study, but I don’t really know what I am doing” and “Focus more on material I am struggling in”.

What this is telling me is that the students were having difficulties studying and organizing their time with studying being the dominant theme here and that they are motivated because they want to get their degree, a job etc.

Managing Time. A second theme that came out of the data was students acknowledging that they were not very organized. Words that came up during this part of the analysis were time, work, school, balance, “more time”, sleep. When asked how the challenges got in the way in the way of completing their coursework they said “the few hours I work take away from when I could be studying”, “by not managing my time’ and “I just don’t do it”. Students are

suggesting that they don't have enough time to complete what they need to get done and as a result will just not do it.

Dealing with Challenges. A third theme identified was how students feel when they don't know how to study properly or are not organized. When they are not meeting the demands of school, they begin to respond with words like "giving up", "struggling", and "just stop".

Most Motivated Students

Visually Appealing. In general students in this group liked the overall feel of the email, including how it was set-up and divided. They liked that it was short, simple and convenient to go back to if they wanted to reference it at a later date. They liked the picture of the road, but wanted a more relevant quote from someone either closer to the population at WSU or someone closer to the school of business administration. They liked the colors that were used and thought that overall it was attractive and interesting.

Reminders. When asked questions about the actual content or instruction within the email, the students felt it was too general and wanted the space to be used more efficiently with detailed explanation of something. Don't just tell me to get help, tell me where to go to get help and provide "more of a road map". Other ways the students expressed this thought were by telling me that the content was familiar and that they had heard all that before and they still do not do it.

Dealing with Challenges. A final theme that emerged from the analysis was about student difficulties. Unlike the least motivated students who lost hope, the students who were most motivated responded in a way that reflected that they will keep going. "It's not always easy; you just have to keep going" and "I just keep going". A big difference emerged between how most motivated students responded to this question and how least motivated students

responded to this question. The least motivated students responded in a more hopeless way, with statements such as “I want to quit”, whereas most motivated students responded with “I just keep going”. This is consistent with the literature as Keller (2010) states that students who are already motivated just need a refill now and again, whereas students who are not as motivated need more of a push. Another interesting theme emerged between the most motivated students and the least motivated students in that to solve the problem of challenges during the semester students who were least motivated looked for a solution in instruction such as study skills, help with exams and writing papers. The most motivated students felt that knowing someone who cared (the researcher who sent the email) was helpful in getting them through challenges that may arise. A third emerging theme was that students who were identified as least motivated on various occasions claimed that the extrinsic motivators would help them finish their degree, such as getting a good job, making good money. Conversely, the most motivated students selected motivators such as lifelong learning, and showing their family that they can be the first person in the family to obtain a degree.

The second motivational email (Appendix P) was designed with the feedback provided from the least and most motivated individuals taking the courses. Table 45 represents the feedback incorporated into the redesign of the motivational email to meet the real time needs of the students.

Table 45

Summary of Iterative Design Changes to Create Motivational Email #2

Theme	Evidence	Redesign
Study Skills (Least Motivated)	Student 1, Line 1: “studying for exams, writing papers” Student 2, Line 3: “Exams, lack of sleep” Student 3, Line 4-5: “Lots of exams in this class, studying” Student 2, Line 22: “Focus more on material I am struggling in” Student 3, Line 24: “make more time to study, but I don’t really know what I am doing”	Study Skills became the main theme of Motivational Email #2
Managing Time (Least Motivated)	Student 1, Line 9: “the few hours I work take away from when I could be studying” Student 2, Line 13: “by not managing my time” Student 3, Line 15: “I just don’t do it”.	Because Managing time was mentioned more than once, but not as much as Study Skills, the last bullet point in the study skills email was about managing time.
Dealing with Challenges (Least Motivated)	Student 1, Line 27: “it would be great if I could just stop writing papers and doing projects period” Student 2, Line 23: “struggling”, Student 3, Line 15: “I just don’t do it”	Added the support needed with study skills and included a positive personal message from the researcher
Solving problems (Least Motivated)	Student 2, Line 22: “focus more on material I am struggling in” Student 3, Line 24: “make more time to study, but I really don’t know what I am doing”	Created the entire email on one area of focus to meet the real time study skills needs that the students were asking for
Visually Appealing (Most Motivated)	Student 3, Line 9: “nice look, feel, inspirational” Student 2, Line 8: “I liked it” Student 2, Line 20: “attractive, valuable, Interesting. I liked the picture” Student 3, Line 22: “Comforting, direct, hopeful” Student 4, Line 24: “poetic, interesting” Student 2, Line 31: “looked contemporary, and I like the set-up”	Most motivated students liked the set up, so I continued to use graphics, pictures, quotes and a personal messages as it was confirmed that this format was working

	<p>Student 4, Line 36: “yes, caught my attention”</p> <p>Student 2, Line 58: “I liked the picture that said you are not alone”</p> <p>Student 3, Line 60: “yes, nice graphics”</p> <p>Student 4: Line 61: “nice graphics”</p>	
Detail (Most Motivated)	<p>Student 1, Line 18: “no mention of how to attain it”</p> <p>Student 4, Line 24: “vague”</p> <p>Student 3, Line 34: “maybe too generic”</p>	Email focus was on one particular subject “Study Skills” in a more detailed format
Reminders (Most Motivated)	<p>Student 1, Line 1: “Sounds a bit familiar”</p> <p>Student 2, Line 98: “it was a good reminder”</p> <p>Student 4, Line 120: “Yeah, it reminded me of where I need to go, just would have been helpful to have more of a roadmap of how to get there”</p>	Identified study skills as a specific area that was more detailed and focused for students to offer more of a road map
Dealing with Challenges (Most Motivated)	<p>Student 2, Line 107: “That it’s not always easy, just gotta keep going.”</p> <p>Student 3, Line 118: “I don’t know, I just keep going”</p>	Added another personal message from me to connect with the most motivated students
Personal (Most Motivated)	<p>Student 2, Line 44: “This email made me feel like at least one person cared”</p> <p>Student 3, Line 101: “That I can contact Sara, the grad student who came to class”</p> <p>Student 1, Line 104: “That there are people who care”</p> <p>Student 3, Line 109: “That there are others on campus like Sara who came to class that care”</p>	Concluded the email with an inspirational message from the researcher

The following changes were implemented in the redesign of the motivational email to meet both the needs of the most motivated and the needs of the least motivated. The second motivational email was designed to include study tips as the main content. Evidence collected

from the least motivated students supported this decision. At the top of the email, a banner read “Study Skills: Sara’s Motivational Moment”. Underneath the banner was a picture of a person walking up concrete stairs. Next to the picture there is a quote by Dr. Martin Luther King Jr. that says “Take the First Step in faith; you don’t have to see the whole staircase, just take the first step.” The study tips within the email provided tips on attending class and taking notes, reading through course materials and taking notes, as well as encouragement to participate in class, stay organized, and ask for help. In addition I included a personal message at the bottom as the most motivated students wanted a reminder that someone cares about them. The message read:

“As a final note, I want to say that I am so proud of you for working towards your degree. I know there are all kinds of things you can be doing right now like sleeping or watching all the current season premieres of popular tv shows, remember, you have your whole life to watch tv. Think about it, in five years do you want to be the person who watched a lot of tv, or the person who has a degree?” A visual of Motivational Email #2 is depicted in Figure 5.

Figure 5 *Motivational Email #2*

STUDY SKILLS

Sara's Motivational Moment



“Take the first step in faith. You don't have to see the whole staircase, just take the first step.”

- Dr. Martin Luther King, Jr.

Hello BA 1010,

I thought some of you might be interested in a few study tips. I encourage you to try them; you might be surprised at what works best for you.



Attend class and take notes. I know this seems like common sense, but sometimes times it's real easy to say, "oh, I'll just miss this one class." Then the next thing you know, you have missed several classes. Just go!



Read through course materials and take notes. It's a lot of writing, but no one ever said college would be easy. Writing notes and information more than once will help you imprint the information into your brain.



Participate in class. We don't expect you to know everything right now, that's why you are a student. Once your role changes from student to worker, employers will be looking for those students who can jump right into the job without much training. Participating in class, networking and learning from classmates helps you prepare for your future job.



Stay organized. No matter what comes your way, if you are organized, you should be able to handle the unexpected little things with ease. This means look at your syllabus, mark somewhere in your phone or calendar when you have exams, quizzes or big assignments due and then make a plan to complete the work and stick to it.



Ask for help. Did you know you have resources available to you through WSU just for being a student? Try going to success.wayne.edu/LFP.php to find out how WSU can help you increase your study skills.

As a final note, I want to say that I am so proud of you for working towards your degree. I know there are all kinds of things you can be doing right now like sleeping or watching all the current season premiere's of popular tv shows, remember, you have your whole life to watch tv. Think about it, in five years do you want to be the person who watched a lot of tv, or the person who has a degree

It's your choice.

Second Iteration

Least Motivated Students. Once Motivational Email #2 was sent and all the data was collected from the students regarding Motivational Email #2 “Study Tips”, the following themes emerged from their feedback. For the least motivated students two major themes emerged, managing time and dealing with challenges.

Managing Time. Students spoke a lot about how there was just “too many writing assignments due this week” and “seems like a lot of busy work these days and not sure how to handle it all”.

Dealing with Challenges. In response to the challenges they are facing students again, were frustrated, overwhelmed and wanted to quit. It is important to note that not one student mentioned study skills as a way to increase their motivation.

The most motivated student’s data emerged the following themes: Visually Appealing, reminders and dealing with challenges.

Visually Appealing. Overall the students liked the appearance and felt it was “visually nice”, organized and motivating. They like the idea of the short heading at the top of the page with icons for each subject area. One person mentioned that he/she would have preferred the email to be personalized, this is consistent with (L. Visser & Keller, 1996) however due to time, this was not plausible. They really liked the picture embedded into the email and the MLK Jr. quote “Take the first step in faith. You don’t have to see the whole staircase, just take the first step.”

Most Motivated Students

Reminders. They indicated the content was familiar and general however this time the students said that they were more “invested” and “supportive” of the content. Again they asked

for ‘more detail’ even stating “we need to know these things and how to organize them” and “pick one thing like time management and do that more detailed”.

Dealing with challenges. One interesting thing that emerged is that student’s in this group began to answer their questions in a more positive light. Responses such as “I have choices”, “I feel good I am still in school working towards this degree”. In other words, the students were identifying with the personal message at the bottom of the email which said “As a final note, I want to say that I am so proud of you for working towards your degree. I know there are all kinds of things you can be doing right now like sleeping or watching all the current season premieres of popular tv shows, remember, you have your whole life to watch tv. Think about it, in five years do you want to be the person who watched a lot of tv, or the person who has a degree?” They were identifying that someone cares about them and they are listening to what I was saying. Goals for students who were most motivated fell into a category of intrinsic motivation. They answered with statements such as “no one else in my family has a degree” and “future goals motivate me”.

The third motivational email (Appendix Q) was designed with the feedback provided from the least and most motivated individuals taking the courses. Table 46 represents the feedback incorporated into the redesign of the next motivational email to meet the real time motivational needs of the students.

Table 46

Summary of Iterative Design Changes to Create Motivational Email #3

Theme	Evidence	Redesign
Managing Time (Least Motivated)	Student 1, Line 1: “Too many writing assignments due this week” Student 2, Line 3: “Seems like a lot of busy work these days, not sure how to handle it all”	The third motivational email was devoted to Time Management

	Student 3, Line 25: "I need help with writing and figuring out how to get it all done"	
Dealing with Challenges (Least Motivated)	Student 3, Line 9: "I get overwhelmed and stop" Student 2, Line, 12: "I get frustrated and quit working on it until the next day" Student 2, Line 20: "Give me more resources to figure out how to do all this and help students when they ask"	The email was designed in away so that students could pick and choose strategies that would work for them to help eliminate some of their challenges as a student
Visually Appealing (Most Motivated)	Student 2, Line 6: "Visual, organized, motivating" Student 3, Line 4: "visually nice" Student 1, Line 5: "personal and encouraging" Student 3, Line 8: "colorful" Student 1, Line 9: "I really like the quote by MLK Jr. "I love the picture" Student 2, Line 11: " I like the short title at the top letting me know what the message was about." Student 1, Line 22: "I like the icons next to the statements"	Stayed consistent with a format design that students already approved of including: banner on top that read Time Management: Sara's Motivational Moment, a picture, a quote, time management skills and a personal message from me
Reminders (Most Motivated)	Student 2, Line 18: "yes, but too general" Student 3, Line 19: "Somewhat, but I already knew this stuff, go into more detail" Student 2, Line 31: "I would go more into detail. We know we need those five things while at school. But once we have that information, how should we organize it." Student 2, Line 49: "I already know to go to class and take notes, it would have been cool	Motivational Email #3, Time Management focused specifically on Time Management. Each icon detailed one strategy

	<p>to have the whole email talk about something more specific like how to stay organized”</p> <p>Student 1, Line 47: “It was a little to general, I like the email, just want something more specific”</p> <p>Student 3, Line 68: “the stay organized tip was most helpful, everything else was repeat for me”</p>	
Dealing with Challenges (Most Motivated)	<p>Student 1, Line 70: “Yes, it reminds me I have choices”</p> <p>Student 2, Line 49: “I can get through this one step at a time”</p> <p>Student 2, Line 72: “I feel good that I am still in school and working towards this degree”</p> <p>Student 3, Line 76: “I just keep my eye on the end game”</p>	<p>Choices appeared to be a common theme with motivated students, so I incorporated many in motivational email #3</p>


The format of the email included a banner at the top, a picture, a quote, and a personal message from me. By the time I got to the creation of the third motivational email, the content became very detail focused and specifically on “Time Management”. In other words, this was no longer a general email. It was very specific. The top of the email read “Time Management: Sara’s Motivational Moment”. Underneath was a picture of a person running with a picture of a clock superimposed behind him. The quote next to the picture read “Achieve success in any area of life by identifying the optimum strategies and repeating them until they become habits” – Charles J. Greens Underneath the quote was a personal message from me followed by very detailed icons: choices, follow through, organize, bonus time, reflect. A visual of Motivational Email #3 can be found in Figure 6.

Figure 6

Motivational Email #3

TIME MANAGEMENT

Sara's Motivational Moment




“Achieve succes in any area of life by identifying the optimum strategies and repeating them until they become habits.


- Charles J. Greens

Hello BA 1010!


Some of you mentioned you would appreciate helpful strategies for time management. Think about a time when you had to plan something or you were part of something that was very successful. Chances are you had to make some choices, follow through, organize, find extra time to work on it and probably thought about the event afterwards. Here are a few strategies that have been successful for me when I had many things on my plate.

- 


Choices

Time Management is really all about the choices you make. It's your life. So right now, I am asking you. What do you need to do to complete this semester? Do you have any distractions that are getting in the way of you meeting your goals? If so, make the choice and put a stop to them and focus on your classes.
- 


Follow through

Look at the week ahead of you. I bet you have time right now that you can block off for school. Pick a couple hours at least, write the times down, either on your computer or them type into your phone, whatever you need to do and stick to it. If someone drops by during your scheduled work time tell them you are busy and you will catch up with them later.
- 

Organize

Grab your syllabus for each class you are taking. Make a list of what you have left to do in each of your classes for the semester. Choose the larger projects first in each class, break each large assignment/project into smaller "tasks." Use the time you set aside each week to work on these smaller tasks in order to complete your projects/assignments on time.
- 

Bonus time

Make use of your down time. Bring a working study guide or one of your school books everywhere you go. If you are waiting in line somewhere, instead of playing on your phone, pull out your book or study guide and review it. It sounds small, but it adds up.
- 

Reflect

Once you have completed the semester, take a look at what worked and didn't work for you throughout the semester and then build on those activities next semester.

Remember everyone finds success through different strategies, so try out a few things listed here and stick with what works for you.

Good Luck!

Third Iteration

After Motivational Email #3 “Time Management” was sent out data was collected from the students regarding real time motivational needs from the least motivated and the design of the email from the most motivated students. The following themes emerged from their feedback.

Least Motivated

Feedback. For the least motivated students two major themes emerged, feedback and dealing with challenges. In regard to the least motivated students, students were asking for a person to guide them, whether it be a mentor, or a coach. They responded stating that when they feel stressed or like they cannot do something they wanted someone to tell them that they could do it. Evidence of this includes “provide more support for when things come up, where is my instructor?”, “it would be great if our instructor would appreciate and recognize our work”, and “Our teacher seems more stressed about her own life than helping us”.

Dealing with Challenges. Student responses such as “stressed out about whether I can do it”, “this stops me in my tracks and I quit”, “I have quit things before” are evidence of this.

Most Motivated

Visually Appealing. In regard to the most motivated students, it was apparent that they appreciated the visual aspect of the emails, and thought they were visually appealing. They liked the color choices, the picture and the quote. Such words as “specific”, “appealing”, and “interesting” were used by students.

Transfer. A theme that surprised me was that students identified ways in which they would use the content in the material at a later date. I coded this as Transfer. Evidence to support this theme includes “A lot of work in class, you gave ideas on how to get through”, “Just like you suggested, I put my school stuff on my phone, so when I have free time, instead of

playing a game I reviewed my school stuff’. Other students chunked the remaining assignments that they had into smaller more achievable goals based on one of the bullets in the motivational email “I separated my assignments into smaller goals”. Evidence that the most motivated students, the ones who indicated that they do not need a motivational email and that the content was familiar even showed signs of transfer. Support for this came from their feedback, “I can rework my life” and “adjust to make room for challenges”, and “some organizational strategies can work for me” (Table 45, Table 46) changed as opposed to responses that indicate “I have already seen this before”. In previous iterations, students still brought up that the content was familiar, so seeing the change in the most motivated students was encouraging.

The fourth motivational email was created based on feedback from the most motivated and least motivated students who reviewed motivational email #3, “Time Management”. The format of the email including a banner at the top, a picture, a quote, and a personal message from me stayed the same to be consistent with the feedback. A summary of the detailed redesign of the email #3 can be found in Table 47.

Table 47

Summary of Iterative Design Changes to Motivational Email #4

Theme	Evidence	Redesign
Feedback (Least Motivated)	<p>Student 2, Line, 16: “provide more support for when things come up, where is my instructor?”</p> <p>Student 1, Line 23: “it would be great if our instructor would appreciate and recognize our work”</p> <p>Student 3, Line 31: “Our teachers seems more stressed about her own life than helping us”</p>	<p>As the students were really looking for feedback from their instructor, the solution in the email was to offer other areas of support for student future needs to supplement this feedback need.</p>

Dealing with Challenges (Least Motivated)	Student 2, Line 3: “stressed out about whether I can do it” Student 2, Line 8: “this stops me in my tracks and I quit” Student 1, Line 13: “I have quit things before”	The email had a very cheerful tone, “congratulations” “You did it’
Visually Appealing (Most Motivated)	Student 1, Line 4: “specific, appealing and interesting” “more detailed” “liked picture” Student 1, Line 9: “I like the quote” Student 2, Line 21: “yes, I liked that there is a quote, picture, message”	Kept the design format the same based on previous feedback from most motivated students
Transfer (Most Motivated)	Student 1, Line 5: “I like how you picked a few items that could really help us develop that area” Student 1, Line 13: “A lot of work in class, you gave ideas on how to get through” Student 1, Line 18: I liked how you included a personal message” Student 1, Line 36: “Just like you suggested, I put my school stuff on my phone, so when I have free time, instead of playing a game I reviewed my school stuff” Student 1, Line 39: “I like the idea to separate larger assignments into smaller goals” Student 3, Line 42: “that things are doable, you just need to rework them to what fits you”	This is evidence that the third motivational email impacted students and they were using the strategies.

The format of the email remained the same including a banner at the top, a picture, a quote, and a personal message from the researcher. The main difference in the design was that


the content focused specifically on looking backwards and building on successes to focus on the future. The top of the email read “You Made It: Sara’s Motivational Moment”. Underneath was a picture of a car on a winding road. The quote next to the picture read “You can turn it all around in a split second by making a choice to try again, to love again, to live again, to dream again” -Chris Assaad. Underneath the quote was a personal message from the researcher followed by resources at Wayne State University that students have access to and should use. A visual of Motivational Email #4 can be found in Figure 7.

Figure 7

Motivational Email #4

YOU MADE IT !!

Sara's Motivational Moment



””

You can turn it all around in a split second by making a simple choice to try again, to love again, to live again, to dream again.

””

- Chris Assaad

Hello BA 1010,

Congratulations! You are at the end of the course. You did it. Take a moment to look back and reflect on your semester. What worked really well for you? Were there things that did not go so well for you? Focus on what went well and your next step is to incorporate those strategies into your next semester.

Look to the future, be prepared, you may experience bumps in the road, life happens and sometimes no matter how motivated you are, things get in the way of your educational goals. The best choice you can make when faced with a bump in the road is to communicate, reach out and ask for help. If you do not know where to go as any of your professors for direction, your advisor, your peers or any other person associated with the University.

Here is a list of commonly used resources throughout campus, please use them they are here for YOU!

Academic Success Center: success.wayne.edu

Learning communities specifically designed for students at WSU:
lc.wayne.edu/current.php

Student Organizations at WSU that you might want to consider joining:
wayne.collegiatelink.net/organizations

Campus events: events.wayne.edu

Student Overall Evaluation

This study attempted to take a “snapshot” of real time motivational needs of undergraduate students at three different times throughout the semester. Students in the experimental group, including both most motivated and least motivated, were given the opportunity to complete a final summative evaluation covering all four motivational emails that the groups received after all motivational emails were sent out. The following overarching themes emerged from the collected data will be reviewed first about the actual email process and secondly specific information that emerged regarding the characteristics of the students.

Motivational Emails are Motivating. Responses included comments such as “my immediate reaction to receiving the motivational emails was surprised, but thankful”, and “I feel as though the business school takes a personal interest in student success” and “it was nice”. When asked for three words that state how they feel about the emails student’s responded with “happy, encouraged, humorous”, “motivating, inspirational, informative-because they gave relevant advice about how to move forward and important ways to stay organized in the process of working toward a degree” and “helpful, hopeful, inspirational”. With the exception of one respondent who said “good for unmotivated, I feel like I am already motivated to do well”. Overall when asked if the emails were motivating, seven of the eight responses indicated that yes, the emails were motivating.

Responses to support that the emails were motivating include: “emails helped me refocus in stressful times throughout the course”, “yes, it pushed me to work harder”, “leading up to finals time has been rough, so reading an inspirational email did help me stay hopeful about finishing up the semester on a good note”, “my favorite email message was the “you made it’ email. The quote from that email was very inspirational for me. At times during this semester, I

was ready to take the easy way out of things and just settle for less than I deserved as far as grades”, “the emails did impact my motivation in a positive way, but more so towards the end of the semester. The emails motivated me to keep trying and that the end of the semester is not far away, and that I had made it as far as I had, so I should see the semester through to the end.”

Detail. Students were asked to take a quick glance at all four emails and determine which one they liked the best. Overall, students reported a tie between “Time Management” (Figure 6) and “You Made It” (Figure 7). In regard to the Time Management email students said, “it made me feel that if I follow the advice provided I will be successful” and support for the You Did it email was, “I didn’t even know those resources were available”.

Interactive. When asked what could be done to make the motivational emails more effective students provided the following information: “Emails are not interactive enough”, “some of the emails had a lot of text, it is not interactive with the reader, when a student is getting ready for an exam they do not want to read so much”, “not interactive with students would be better to use a video”, “emails can only do so much for motivation. I think that if a student is not motivated to complete a degree, they will disregard any emails. However, maybe more about the rewards one receives upon degree completion could be incorporated into the emails as a motivational tool”, “I would like things emailed to me that are specific to my major such as new classes that are available”, “it would be cool to see a before and after video of a student who has made it”, “what about a reward, like an ipad if you graduate or maintain a 3.0 or above.

“, “I would like to see the emails become more frequent, once a week or every two weeks. A frequent reminder helps me most because of the repetition of hearing or seeing something reinforces the idea, and once I see/hear something so many times it becomes embedded in my

mind and becomes a habit”, “I would like to see information on hydrating and nutrition, that helps the mind and body to function at it’s best”, “also emails that tell students to get enough rest and to take breaks away from study area, these are things that would help keep me motivated to complete my degree”.

Transfer. Evidence for transfer emerging as a theme comes from “if I work harder there are opportunities, I will use your time management ideas”, and “gave relevant advice about how to move forward and important ways to stay organized in the process of working toward a degree.”

When asked what impact the email had on overall motivation, students replied with “I wanted to work on the steps I was lacking when I was studying for the exam”, “it reaffirmed my satisfaction in all the hard work I had completed and allowed me a moment to reflect on the mistakes I had made and how I will learn from them in future courses” , “The emailed messages were helpful and in some ways reminders of strategies that I have been told before and reminded me to use them in the future”, “Because of the emails, I have improved my time management skills because I am learning that procrastination always gets me in trouble”, “I have definitely referenced back to the time management email on more than one occasion, and used the advice in study skills to take better notes”, “the study skills email gave me the confidence to participate in class, the class is so large before, but I realize I am hurting myself if I don’t participate”, “these emails served as reinforcement of reminding me what I need work on for the rest of this past semester and for semesters to come”, “I specifically use ‘ask for help’ and ‘reading through course materials and taking notes’ are two habits that I need to work on, thank you for that”, “I look at down time more closely now”, “I plan on using my down time to organize more, and not to just relax. I also plan on making study guides from the beginning of the semester and not just

around finals time, I believe that this will help me be more successful in grasping the information and making it stick in my memory,” “I took each assignment and exam preparation individually and focused on whichever demanded the most immediate attention.” Interestingly enough, even though the most motivated students said that the content was familiar by the time data was collected for the third email, which was more detailed, it was apparent that the students were benefiting from the information as most of the feedback that they supplied included statements indicating that they were using the techniques listed in the “Time Management” email. Table 49 includes a visual representation of all these themes.

Table 48

Summary of Student Overall Evaluation

Theme	Evidence
Motivating	<p>Student 1, Line 12: “happy, encouraged, humorous”</p> <p>Student 2, Line 13: “motivating, inspirational, informative”</p> <p>Student 5, Line 23: “good for unmotivated”</p> <p>Student 8, Line 27: “helpful, hopeful, inspirational”</p> <p>Student 1, Line 28: “Yes, pushed me to work harder”</p> <p>Student 7, Line 42: “the messages that were sent through WSU email were motivating because this semester was a turning point for me; starting out with my basic business classes, and not dropping any of my four classes this semester”</p> <p>Student 8, Line 56: “ leading up to finals time has been rough, so reading an inspirational email did help me stay hopeful about finishing up the semester on a good note”</p>
Interactive	<p>Student 4, Line 19: “some of the emails had a lot of text, it is not interactive with the reader, when a student is getting ready for an exam they do not want to read so much”</p> <p>Student 5, Line 33 : “Emails are not interactive enough”</p> <p>Student 2, Line 164: “emails can only do so much for motivation. I think that if a student is not motivated to complete a degree, they will disregard any emails. However, maybe more about the rewards one receives upon degree completion could be incorporated into the emails as a motivational tool”</p> <p>Student 4, Line 172: “look at a video about student before and after”</p>

Transfer	<p>Student 2, Line 15: “they gave relevant advice about how to move forward and important ways to stay organized in the process of working toward a degree”</p> <p>Student 3, Line 30: “they made me feel that if I follow the advice provided I will be successful”</p> <p>Student 4, Line 50: “I wanted to work on the steps I was lacking when I studied for the exam”</p> <p>Student 1, Line 59: “if I work harder, there are opportunities”</p> <p>Student 2, Line 61: “They reaffirmed my satisfaction in all the hard work I had completed and allowed me to take a moment to reflect on the mistakes I had made and how I will learn from them in future courses”</p> <p>Student 2, Line 90: “I have improved on my time management skills because I am learning that procrastination always gets me in trouble”</p> <p>Student 8, Line 106: “asking for help and reading through course materials are two habits that I need to accomplish</p> <p>Student 8, Line 131: “I do plan on using my down time to organize more, and not to just relax. I also plan on making study guides from the beginning of the semester and not just around finals.”</p>
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Differences between motivated students and least motivated students. Students who scored high on the course interest survey provided feedback stating they were most motivated by intrinsic rewards, whereas students who were identified as least motivated placed more emphasis on extrinsic rewards. This aligns with motivation literature as Maslow’s hierarchy of needs (1954) suggests that when students are close to or arrive at the highest level “self-actualization” they identify with intrinsic motivators. Students who are not at that point in the process seemed to identify more with extrinsic motivators suggesting that they have not completed prior need categories.

There was a difference of opinion among the participants about how or why the motivational emails were motivating. Unexpectedly, there was a huge difference in perception of rewards that the most motivated students desired in comparison to the rewards the least

motivated students desired. The most motivated students identified with intrinsic rewards such as making money and getting a good job. The least motivated students identified with extrinsic rewards such as wanting to help others and wanting to be the first in the family to earn a degree. I thought this was interesting as it correlates with Maslow's (1954) hierarchy of needs in that the most motivated student may be approaching or at the self-actualization phase whereas the least motivated students might be at a lower level.

Another difference or theme that emerged concerned the way each group used coping strategies when they felt stressed. When felt challenged, the most motivated students responded in a way that reflected hope. The least motivated students responded with frustration and negativity.

Student Development. In regard to student development there was a dramatic difference between what most motivated and least motivated students said they needed for student development. The most motivated students stated that realizing that someone cared about them was important in their development as a student. The students who were identified as least motivated indicated that resources such as study skills and time management skills was what they needed to develop as student. A final theme that emerged was that the motivated students identified that it was important to feel like someone cared. Table 50 is a representation of the theme and the differences between the most motivated students and the least motivated students in the experimental group.

Table 49

Summary of Differences between Most Motivated and Least Motivated

Theme	Least Motivated	Most Motivated
Rewards	Extrinsic Evidence Time 1, Student 1, Line 33: Getting a college degree along with a job”	Intrinsic Evidence Time 2, Student 1, Line 38: Future goals that I have had for a long time.

	<p>Time 1, Student 3, Line 37: “Finding a good job”</p> <p>Time 2, Student 2, Line 22: “the money and the reward”</p> <p>Time 2, Student 2, Line 24: “finding a job”</p> <p>Time 3, Student 1, Line 20: “lot’s of money”</p> <p>Time 3, Student 2, Line 22: “not much motivates me”</p> <p>Time 3, Student 3, Line 27: “they should implement a program where when you graduate you get an ipad”</p>	<p>Time 2, Student 2, Line 40: No one else in my family has tried to get a degree, I would like to be the first”</p> <p>Time 2, Student 3, Line 74: My family</p> <p>Time 3, Student 1, Line 26: “I am a life long learner”</p> <p>Time 3, Student 2, Line 31: “I want to help others with my degree”</p>
<p>Coping Strategies</p>	<p>Less hopeful</p> <p>Time 1, Student 3, Line 15: “I just don’t do it”</p> <p>Time 1, Student 2, Line 23: “I am struggling”</p> <p>Time 1, Student 3, Line 25: “I don’t really know what I am doing”</p> <p>Time 1, Student 1, Line 27: It would be great if I could just stop writing papers and doing projects period”</p> <p>Time 2, Student 2, Line 3: “not sure how to handle it all”</p> <p>Time 2, Student 2, Line 8: “I get overwhelmed and quit”</p> <p>Time 2, Student 2, Line 12: “I get frustrated and quit working on it until the next day”</p> <p>Time 2, Student 2, Line 26: “I need to figure out how to get stuff done”</p> <p>Time 3, Student 2, Line 3: “stressed</p>	<p>Hopeful</p> <p>Time 1, Student 2, Line 107: That it’s not always easy, just got to keep going”</p> <p>Time 1, Student 3, Line 118: “I just keep going”</p> <p>Time 2, Student 2, Line 70: “I have confidence and am reminded that I have choices”</p> <p>Time 2, Student 2, Line 72: “I feel good I am still in school even though it is hard sometimes”</p> <p>Time 3, Student 1, Line 42: “Things are doable, you just have to rework them to what fits you”</p> <p>Time 3, Student 2, Line 48: I definitely feel that my goals are attainable”</p>

	<p>about whether or not I can do this”</p> <p>Time 3, Student 2, Line 7: “Sometimes it stops me in my tracks and I am just done”</p> <p>Time 3, Student 2, Line 13: “I have quit some things before”</p>	
Student Development	<p>Skills</p> <p>Time 1, Student 1, Line 1: “studying for exams, writing papers, and working”</p> <p>Time 1, Student 3, Line 4: “Lots of exams in this class, studying”</p> <p>Time 1, Student 3, Line 24: “Make more time to study”</p> <p>Time 1, Student 1, Line 38: “I need some more sleep”</p> <p>Time 2, Student 1, Line 1: “too many writing assignments this week”</p> <p>Time 2, Student 2, Line 18: “Give me more resources to figure out how to do all this”</p> <p>Time 2, Student 1, Line 25: “help with writing”</p> <p>Time 2, Student 2, Line 26: “Figuring out how to get stuff done”</p> <p>Time 3, Student 1, Line 14: “have more student sessions”</p>	<p>Caring person</p> <p>Time 1, Student 1, Line 44: “This email made me feel like at least one person cared.”</p> <p>Time 1, Student 3, Line 100: That I can contact Sara the grad student who came to class”</p> <p>Time 1, Student 1, Line 104: “That there are people who care. I’ve only met one and that was the admissions advisor”</p> <p>Time 1, Student 3, Line 109: That there are others on campus like Sara who came to class that care”</p> <p>Time 1, Student 1, Line 113: “having someone tell me I am doing a good job, in put always helps.</p> <p>Time 2, Student 2, Line 26: It’s nice to know someone else cares</p> <p>Time 3, Student 1, Line 18: I liked the personal messages (implied)</p> <p>Time 3, Student 2, Line 28: “It’s like the orientation happens and then no more contact”</p>

Summary

The general aim of this study was to determine the effects of motivational emails on undergraduate student motivation levels throughout the course of a semester. The specific purpose was to examine the process of utilizing design-based research efforts for the creation of real time emails in order to meet the motivational needs of undergraduate students. Qualitative and quantitative data were collected to examine any relationships between the motivational emails and student motivation levels. The purpose of this chapter was to present the results of the data collection for both the pilot study and the main study. Quantitative and qualitative results for the pilot study were reported, followed by the quantitative and qualitative results of the main study. The next chapter consists of a discussion of the results.

CHAPTER FIVE

DISCUSSION AND CONCLUSION

The overarching goal of this research study was to examine the impact of four motivational emails sent through the university email system to students in a face-to-face setting. The specific purpose was to review the process of utilizing design-based research efforts for the creation of emails incorporating ARCS (Keller, 1987abc) motivational instructional design strategy to meet the real-time motivational needs of undergraduate students. A mixture of methods, including both qualitative and quantitative data was collected across the four month time period in which this study occurred.

The first chapter in this research study identified the challenge higher education is faced with to assist students in increasing and maintaining motivation throughout the course of a semester. The literature review incorporated a funnel strategy beginning with the overarching topic of motivation, moving to motivation in the classroom, and concluding with the specific instructional strategy of motivational messages/emails. The third chapter provided an overview of the study's research methodology, the rationale for the research design, and an explanation of the pilot study. Chapter four presented the quantitative and qualitative data collection results of both the pilot study and the main study. The purpose of the fifth chapter is to present a summary of the research study questions answered, major findings, limitations, implications for the field of instructional design, and recommendations for further research. The following four research questions guided this study:

Q1: What is the current level of motivation for undergraduate students?

Q2: To what extent do the ARCS based motivational emails impact the undergraduate perceptions of motivation?

Q3: What is the difference in perception of motivation, if any, between the experimental group and control group?

Q4: Does the iterative process of this design-based research study improve the strategically timed motivational message dispersed throughout the semester?

In order to fully understand student perceptions and reactions to the four motivational emails, several students in the experimental group were asked to complete two separate open-ended surveys via surveymonkey.com. A total of 15 students who were identified through the CIS as most motivated supplied real-time feedback regarding the design of the motivational emails (Appendix J). In addition, 15 students who were identified as being least motivated were sent a separate survey (Appendix G) asking for real-time feedback with regard to what kind of content can be put into the email in order to help sustain or increase motivation. These responses or feedback from the students were vital to the success of this design-based research project.

Over the course of collecting student data for three iterations, the vast majority of responses were extremely positive. A few students responded to the surveys by indicating that they were not in favor of the motivational emails. One particular student mentioned that she liked the idea of a motivational intervention, but that she did not feel that an email was the correct delivery format. Instead this particular student felt that a video or a motivational poster would have been more effective. In addition, in the final overall evaluation survey (Appendix K), two students mentioned that they were already motivated and it was a waste of time to read the motivational emails as they did not add to the student's knowledge or motivation.

Research Question 1: What is the current level of motivation for undergraduate students? The Course Interest Survey (Appendix D) was designed as a situation specific measure of learner motivation for one particular setting. The setting in this study was the six

School of Business Administration sections of BA1010 and BA2020. The minimum score on the Course Interest Survey is 34 and the highest score is 170. Keller does state that there really are not any normal scores for this survey as each situation has different measures, so there is no normal distribution of responses. During this study those students who had a score of 70 or less were considered “least” motivated and students who had a score of 130 or more were considered “most” motivated. The students in the control group (n=158) had a mean score of 123.08 and the experimental group (n= 155) had a mean score of 123.05. The scores suggest that, students enrolled in both BA1010 and BA2020 started the semester motivated.

Research Question 2: To what extent do the ARCS based motivational emails impact the undergraduate perceptions of motivation. Three hundred and thirteen, School of Business Administration students in BA1010 and BA2020 took a pre-test and post-test survey of their motivation levels throughout the study. Half of those students were randomly selected to be in the experimental group and received four motivational emails throughout the semester, the other half were in the control group and did not receive the motivational emails. In addition to receiving the motivational emails students in the experimental group completed online surveys to provide real-time feedback about the design of the emails and the class motivational needs. The difference between the students in the experimental group and the control group was measured by performing a t-test through SPSS and the analysis of qualitative data collected. Results of the t-test will be presented followed by the qualitative analysis.

Results of the data analysis determined that there is no significant difference in the mean score between the experimental group and the control group with regard to the motivational emails and motivation. From this finding it can be inferred that the treatment condition of

delivery of motivational emails did not enhance the level of motivation significantly more than the control group who did not receive motivational emails.

The emails designed for the experimental group were developed to enhance student motivation. The use of ARCS motivational instructional design strategy was incorporated in the content of the emails in order to increase or maintain motivation throughout the semester. In this study motivation levels of students in both the control group and the experimental group decreased from Time 1 to Time 2. A visual of this is located in Table 51.

Table 50

SPSS T-test Results between Experimental Group and Control Group

	Sample Time 1	Size	Mean Time 1	Sample Time 2	Size	Mean Time 2
Experimental Group	n=155		123.05	n= 108		116.24
Control Group	n=158		123.08	n=109		116.94

The Course Instrument Survey (Appendix D) measures motivation levels specific to that situation. Which means that students in these business courses may have had decreased motivation in the classes specific to this study and could very well be motivated in other areas of life. These findings differ from other research related to motivational emails which found the experimental group more likely to stay or increase in motivation (J. Visser, 1990; J. Visser & Keller, 1990; L. Visser, 1998; Gabrielle, 2003; Robb, 2010). Other studies found mixed findings with significance as they placed emphasis on the confidence variable alone and not the entire aspect of ARCS (Naime-Diefenbach, 1991; Moller, 1993; Huett, 2006). As a review of the research indicates that this is the first study with the following elements, incorporating all of ARCS, appropriate length of study and use of student feedback that did not find significance.

The other side of the story, the qualitative data collected through the Student Motivation Opinion Survey (Appendix G), Student Design Motivated Survey (Appendix J) and the Overall Evaluation Survey (Appendix K) suggests that students found the motivational emails motivating. The least motivated students just came out and said it. The most motivated students implied that the information was motivating; however they did not come out and say it. This theme suggests that overall the email one way or another affected motivation. Students used specific words like the email was “motivating, hopeful and inspirational” when asked to describe their feelings about the overall email. Data collection from the final overall evaluation, seven of the eight respondents indicated that the motivational emails were motivating. When students were asked which motivational email they liked the most, 80% of the students responded with Motivational Email #3 “Time Management” (Appendix Q) and 20% responded with Motivational Email #4 “You Did It” (Appendix R). Motivational email #3 was the most detail specific email of all three emails and Motivational Email #4 incorporated encouraging words with specific resources at WSU for students to go for further support.

As an attempt to explain reasoning behind why the motivation levels decreased throughout the semester I reviewed the qualitative feedback collected throughout the study to see what student responses said about motivation. Based on the qualitative data, students do have a sense of what motivation is since they indicated specifically what motivates them. The least motivated students focused on extrinsic rewards and students who were most motivated focused on intrinsic rewards. Knowing that students were aware of motivating factors, I went back into the qualitative data to see if there was something to indicate reasons for the decrease in motivation.

The majority of the students in the study said they were working towards obtaining a Bachelor of Arts or Bachelor of Science degree in Business Administration. As these classes are required for graduation, it would appear that students have no choice and are required to take these courses. When someone is required to do something, they may or may not be motivated to do it. In this case, as the semester started, students may have had some motivation, but as the semester continued their motivation dwindled as they did not find relevance with the course material. So in this case, possibly the students are motivated in other areas of their lives but are making different motivational choices in these courses because they are choosing not to make an effort in them.

Another possibility is that students might feel as though they have too much on their plates. Currently there are more students attending college, working, and participating in other activities besides school (Nathan, 2005). Eighty-five percent of students in the experimental group were full-time students enrolled in four classes. Sixty-five percent of those students work and average at least 22 hours per week. When considering students are in class approximately 10 hours and need to study for 3.5 hours per credit, do they have any time left at the end of the day? Tinto suggests that students entering college are exposed to various new obstacles that occur alongside a demanding academic schedule (Tinto, 1987a) that may cause a decrease in motivation or persistence to complete their goals.

The most likely explanation for the decrease in motivation from Time One data collection to Time Two data collection is instructor dissatisfaction. This theme arose immediately with the first round of data collection. After receiving motivational email #1, students were asked to provide feedback with respect to the first motivational email. During the analysis, one of the least motivated students responded to a question about what would motivate them with “feedback

from instructors would help to motivate me” (Time 1, Student 3, Line 41). Another student who reviewed the email focused specifically on one of the recommendations in the email which suggested that students ask for help. In response to this question, the student wrote “I feel like asking for help is pointless because it seems no one can give you the right answers without going through someone else first” (Time 1, Student 1, Line 38). The instructor dissatisfaction theme is implied in this case as the question the student was responding to was “Did you find the email relevant to your class?” and this person is saying that asking for help in class is pointless, as nobody knows the answers without asking someone else. One student just came out and said it when they answered the question “What can the SOBA do to help motivate you?” The response was “I need people with PhDs teaching, and direct access to them. These discussion groups seem beneficial in some classes but at the same time I feel it’s because they don’t learn anything in the lecture. The college of business needs to raise their standards on their professors. I think most shouldn’t be teaching. I lose motivation in said classrooms. Bring me someone who has some real world experience in something I’d be interested in” (Time 1, Student 1, Line 72). Additional evidence collected from Time one data collection is summarized in Table 52.

Clearly many students provided feedback in regards to their current instructors. The most data was collected from Time 1, where six students, without being prompted, responded with concerns regarding their instructors. Two students, one of whom was in the most motivated group and one of whom was in the least motivated group, provided feedback from the Time two data collection indicating dissatisfaction with their instructors. The least motivated student wrote, “I did try to ask for help and didn’t get help from my instructor”(Time 2, Student 2, Line 15) and the most motivated student wrote “SOBA [School of Business Administration] needs better teachers” (Time 2, Student 3, Line 45).

The Time 3 data collection resulted in feedback from three students, one was identified as least motivated and the other two were identified as most motivated. The least motivated student wanted the “Professor to appreciate and recognize our work” (Time 3, Student 1, Line 23). The two most motivated students provided the following feedback, “Teachers are not very approachable”, (Time 3, Student 1, Line 26) and “Support for the duration of the degree this is implied as they would not ask for support if they felt it from teacher” (Time 3, Student 2, Line 30). The final email message evaluation (Appendix K) included questions that were specific to the motivational emails sent throughout the semester. The questions on the survey only allowed for answers that were related to the motivational emails.

A Summary of all three iterative data collections feedback from the most motivated students and least motivated students is located in Table 52

Table 51

Summary of all Three Iterative Data Collections

Iterative Design Cycle	Response from a student identified as Most Motivated	Response from a student identified as Least Motivated
Time 1	Time 1, Student 1, Line 38: “I feel like asking for help is pointless because it seems no one can give you the right answer without going through someone else first” Time 1, Student 3, Line 49: “The instructor is not easy to contact” Time 1, Student 1, Line 72 “I need people with PhDs teaching, and direct access to them. These discussion groups seem beneficial in some classes but at the same time I feel it’s because they don’t learn anything in the lecture. The college of business needs to raise their standards on their professors. I think most shouldn’t be teaching. I lose motivation in said classrooms. Bring me someone who has some real world experience in something I’d be interested in.” Time 1, Student 2, Line 91: “organized teachers who want to talk to students”	Time 1, Student 3, Line 41: “feedback from instructors would help to motivate me”

	Time 1, Student 2, Line 116: “teachers who want to know their students”	
Time 2	Time 2, Student 3, Line 45: “SOB needs better teachers”	Time 2, Student 2, Line 15: “I did try to ask for help and didn’t get help from my instructor”
Time 3	Time 3, Student 1, Line 26: “Teachers are not very approachable” Time 3, Student 2, Line 30: “Support for the duration of the degree” this is implied as they would not ask for support if they felt it from teacher.”	Time 3, Student 1, Line 23: “Professor to appreciate and recognize our work”

Instructors often lack the knowledge and preparation to incorporate effective motivational instructional strategies in their classrooms (Keller, 2010) and they may not be trained to motivate and have competing motivations of their own which often detract from their original intent of motivational effectiveness (Brewer & Burgess, 2005). Practitioners tend to view motivation as a separate approach which is not in the control of the designer, assuming motivation is derived from student perceptions and from their personality (Keller and Burkman, 1993) and professors easily place accountability on the students to explain any lack of motivation (Wlodkowski, 1999).

In addition to the data collected from students, a few observations I recorded through out the course of the semester can be used as added support. In the planning stages of Motivational Email #1 (Appendix O) as I was inputting contact information, I asked one of the instructors what telephone number I should put on the email for students to use when they need to contact someone. The response from the instructor was complete shock that I would consider giving students a telephone number. The instructor said “email addresses, that’s it”. On another occasion with a different instructor I passed out the Course Interest Surveys (Appendix D) and immediately, the students in the class started talking. As I felt this loud talking might be an interruption to the students who were completing the survey, I looked to the instructor for

direction, and the instructor did not even notice that there was a loud level of talking occurring in the classroom. At that point, I noticed students in the course who were completing the survey look up and around at everyone talking. My observation of this was that these students were on the same page and felt the talking was an interruption. As the researcher, I asked the class to stop talking so that the students who were completing the survey had quiet in order to complete it. I had a similar situation occur in another course and when I looked up at the instructor to find out if anything would be said, the instructor mouthed to me “it’s okay, they’re fine”. It appeared the talking may have been a disruption to those in the study filling out the survey.

According to student feedback collected as described above in Table 51 students from all classes involved in this study describe dissatisfaction with their instructors. There are a variety of explanations for this as faculty experience numerous research demands and are working with extremely large class sizes which might have impacted the instructors’ ability to respond to students. In many cases, instructors are not versed in motivational theory (Keller, 2010) and the necessity of feedback (Hattie, 1987; Hyland, 2000) and building relationships with students (Larson, 1985; Preston, 2003; Lumsford, 2007).

Research Question 3: What is the difference in perception of motivation, if any, between the experimental group and control group? To create experimental and control groups, 313 School of Business Administration students in BA1010 and BA2020 took a pre-test and post-test survey of their motivation levels throughout the study. Half of those students were randomly selected to be in the experimental group and received four motivational emails throughout the semester, the other half were in the control group and did not receive the motivational emails. In addition to receiving the motivational emails students in the experimental group completed online surveys to provide real-time feedback about the design of

the emails and the class motivational needs. As indicated with the t-test in SPSS, there was not statistical difference between the experimental group and the control group with regard to motivation. A clear distinction emerged between the most motivated students (n=15) and the least motivated student (n=15) arose very quickly within the data. Three overarching themes emerged from the overall review in support of differing perceptions of motivation between the least motivated students and the most motivated students. The first theme found in the analysis is that the most motivated students valued intrinsic rewards and least motivated students valued extrinsic rewards. The second theme emerged in the way that students responded to questions about how they handled challenging moments they were going through. Based on student responses to the open ended questions they identified both positive and negative coping strategies when faced with challenges. The most motivated students answered the questions with a more positive tone and the least motivated spoke with negative undertones. The third theme between the most motivated students and the least motivated students was the differing perceptions of what they needed to develop as students. The most motivated students wanted to build relationships whereas the least motivated students asked for resources and skills to be made available.

Students who were identified as most motivated by the Course Interest Survey (Appendix D) collectively provided feedback stating that they were motivated by intrinsic rewards. Intrinsic motivation emerges for the student from the activity itself or from the inherent satisfaction that the task brings to the student rather than for any other consequence (Deci& Ryan, 2000). The students who were identified as least motivated provided feedback indicating they were motivated by extrinsic rewards as opposed to intrinsic rewards. Extrinsic motivation emerges

from external consequences or rewards that are presented or given to a person as a reward. Examples of extrinsic motivation include: student recognition, a paycheck, or a promotion.

This finding aligns with motivation literature as Maslow's hierarchy of needs (1954) posits that students go through five levels of needs and once they satisfy a particular level, they move on and no longer need to fulfill previous needs. In this case, the most motivated students are clearly either almost there or at the highest-level "self-actualization" as they identify with intrinsic motivators and have already completed the fourth need of ego. The least motivated students are on varying levels of needs prior to self-actualization. In most cases they are either at or near the fourth need level of attending to one's ego, in finding achievement, adequacy, and strength.

One of the challenges with considering intrinsic motivation as a motivational element alone for students is that in order for a student to maintain intrinsic motivation, it requires constant persistence and effort on the student's behalf. Not all students are readily interested in every subject area contained in their course of study. In this case, students can have high intrinsic motivation in some areas of study, but not in all their areas of study. In some situations students may believe that they are capable of understanding much of the content area in their programs. However, they might come across a course that they do not feel comfortable taking, or they might not believe in themselves. According to Bandura, the motivation of a student has an impact on the student and can be further increased when the student holds the belief that they are capable and competent (self-efficacy) of reaching their academic goals (Bandura, 1977; 1993; Marsh, Walker, & Debus, 1991). In other words, when students feel in control, they will persist and try, which will result in belief in themselves.

The second theme involved the coping mechanisms that students used to deal with challenges that arose during the semester. For the students who were identified as most motivated, a challenge was not a big deal and the students responded positively. For the students who were identified as least motivated, the opposite was true. The least motivated students responded with powerful statements repeatedly using words and phrases such as “stressed”, “can’t handle it all” and “quit”. Students make choices in school based on what reinforcements they see in front of them and how they perceive the results of their behavior. So a student who expresses this negative feeling will most likely have an external locus of control and will most likely believe that fate guides their behavior. The most motivated students are more likely to have an internal locus of control indicating they believe that their own personal decisions guide their effort and behavior. The importance lies in the understanding that motivated students see value and are able to link their behavior and thoughts as a student which will in turn reinforce the behavior in a positive way (Miltiadou & Savenye, 2003). They would be more likely to continue to persist and stay in school. The students who are least motivated most likely do not see a clear link between the behavior and reinforcement. The least motivated students would therefore have a more general expectancy (Miltiadou & Savenye, 2003) that impacts the decisions they make in regard to school.

The third theme was the significant difference in how the students responded about their need for student development. The most motivated students responded by asking for access to a relationship with someone at WSU. They wanted to know that someone else cared about them. This is consistent with retention literature, specifically Tinto (1987). The basis for Tinto’s research (1987) is that a connection can be made between an undergraduate first year student and academic and social integration. According to Tinto, if student integration into the university

does not occur, it can lead to decision changes within the student. These decisions can lead to a change in student commitments that will eventually impact a student's persistence and result in the student leaving the college. As opposed to the most motivated students, the students who were identified as least motivated asked for information on skills and techniques that they could use to help with studying for exams or help with writing a paper, in order to develop as a student.

Research Question 4: Does the iterative process of the design-based research study improve the motivational email development throughout the semester? Based on the qualitative data analysis it became clear that the iterative process of the design-based research study did improve the motivational email development throughout the semester. To assist in meeting real-time undergraduate student motivational needs, the design and development of a perceived effective motivational email occurred in this study. Through the process of three iterative design cycles, information collected determined that a well-received format, structure and detailed content were most important to both the most motivated and least motivated undergraduate students. Additional evidence surfaced in the themes of motivating and transfer, as explained below.

Motivation. A theme that emerged from the qualitative data collected was that, overall the motivational emails were motivating. The least motivated students stated this directly. The most motivated students implied that the information was motivating; however they did not state it directly. This theme suggests that overall the emails one way or another affected motivation. Students used specific words such as "motivating, hopeful and inspirational" when asked to describe their feelings about the overall email. In the final overall evaluation seven of the eight respondents indicated that the motivational emails were motivating. When students were asked which motivational email they liked the most, 80% of the students responded with Motivational

Email #3 “Time Management” (Appendix Q) and 20% responded with Motivational Email #4 “You Did It” (Appendix R). Motivational email #3 was the most detail specific email and Motivational Email #4 incorporated encouraging words with specific resources at WSU for students to go for further support.

Transfer. Evidence that the design based research process worked in this study came from student feedback as well. After the first data collection, many students asked for information about study skills. Listening to this real-time motivational concern, motivational email #2 was designed specifically to address study skills. After students received the study skills email, 10 students were asked questions to assist in the design and development of motivational email #3. After the “Study Skills” email was sent out, students never mentioned concerns about study skills again. Therefore, I was able to move forward on the assumption that the study skills email met the real-time motivational needs of the students.

The feedback from the students in response to motivational email #3 focused on specific details as opposed to a general formatted email like the previous email. Motivational email #3 was created solely around the student’s request of “time management”. When I finished looking at the data collected after email #3 was sent, the student responses did not ask for information about time management. These two examples provide evidence that students read the information on study skill and time management and therefore were satisfied with the answers to their real-time motivational needs.

Design-Based Research Impact on Instrumentation. In the development phase of this research study, I expected the design-based research part of this to be helpful with the design and development of the motivational emails. An unexpected finding was how the very nature of the process would impact the immediate needs of the study and the instruments used. The main

ways in which the design-based research process helped to identify immediate needs in order to enhance the study include:

- In the pilot study, no identifiers were used when collecting information from the students. After working with the data from the pilot study it became quite clear that I would need identifiers on the Course Interest Survey (Appendix D) in order to determine who was in the experimental group and who was in the control group. More specifically, identifiers were needed to determine which participants had the most motivation in the course per the Course Interest Survey (Appendix D) and which students were identified as having the least motivation. Prior to this discovery, the research design involved selecting students at random through SPSS. This was done in order to send students in the experimental group a survey to collect real-time information. Being able to identify which students were most motivated and least motivated has proven to be invaluable to this study. Without the ability to collect such rich feedback from both sets of students I would have had weaker findings. As a result of this change, a new approval had to be obtained the Human Investigative Committee (Appendix I).
- Upon the completion of the pilot study, it was determined that several questions from the Background Survey Question (Appendix E) were not set up properly and would not supply appropriate data to analyze. For example, when students were asked, “what is your age”, two of the possible responses were 19-20, and 20-21. A student who is 20 years old has the option to check both responses. This was a flaw in the design of the Background Survey and needed to be changed before the main study.

- Another piece of valuable feedback learned from the Background Information Survey (Appendix E) given to students in the pilot study was that several questions were not needed and the data collected was not helpful to the study, therefore they were deleted.
- The challenge of getting participants to complete the surveys (Appendix G, H, J, K) occurred throughout the course of the research study. To overcome this challenge and obtain data from more participants I had to change data collection methods. For example, I collected the Course Interest Survey (Appendix D) two times throughout the semester. The first time, I was invited into the classrooms to collect the Course Interest Survey and derived the sample of 316 from that meeting. The second data collection time, I was again invited into the classroom to collect the surveys, however, obtaining the same amount of surveys proved to be much more difficult. Apparently many students did not feel as though they needed to attend class the day of the second data collection and therefore upon adding up all the collected Course Interest Surveys I realized I was not even close to 316. As a result of the low number of Course Interest Surveys (Appendix D) collected for the second round, I made the decision to move the CIS online through [surveymonkey.com](https://www.surveymonkey.com) in an attempt to collect more responses. As a result of this change, an additional 25 students completed the CIS online.
- The original research design called for a semi-structured interview (Appendix H) of the most motivated students in order to collect real-time information regarding the design and format of the motivational emails. During the first iteration after several attempts to contact five students with no response, I made the decision to adapt the semi-structured interview questions into a ten-question survey (Appendix J). I put the survey questions on [surveymonkey.com](https://www.surveymonkey.com) and sent it out to the same five students who I had been calling to

interview. As a result of moving the semi-structured interview (Appendix H) to an online format, I was able to collect feedback from four of the five respondents that were involved in the design and development of the second motivational email. This change became permanent after a second failed attempt at reaching five different students during the second iteration. As a result of moving the semi-structured interview (Appendix H) to an online survey (Appendix J) during the second iteration, I was able to collect feedback from three students. During the third iteration, I made the decision to send the online survey (Appendix J) without any attempt to interview the students.

Student Population. Most students (50.6%) indicated that this was not their first year at Wayne State University. The experimental group had a total of 156 valid responses, missing just two respondents. For most students with a mode of 53.8% this was their first year at Wayne State University. I expected more students to say that this was their first year at WSU. The sample that I was offered had up to 1,000 students it seems unreasonable that the final sample was 313. In other words, the survey responses were reasonable but still below threshold for making generalizations. If I had had a larger sample and perhaps a higher response rate from at least 400 students, that would have produced greater results and greater confidence levels.

Limitations

In this study, there was limited external validity as the students were sampled from one university, which means that the conclusions are subject to undergraduate students at Wayne State University. In spite of the fact that graduates from WSU are typical students similar to most undergraduate students, generalizing results is not possible as the sample risks drawing conclusions about students who had no opportunity to contribute data, and thus lacks validity.

The design process started with the creation of the first motivational email through the feedback of undergraduate students in the pilot study. During the main study, the redesigned email from the pilot study was sent to the experimental group, where I collected student feedback and then created a new email based on the real-time needs of the experimental group. Once the new email was designed, I sent it back to the same group of students. The students providing feedback on each email may have been confounded by their input on the further development to the email. So, I could not continue with the participants, as it would not have been considered a random sample anymore. To eliminate this limitation, I would have had to send out a motivational email to a first group of students, collect their feedback on the motivational email and then from that determine whom the most motivated and least motivated students were. I would then have had to survey just those extremes, use their feedback to redesign a new email, and then, send the new email to an entirely new group of students. The practical limitation is that with limited time and money, it was necessary to go ahead and utilize the same group throughout the duration of the whole project.

Perhaps one of the biggest challenges this semester was in enlisting participants for the research study. At the start of the semester, there were close to 1,000 students enrolled in the six sections of the two courses. After the first data collection of the Course Interest Survey (Appendix D) my sample size was 316. I specifically chose to visit each of the classes face to face to meet in order to collect as many survey responses as possible. After visiting all six sections for the first data collection of the Course Interest Survey (Appendix D), I had approximately 32% of the students provide data. At the end of the semester when I collected the Course Interest Surveys (Appendix D) for the second time, the response rate of students dropped 10% and I was only able to collect a total of 22% of the students completing the survey. This

drop in participation could have been because one of the classes, which incorporated two sections of this study, had a review the day I came to collect data. Perhaps these students did not believe they needed to participate in a review, and therefore did not show up for class. In addition, students across the sample indicated negative feelings toward their instructors and since it was the end of the semester they could have decided not to attend.

Finally, maybe the most notable limitation is that some people might consider a series of emails as an elementary motivational intervention. I accept this and know that the complex nature of motivation is so large that four motivational emails are a simple, direct intervention that offers practitioners concrete ways to address motivation in their classrooms. Although I did not intend to tackle the multifaceted world of motivation, I did want to use the ARCS model to create a well-received and perhaps cost-effective intervention with meaningful results.

Implications for Instructional Design

Results from extensive qualitative data collection confirm that factors found in previous motivation literature (Naime-Diefenbach, 1991; Visser, L., 1998; Visser, L., 2002; Gabrielle, 2003; Huett, Kalinowski, Moller, &Huett, 2008) were crucial components for this research study in that it will add to the research literature for design-based research. I am not aware of any other study specific to mixed methods and design-based research that examined this type of motivational intervention.

Explicit dividers separating people into most motivated students and least motivated students validates past literature (Maslow, 1954; Weiner, 1974). It is a reminder of how large the motivational component is for the diverse motivational needs of the undergraduate students of today.

In response to the decrease of motivation for all students enrolled in BA1010 and BA2020 and how it relates to the instructors, perhaps the class sizes may be too large and are much more of a challenge to instructors than originally thought. A simple solution to this challenge of non-responsive instructors would be to adjust the class sizes to more appropriate numbers so that both the instructor and student needs may be met. However, university guidelines may not allow this. Another factor could be that instructors are not aware of motivational theory and that students have different motivation levels which can change anywhere from 16-38% (Means, Jonassen, & Dwyer, 1997) during the course of a semester. Even if a student felt that they were motivated at 100% at the beginning of the semester, there is a chance that motivation level can drop to 62% at any time during the course of the semester. Instructors with an understanding of motivational theory and a clearer definition of who their learners are may help them in maintaining student motivation and overall student achievement. As mentioned earlier, students choose to persist based on their interest or desires about a subject. If an instructor has a class filled with students who have no interest in the course because it is a requirement, an effective instructional design could help create engaging instruction.

Keller (1983) indicates that students' levels of motivation fluctuate as a result of a countless number of unexpected and expected challenges or events that they face throughout the semester. It would be difficult for a designer to identify all variables that could impact student motivation. Therefore, instructional designers would face an impossible challenge if they tried to create a motivational design that was a one size fits all approach. Students come to higher education with a variety of backgrounds, experiences and values. As challenges arise, students' persistence will be increased or decreased based on their perceptions of the outcomes of the challenges they face. Keeping the fragile relationship between student perceptions of how they

work through challenges and the way it impacts student persistence in mind, the instructor can supplement with motivational instructional strategy in order to support students and help them persist and maintain motivation levels.

As a researcher, I have to acknowledge that this dissatisfaction with the instructors had a role in the students' motivation levels dropping from the beginning of the semester to the end of the semester. This perception is consistent with past literature. It would appear that instructors are not aware of the internal and external components of motivation. As discussed in Chapter one of this dissertation, in the past, the expectation to maintain or increase motivation has been placed on the student (Astleitner & Keller, 1995; Gabrielle, 2003; Means, Jonassen & Dwyer, 1997; Shellnut, Knowlton & Savage, 1999; Visser & Keller, 1990) The feedback from students regarding their dissatisfaction opens the door to another question. Students overall motivation levels dropped within the course of a semester, it is unreasonable to expect that the decrease occurred from the motivational emails as the drop in motivation was consistent across the board between both the experimental group and the control group. Reasons for the drop are unknown at this time but most likely stem from a much larger component such as increased faculty demands in conjunction with inexperienced new instructors.

Motivation in the classroom. Instructional designers need to work with instructors in order to teach motivational theory and how it relates to students who are motivated extrinsically and intrinsically. Instruction and instructional materials need to support the motivational needs of students. Specifically, as students in this study were identified as most motivated and least motivated, instructors need to be aware of how students react to constraints that students face as each student responds in a different way.

New Instructor Support. It is important to note that three of the instructors had not completed their Ph.D. programs. They were graduate students in the Ph.D. program who have not yet completed their degrees and may not have had exposure to motivational or instructional design strategies. A solution for these instructors could be to mandate exposure to motivational theory through a mandatory orientation or through a peer mentor program for new instructors to assist them with the development and design of their courses.

Recommendations

In the current study the semi-structured interview had to be changed to open-ended survey questions. Although important data was collected it only provided broad outlines of the student's motivational needs. That process did not provide any insight into the fundamental question: why do some students have higher levels of motivation and other students have a lower level of motivation. It would be useful to create a study that looks at meeting the needs of students whether or not they are intrinsically motivated or extrinsically motivated.

Future Research. With focus on the instructors, I think the next step would be the creation of a design-based study with focus entirely on an intervention for faculty that focuses on teaching the faculty motivational instructional design theory. Possible interventions could be embedded into a mentoring program as research suggests that it is worthwhile to have a mentor program for new faculty members as the history and tacit knowledge which can only be passed down from an experienced faculty member can help the new faculty member develop on a professional level and become more compassionate (Boyle & Boice, 1998). In addition, when faculty members have the opportunity to work with mentors; it has been found that they experience personal relationships (Reich, 1986), much like the most motivated students in this study were looking

for. With focus on the students, the next step would be to create a more detailed motivational intervention incorporating instructor feedback and student resources.

A replication of this study should be conducted that looks at any impact of motivational emails that come from the Instructor and are personalized for each student. This study incorporated the use of one mass email per class as opposed to individual, personalized emails with the students name on each email. In 1998, L. Visser completed a study that incorporated personalized motivational messages. A result from L. Visser's study was that students who received personalized messages from the instructor had a higher rate of course completion than students who received general emails. As discussed earlier, personalized emails created by the instructor, based on the real-time motivational needs collected from students in this study, could have been beneficial for students to receive an email from an instructor who cares.

Within the data analysis of the current study I would have taken a deeper look at the data collected and analyzed the individual components of ARCS as opposed to the entire aggregate score from ARCS. If I had done this I would have been able to determine if there was any significance between the individual components of Attention, Relevance, Confidence and Satisfaction.

In addition, I would have separated the course between BA2020 the course taught with the experienced faculty member from the BA1010 courses which were taught by graduate students to determine if the isolation of BA2020 found any significance in regard to the motivational emails.

Finally due to time and money factors, in the best cases scenario I would complete this study as it is and instead of sending the revised motivational email to the same group of experimental group students I would send the email to an entirely new group of students, collect

their feedback and revise the emails based on the new group of people. By collecting data from a new group of participants would have offered a fresh perspective through each data collection cycle.

Summary

This study answered four research questions posed in Chapter One. Through data collection, a real-time “snapshot” of undergraduate student motivational needs was collected. Based on the qualitative data analysis, mass emails can be considered one of the many ways to connect with undergraduate students and to address the students’ immediate motivational needs. Ongoing research would suggest replicating this study where one instructor teaches all the courses surveyed. Since there were intermittent student complaints about the instructors for the course, dissatisfaction with the instructor could have played a large role in the students’ overall motivation level, therefore affecting the overall findings.

This study supported previous conclusions of Maslow’s hierarchy of needs (1954) and Expectancy Theory (Weiner, 1974) that there are extreme differences in how each individual student is motivated. Feedback from students provided an outline for a motivational email designed that is very detailed, structured and meets the needs of both motivated students by inserting information stating that someone cares and the least motivated students by providing a specific road map filled with tools that they can implement immediately. To date, there has not been any other research study that used Keller’s Course Interest Survey (Appendix XX), and incorporated an iterative design-based research study with student feedback.

APPENDIX A

HIC Approval

WAYNE STATE
UNIVERSITY

IRB Administration Office
87 East Canfield, Second Floor
Detroit, Michigan 48201
Phone: (313) 577-1628
FAX: (313) 993-7122
<http://irb.wayne.edu>

NOTICE OF EXPEDITED APPROVAL

To: Sara Kacin
Administration & Organization Stud

From: Dr. Scott Millis *H. Campbell-Voytall*
Chairperson, Behavioral Institutional Review Board (B3)

Date: June 28, 2012

RE: IRB #: 063712B3E
Protocol Title: Impact of Motivational Emails on First Year Students
Funding Source:
Protocol #: 1205010957

Expiration Date: June 27, 2013

Risk Level / Category: Research not involving greater than minimal risk

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The above-referenced protocol and items listed below (if applicable) were **APPROVED** following *Expedited Review* Category (#7)* by the Chairperson/designee for the Wayne State University Institutional Review Board (B3) for the period of 06/28/2012 through 06/27/2013. This approval does not replace any departmental or other approvals that may be required.

- Revised Protocol Summary Form (received in the IRB Office 6/20/12)
- Protocol (received in the IRB Office 5/31/12)
- The request for a waiver of the requirement for written documentation of informed consent has been granted according to 45 CFR 46.117(1)(2). Justification for this request has been provided by the PI in the Protocol Summary Form. The waiver satisfies the following criteria: (i) the research involves no more than minimal risk to participants, (ii) the research involves no procedures for which written consent is normally required outside of the research context, (iii) the consent process is appropriate, and (iv) an information sheet disclosing the required and appropriate additional elements of consent disclosure will be provided to participants.
- Research Information Sheet (dated 6/27/12)
- Script for Passing Out Course Interest Survey in Week 1 or 2
- Data collection tools: Course Interest Survey, Final Evaluation, Background Survey Questions, Student Design Semi-Structured Interview, and Student Iterative Survey Questions

- Federal regulations require that all research be reviewed at least annually. You may receive a "Continuation Renewal Reminder" approximately two months prior to the expiration date; however, it is the Principal Investigator's responsibility to obtain review and continued approval **before** the expiration date. Data collected during a period of lapsed approval is unapproved research and can never be reported or published as research data.
- All changes or amendments to the above-referenced protocol require review and approval by the IRB **BEFORE** implementation.
- Adverse Reactions/Unexpected Events (AR/UE) must be submitted on the appropriate form within the timeframe specified in the IRB Administration Office Policy (<http://www.irb.wayne.edu/policies-human-research.php>).

NOTE:

1. Upon notification of an impending regulatory site visit, hold notification, and/or external audit the IRB Administration Office must be contacted immediately.
2. Forms should be downloaded from the IRB website at **each** use.

*Based on the Expedited Review List, revised November 1998

APPENDIX B**Research Information Sheet**

Impact of Motivational Messages on First Year Students

Principal Investigator (PI): Sara E. Kacin
College of Education, Instructional Technology
(248)632-2221

Purpose:

You are being asked to be in a research study that will explore undergraduate student perceptions regarding motivation because you are a student in the School of Business Administration at Wayne State University. This study is being conducted at Wayne State University.

Study Procedures:

- If you take part in the study, you will be asked to complete three 34 question surveys during the course of the fall semester. The first survey will be passed out during class time in the first two weeks of class, the second survey will be passed out in the middle of the semester and the final survey will be passed out during the last week or two of class. Additional students will be asked to participate in either a short 20 minute interview or to complete a 6 question survey via surveymonkey.com. Aside from the surveys or interviews that you might participate, some students might receive up to five emails from the researcher that will take approximately one minute to read. At the end of the semester, if you received any emails from the researcher you will be asked to provide evaluative feedback on the email(s) that were sent to you. This final evaluative survey has nine questions and will take approximately 10 minutes to complete.

Benefits

- As a participant in this research study, there will be no direct benefit for you; however, information from this study may benefit other people now or in the future.

Risks

- There are no known risks at this time to participation in this study.

Costs

- There will be no costs to you for participation in this research study.

Compensation

- You will not be paid for taking part in this study.

Confidentiality:

- All information collected about you during the course of this study will be kept without any identifiers.

Voluntary Participation /Withdrawal:

Taking part in this study is voluntary. You may choose not to take part in this study, or if you decide to take part, you can change your mind later and withdraw from the study. You are free to not answer any questions or withdraw at any time. Your decision will not change any present or future relationships with Wayne State University or its affiliates.

Questions:

If you have any questions about this study now or in the future, you may contact Sara Kacin or one of her research team members at the following phone number (248) 632-2221. If you have questions or concerns about your rights as a research participant, the Chair of the Human Investigation Committee can be contacted at (313) 577-1628. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call (313) 577-1628 to ask questions or voice concerns or complaints.

Participation:

By completing the surveys and opening the emails sent to you by the researcher you are agreeing to participate in this study.

APPENDIX C**Approval Letter from the School of Business Administration**

April 10, 2012

Sara E. Kacin, Ph.D Candidate
Instructional Technology Department
College of Education
5425 Gullen Hall
Education Bldg-Room 355
Detroit, MI 48202

Dear Ms. Kacin,

I am writing to offer the support of the School of Business Administration to your research proposal entitled "*Motivational Emails to Increase First Year Student Motivation*". We have been working towards increasing retention in our department, and are pleased that you want to work with some of our students. We are also pleased that your motivational email intervention provides a sound approach to motivating students in order to help students reach their academic goals.

We understand that this proposal requires the support and cooperation of the School of Business Administration at Wayne State University in several ways. This includes 1) the identification of at least one course to pilot the study this spring term, 2) the identification of at least 2 courses during the fall 2012 semester that will incorporate the use of the motivational intervention and 3) the collection of data from the students in these identified courses at various points in time throughout the intervention. We are willing to cooperate with this project as long as our policies and rules are followed and our expectations in a number of areas are met. This includes the following:

- That faculty whose courses are part of the motivational intervention are participating voluntarily and will provide the PI time during class in order to administer the motivational survey up to three times during the course of the semester.
- That students who volunteer to participate in the study have reduced burden and can change their mind and leave the study at any time during the semester without impact to their grade. They are free to not answer any questions and may withdraw at any time.
- That the results of the research be shared with the School of Business Administration executive team on an on-going basis and in a timely manner
- That the study design/protocol be reviewed and approved by the IRB at Wayne State University

We support this research and look forward to working with you on this unique and worthwhile project. Please contact me at 313-577-8598 or toni_somers@wayne.edu should you have any questions.

Thank you,

Toni Somers
Professor of Information Systems Management
Chair, Department of Management and Information Systems

APPENDIX D

Course Interest Survey

There are 34 statements in this survey. Please think about each statement in relation to the class you have just taken and indicate how true it is. Give the answer that truly applies to you, and not what you would like to be true, or what you think others want to hear.

Think about each statement by itself and indicate how true it is. Do not be influenced by your answers to other statements.

1. The Instructor knows how to make us feel enthusiastic about the subject matter covered in this program?

Not True Slightly True Moderately True Mostly True Very True

2. The things I am learning in this course will be useful to me.

Not True Slightly True Moderately True Mostly True Very True

3. I feel confident that I will do well in this course.

Not True Slightly True Moderately True Mostly True Very True

4. The class has very little in it that captures my attention.

Not True Slightly True Moderately True Mostly True Very True

5. The instructor makes the subject matter of this program seem important.

Not True Slightly True Moderately True Mostly True Very True

6. You have to be lucky to get good grades in this course.

Not True Slightly True Moderately True Mostly True Very True

7. I have to work hard to succeed in this course.

Not True Slightly True Moderately True Mostly True Very True

8. I do NOT see how the information I am learning in this course relates to anything I already know.

Not True Slightly True Moderately True Mostly True Very True

9. Whether or not I succeed in this course is up to me.

Not True Slightly True Moderately True Mostly True Very True

10. The Instructor creates suspense when building up to a point.

Not True Slightly True Moderately True Mostly True Very True

11. The subject matter in this course is just too difficult for me.

Not True Slightly True Moderately True Mostly True Very True

12. I feel this course gives me a lot of satisfaction.

Not True Slightly True Moderately True Mostly True Very True

13. In this course, I try to set and achieve high standards of excellence.

Not True Slightly True Moderately True Mostly True Very True

14. I feel that the grades or other recognition I receive are fair compared to other students in the course.

Not True Slightly True Moderately True Mostly True Very True

15. The students in the course seem curious about business matters.

Not True Slightly True Moderately True Mostly True Very True

16. I enjoy working for this course.

Not True Slightly True Moderately True Mostly True Very True

17. It is difficult to predict what grades the instructor will give my assignments.

Not True Slightly True Moderately True Mostly True Very True

18. I am pleased with the instructor's evaluations of my work compared to how well I think I have done.

Not True Slightly True Moderately True Mostly True Very True

19. I feel satisfied with what I am getting from this course.

Not True Slightly True Moderately True Mostly True Very True

20. The content of this course relates to my expectations and goals.

Not True Slightly True Moderately True Mostly True Very True

21. The instructor does unusual or surprising things that are interesting.

Not True Slightly True Moderately True Mostly True Very True

22. The students actively participate in this class.

Not True Slightly True Moderately True Mostly True Very True

23. To accomplish my goals, it is important that I do well in this course.

Not True Slightly True Moderately True Mostly True Very True

24. The instructor uses an interesting variety of ways to motivate me throughout the semester.

Not True Slightly True Moderately True Mostly True Very True

25. I do NOT think I will benefit much from this course.

Not True Slightly True Moderately True Mostly True Very True

26. I often daydream while in this class.

Not True Slightly True Moderately True Mostly True Very True

27. As I am taking this class, I believe that I can succeed if I try hard enough.

Not True Slightly True Moderately True Mostly True Very True

28. The personal benefits of this course are clear to me.

Not True Slightly True Moderately True Mostly True Very True

29. My curiosity is often stimulated by the questions asked or the provided in the given on the subject matter in this class.

Not True Slightly True Moderately True Mostly True Very True

30. I find the level of challenge in this course to be about right: neither too easy not too hard.

Not True Slightly True Moderately True Mostly True Very True

31. I feel rather disappointed with the business course.

Not True Slightly True Moderately True Mostly True Very True

32. I feel that I get enough recognition of my work in this course by means of grades, comments or other feedback.

Not True Slightly True Moderately True Mostly True Very True

33. The amount of work I have to do is appropriate for this type of course.

Not True Slightly True Moderately True Mostly True Very True

34. I get enough feedback to know how well I am doing.

Not True Slightly True Moderately True Mostly True Very True

APPENDIX E**Pilot Study
Background Survey Questions**

There are 14 questions in this survey. Choose one answer for each question that best explains or represents your current living situation.

1. What is your age? (Circle One Answer)
18-19
20-21
21-22
22-23
23-24
24+
2. What is your gender? (Circle One Answer)
Male Female
3. How would you classify yourself? (Circle One Answer)
White Alone
Black Alone
Native American Alone
Asian Alone
Pacific Islander Alone
Other Race Alone
Multiracial
4. What is your current status with WSU? (Circle One Answer)
Part-time Full-Time
5. How many dependents do you claim on your federal taxes? (Circle One Answer)
0
1
2
3
More than 3
Do not complete federal taxes
6. Are you currently working? (Circle One Answer)
Yes No
7. If Yes, How many hours per week? (Circle One Answer)
Full-time 40+ hours a week
Part-time <40 hours per week
Not working

APPENDIX F**Background Survey Questions**

There are 14 questions in this survey. Choose one answer for each question that best explains or represents your current living situation or fill in one answer in the blank that best represents your current living situation.

1. What is your age? (Write Answer) _____
2. What is your gender? (Circle Correct Answer)
Female Male
3. How would you classify yourself? (Circle One Answer)
Asian
Black
Hispanic
Multiethnic
Native American
Pacific Islander
White
4. What is the main language you speak? (Write Answer) _____
(Example: English, Spanish, etc.)
5. What is your current status with WSU? (Circle Correct Answer)
Part-time Full-Time
6. Did you file a federal tax return in 2011? (Circle Correct Answer)
No Yes

If no, skip question #7.
7. If yes, how many dependents did you declare? (Write Answer) _____
8. Are you currently employed? (Circle Correct Answer)
No Yes

If no, skip question #9.
9. If yes, how many hours? (Write Answer) _____
10. What is your yearly income in U.S. dollars? (Write Answer) _____

11. What is your academic goal at WSU? (Circle One Answer)

Bachelor of Science (B.S.) in Business Administration

Bachelor of Arts (B.A.) in Business Administration

Business Minor

Master of Business Administration (MBA)

Master of Science in Accounting (MSA)

Master of Science in Taxation (MST)

Doctor of Philosophy in Business Administration

Other _____

Not sure

12. How many classes are you enrolled in this semester? (Write Answer)

13. Is this your first year at WSU? (Circle One Answer)

No

Yes

14. Have you attended college before starting at WSU? (Circle One Answer)

No

Yes

APPENDIX H**Student Design Semi-Structured Interview**

Thank you so much for taking time to participate in this Interview. I just wanted to take about 15 minutes to talk about an email that was sent to you on (insert date here). The first question I have is:

1. Did you like the email that sent on (insert date here)?
2. What was your impression or immediate reaction to the motivational email sent to you on (insert date here)?
3. If you could describe the email sent to you in three words, what would they be and why?
4. Did you learn anything from the email? If so, what?
5. Did the e-mail grab your attention? Was it visually pleasing? Why or why not?
6. Did you find the email relevant to your student life? How so?
7. Did you find the email relevant to your class? How so?
8. Did the email help build your confidence in the course? How so?
9. Did the email help you to feel satisfied with the course you are taking? Or with the program you are in? (School of Business Administration)
10. Were you able to make connections between the information in the email and your daily or student life?
11. Was receiving the email helpful to you? How so? or Why Not?
12. Did you like the format of the email? Yes or no?
13. What did you like most? Why or why not?
14. If you could make changes to the format of the email, what would they be?
15. Thinking about graduation and obtaining your degree, what do you need from the College of Business to help you achieve your goals and complete your degree?
16. What do you think your peers would like to help motivate them?

Thank you so much (insert students name here) for participating in this study. Good Luck with your studies!


APPENDIX I

WAYNE STATE
UNIVERSITY

IRB Administration Office
87 East Canfield, Second Floor
Detroit, Michigan 48201
Phone: (313) 577-1628
FAX: (313) 993-7122
<http://irb.wayne.edu>

NOTICE OF EXPEDITED AMENDMENT APPROVAL

To: Sara Kacin
Administration & Organization Stud

From: Dr. Scott Millis 
Chairperson, Behavioral Institutional Review Board (B3)

Date: August 10, 2012

RE: IRB #: 063712B3E
Protocol Title: Impact of Motivational Emails on First Year Students
Funding Source:
Protocol #: 1205010957

Expiration Date: June 27, 2013

Risk Level / Category: Research not involving greater than minimal risk

FILE

The above-referenced protocol amendment, as itemized below, was reviewed by the Chairperson/designee of the Wayne State University Institutional Review Board (B3) and is APPROVED effective immediately.

- Protocol – Changes to data collection methods and/or instruments which includes changes to the Background Survey Questions and Student Design Semi-Structured Interview based on the data collected in a pilot study and the recommendation of a statistician.

APPENDIX K**Final Email Message Evaluation**

I have been studying the way that emails with motivational strategies embedded into them have impacted your persistence throughout the semester. During the course of the semester, you received motivational messages sent by your Instructor through Blackboard. Please take a look at the questions below and answer them with the motivational emails sent to you in mind. I have included the messages so that you have immediate access to them while you complete the questions.

1. When you opened your email account and saw messages from your Instructor through Blackboard, what was your immediate reaction?
2. What did you think about the email messages in general?
3. Where the messages sent by your Instructor motivating?
4. What impact did the messages have on your overall motivation to complete your degree?
5. Considering the messages sent, which one is your favorite and why?
6. Of the messages, which one did you like the least and why?
7. How did the receipt of the emails impact the way that you communicate with your instructor?
8. How did the receipt of the emails impact the way that you completed your course work?
9. Overall, what would you have liked to see in the emails that you think would have helped motivate you to persist and complete your degree?

APPENDIX L**Final Evaluation Pilot Study**

I have been studying the way that emails with motivational strategies embedded into them have impacted your persistence throughout the semester. During the course of the semester, you received motivational messages sent by your Instructor through Blackboard. Please take a look at the questions below and answer them with the motivational emails sent to you in mind. I have included the messages so that you have immediate access to them while you complete the questions.

1. When you opened your email account and saw messages from your Instructor through Blackboard, what was your immediate reaction?
2. What did you think about the email messages in general?
3. Where the messages sent by your Instructor motivating?
4. What impact did the messages have on your overall motivation to complete your degree?
5. Considering the messages sent, which one is your favorite and why?
6. Of the messages, which one did you like the least and why?
7. How did the receipt of the emails impact the way that you communicate with your instructor?
8. How did the receipt of the emails impact the way that you completed your course work?
9. Overall, what would you have liked to see in the emails that you think would have helped motivate you to persist and complete your degree?

APPENDIX M**HIC Approved Script for Class Meetings**

Hello, my name is Sara Kacin and I have been approved by the HIC office to conduct a research study called: Impact of Motivational Messages on First Year Students. We are asking you to volunteer to be a participant in this study by completing 3 face to face surveys during class time throughout the semester: one now, one during the middle of the semester (approximately week 7 or 8), and one during the last two weeks of the course. Each survey will take approximately 15-30 minutes to complete.

Additional students will be asked to participate in either a short 20 minute interview or to complete a 6 question survey via surveymonkey.com. Aside from the surveys or interviews that you might participate, some students might receive up to five emails from the researcher that will take approximately one minute to read. At the end of the semester, if you received any emails from the researcher you will be asked to provide evaluative feedback on the email(s) that were sent to you. This final evaluative survey has nine questions and will take approximately 10 minutes to complete.

We appreciate your participation, and ask that you complete each emailed survey within seven days of receiving the email. You can find a full research information sheet about the study by clicking on the link.

Thank you so much in advance for your participation.
Sara Kacin

APPENDIX N

Pilot Study Motivational Email



*You might feel like there's a long road ahead as you work towards **finishing** your degree. And yes, there will be some bumps in the road. With **hard work and determination** you can **work straight** through those bumps and **successfully** achieve your academic goals.*

*"Map out your future– but do it in pencil.
The road ahead is as long as you make it. Make it worth the trip" -Jon Bon Jovi*



APPENDIX O

Motivational Email #1

LONG ROAD AHEAD



“Map out your future — but do it in pencil. The road ahead is as long as you make it. Make it worth the trip.”

— Jon Bon Jovi

HELLO BA1010!

Congratulations! Your road to success starts here! My name is Sara Kacin, we met a few weeks ago in class.

As you complete your academic journey, you may come across unexpected bumps in the road. Be prepared and tread lightly through whatever is in your path, adjust your plans accordingly and move on.

Remember with hard work and determination you can work straight through those bumps in the road and successfully achieve your academic goals.

Many people at Wayne State University care about you and your academic success. Should you need any assistance or help with working through any bumps in the road, feel free to contact any of the following:



Dan Yeakel
Email: yeakel@wayne.edu

Sara Kacin
Email: skacin@wayne.edu

Good Luck to all of you!

APPENDIX P

Motivational Email #2

STUDY SKILLS

Sara's Motivational Moment




"Take the first step in faith. You don't have to see the whole staircase, just take the first step."


- Dr. Martin Luther King, Jr.

Hello BA 1010,


I thought some of you might be interested in a few study tips. I encourage you to try them; you might be surprised at what works best for you.




Attend class and take notes. I know this seems like common sense, but sometimes times it's real easy to say, "oh, I'll just miss this one class." Then the next thing you know, you have missed several classes. Just go!




Read through course materials and take notes. It's a lot of writing, but no one ever said college would be easy. Writing notes and information more than once will help you imprint the information into your brain.



Participate in class. We don't expect you to know everything right now, that's why you are a student. Once your role changes from student to worker, employers will be looking for those students who can jump right into the job without much training. Participating in class, networking and learning from classmates helps you prepare for your future job.



Stay organized. No matter what comes your way, if you are organized, you should be able to handle the unexpected little things with ease. This means look at your syllabus, mark somewhere in your phone or calendar when you have exams, quizzes or big assignments due and then make a plan to complete the work and stick to it.



Ask for help. Did you know you have resources available to you through WSU just for being a student? Try going to success.wayne.edu/LFP.php to find out how WSU can help you increase your study skills.

As a final note, I want to say that I am so proud of you for working towards your degree. I know there are all kinds of things you can be doing right now like sleeping or watching all the current season premiere's of popular tv shows, remember, you have your whole life to watch tv. Think about it, in five years do you want to be the person who watched a lot of tv, or the person who has a degree


It's your choice.

APPENDIX Q

Motivational Email #3

TIME MANAGEMENT

Sara's Motivational Moment




»»

Achieve success in any area of life by identifying the optimum strategies and repeating them until they become habits.

- Charles J. Greens


Hello BA 1010!

Some of you mentioned you would appreciate helpful strategies for time management. Think about a time when you had to plan something or you were part of something that was very successful. Chances are you had to make some choices, follow through, organize, find extra time to work on it and probably thought about the event afterwards. Here are a few strategies that have been successful for me when I had many things on my plate.




Choices

Time Management is really all about the choices you make. It's your life. So right now, I am asking you. What do you need to do to complete this semester? Do you have any distractions that are getting in the way of you meeting your goals? If so, make the choice and put a stop to them and focus on your classes.




Follow through

Look at the week ahead of you. I bet you have time right now that you can block off for school. Pick a couple hours at least, write the times down, either on your computer or then type into your phone, whatever you need to do and stick to it. If someone drops by during your scheduled work time tell them you are busy and you will catch up with them later.




Organize

Grab your syllabus for each class you are taking. Make a list of what you have left to do in each of your classes for the semester. Choose the larger projects first in each class, break each large assignment/project into smaller "tasks." Use the time you set aside each week to work on these smaller tasks in order to complete your projects/assignments on time.



Bonus time

Make use of your down time. Bring a working study guide or one of your school books everywhere you go. If you are waiting in line somewhere, instead of playing on your phone, pull out your book or study guide and review it. It sounds small, but it adds up.



Reflect

Once you have completed the semester, take a look at what worked and didn't work for you throughout the semester and then build on those activities next semester.

Remember everyone finds success through different strategies, so try out a few things listed here and stick with what works for you.


Good Luck!

APPENDIX R

Motivational Email #4

YOU MADE IT !!

Sara's Motivational Moment



””

You can turn it all around in a split second by making a simple choice to try again, to love again, to live again, to dream again.

””

- Chris Assaad

Hello BA 1010,

Congratulations! You are at the end of the course. You did it. Take a moment to look back and reflect on your semester. What worked really well for you? Were there things that did not go so well for you? Focus on what went well and your next step is to incorporate those strategies into your next semester.

Look to the future, be prepared, you may experience bumps in the road, life happens and sometimes no matter how motivated you are, things get in the way of your educational goals. The best choice you can make when faced with a bump in the road is to communicate, reach out and ask for help. If you do not know where to go as any of your professors for direction, your advisor, your peers or any other person associated with the University.

Here is a list of commonly used resources throughout campus, please use them they are here for YOU!

Academic Success Center: success.wayne.edu

Learning communities specifically designed for students at WSU:
lc.wayne.edu/current.php

Student Organizations at WSU that you might want to consider joining:
wayne.collegiatelink.net/organizations

Campus events: events.wayne.edu

APPENDIX S

A Sample of Round One Raw Data Table

credibility? into a network of students
Kadin: Time 1 Survey Monkey Results

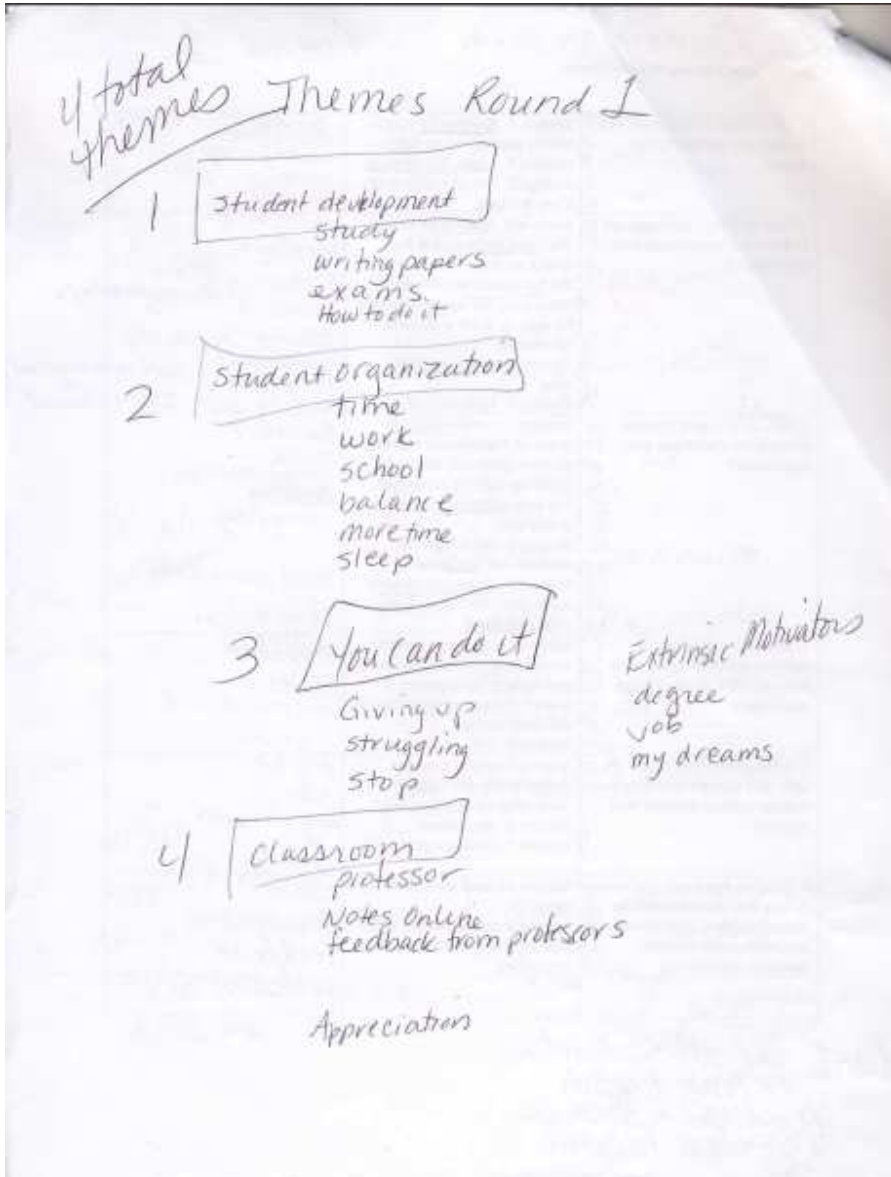
Round 1

1. What kinds of challenges as a student are you facing this week? <i>working</i>	1 Student 1: <u>studying for exams, writing papers, and working</u> 2 3 Student 2: <u>Exams, lack of sleep</u> 4 Student 3: <u>Lots of exams in this class, studying</u> 5	<i>Study</i> → <i>Study</i> Writing papers <i>Lack of sleep</i> } <i>Time management</i> <i>Working</i>
2. How do those challenges get in the way of completing your coursework? <i>working</i> <i>studies</i>	6 Student 1: <u>studying for exams and doing homework is the course work so I would say that the few hours I actually work takes away the few hours I could be using to study or do some homework</u> 7 8 9 10 11 12 Student 2: <u>By not managing time</u> 13 14 15 Student 3: <u>I just don't do it.</u>	<i>Study</i> } <i>study</i> <i>homework</i> } <i>time management</i> <i>few hours</i> } <i>work</i> <i>Study</i> } <i>study</i> <i>homework</i> } <i>time management</i> <i>Time Manag.</i> → <i>time management</i> <i>Giving up</i> → <i>Inspirational</i>
3. How do you work through some of the challenges you experience? <i>work</i>	16 Student 1: <u>I only work 3 1/2 hours on Tuesday and Thursday so there really isn't much of a challenge to try to come over. I've been balancing everything pretty well.</u> 17 18 19 20 21 22 Student 2: <u>Focus more on material I am struggling in</u> 23 24 Student 3: <u>Make more time to study, but I don't really know what I am doing</u> 25 26	<i>Balanced work</i> <i>No big challenges</i> struggling <i>struggling</i> <i>Find more time</i> <i>How to do it</i> → <i>tools</i>
4. What can the School of Business Administration do to help you work through those challenges?	27 Student 1: <u>It would be great if I could just stop writing papers and doing projects period. :)</u> 28 29 Student 2: <u>Have professor post all the notes online</u> 30 31 Student 3: <u>N/A</u> 32	<i>stop</i> <i>Reorganize</i> <i>Professor</i> <i>post notes online</i>
5. What is one thing in your life right now that is motivating you to keep working towards your degree?	33 Student 1: <u>Getting a college degree along with a job is motivating me to keep going.</u> 34 35 Student 2: <u>My dreams</u> 36 Student 3: <u>Finding a good job</u> 37	<i>degree</i> <i>Job</i> <i>my dreams</i> <i>Job</i>
6. What do you need right now to help you stay motivated in order to achieve your course requirements in order to complete this course?	38 Student 1: <u>I need some more sleep. :)</u> 39 40 Student 2: <u>Appreciation</u> 41 Student 3: <u>Feedback from instructors</u> 42	<i>sleep</i> <i>Appreciation</i> <i>Feedback</i> <i>professors</i>

Can I put all student response together for motivated + least to see what happens?

APPENDIX T

A Sample Document Generated from Step Two: Chunking the Data



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ABSTRACT**A DESIGN-BASED RESEARCH STUDY EXAMINING THE IMPACT OF MOTIVATIONAL EMAILED MESSAGES TO FIRST YEAR STUDENTS**

by

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This research study examined the effects of strategically designed motivational emails using the instructional design strategy ARCS (Keller, 1987abc) for first year students in a face to face setting. A design based research approach applying a mixed study of quantitative and qualitative research methods was taken. Quantitative and qualitative data in terms of student motivation and perceptions of the motivational emails were collected through three iterative design cycles. A multiple choice comprehensive pre test and post test were given to students to detect different levels of motivation, and student perceptions were captured through self-report surveys.

The literature review incorporated a funnel strategy covering the overarching topic of human motivation and narrowing to the specific instructional strategy of motivational emails. Specifically, the first section discussed the pertinent historical theories over the last 50 years including the foundational definitions of motivation. The second section placed the ARCS motivational instructional design strategy within the instructional design literature. And finally, the third section compiled the reasoning behind the motivational message research study results that were included in the design of this study.

The sample for this study was undergraduate students enrolled in two face to face classes within the School of Business Administration at Wayne State University. Students were randomly selected using SPSS and half of the students in the sample were selected to be in the experimental group and the other half of students were selected to be in the control group. Students in the experimental group received four motivational emails designed with student feedback throughout the semester. As students in the experimental group received motivational emails they were sent surveys to collect real-time feedback about the design of the emails and the current motivational needs of the students in order to inform the design of the next motivational email. Once data was collected for each email, feedback from the students was immediately incorporated in order to meet the real-time motivational needs of undergraduate students.

Findings from the study were mixed as a t-test completed in SPSS which compared the motivational levels between the experimental group and control group was not significant, indicating that students were not motivated by the emails. However, the qualitative data collected throughout the semester showed a different story and indicated that students were in fact motivated by the motivational emails.

This was the first empirical study to use motivational emails and the Course Interest Survey, supplemented with qualitative surveys for the students identified as most motivated and least motivated at a university. An important finding of this study is that students are motivated many ways. Instructors need to be aware of who their students are and use motivational strategies to meet their individual needs.

AUTOBIOGRAPHICAL STATEMENT

Sara E. Kacin currently works with faculty at the Office for Teaching and Learning at Wayne State University. In this role, she assists faculty by creating instructional materials and working with faculty on a one on one basis to meet their teaching and learning needs. Sara has a passion for helping instructors combine learning theory and motivational design theories into their content in order to create engaging instruction. She is an active researcher and has presented scholarly research at several local and international professional conferences. Her academic research focuses on embedding motivation design strategies into higher education courses. Sara has taught design and human resources courses at several colleges and universities in the Detroit metropolitan area. She has a bachelor's degree in sociology from Michigan State University and a master's of training and development from Oakland University.