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Pepperdine University

Graduate School of Education and Psychology

MOTIVATION TOWARDS LEARNING PERCEIVED IN SOCRATIC SEMINAR VERSUS TRADITIONAL LECTURE

A dissertation submitted in partial satisfaction

of the requirements for the degree of

Doctor of Education in Educational Leadership, Administration, and Policy

by

Benjamin N. Roberson

April, 2013

Doug Leigh, Ph.D. – Dissertation Chairperson

This dissertation, written by

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under the guidance of a Faculty Committee and approved by its members, has been submitted to and accepted by the Graduate Faculty in partial fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

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DEDICATION

I would like dedicating this work to my beloved bride Cassidy who has supported me every step of the way. Thank you Cass for encouraging me to press on when the obstacles seemed insurmountable. I also dedicate this work to my loving parents Don and Teresa who are two most incredible parents and educators I have ever encountered. Thank you both for instilling the vision in me to pursue a life dedicated to growing as an educator for the purpose of serving students and God.

VITA

BENJAMIN N. ROBERSON

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Calvary Christian School, Santa Ana

- Develop and implement mission and vision
- Direct formation and implementation of strategic plan
- Supervise and evaluate faculty and staff
- Facilitate staff development, curriculum and instruction
- Manage day-to-day school operations
- Prepare and manage budget
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Dean of Students 2008-2010
Pacifica Christian High School, Santa Monica

- Head of College Counseling, Academic Advising & Student Life
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TEACHING EXPERIENCE

High School Teacher 2008-2010
Pacifica Christian High School, Santa Monica
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Middle School Teacher 2004-2008
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ABSTRACT

As discussed in past literature, high school students often lack motivation towards learning (Crow, 2007; Lumsden, 1995). This lack of motivation interferes with student learning (Lumsden,1995; Vansteenkiste, Simons, Lens, Soenens, & Matos, 2005). At the middle school and collegiate level, Socratic Seminar is seen to provide motivation towards learning in students (Copeland, 2005; Mee, 2000; Strong, 1996); however, there is a need for research on student motivation as a result of Socratic Seminar at the high school level.

The purpose of this study is to identify the extent to which, if any, differences exist in student motivation towards learning among students receiving English instruction via Socratic Seminar versus traditional lecture at the high school level. It was hypothesized that Socratic Seminar provides a better opportunity for students to experience the IV pillars of motivation as described by John Keller (1987a)--attention, relevance, confidence, and satisfaction--than traditional lecture does.

A quantitative correlational design was implemented with a cross-sectional data collection administered post-implementation of traditional lecture 3 times and post-implementation of Socratic Seminar 3 times over an 8-week period with 139 11th grade English students at Lutheran High School of Orange County. The responses were viewed as a group through the application of chi-squares. Next, chi-squares were applied to analyze the group's results for each question from the modified CIS. Then, the results were analyzed via Cramer's *V* within the individual constructs of motivation as described by the CIS, which include: attention, relevance, confidence and satisfaction.

The results displayed Socratic Seminar as providing a more motivating experience towards learning in certain areas of motivation while lecture was seen to be more motivating for other areas of motivation. It was originally believed the application of Socratic Seminar would provide higher student motivation toward learning. From these results, it was learned that teachers must seek a balanced approach in their teaching by applying both Socratic Seminar and lecture. In a broader sense, the lesson learned is that different teaching strategies motivate students in different ways and a wide range of teaching strategies ought to be applied.

Chapter I. The Problem

Background

It is no secret that high school students often lack motivation towards the ideas and content they are required to learn in school. Studies have shown that as students grow older, their intrinsic motivation to learn weakens (Crow, 2007; Lumsden 1995). The problem with such a lack is that it is directly related to student learning (Lumsden,1995; Vansteenkiste, et al., 2005). There are multiple teaching strategies that develop student motivation; one such tool is Socratic Seminar.

It is believed by the researcher that it is the teacher's job to shift the paradigms of students who lack motivation towards learning by leading them to a place where they are motivated about the work at hand and so increase student learning. To do this, implementing instructional strategies that perk the curiosity of students becomes a must at the high school level as these students struggle with motivation.

In effort to define motivation for this study, John Keller's (1987a) theoretical motivational model, referred to as the ARCS Model, will be applied because it encompasses the predominant research on motivation and condenses it to four conditions which are applicable to the classroom. The purpose of the ARCS model is threefold: to capture the research of motivation applicable to classroom instruction, support teachers to design motivating strategies for instruction, and to determine if methods of instruction are in fact motivating for students (Keller, 1987a). It is important to note that Keller's model, which is the first theory of motivation dedicated to classroom instruction, is derived from Tolman (1949) and Lewin's (1935) work on social learning theory. The social learning theory "assumes that motivation and behavior are the result of interactions

between a person and the environment" (Keller, 1979, p. 27), which implies that motivation is happening in a social context. The first feature of the ARCS Model, which displays the four overarching conditions necessary for student motivation is represented in the acronym ARCS: (A) attention, (R) relevance, (C) confidence, and (S) satisfaction (Keller, 1987a). These four conditions will serve to define the necessary environment for student motivation for this study and are furthered defined under the Key Terms and Operational Definitions section later in this chapter.

For this study, the researcher will examine Socratic Seminar as a prospective method of instruction resulting in student motivation. Socratic Seminar is an instructional method incorporating a systematic process of questioning and dialogue centered on ideas from a text where students are seated in a circle and are encouraged to discuss many possible answers by the teacher (Copeland, 2005; Lambright, 1995; Strong, 1996).

For this study, there are five primary components to a Socratic Seminar: the text, opening question, leader, students, and the Socratic circle as seen in the literature (Lambright, 1995; Mee, 2000). Each of the five components is essential for the seminar. The text must be read prior to the discussion; almost any text will work as long as it contains an abstract idea (Lambright, 1995). Copeland (2005) noted that material can be taken from any subject, current event, piece of music, or selection of art, as long as it raises questions in the student's mind. The only bad text would be one that leaves participants with nothing to discuss (Copeland, 2005; Lambright, 1995). The opening question follows the text; it is open-ended and should pique the curiosity of the students (Strong, 1996). The leader's role can be broken down into four parts: selecting the text

and opening question, keeping the discussion on task (Copeland, 2005; Lambright, 1995), assessing and evaluating individual students and group performance and guiding students in developing a deeper understanding of the text (Copeland, 2005). Strong (1996) described a shift in power from the teacher to the students as the teacher interacts rather than dominates the conversation. This makes the participation of the students vital, as Mee (2000) described, "Without willing participants there can be no Socratic Seminar" (p. 61). Students must be brought into the conversation, which can be difficult for teachers who are used to leading the conversation. Author and teacher Molly Mee noted that some teachers have unwilling students sit outside the Socratic Seminar circle, but it is the teacher's job to engage the students into the conversation so exclusion from the circle is no longer necessary. However, according to Copeland (2005), students love to talk and if they don't talk it is most likely caused by one of three reasons: students are uncomfortable discussing the topic with an adult present, participants aren't able to make connections with the text, or the text is too difficult. A basic rule of thumb in Socratic Seminar is that all members have an equal voice; thus, the most appropriate seating arrangement is that of a circle or semi circle. In this arrangement, all participants can see each other and stay engaged in dialogue (Copeland, 2005; Mee, 2000). As Copeland pointed out, "it is the nature and process of that conversation that differs radically from the typical teacher–led, question-and-answer discussion" (p. 9). Unlike traditional lecture, which consists of teacher pontificating information to students as they respond with answers, Socratic Seminar is student-centered (Polite & Adams, 1996; Strong, 1996) and so engages students with the content by dialoguing with their peers.

The purpose of Socratic Seminar is to examine current beliefs, improve reasoning skills, and ultimately move students toward more rational thinking. As Copeland (2005) noted, the goal is not for the participants to debate, but for them to reach a "common vision of truth and understanding that serves all members of the group equally" (p. 26-27). Socratic Seminar goes beyond collecting information and getting an answer; instead, the aim is to learn how to think critically (Copeland, 2005). A review of literature illustrates the academic benefits for Socratic Seminar; these benefits include critical thinking (Copeland, 2005; Polite & Adams, 1996; Strong, 1996), creativity (Copeland, 2005; Lambright, 1995), improved reading, speaking and listening (Copeland, 2005).

A growing body of literature is displaying that Socratic Seminar can provide motivation for students (Copeland, 2005; Mee, 2000; Strong, 1996). According to Strong (1996), "students become intrinsically motivated lifelong learners" (p.131) through participation in Socratic Seminar. It has been suggested that Socratic Seminar is motivating because it makes content relatable to students (Polite & Adams, 1996; Strong, 1996; Tredway, 1995), improves confidence and self-esteem (Strong, 1996), and creates an active learning environment (Lambright, 1995; Strong, 1996). It has been described by these authors as well as by Adler (1982) that if teachers are able to address these principles by incorporating Socratic Seminar, then students' motivation for learning will increase.

This study views student motivation toward learning as a result of Socratic Seminar in a high school classroom in contrast to traditional lecture. Student motivation will be measured using a quantitative approach through the application of the ARCS

Model (Keller, 2006), which as noted, also serves to determine the student motivation toward learning as a result of an implemented teaching strategy.

Problem Statement

There is an abundance of research on strategies that increase motivation in students (Eccles et al., 1993; Eccles, Lord, & Midgley, 1991; Keller, 1987a; Lumsden, 1994) as well as literature on the theory of Socratic Seminar (Adler, 1982; Lambright, 1995; Polite & Adams, 1996; Strong, 1996; Tredway, 1995). However, research that links student motivation to Socratic Seminar is not well documented in research.

Purpose Statement

The purpose of this study is to identify the extent to which, if any, differences exist in student motivation towards learning among students in high school English courses as a result of instruction via Socratic Seminar versus traditional lecture.

Research Questions

1. To what extent, if at all, are there differences in the motivation toward learning of students in high school English courses as a result of instruction via Socratic Seminar versus tradition lecture?
2. To what extent, if at all, is there a relationship between teachers' fidelity in implementation of Socratic Seminar and their students' motivation toward learning?"

In effort to measure student motivation towards learning the researcher will administer a modified version of Keller's Course Interest Survey (CIS) (Keller, 2006; see Appendix A). Keller (2006) created the CIS as way to measure "student's motivation to

learn in a specific classroom setting…designed with a theoretical foundation represented by the ARCS model" (p. 1).

In effort to measure the degree of teachers' fidelity to Socratic Seminar methods of instruction versus traditional lecture the researcher will use the Degree of Implementation Survey, which was developed by the researcher to for this study.

From these results, we will be able to view whether or not students have increased motivation to learn as a result of Socratic Seminar versus traditional lecture.

Research Hypothesis

It is hypothesized that students in high school English courses with Socratic Seminar will report significantly higher levels of motivation towards learning than when receiving English instruction via traditional lecture. The researcher also hypothesizes that as the ability of teacher to implement Socratic Seminar increases, so will the level of student motivation; as the ability of the teacher to implement traditional lecture increases, the level of student motivation will decrease. The researcher believes Socratic Seminar provides a better opportunity for students to experience the four pillars of motivation as described by Keller (1987b)--attention, relevance, confidence, and satisfaction--than traditional lecture does.

Key Terms and Operational Definitions

Motivation. A review of literature indicates that there is much empirical research implying that motivation in the classroom can be derived from goals (Bong, 2005; Church, Elliot, & Gable, 2001; Kaplan, Gheen, & Midgley, 2002; Karabenick, 2004; Murayama & Elliot, 2009), peers (Nelson & DeBacker, 2008), self (Hyungshim, 2008),

teachers (Long & Murphy, 2005), and multidimensional applications (Martin, 2008). Empirical research on motivation also supports the Self-Determination Theory ([SDT] (Ryan & Deci, 2000), and the use of John Keller's ARCS model (Huett, Young, Huett, Moller, & Bray, 2008). As noted earlier, Keller's (1993) ARCS model will be used to define motivation for this study. This model contains three distinct features. The first feature encompasses all relevant research for motivation applicable to classroom instruction in four conditions: (A) Attention, (R) relevance, (C) confidence, and (S) satisfaction. The second feature of the model provides teachers strategies to increase student motivation towards learning by integrating each of the four conditions into instruction. The final feature of the ARCS model (Keller & Subhiyah, 1993) measures student motivation towards learning through the lens of the four conditions. The first feature will be used to define student motivation toward learning for this study. The third feature will be used to measure student motivation toward learning by utilizing a modified version of Keller's CIS (see Appendix A). In effort to take a deeper look at the third feature, the four conditions which encompass the important research done on motivation applicable towards classroom instruction, will be further discussed.

Attention. Keller (1983) maintains that for student motivation to be present it is vital for teachers to grab the attention of their students. As Keller noted, "Ultimately, the best way to fight boredom and indifference is to stimulate their curiosities so the instructor can spend more time directing attention than getting it" (p. 1). It is evident that attention is a prerequisite for learning. Attention will be measured using the modified CIS (see Appendix) and examining its appropriate subscores. The key aspects for attention that will be measured for by the CIS (see Appendix A) include the presence of

enthusiasm towards the content, capturing of attention, suspense when building to a point, curiosity towards the subject matter, surprising or interesting things, interesting teaching techniques, focus on present lesson (rather than daydreaming) and questions posed which increased curiosity.

Relevance. Connecting content to students' lives is a requirement for student motivation. Relevance, to paraphrase Keller (1983), is the perceived value to the learner's goals, interests, and learning styles. Relevance can come from the way something is taught and does not need to come directly from the content itself. Relevance will be measured using the modified CIS (see Appendix A) and examining its appropriate subscores. The key traits for confidence that will be measured for by the CIS (see Appendix A) include the perception that content learned will be useful, are clear and matter for personal goals, that standards of excellence where high and active participation by students.

Confidence. Keller (1983) noted that when clear expectations are made and students know what makes or breaks their potential success, the foundation for confidence is made. Students must know what is expected of them in order for confidence to be gained, and confidence breeds motivation. Confidence will be measured using the modified CIS (see Appendix A) and examining its appropriate sub scores. The key traits for confidence that will be measured for by the CIS (see Appendix A) include the presence of a feeling of confidence, a feeling that scoring well and success is dependent on self (rather than luck) and effort, attainability of content, clear expectations for grading and well defined feedback.

Satisfaction. Satisfaction comes from feeling good about one's own accomplishments, learning experiences, and being treated fairly (Keller, 1983); it is a key component for motivation to be sustained. In order to measure satisfaction, a modified CIS (see Appendix A) will be utilized and its appropriate sub scores examined. The key elements of satisfaction measured for include the perception of needing to work hard for success, satisfaction, fairness in recognition, joy in the process and fairness in the amount of work assigned. With this definition of motivation in the classroom, it is useful to turn the focus to the proposed instructional methods of traditional lecture and then Socratic seminar for the purpose of studying which method best increases motivation in students.

Socratic Seminar. The purpose of Socratic Seminar is to scrutinize present thinking, develop reasoning skills, and ultimately move toward a more rational way of thinking. Socratic Seminar is often referred to as teaching through conversation and questioning among peers focused on an idea from a text (Lambright, 1995; Strong, 1996). The text provides the foundation for the discussion and serves as the lecture. Preferable texts are ones that provide arguable and open-ended ideas and situations rather than material that leaves little room for discussion. The students are the participants and must be willing to discuss or the Socratic Seminar will not be successful (Mee, 2000).

Traditional lecture. Brown and Race (2002) interviewed hundreds of people ranging from students to retired professors in effort to find a definition for lecture. The results yielded differing answers, some positive and some negative; where positive reactions resulted, qualifying statements where usually given in regards to the necessary conditions that must be present. Answers included, "Being told something you don't wish to know, by someone who 'knows' better than you…" (p. 19) as well as, "Creating

a story (with a beginning and an end, and an interesting middle) - some of which is developed by my students" (p. 14). According to Merriam-Webster's Dictionary , lecture is "a discourse given before an audience or class especially for instruction" (Woolf, 1977, p. 655). A range of factors can increase the impact of lectures including: acoustics, visibility, comfort, and logistics (Brown & Race, 2002). Solely the teacher guides lecture driven instruction, and the goal is for students to gain answers and information (Copeland, 2005). Students are not on the same level as the teacher, their primary job is to listen, rather than discuss, and to gather information, rather than to grapple with the content (Strong, 1996). Lectures have traditionally been defined as the oral communication of information for the purpose of learning (Bligh, 2000; Brown, 1978). For this study, lecture will consist of teachers speaking to the class, students taking notes, and questions being answered by the teacher if students raise their hands.

Nature of Intervention

Socratic Seminar. Socratic Seminar is a systematic process of questioning and dialogue centered on ideas from a text where students are encouraged to discuss many possible answers (Lambright, 1995; Strong, 1996). The primary purpose of Socratic Seminar is for students to develop critical thinking and reading skills (Strong, 1996). Another benefit, as noted by Copeland (2005), is that because ownership is given to the students, motivation towards learning increases.

An appropriate amount of time for a Seminar ranges from 40-90 minutes (Lambright, 1995; Strong, 1996). Lambright (1995) called for 12 people or fewer while Strong (1996) said 15 or fewer are necessary for best results. Both agree that the

maximum capacity for successful Seminars is 25 students (Lambright, 1995; Strong, 1996).

In an effort to ensure that all of these components are occurring in the classrooms during Socratic Seminars, which are used for data collection, the researcher will meet with the implementing teachers ahead of time and discuss what a Socratic Seminar must include to be a part of this study. More information is available in chapter 3 describing the Socratic Seminar training for teachers.

Fidelity in implementing socratic seminar. The fidelity, or commitment, of the instructor to implement Socratic Seminar is measured by students' perception following each Socratic Seminar via the Degree of Implementation survey (see Appendix B). The first five items in the Degree of Implementation survey ask for a specific element found in a Socratic Seminar according to the literature. These five elements display fidelity in implementing Socratic Seminar: students in a circle, students engaged in a discussion, a common text, an opening question and students leading the discussion.

Traditional lecture. Traditional lecture expects students to copy or take notes because they are part of a one-way transmission. The learner is assumed to take responsibility for the learning, as the lecturer is responsible to deliver the up-to-date and pertinent information. The goal of lecture is for students to acquire information. Lectures have traditionally been defined as the oral communication of information for the purpose of learning (Bligh, 2000; Brown, 1978). In 1972 Bligh provided a classification system for styles of lecture. The classification of lectures has since been updated by Bligh (2000) and is now categorized into two common forms of organization, hierarchic and chaining, but each of these forms has numerous variations and they are commonly

used in conjunction with each other. For this study, these two forms of lecture, hierarchic and chaining, will be used to define traditional lecture.

Hierarchic. The hierarchic form of organizing lecture can be broken down into two subcategories: the classification hierarchy and problem-centered lecture. Classification hierarchy is the most basic form as information and ideas are grouped under unifying features and headings accordingly. This is an ideal form of organizing a lecture with the goal of providing facts. The downside to lecturing this way is that it only provides the information or idea in one context and may not be applied to more situations (Bligh, 2000). The other looming problem, which drives this study, is "boredom" (Bligh, 2000, p. 72). The problem of boredom coupled with the notion that lecture doesn't "stimulate interest or thought" (Bligh, 2000, p. 72), insinuates that lecture should only be used for less able students according to Bligh (2000). Problem-centered lecture, which is also constituted as a hierarchic form, consists of a problem asked by the lecturer with information, arguments, and hypotheses thereafter all stemming from the original question. This form is considered hierarchic because each hypothesis given is under the scope of the initial problem. Evidence and inferences are taught in line with each hypothesis as seen in the modified (Bligh, 2000) example of problem-centered lecture in Figure 2 (see Chapter 2). The problem-centered approach is thought to arouse student's motivation and so is considered preferable although more difficult to implement. For best success, the problem must be clear, attainable, and synthesize the objectives to be taught (Bligh, 2000).

Chaining. Chaining is more like a story; the presentation is given in sequence of time or reason, much like normal speech. It is important to note than when chaining is

implemented, a lecturer should be sure to take stock, or, remind students of what they should be learning. Taking stock during a chaining form of lecture can be done by writing key points on the board, power point, or on a provided outline of notes. An example of the chaining form can be seen in Figure 3 (see Chapter 2) as adapted from Bligh (2000).

In an effort to ensure that the components for traditional lecture, either hierarchic lecture style or chaining style lecture, are implemented as defined in the classrooms during traditional lectures which are used for data collection, the researcher will meet with the implementing teachers ahead of time for a training and discuss what a traditional lecture must include to be a part of this study. More information is available in chapter 3 describing the traditional lecture training for teachers.

Importance of Study

The results of this study will help support or disconfirm similar studies on the motivational influences of Socratic Seminar for students while advancing motivational theory. This study adds to studies that have already been done on the motivational influences of Socratic Seminar in two ways. First, the setting is at the high school level rather than primary grades, middle school, or collegiate level. Secondly, this study compares motivation towards learning as a result of Socratic Seminar to that of traditional lecture.

Assumptions

Because the resources are not readily available to make direct observations and ratings of motivation over the length of the study in each of the settings, a modified

version of John Keller's CIS (see Appendix A) for measuring motivation will be implemented. It will be necessary to assume that the participants are honest in reporting their ranges of motivation following a class session in their surveys; the motivation survey tool will be administered anonymously and the participants will be encouraged to be honest by those administering the surveys. It is also assumed that it is not necessary to measure students' like or dislike for any particular teacher since their feelings would not differ based on instructional method.

Limitations

The limitations of this study include generalizability, group equivalence, and a lack for a measurement of learning. First, the study is intended to be generalized to a similar population sharing characteristics such as are found at the independent Christian High School. In regards to group equivalence, the two instructional methods implemented may not necessarily contain the same content. Thus, the content itself could possibly be more motivating in the lesson using Socratic Seminar than the content in the lesson applying traditional lecture. Lastly, this study is not attempting to measure learning because it would require standardization of content, which is not a possibility because the teachers are autonomous.

Chapter II. Review of Literature

This literature review is divided into four parts. The first three sections, each of which will focus on a variable from the study, include motivation, traditional lecture, and Socratic Seminar. Each of these sections looks at the history, theory, and empirical data of the given variable. The final section is a summary and demonstrates the need for further research in this area.

Motivation

What makes people tick? Why do some students engage while others lag behind? To answer these questions it is necessary to look at what differences exist in students' motivation toward learning. To best understand the differences that exist in students' motivation towards learning, it is important to recognize how researchers came to their conclusions for theories on motivation by looking at its history.

History of motivation. The Latin root for the term motivation is motive, which means to move. Perhaps this helps understand why researchers of motivation in the early 1900s focused on what moved someone from a state of rest to a state of activity. The dominant view of the time regarding what moved people is called behaviorism, a philosophy that maintains psychology must focus solely on behaviors that are observable and objective, not taking into account perceptions, feelings, and thoughts of the individual (Watson, 1914). The Russian behaviorist psychologist Ivan Pavlov (1927) was one of the most pre-eminent behaviorists of the early 20th century. His studies focused on *reflexes*, such as salivary response. In his research Pavlov began with an unconditioned stimulus and an unconditioned response. Pavlov found that if he associated a neutral stimulus with an unconditional response repeatedly, eventually the

neutral stimulus created a conditioned response in his participants. This has become known as Pavlovian (or classical) conditioning. Adding to Pavlov's research, behaviorist psychologist John Watson (1914) completed studies of rats' behavior, specifically that of motivation, as applicable to human behavior. Out of this focus on what moves a person also came motivation research focused on topics such as *drive*, *arousal*, and *need* (Weiner, 1990). Behaviorist psychologist Clark Hull (1943), for example, held that motivation stemmed from a biological need, which created a behavioral arousal that he termed drive. Because drive was an uncomfortable state, due to the need, he believed an animal would be motivated to eliminate that need. Hull's theory came to be known as the *drive theory* and encapsulates the findings on these topics during this era focused on behavior as a mechanism.

Studies conducted using rats became increasingly popular and began including tests in which subjects were deprived of food or water to find if the presence of a need moved the animal to activity (Hull, 1937). These studies not only created an index of motivation based on need states but also borrowed the idea of energy levels by making machine based analogies of energy as described in the field of physical sciences to human behavior (Weiner, 1990). Much of this research was applicable to instructional education, which led to education-based studies during the late 1930's on topics such as praise and reproof (Blankenship & Humes, 1938) success and failure (Anderson, 1936), reward and punishment (Anderson, 1936), and knowledge of results (Hull, 1937).

From 1941-1950, however, mainstream motivation theories had diminutive bearing on the education field. This was in part because in the 1930's the study of learning divorced the

field of motivation due to views on motivation learning and performance acquisition learning. Motivational behaviorist Hull declared that in order for learning to occur, there must be *reinforcement*, such as an incentive for a change in behavior and increased motivation. However, in his extensive research on what is referred to as *latent learning*, behaviorist psychologist and University of California Berkeley professor Edward Tolman combated Hull's theory when he demonstrated that incentives are not necessary for learning, they are only necessary for performance. Using rats for research on human behavior, Tolman (1932, 1948) found that when a reward was placed in the goal box of a maze, animals increased performance, but not necessarily learning. From these studies, motivational psychologists formed the separation between motivation and learning based on their understanding that motivation can view the use, but not the acquisition of knowledge. However, as University of California Los Angeles professor Weiner (1990) points out, the primary goal of motivation in education has always been to move students to engage in new learning, not to apply already acquired knowledge. This framework of applying motivation to education is an appropriate issue for mainstream psychologists.

In the 1950s and 1960s the focus of mainstream motivation psychology shifted from mechanisms towards *cognition*. For example, the behaviorism based view of Hull's (1943) psychology that a reward given for an action would increase the likelihood of that same action in the future given the same environment began to wane (Weiner, 1990). On the other hand, research of motivation through the cognition lens increased. This shift was largely influenced by cognitive researcher Albert Bandura (1977) of Stanford University who began documenting social learning, based on the premise that children's learning can be from the observation of people and factors in their environment and does

not need to be accompanied by a change in behavior. The shift from focusing on mechanisms (Hull, 1943) to cognition (Bandura, 1986) was bridged which manifested the study of a number of topics for human research with cognition as a central theme. Of these cognitive based studies none was more prevalent than achievement motivation, (Weiner, 1990). In Harvard professor David McClelland's (1961) landmark text, *The Achieving Society, achievement motivation* was described as central to human motivation and explained as the need to perform or strive for success evidenced by persistence in the face of difficulties. For this reason, the term achievement motivation is synonymous with the terms achievement strivings and achievement needs.

With the focus firmly set on achievement strivings in the 1960s, individual differences took center stage for the first time. Much of this focus on individual differences came from McClelland (1961), who held that humans have three dominant needs including the need for achievement, need for affiliation, and need for power, but individuals differ on how the amount of need they have for each. McClelland's research was a pivotal paradigm shift because his study moved research on human behavior from lower organisms such as rats to humans. Due to this shift in view towards human behavior, the door for motivation through an educational lens was once again opened as a framework and potential was created for educational psychologists to differentiate between students' motivational needs. During the 1960s psychologists applied the use of measurement tools to individuals with differing motivation levels that focused on achievement needs, anxiety, and locus of control. McClelland (1953) for example, helped to create the Thematic Apperception Test (TAT), which measures achievement motivation and personality assessment. This focus on achievement motivation was

readily applicable to anyplace where achievement outcomes are present, including the classroom. The potential for the mixing of education with motivation research was now ripe.

However, the move from focusing on mechanism to cognition in the 1960s was not without notable exception. For example, *cognitive dissonance*, which is an imbalance among beliefs, was linked to drive theories because it was believed that any cognitive imbalance would drive a human back to equilibrium, or, *cognitive consonance* (Weiner, 1990). Festinger, Riecken, and Schachter (1956), for example, studied a group that was expecting the end of the world on a specific, prophesied date. When the date passed and the prophecy failed, most of the group members changed their belief by accepting that the world did not end. Dissonance was present when their belief proved false and was lessened when the group changed their belief. This lessening of dissonance is linked to the motivational drive of needing to reach cognitive consonance. In addition, motivation was also viewed from a mathematical equation lens. This is illustrated in Atkinson's (1964) Motive x Probability x Incentive formula, which, according to Weiner (1990), was derived from Lewin (1935). Lewin and Atkinson's theories are known as expectancy-value theories, which describe motivation as a result of how much something was expected and how likely one is to get it. As noted already, mechanisms based drive theories were the exceptions, and the attention they were given in the 1960s was far less than that of cognitivism, which focused on topics such as achievement strivings (Weiner, 1990).

By the end of the 1960s research with lower organisms such as rats, mechanism-based psychology such as drive theories, and machine metaphors for human behavior were considered history. Taking their place, research on motivation shifted towards cognitivism via human based research, achievement strivings, and perhaps most importantly for student motivation--individual differences (Weiner, 1990). Motivation research in the field of psychology would never have been applicable to the classroom without this shift from mechanisms and lower animals to cognition and humans. The major individual differences researched and their corresponding instruments include: need for achievement and the Thematic Appreciation Test (McClelland, 1953), anxiety about failure and the Test Anxiety Questionnaire (Mandler & Sarason, 1952) as well as locus of control and the Internal External Locus of Control Scale (Rotter, 1966). A common theme is found in the development of each of these instruments. For each theoretical framework, a motivational effect resulted from the manipulation of a specific condition. For example, within the theoretical framework of achievement theory, some individuals express more heightened arousal than others with the presentation of achievement cues, such as test directions, despite being in the same environment (Atkinson, 1964).

Continuing this movement of studying individual differences, social learning theorists such as Rotter (1966) recognized in their research that expectancy shifts (rises after success, falls after failure) are more likely when an individual attempts a skill as opposed to a chance task. The result, as the social learning theorists reasoned, was that individuals who perceive tasks in their environment as skill-based and thus within their

control have higher levels of expectancy than individuals who view tasks as luck-oriented (Weiner, 1990). Motivational research shifted from behaviorism to cognitivism as seen in the focus on individual differences in need for achievement, locus of control, anxiety, and expectancy.

Outside of the arenas of cognitivism and behaviorism, Sigmund Freud's theoretical approach of psychoanalysis gained momentum in the 1950s (Weiner, 1990). Psychoanalysis sought to reason conflicts that were unconscious to the individual or repressed, thus creating a framework for the reason behind human behavior. Behaviorists largely criticized this approach as it was formed out of interpretation and not empirical data (Overskeid, 2007). More importantly, another branch, humanism, was spawned out of rejection of both behaviorism and psychoanalysis. Humanist psychologist such as Abraham Maslow and Carl Rogers focused on the growth and individuals potential for growth rather than failing to take emotions into account as in behaviorism or focusing on unconscious emotions such as in psychoanalysis (Aanstoos, Serlin, & Greening, 2000). Humanism became known as the third force of psychology: behaviorism and psychoanalysis being the first two forces respectively (Bugental, 1964). These forces are not necessarily competing, but can be seen as differing ways to view motivation for human behavior.

In the 1970s psychologists continued to focus on human behavior (Ball, 1982). Articles were published documenting increasing amounts of cognitions that held relevance to motivation including causal aspirations, differences in individuals' achievement needs, anxiety concerning failure, and perceptions of control (Wiener, 1990). For example, influential cognitive researcher Deci (1975) found that if a reward is

viewed as controlling, it undermines the purpose of the activity, but if the reward is seen as positive feedback, it is perceived as motivating. When a reward is given in a competitive environment, a comparison to others is perceived; rewards in a cooperative setting, however, provide feelings that one has worked hard to better oneself. In addition, the attribution theory was further developed which attributes causes to behaviors. Weiner (1979) described how an individual perceives his or hers own performance to be linked to ability versus effort has substantial impact on that individual's achievement behavior.

The late 1970s also brought about a topic of study critical to education–self. Stanford professor and psychologist Bandura (1977) focused his research on self-efficacy. Self-efficacy, which is an individual's perception of his or her own ability to succeed, determines how one approaches tasks. If a person has a high self-efficacy, they are more likely to engage in challenging tasks then when their self-efficacy is low. Self-efficacy is the centerpiece to Bandura's (1977) social cognitive theory, which stems from social learning and holds that personality is a result of learning from observation of others and an individual's thought process. Bandura's theories led to the understanding that the way individuals learn behaviors early on in their development process has powerful impact on their mental processes in the later stages of development. If people have high self-efficacy, than they don't shy away from difficult tasks (Bandura, 1977).

The 1980s brought applicable motivational research to the classroom as a somewhat new approach was undertaken. Referred to as the goal theory (Weiner, 1990), motivational researchers attempted to interrelate the ideas of competitive and individualistic goal structure (Ames, 1984), make social comparisons as indicators for

success (Chafel, 1986), and include ego-involvement (Nicholls, 1984a). Ames (1984), for example, researching through the lens of the attribution theory found that students made higher ability attributions in the competitive condition than in individual goal structures. Individual goal structures elicited more effort attributions as well as more engagement to self-instructions and self-monitoring. Chafel (1986), who studied preschool students, found relatedness between students' social comparisons and consequent events. Nicholls (1984b) noted that for an individual to judge his or own ability, a comparison must be made of effort or attainment of either self or others. The term ego-involvement is the state where individuals seek to perceive ability in regards to self or others (versus perception of ability being a result of the mastery of a given task). The classroom implications include (a) students with low perceived ability in ego-involvement situations are less likely to seek assistance, (b) students in ego-involvement situation with lower perceived effort felt guilt while students with higher perceived effort felt embarrassed, and (c) task oriented situations result in higher perceptions of ability than that of ego-involvement situations where ability is perceived in comparison to others. These studies demonstrate an approach that is seeking to pull together multiple aspects of achievement motivation (Weiner, 1990).

The study of self continued to be the center of research as self-actualization, self-esteem, and the rest of the self-focused alphabet dominated motivational research (Weiner, 1990). This focus on the study of self can be described as an increase in popularity of humanism, which was birthed in the 1950s as a reaction to behaviorism and psychoanalysis as noted earlier. Humanistic psychologist Abraham Maslow (1943), who was a part of the movement's creation, is often regarded for his use of the term *self-*

actualization to describe an individual's desire to reach the ultimate state where one can be a fully realizing self; his concept of self-actualization is growth motivated rather than deficiency motivated. In Maslow's hierarchy of needs, self-actualization is pictured at the top of a pyramid and regarded as the ultimate goal. However, the ultimate goal is not desired until all other levels of need have been met; the levels exist in descending order: self-actualization, self-esteem, love, safety, and physiological. The theory declares each level must be met before a person is motivated to go to the next level. For example, Maslow (1943) places physiological needs at the bottom; only after physiological needs have been met would a person desire to go on to the next level, which is safety. The same holds true for safety and so on up the pyramid to the ultimate state of self-actualization. Maslow's thought, and humanism in general, was original to the field of motivational psychology because it moved the spotlight from the mentally ill to the mentally healthy.

By the end of the 1980's motivational psychologists became noticeably silent on research covering individual difference variables (Weiner, 1990). As Mischel (1968) noted, the problem with studying motivational traits in individuals, is the inability to generalize findings. For example, an individual can be found to have high achievement strivings in music over academics; however, predictions applicable to this individual may not necessarily hold true for another person's achievement needs (Weiner, 1990). Another issue with individual difference variables is that the variables, such as self-efficacy or locus of control, became more popular than the theories from which they were birthed

and became disconnected from those theories altogether. Thus, there is a lack of theoretical framework from which to apply the variables (Weiner, 1990).

An area that grew rapidly in popularity in the 1980s was the role of emotions in motivation (Weiner, 1990). Having been largely unaddressed by Hull's focus on drive or Tolman's study of cognition, emotions began to be addressed. It should be noted that some emotions have been given a cursory study such as pride (Atkinson, 1964) and frustration (Lewin, 1935), but these have been relatively isolated in mainstream motivational psychology research. The focus on self resulted in an interest in self-directed emotions including pride, shame, and guilt (Weiner, 1990). Perhaps studying emotions such as these will provide insight into what motivates people and equate to a firmer grasp of how to motivate students in the classroom.

Theory of motivation. Relative to the classroom, motivation deals with a student's inclination to engage in the learning process (Lumsden, 1994). More importantly, as Lumsden (1994) notes, motivation has to do with "reasons or goals that underlie" (p. 2) their participation or lack thereof in a given activity. The following is a brief overview of motivation as it pertains to this study providing differing concepts and theories to view motivation.

Intrinsic motivation. Over the past 40 years motivation has been studied through the lens of *intrinsic* and *extrinsic* motivation. Intrinsic motives, which include health, community service, and self-development, are a reflection of personal growth (Vansteenkiste et al., 2005). Psychologists Ryan and Deci (2000) of the University of Rochester defined intrinsic motivation as the "inherent tendency to seek out novelty and

challenges…to explore and to learn" (p. 70). Ryan and Deci (2000) went on to declare intrinsic motivation to be the most positive potential of human nature. Evidence has now shown us that although people are naturally endowed with intrinsic motivation, supportive conditions are necessary for continued intrinsic motivation (Ryan & Deci, 2000).

A theoretical framework for intrinsic motivation is found in Fritz Heider's attribution theory, Albert Bandura's work on self-efficacy, and Ryan and Deci's cognitive evaluation theory (CET). Heider's (1958) attribution theory was concerned with what individuals explain or attribute as the cause of behavior and events. Attributes for behavior include disposition such as a positive or negative personality trait; behavior can also be attributed to a situation such as peer pressure or a car accident. Psychologist Albert Bandura of Stanford University connected the attribution theory with motivation by noting that what people attribute their failure or success to will directly affect their motivation. For example, Bandura (1997) explained that being told repeatedly that one's hard work is the reason for success will eventually convey the message that one's talent is limited and result in a lower self-efficacy; while being told that one's progress is a result of ability without describing effort results in a higher self-efficacy. Self-efficacy, Bandura explained, plays a key role in motivation. The higher one's self-efficacy, the more likely he or she is to engage in a given task, the lower one's self-efficacy, the less likely he or she is to engage in a task. Bandura (1997) defined intrinsic motivation in terms of self-efficacy, which he describes as, "…belief about what one can do under different sets of conditions with whatever skills one possesses" (p. 37). Bandura noted that students gain perceptions on self-efficacy from four sources: mastery experiences,

vicarious experiences, social pressures, and physiological states.

Recent empirical literature displays multiple applications within education. For example, empirical studies have found that teacher self-efficacy is a critical component of teaching (Gibson & Dembo, 1984; Goddard, Hoy, & Hoy, 2000; Tshannen-Moran & Woolfok-Hoy, 1998) and academic success for students (Guo, Piasta, Justice, & Kaderavek, 2010; Vuong, Brown-Welty, & Tracz, 2010;). In a study on teacher self-efficacy, Goddard et al. (2000) measured the self-efficacy of 70 teachers from 47 urban elementary schools and found a positive relationship between self-efficacy of teachers and their students' academic achievement in reading and math. In another study, the effects of first-generation sophomore college students' self-efficacy on their academic success were examined in five California State Universities. Results displayed through the use of an Online Self-Efficacy Inventory displayed that students with lower self-efficacy had lower grade point averages and persistence rates, while students with higher self-efficacy had higher grade point averages and persistence (Vuong et al., 2010).

In yet another lens through which to view intrinsic motivation, Deci and Ryan's (1985, 1991, & 2000) Cognitive Evaluation Theory (CET) focused on the social determining factors that produce motivation. According to the CET, if a person believes he or she is able to complete a task and is in control, he or she will not need further extrinsic motivators (Deci & Ryan, 1991). The theory implies that key influencers in motivation include social agents such as teachers, peers, and parents as they support autonomy. Supporting autonomy means giving students an active role in their education by providing opportunities for students to make decisions (Ames, 1992). Once this is accomplished, feelings of autonomy and competence increase self-determined motivation

(Deci & Ryan, 2000). Empirical research supporting the CET is directly linked to academic success (Cameron, Pierce, Banko, & Gear, 2005; Young, 2005). In an empirical study examining the relationship between CET, self-regulated learning styles, and achievement goals on intrinsic motivation in the classroom, perceptions of autonomy, competence, and task mastery contributed to the classroom culture's effect on intrinsic motivation. The study suggested that intrinsic motivation can be heightened by the social factors that Deci and Ryan (1991) described including an enthusiastic faculty, positive feedback, and clear expectations of learning rather than grades (Young, 2005).

As seen from the attribution theory, self-efficacy, and cognitive evaluation theory, there are multiple theoretical frameworks to explain intrinsic motivation. In summary, students are likely to have intrinsic motivation if they attribute their performance to factors they control (Heider, 1958), believe they are able to effectively complete their goals (Bandura, 1997), and perceive they have the ability (due to a strong support environment such as peers, family, and teachers). Intrinsic motivation, however, is only one way to look at motivation; researchers have also viewed motivation through an extrinsic lens.

Extrinsic motivation. Some researchers find intrinsic and extrinsic rewards to impede one another (Deci, Edward, & Flaste, 1995; Deci, Koestner, & Ryan, 1999; Kohn, 1993b) while others find the combination of intrinsic and extrinsic rewards to be helpful in heightening academic achievement (Bowman, 2007). Examples of extrinsic goals include appearance, material wealth, prestige, and image (Vansteenkiste et al., 2005). Bowman (2007) argued that when motivation is tied to tangible rewards alone, students are limited in what is meaningful to them as individuals and collectively. This

phenomenon has long been seen in empirical studies (Lepper, Greene, & Nisbett, 1973). In a study involving pre-school students, a good player ribbon was promised for students who engaged in the typically enjoyable activity of playing with felt-tip pens. A second group of students were given the same ribbons because they played with felt-tip pens although they were not told prior to the activity about the potential of ribbons. A third group also participated in playing with felt-tip pens but was not given ribbons at any point. Once the activity was completed students had the opportunity to play with the felt-tip pens during free time. It was observed that students who had received an award played significantly less with the pens. The results of the study suggested that extrinsic rewards undermine student intrinsic motivation in activities previously considered enjoyable (Lepper et al., 1973). The test was duplicated by providing students with trophies and certificates for performance in math with similar results (Greene, Sternberg, & Lepper, 1976).

In a more recent study on the effects of rewards for achievement on intrinsic motivation different results were seen. In the study, undergraduates involved in a problem-solving activity were provided either a reward for achievement or no reward at all. Intrinsic motivation was measured during free time by the amount of time participants spent on the task and ratings of interest towards the task. The conclusion, which was contrary to previous findings (Greene, et al., 1976; Lepper et al., 1973), was that intrinsic motivation was increased by achievement-based rewards (Cameron et al., 2005).

Although it may seem idealistic, moving students from extrinsic to intrinsic motivation in the classroom is a key if educators want students to value learning. In

order for this to occur, teachers must move students past the "token rewards and give them opportunities to grow" (Sanacore, 2008, p. 41). This means creating an environment in the classroom that stimulates intrinsic motivation, which Sanacore (2008) describes as encouraging, challenging, involving opportunities for choice in learning, participating, and an encouraging attitude towards the love of learning.

One way researchers have been enabled to find ways to create an environment where students are motivated as described is through studying the Self-Determination Theory.

Self-determination theory. There are many people who go through their day full of vigor, challenging themselves, striving to learn and seeking to reach their fullest potential. On the other hand, there are plenty of children who spend hours a day sitting in front of televisions lifelessly or in a classroom staring thoughtlessly as though they have no desire to be present. Beyond a natural inclination or biological trait, the dispositions people have are reactions to the social environment in which they find themselves. By studying the social conditions that nurture we are able to understand the causes for behavior as well as better design environments, such as the classroom, to produce the optimum performance and well-being (Deci & Ryan, 2000). The self-determination theory (SDT) approaches motivation and personality by empirically researching inherent growth tendencies and the innate psychological needs of individuals as well as seeking to find conditions that nurture self-motivation and personality integration (Ryan, Kuhl, & Deci, 1997). Three needs have been identified which produce a condition for growth, integration, and personal well-being: need for competence (Deci & Ryan, 2008; Harter,

1978), relatedness (Baumeister & Leary, 1995; Deci & Ryan, 2008), and autonomy (Deci, 1975; Deci & Ryan, 2008). The theoretical framework of SDT has been firmly established in supporting empirical literature in a plethora of diverse arenas including: the workforce (Fertig, Zeitz, & Blau, 2009), parenting (Soenens & Vansteenkiste, 2010) and health (Podlog & Dionigi, 2009). In a recent and important study in the field of education, Jang Hyungshim (2008) used several theoretical frameworks to explain why an external rationale often motivates, engages, and increases learning for students who are completing an uninteresting assignment. In Hyungshim's study, 136 undergraduate students were given a relatively uninteresting task; some were given a rationale while others were not. Students who received a rationale displayed more interest, worked harder, and were more determined. While each of the models applied by Hyungshim fit the results, only the SDT supported students learning and engagement. The key result in the data was that externally provided rationales appear to supply student motivation to become involved in uninteresting content. The recommended practical application for educators from the SDT is that providing an otherwise hidden value for a given task, can generate motivation from students (Hyungshim, 2008). Another framework to view student motivation is achievement motivation.

Achievement motivation. Nicholls (1979) pointed out that achievement and motivation are naturally linked. Achievement goal theory has been one construct to view student achievement motivation and academic outcomes (Ames, 1992; Harackiewicz, Durik, Barron, Linnenbrink-Garcia, & Tauer, 2008). Achievement goals are "situationally specific orientations that refer to the reasons students are pursuing achievement tasks, and

affect how students experience and perform these tasks" (Régner, Loose, & Duncan, 2009, p. 264). Achievement goals have been subdivided into master and performance goals (Ames, 1984; Nicholls, 1984a). Mastery goals focus on conquering the task and developing competence while performance goals focus on self and performance in comparison to others. Mastery and performance goals have since been developed to incorporate the approach-avoidance element in order to differentiate student orientations of viewing goals via positive outcomes versus avoiding negative outcomes (Elliot, 1999; Elliot & McGregor, 2001). For example, students with the mastery-approach completed goals for the sake of task mastery (mastery-approach), but a distinction is made between students mastering a task for the sake of mastery versus students who complete tasks to avoid not developing competence (mastery-avoidance). Similarly, students with performance-approach goals use performance as the focus, but a distinction is made between students who do so to demonstrate competence versus those students who do so for the avoidance of being incompetent relative to others (Régner et al., 2009).

Achievement motivation theorists have attempted to explain why individuals choose specific achievement tasks, why they are persistent and vigorous on those tasks, and their performance level on them (Wigfield & Eccles, 2000). Similarly, psychologists have also explained motivation through the expectancy-value model.

Expectancy-Value model. The expectancy-value model is a theory associated with humanistic psychologists such as Tolman (1932) who attempts to answer these questions about achievement motivation as it holds behaviors and attitudes to be a result of beliefs towards a task and the value placed on the task (Wigfield & Eccles, 2000). According to Eccles (2005), achievement motivation is predicted by perceived

competence and value placed on the task by a student. For example, if a student thinks he or she is able to do a task and believes that task is important, achievement motivation increases accordingly. An example of application for this model is found in one study where authors hypothesized that endorsing stereotypes of African American student academic abilities would negatively affect self-perceptions for students who held their race as central to their identity (Okeke, Howard, Kurtz-Costes, & Rowley, 2009). The hypothesis was supported in two independent samples among students with high race centrality (race is central to their identity) where traditional race stereotypes were connected to low self-perception and academic ability. As expected in the expectancy-value model, students with low race centrality did not result in low self-perception or academic competence despite the endorsement of traditional stereotypes (Okeke et al., 2009). While research continues through the lens of the expectancy-value model, some motivation researches focus on what interests students.

Four phase model of interest development. The development of interest is another way to view motivation in students. Hidi and Renninger (2006) developed a four-phase model of interest development that includes: triggered situational interest, maintained situational interest, emerging individual interest, and well-developed individual interest. Each phase refers to a different state of psychological interest. Triggered situational interest results from short-term changes in affective and cognitive processing. Maintained situational interest is a continuation of triggered interest and lasts for an extended period of time and reoccurs. Emerging individual interest is a state of interest at the beginning of an enduring predisposition to repeat a given class. Finally, positive feelings and an

understanding of content for a particular area display the well-developed individual interest (Hidi & Renninger, 2006). This model of motivation has implications for the education field. One study applicable to the classroom found that teachers' interest towards subject matter significantly impacted student interest in content (Long & Murphy, 2005), which suggests the need for teacher support. In general, findings focused on this model find that the four-phase interest development model can impact student motivation as educators support student attention, provide opportunities for students to ask questions, and create opportunities for problem solving (Hidi & Renninger, 2006).

In effort to synthesize the litany of theories on motivation into one simple model while at the same time providing a systematic method of increasing motivation, the ARCS Model was developed by Keller (1987a) of Florida State University.

ARCS motivational model. The ARCS model contains three features: the first consists of four categories that capture the dominating theories on motivation, the second includes tactics to improve motivation during instruction and the final feature is a systematic design referred to as "motivational design" (Keller, 1987a, p. 2). The ARCS model is important because it is the first theory of motivation dedicated to classroom instruction that included a problem-solving component (Keller, 1987a). The origins of the ARCS model stem from the expectant-value theory crafted by Tolman (1932) and Lewin (1938). The expectant-value theory presumes that when a person expects success (expectant) and feels that the activity satisfies individual desires (value), motivation is present. Originally, Keller (1983) expanded the value category into interest and relevance; these constructs capture curiosity and create arousal. Interest focuses primarily around

attention factors while relevance includes goal-oriented issues. Keller's third category, expectancy, focuses on an individual's expectations for achievement. A fourth category, referred to as outcomes, was derived from the operant conditioning theory (Deci, 1975) and applies application of reinforcement (Keller, 1987a). Using these four categories, Keller then gathered a myriad of primary research based motivational strategies from multiple areas of study and matched them (if possible) to a corresponding category. The reliability of the classification process was "based upon the intraclass correlational method (and) was .78" (Winder, as cited in Keller, 1987a, p. 3). The names of the four categories were then modified in effort to highlight the key component of each while creating a practical acronym known as the ARCS Model (Keller, 1987a).

Each of the four categories of ARCS is a psychological construct, rooted in multiple areas of psychological research, necessary for motivation. The following is a brief overview of each condition (the first feature of the ARCS model), strategies to induce each one (the second feature of the ARCS model), and implementation (the third feature of the ARCS model). Appendix C, adopted from Keller (1987b), includes a look at each category, subcategory, and process question at a glance, which sums up the first two features. The third feature, which involves the implementation, is also discussed.

Attention. In one sense, gaining attention could be thought of as a sudden loud noise or movement, but the real goal of this condition is sustaining. The goal is to find a middle ground between boredom and hyperactivity so students are alert but not anxious. Strategies for gaining attention include: conflict, concreteness, variability, humor, inquiry, and participation (Keller, 1987b).

Relevance. Students want to know why they are learning what they are learning

and how the content relates to them. Some educators have answered this question by providing possible careers that directly link to the content while others focus on learning itself as the goal. This condition, however, focuses on how the content is taught opposed to making the content itself relevant. For example, if a class is taught in groups, those who are high in "need for affiliation" will tend to relate while students who are high in "need for achievement" will find challenges and goals more relevant. Example strategies for creating relevance include: experience, present worth, future usefulness, needs matching, modeling, and choice (Keller, 1987b).

Confidence. Perceptions of personal ability, confidence, influence a person's persistence and thus accomplishment. Confidence can be seen through the lens of what an individual attributes success to. For example, people who are confident attribute their accomplishments to skill rather than luck (Dweck as cited in Keller, 1987a; Weiner, 1974) and believe they can accomplish their goals through their actions (Bandura, 1997) rather than fearing failure (Dweck, as cited in Keller, 1987a). Strategies for inducing confidence include: clear expectations, difficulty, attributions, and self-confidence (Keller, 1987a).

Satisfaction. The construct of satisfaction includes all conditions that encourage individuals about their achievements. The reinforcement theory assumes people will be more motivated if a task is clearly defined and reinforcement is applied. Strategies for improving satisfaction include: natural consequences, unexpected rewards, positive outcomes, negative influences, and scheduling (Keller, 1987a).

The third feature of the ARCS Model, referred to as the motivational design model, is a systematic process for implementation, which includes four steps: define,

design, develop, and evaluate. The goal of this motivational design process is to make classroom instruction attractive to students (Keller, 1987b). Each component of this feature is viewed below. Appendix D, adopted from Keller (1987b), displays the motivational design model at a glance by including phases & activities as well as process questions. Note that in the table 2 implementation and evaluation are combined and replaced by the pilot phase. Keller does this because it is perceived that this is the most common way of completing this phase.

Define. In this initial step, the problem is classified, audience is analyzed, and motivational objectives prepared. The goal of classifying the problem is to find the motivational problem in effort to find if the ARCS model can be useful. If the problem is due to the way content is presented, then the ARCS model can be of help. Analyzing the audience is for the sake of finding the motivational gaps and finding which motivational strategies to apply most. Motivational objectives identify the, "behavior, conditions, and criteria that apply" (Keller, 1987a, p.6).

Design. The design phase is more creative and involves brainstorming ways to generate potential strategies based off the objectives in the define phase. Next, strategies are selected based off five guidelines: take up small amount of time, doesn't take away from instruction, is affordable, acceptable to the audience, and compatible with instructor's teaching style (Keller, 1987b).

Develop. This phase calls for necessary modification of any materials or instruction to enable the integration of the motivational elements with the instruction (Keller, 1987b).

Evaluate. When evaluating, instructors must not only measure motivation, but also learning results. Recommend items to measure include persistence, effort, and attitude (Keller, 1987b).

There have been numerous empirical studies completed implementing the ARCS model of motivation (Huett, Kalinowski, Moller, & Huett, 2008; Huett, Young, et al., 2008; Chan, 2009). In a recent study focusing on online instruction (Chan, 2009), the ARCS model was used as criteria for design and implementation for the purpose of learning and motivation. During implementation, motivational issues were examined and adjustments were made to instruction using the ARCS model as a criterion addressing issues with student motivation. Results supported the ARCS model of motivation as a contributor to motivation and learning for students. An online lesson on computer ergonomics with 40 undergraduate participants majoring in information science and library were the focus of this study. In effort to provide motivation, attention, relevance, confidence, and satisfaction, strategies as prescribed by the ARCS model were applied. For example, in regards to attention, video clips and graphics were used to foster students' awareness and motivate them to seek relevant applications for themselves. Another example is seen in integration of reflection components, use of Web-based resources, and consistent positive feedback for the sake of learning satisfaction. Data was collected via an end of the class research paper, discussion forums, and final reflections. Results provided implications for designing motivating Web-based instruction as well as implying the need for ongoing student assessment of motivation to ensure desired learning outcomes (Chan, 2009).

Empirical research on motivation. Much empirical research has been done

recently in the area of motivation in the high school setting. In the following, research has been clustered into four areas of motivation including: goal centered, student centered, others centered, and multidimensional applications of motivation. These categories were selected by the researcher to maintain consistency with the organization of various databases such as ERIC and ProQuest.

Goal centered. Much research has been done to view how goals relate to student motivation. Murayama and Elliot (2009) noted that much empirical research exists that supports both personal achievement goal structures as well as classroom goal structures as having a positive relationship with student motivation. However, Murayama and Elliot clarified that studies viewing the influence of the combination for both personal and classroom goals have not been widely seen. In order to push this research along, Murayama and Elliot have developed an analytical framework consisting of three models for study of the joint influence of personal achievement goals and classroom goal structures. Each of the three models examined by Murayama and Elliot present a different aspect of the joint influence of personal and classroom goals. The models include a direct effect, indirect effect, and interaction effect model; each of which were used to analyze a different component of the two types of goals seen in high schools and junior high schools in Japan. With a sample size of over 1500 students in 47 mathematics courses, students were divided into two groups and a questionnaire was distributed to each group; one group received questionnaires designed to measure the adoption of personal achievement goals while the other group's questionnaire was designed to assess classroom goal structure items. The questionnaires included a 5-point scale used for each item ranging from not true to very true. Each item correlated to an

area in mathematics. Each of the three models was then used to examine how the combination of personal and classroom goal structures operate to produce results. The results from the direct effect model suggest that a mastery goal structure is positively correlated with intrinsic motivation while performance based-approach goal suggested a negative correlation for intrinsic motivation and academic self-concept (Kaplan et al., 2002; Karabenick, 2004). The results of the indirect-effect model suggest that a mastery goal structure is a predictor of "student's adoption of personal mastery goals, but performance-approach goal(s) was(are) not related to achievement goal adoption of any sort" (Murayama & Elliot, 2009, p.16), which is also consistent with past research (Bong, 2005; Church et al., 2001). Results for the interaction model, which has not been well studied in past research according to Murayama and Elliot, indicate that a positive correlation exists between personal performance goal structures with academic self-concept and intrinsic motivation when in a classroom with strong performance goal structures. The results also suggest that the combination of personal and classroom goal structures on achievement motivation is multi-faceted and not unitary, thereby necessitating the use of all three models for measurement of the joint effects of these two types of goals (Murayama & Elliot, 2009).

In a study viewing goals and their connection to student motivation, three theoretical frameworks of motivation were examined including expectancy-value, achievement goals, and interest, all of which are applied in two separate contexts. The contexts include a college classroom and a high school sports camp involving over 800 students in total. In effort to gather the data for both settings the researchers assessed the students in three waves for each context. For the sports camp, the first wave measured

initial interest and achievement goals by mailing the participants before the camp. In the classroom setting, students were given a questionnaire to measure their initial interest and achievement motivation. In the second wave perceptions of value were measured. In the sports camp, a 10-item questionnaire was used roughly half way through the camp to gather the task value; questionnaires were given four weeks into the classroom-setting course to find perceptions of value and interest. In the final wave, their interest was measured in the last week. Final grades of students and coach's ratings of campers were collected following the close of the semester to view performance. The results for expectancy-value were similar across both settings as intrinsic and utility values predicted satisfaction, therefore displaying task values correlate to motivation. For example, participants in the sports camp who perceived the drills to be useful and enjoyable, reported greater amounts of satisfaction than those who did not perceive the drills to be useful or enjoyable. Thus, value placed on a task is a key influencer towards satisfaction. Analogous findings were suggested from the classroom study as students who perceived the content to be useful reported greater amounts of satisfaction. In regards to achievement goals, both studies find master-approach goals predicted interest while performance-approach goals predicted performance. The combination of mastery-goals and initial interest predicted contentment in both studies; task values mediated this relationship resulting in evidence that when students perceive value, interest and motivation follow (Hulleman, Durik, Schweigert, & Harackiewicz, 2008).

Goals

have also been connected to the self-determination theory. According to the self-determination theory, feelings of relatedness and value affect motivation (Kaufman &

Dodge, 2009). In effort to study the self-determination theory and examine the influences, a study involving 222 undergraduate students enrolled in one of four introductory psychology courses at George Washington University viewed the effects of autonomy, mastery goals, performance goals, and performance-avoidance goals on two variables: students relatedness to the professor and value to the course. Participant relatedness and value were measured using two subscales from the Intrinsic Motivation Inventory (IMI), which is a multidimensional tool that measures subjective experience for a specific activity. Once the surveys were completed, linear regression was used for both objectives (relatedness and value). Results indicated a statistically significant relationship of mastery goals and autonomy to both relatedness and value. This study is important because it is one of the first to view independent effects of mastery goals and autonomy on relatedness and value and is the first study to look at value in this construct in an academic setting. The study supports the Self-Determination Theory (Deci & Ryan, 2000).

Student centered. The Self-Determination Theory connects the effects of goals and autonomy on motivations in an educational setting. There is much more research that focuses on the student's autonomy as found by Hyungshim (2008) who asserted that when students value their work their motivation increases. Hyungshim attempted to find ways to support the motivation of students during uninteresting activities and examined the effectiveness of two models of motivation, the identified regulation model and the interest regulation model, to gain perspective on why an external rationale supports student motivation, engagement, and learning.

Before the describing the study in detail, it is useful to gain a brief understanding of the two models. The identified regulation model was birthed from the self-determination theory (SDT) by Deci and Ryan (1985) who explained student motivation during an uninteresting activity as being high when students attach personal meaning to the activity or in other words the ability for them to identify with the task. Hyungshim (2008) found from Deci and Ryan's research on the identified regulation model that motivation is highest when students understand the rationale for the activity and feel a sense of autonomy. The interest regulation model, on the other hand, which derives from Sansone and her colleagues (Hyungshim, 2008), offered a different solution as to why motivation and engagement is supported by an external rationale. When students find themselves in the midst of a necessary but uninteresting activity, they tend to regulate their interest by self-generating "interest-enhancing strategies" (Hyungshim, 2008, p. 28). Examples of these interest-enhancing strategies include making the activity into a game as noted by Wolters, making a goal as described by Green-Demers, or by working with friends as noted by Isaac, Sansone, and Smith (as cited in Hyungshim, 2008). According

to Hyungshim during an uninteresting task that accompanies rationale for its necessity, people generate interest-enhancing strategies.

Hyungshim's (2008) study served two purposes. The first purpose was to support studies which display rationales given in an autonomous fashion supporting student's identified regulation and engagement. The second purpose was to find whether or not student conceptual learning was enhanced by a rationale and accompanying identified regulation. The study involved 136 college students who participated in an uninteresting task for 20 minutes. Autonomy was measured using the Perceived Autonomy Scale, a 7-point Likert scale developed by Reeve, Nix, and Hamm (2003). To validate the Perceived Interest Autonomy tool, the participants completed a three-item self-report questionnaire. The participants were divided into two groups, one that was given a rationale in an autonomous and supportive fashion (the experimental condition) and one group that was not given a rationale (the control condition). During the 20-minute uninteresting activity, trained raters scored the engagement level of the students' interest for factual and conceptual learning during the first and last 10 minutes. Students also received a 14-item multiple choice questionnaire to measure conceptual and factual learning.

The results of Hyungshim's (2008) study suggested that conceptual learning increased with rationale but not factual learning. The results also indicated that rationale developed identification regulation, which created student engagement and learning as expected by the identification regulation model. The connection between rational to engagement was not significant, which suggests that the identified regulation best explains the extent of engagement. The interest regulation model was also validated as interest regulation increased with rationale and produced engagement and learning. The

path from rationale to engagement, however, was significant, suggesting that the interest regulation model only partially mediates the effect of rationale on engagement. When the two models were viewed side-by-side in an additive model, which was predicted to display each model contributing uniquely, only identified regulation supported engagement significantly. The conclusion by Hyungshim is that identified regulation, as opposed to interest regulation or both, best facilitates engagement. Implications for student engagement then, according to Hyungshim, include providing rationales that produce two responses: students' understanding of the importance of the task and perceiving autonomy while accomplishing the task.

In addition to autonomy, students' sense of belonging also affects motivation. Many studies have been conducted that view student perceptions of classrooms, which support self-efficacy, achievement goals, and perceived instrumentality as noted by Walker and Greene (2009); however research is lacking on the importance of perceptions of belonging in the context of student motivation. In an effort to examine the variable in question, Walker and Greene surveyed 249 high school students to find which motivational variables link to students' feeling of belonging. Students completed 4 questionnaires composed of 6-point Likert scale items and a demographic form. The results suggested that students' sense of belonging has a statistically significant positive relationship with "self-efficacy, perceived instrumentality, cognitive engagement, and mastery goals" (Walker & Greene, 2009, p. 467). The only variable not found to show a positive relationship was personal performance-approach goals. Therefore, a sense of

belonging can be added to the list of variables that seem to indicate influences student motivation in the classroom.

Others centered. There have also been many studies which examine motivation in the classroom as a result of those who support the student such as parents, peers, and teachers. For example, using University of Michigan professor and psychologist Maehr's (1984) theory of personal investment as a framework, one study looked at peer relationships and achievement motivation during science classes among 253 students ranging from 6th to the 9th grade (Nelson & DeBacker 2008). This study incorporated several five-point Likert scale assessment tools, which were self-report questionnaires measuring classroom climate, achievement-related beliefs and values of a best friend, achievement goals, social goals, and self-efficacy during class time (Nelson & DeBacker, 2008). Results displayed that students feeling respected by classmates were more likely to perceive higher achievement motivation than students not feeling valued by classmates. In addition, participating students that had quality friendships or best friends that valued academics, tended to have higher adaptive achievement motivation; students with poor quality friendships who perceived their friends to be resistant to school had lower achievement motivation. In conclusion, students who feel valued and accepted by peers have higher achievement motivation than those who lack perceptions of value and acceptance by peers. In addition, results suggest that participants' perceptions of best friends' value towards academics are positively related to achievement motivation while students with poor quality friendships were linked to low levels of achievement motivation (Nelson & DeBaker, 2008).

In

another study examining the role of supporters of students' motivation, 503 participating students in France aged 13-16 were examined to find if the perceptions of teacher and parental academic involvement contribute to the adoption process of mastery and performance achievement goals. The perceptions of teacher and parental academic support were divided into support and monitoring. Two questionnaires were administered, the first at the beginning of the second trimester that measured perceived competence as well as perceived parental and teacher academic support, and a second assessing achievement goals given three months later. By using factorial analysis, results suggested that students' perceptions of parental academic support positively influenced mastery goals but were unrelated to performance goals as was expected from previous research (Chouinard, Karsenti, & Roy, 2007; Gonzalez, Holbein, & Quilter, 2002). A notable result from this study was that student perception of parental and teacher academic monitoring equally contributes to performance goals. This emphasizes the importance of the combination of parental and teacher academic involvement (Régner et al., 2009).

In a study involving 728 high school students, researchers put a motivational model of persistence in science education to a test (Lavigne, Vallerand, & Miquelon, 2007). The model attests that when teachers support student autonomy, it directly influences students' self-perception and competence in the field of science. It also proposes that students are more likely to enter into an education and career in the science field. Students completed a questionnaire measuring motivation toward science courses, self-perceptions of confidence, perceptions of teacher autonomy support, future career

intentions, and demographics. Results were then calculated for each scale. These results displayed significant relationships between student perceptions of autonomy and confidence in relation to their future intentions. The model was supported as students scoring high in future intentions towards science scored high in perceptions of teacher-supported autonomy. Students scoring low in future intentions towards science scored low in perceptions of teacher-supported autonomy. This research supports Deci and Ryan's (1985, 1991, 2000) Self-Determination Theory and suggests that the more determined a student is in science, the more he or she will pursue an education and career in science. In addition, this research shows the impact a science teacher can have on students when they support student autonomy (Lavigne et al., 2007).

In a study with 625 participants across 19 rural public high schools in Oklahoma, relationships among characteristics of students and learning environment influencing variables of motivation for achievement and learning where examined. Self-reported questionnaires were implemented to assess: perceptions of classroom and teacher, individual difference in self-perception, class-specific goal orientations, motivational characteristics, and school related future outcomes. Results suggest teacher characteristics more strongly forecast students' positive self-perceptions and motivation than do peer relationships. This study adds to the empirical data suggesting the importance of relationships between teachers and students, among peers, and perceptions of ability and valuing for motivation in the high school classroom (Hardré & Sullivan, 2008).

Results of one study (Bempechat, Boulay, Piergross, & Wenk, 2008) suggested a

greater understanding of the motivational advantage of Catholic students can help reform efforts outside of Catholic schools to increase student motivation. The study cites a number of studies and literature that point to a "Catholic school advantage" (Bempechat et al., 2008, p. 168) in every area from college admittance to SAT scores for students of color and low socioeconomic status in comparison to similar students at public schools. In effort to study two Catholic high schools, a qualitative analysis was conducted of individual interviews. The study featured 20 students from each school, half males and half females, all from low-income families. The interviews displayed students have a strong sense of autonomy in their learning, hold to adaptive attitudes about challenges in learning, and feel safe in their school environment with teachers who care about their academic and psychosocial well being. It was noted that during the interviews the students focused on their teachers' commitment to student learning and expressed the care their teachers have for them. This result was linked to past research with similar findings; students who feel cared for and supported by their teachers, feel more motivated academically (Bempechat et al., 2008).

Using the Course Interest Survey (CIS) to measure the ARCS (attention, relevance, confidence, and satisfaction)-based model of motivation by Keller & Subhiyah (1993), Huett et al. (2008) conducted a study involving 153 doctoral students to determine the effects of mass motivational e-mail messages on student motivation as well as retention for online students. An online treatment group, online control group, and a face-to-face classroom group were established in effort to measure learner motivation using the CIS and retention based on completion rates. The same professor taught all three courses to ensure the only difference was the motivational mass e-mail messages

given to the treatment group. The results displayed that there was a statistically significant difference in confidence between students receiving the treatment and those who did not. There was not statistical difference in the confidence between the treatment group and the face-to-face class. Thus, the study implies that there is a positive correlation between the treatment and confidence for students taking courses online (Huett et al., 2008).

A study was completed at Texas University using undergraduate students enrolled in an online course. The study measured the construct of confidence as seen in Keller's (1987a) ARCS model and its correlation to academic performance (Huett et al., 2008). The researchers used SAM Office 2003 and Web CT for the implementation of course content over a five and a half-week term. The study was experimental, using quantitative methods with a post-test only and utilizing a control group. The instruments used included the Motivation Survey for motivation and the already mentioned post-test for academic purposes; both were delivered online, off-site. The results displayed no statistically significant difference in confidence between the treatment and control classes. However, a significant statistical difference was seen in the academic performance of the treatment group as compared to the control group. The results could be for a number of reasons: (a) the ARCS model does not nurture confidence in students, (b) the strategies implemented in this study for confidence were done so incorrectly, (c) the measurement device was not able to adequately measure a significant difference. The study does, however, challenge whether or not individual subsections of the ARCS model can be measured (Huett et al., 2008). Because there was an academic increase in the treatment group, it is worth studying further both for academic and motivation purposes.

In another study on motivation (Martin & Dawson, 2009), engagement and academic performance were examined relative to age, grade retention, and delayed school entry. Using 3,648 students from seven Australian high schools, teachers administered the Engagement and Motivation Scale – High School (EMS-HS) during class. Structural equation modeling found that once demographic characteristics and grade retention were taken into account, linear effects of age did not play a significant factor. However, subsequent modeling of the nonlinear effects displayed older students within a cohort as less motivated, less engaged, and displaying lower academic performance. Therefore, the study suggests grade retention, and or being markedly older in a given cohort, yields no academic advantage. Therefore, the study suggests that students are best served by receiving any needed intervention by residing in cohorts of students their own age (Martin & Dawson 2009).

While much research has been viewed with goals, students, and others as the centerpiece, much research has also been done applying multidimensional interventions.

Multidimensional intervention. In a study conducted by Martin (2008), motivation and engagement of 53 Australian high school students following the implementation of a multidimensional educational intervention were examined. Teachers administered the Motivation and Engagement Scale – High School (formerly the Student Motivation and Engagement Scale – High School) pre and post intervention to the control and treatment group. The central purpose of the analysis was to compare the mean motivational levels between the two groups being measured. The results indicated that

students in the treatment group resulted in higher academic motivation in key facets of motivation including task management, persistence, anxiety, failure avoidance, and uncertain control. These findings display the potential for multidimensional intervention for the purpose of motivation and engagement. The study found that the key components of multidimensional educational intervention that contribute to the gains in student motivation and engagement include: key targets of motivation and engagement, empirically derived intervention methodology, multidimensional educational cognition, affect and behavior, research-based risk, protective factors, established practices that nurture optimal youth development, use of interpersonally skilled staff, and incorporation of evidence-based programming (Martin, 2008).

There is much empirical research implying that motivation can be derived from various types of goals, peers and teachers, as well as multidimensional applications. Empirical research on motivation supports the self-determination theory, the SDT, the identified regulation model and the use of Keller's ARCS model. With these perceptions, it is useful to turn the focus to the proposed instructional methods, traditional lecture and then Socratic seminar, for the purpose of studying which method results in increased student motivation.

Traditional Lecture

Although it is evident from the research that students are motivated to learn through multiple instructional methods derived from radical technological advances and urges for change of pedagogy, lecture is still the most used vehicle for teaching worldwide (Bligh, 2000; Costin, 1972; Cueso, 1996). Not only in scholarly circles but also in the business world and countless conferences in varying fields, lecture is the chosen method of sharing

information. Before discussing the motivational ramifications of lecture, it is necessary to establish its extensive history.

History of lecture. Lecturing has its roots in classical Greece and Rome and was popularized in the ancient European universities such as Oxford, Paris, and Cambridge in the 12th and 13th centuries. Most likely, lecturing developed when handwritten texts were the only books available and students were led to copying down whatever was said by the teacher (Brown & Race, 2002). However, according to Brown and Race (2002), researchers may be coming full circle, in their words, "…models of thinking influenced by contemporary critical theory may be returning to more discursive and participatory models than those which have predominated in recent centuries" (p.24). Before making judgments as to whether or not these researchers are going down the right path, it is helpful to gain a full understanding of traditional lecture.

Theory of traditional lecture. The goal of lecture is for students to acquire information. Lectures have traditionally been defined as the oral communication of information for the purpose of learning (Bligh, 2000; Brown, 1978). In the 1970s Bligh (1972) provided a classification system for styles of lecture. The classification of lectures has since been updated by Bligh (2000) and is now categorized into two common forms of organization, hierarchic and chaining. Each of these forms has numerous variations and are commonly used in conjunction with each other (Bligh, 2000).

The hierarchic form of organizing lecture can be broken down into two subcategories, the classification hierarchy and problem-centered lecture. Classification hierarchy is the most basic form as information and ideas are grouped under unifying

features and headings accordingly. An example of a classification hierarchy form can be found in Figure 1. This is an ideal form of organizing a lecture with the goal of providing facts. The downside to lecturing this way is that it only provides the information or idea in one context and may not be applied to more situations (Bligh, 2000). The other looming problem, which drives this study, is "boredom" (Bligh, 2000, p. 72). The problem of boredom coupled with the notion that lectures fail to "stimulate interest or thought" (Bligh, 2000, p. 72), insinuates that lecture should only be used for less able students according to Bligh.

Problem-centered lecture, which is also constituted as a hierarchic form, consists of a problem asked by the lecturer with information, arguments, and hypotheses thereafter all stemming from the original question. This form is considered hierarchic because each hypothesis given is under the scope of the initial problem. Evidence and inferences are taught in line with each hypothesis as seen in the modified example of problem-centered lecture in Figure 2 (Bligh, 2000). The problem-centered approach is thought to arouse student motivation and so is considered preferable although more difficult to implement. For best success, the problem must be clear, attainable, and synthesize the objectives to be taught (Bligh, 2000).

Chaining is more like a story; the presentation is given in sequence of time or reason, much like normal speech. This storytelling method of classroom instruction has been seen to have greater recall for students in both the short-term (immediately) and in the long-term (5 weeks; Oaks, 1996). It is important to note than when chaining is

implemented, a lecturer should be sure to take stock by reminding students of what they should be learning. Taking stock during a chaining form of lecture can be done by a lecturer writing key points on the board, power point, or on a provided outline of notes. An example of the chaining form can be seen in Figure 3 as adapted from Bligh (2000).

I.
1.
(a)
(b)
(c)
2.
(a)
(b)
(c)
3.
(a)
(b)
(c)

II.

Figure 1. Example of Lecture in Hierarchic Form Note. Adapted from, *What's the use of Lectures* (p. 54), by D. Bligh, 2000, San Francisco: Jossey-Bass. Copyright 2000 by Jossey-Bass. Reprinted with permission.

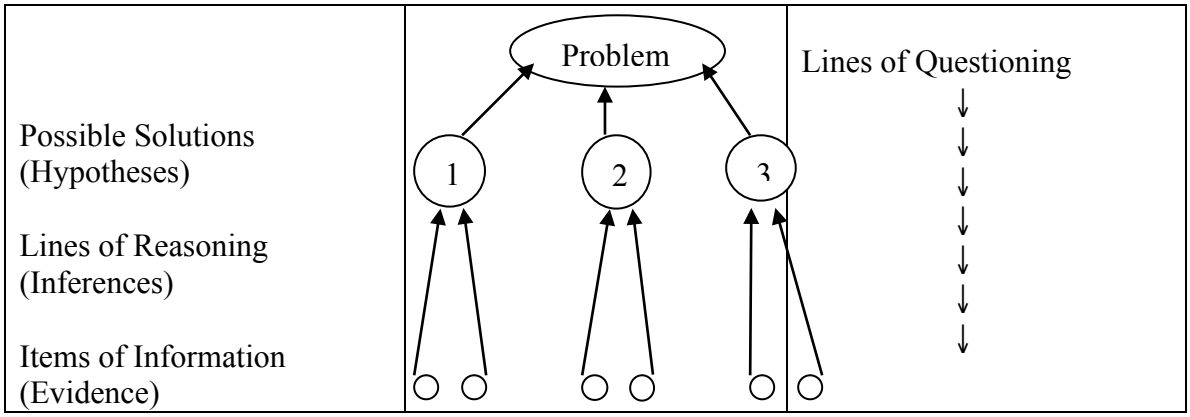

Figure 2. Example of Problem-Centered Lecture Form. Adapted from, *What's the use of Lectures* (p. 73), by D. Bligh, 2000, San Francisco: Jossey-Bass. Copyright 2000 by Jossey-Bass. Reprinted with permission.

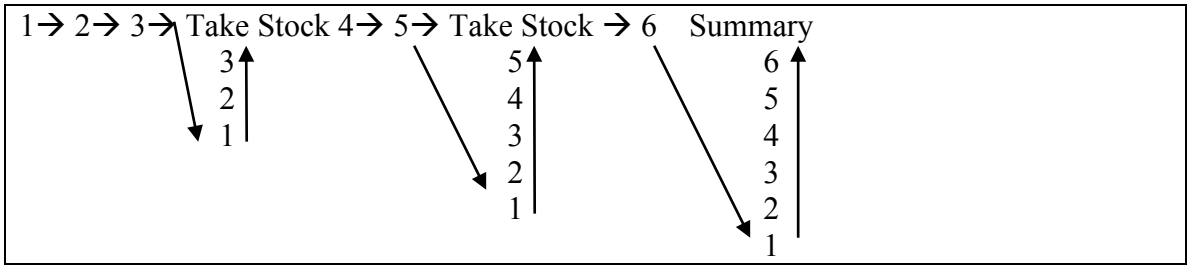

Figure 3. Example of Chaining Form of Lecture. Adapted from, *What's the use of Lectures* (p. 75), by D. Bligh, 2000, San Francisco: Jossey-Bass. Copyright 2000 by Jossey-Bass. Reprinted with permission.

Variations are more complex in nature and may include some combination of the two forms already expressed as well as comparisons of a thesis, a logical dichotomy, or networking of information. Variations, as the name implies, vary in combinations and are more suitable for the advanced lecturer as preparation and delivery are more complicated. The general form of a lecture consists of six parts: concise statement, display, re-expression, elaboration, feedback, and recapitulation (Bligh, 2000). One example of a variation is comparison, which compares the features of two items as seen in the example provided in Figure 1, which is a modified version from Bligh. Other variation forms of lecture not provided in detail here include the thesis, logical dichotomy and networking (Bligh, 2000).

While lectures are effective ways of transferring information (Bligh, 2000; Brown, 1978; Costin, 1972), it is not as effective as discussion methods in promoting thought. Evidence of this thesis can be seen in tables 1 and 2, which have been adopted from Bligh (2000) who summarized numerous experimental studies looking at lecture versus other teaching strategies.

Table 1

Example of a Variation Form for an Anatomical Comparison

Criterion	Upper Limb	Lower Limb
1. Size	1.	1.
2. Strength	2.	2.
3. Dexterity	3.	3.
4. Structure	4.	4.
5. Functions	5.	5.
6. etc	6.	6.

Note. Example of a Variation Form. Adapted from *What's the use of Lectures* (p. 77), by D. Bligh, 2000, San Francisco: Jossey-Bass. Copyright 2000 by Jossey-Bass. Reprinted with permission.

Table 2 views comparisons of lectures with other teaching methods in which accumulation of information is the criterion. The suggested conclusion from this work is that no significant difference exists between lecture and other instructional modes, with the exception of personalized system of instruction (PSI), when it comes to the acquisition of information. On the other hand, Bligh's work seen in Table 3 suggests the effectiveness of promotion of thought by multiple teaching methods in comparison to lecture in multiple studies. The results suggest that lecture is less effective in the promotion of though in comparison to the other instructional methods.

Furthermore, lectures lasting more than 30 minutes are generally thought to be less efficient and less effective because students begin to lose their ability to consolidate information. Techniques are needed to maintain student stimulation. Many researchers advocate the need for more interactive lectures (Bligh, 2000; Cooper et al., 2003). These interactive lectures include cognitive

Table 2

Number of experimental comparisons of lectures with other methods where acquisition of information is main criterion

Teaching Method	Lectures Less Effective	No Significant Difference	Lectures More Effective
Programmed Learning and PSI-Related	20	17	8
Discussion	18	54	22
Reading and Independent Study	10	21	9
Inquiry	6	6	3
Other	27	57	20

Note. Comparisons of lectures with other methods where acquisition of information is the main criterion. Adapted from *What's the use of Lectures* (p. 5), by D. Bligh, 2000, San Francisco, Ca: Jossey-Bass. Copyright 2000 by Jossey-Bass. Reprinted with permission.

Table 3

Number of experimental comparisons of lectures with other methods where promotion of thought is the criterion

Teaching Method	Lectures Less Effective	No Significant Difference	Lectures More Effective
Discussion	29	1	2
Reading and Independent Study	1	3	1
Inquiry	5	1	1
Other Methods	12	17	0

Note. Comparisons of lectures with other methods where promotion of thought is the criterion. Adapted from *What's the use of Lectures* (p. 9), by D. Bligh, 2000, San Francisco, Ca: Jossey-Bass. Copyright 2000 by Jossey-Bass. Reprinted with permission. scaffolding such as think-alouds, partial solutions, and comprehension checks (Cooper et al., 2003). In effort to motivate students via lecture, a speaker must engage the audience while demonstrating enthusiasm (Bligh, 2000).

It is evident that the effect of lecture on student motivation is in question. In effort to make informed decisions on lecture, it is vital to look at the empirical research on lecture.

Empirical research on lecture. There is call for change in the traditional method of teaching that has long dominated the way teachers transfer knowledge in their classroom. As noted by Zemelman, Daniels, Hyde, and Varner (1998), "Virtually all the authoritative voices in each field are calling for schools that are student-centered, active, experiential, democratic, collaborative, and yet rigorous and challenging" (p. viii). Before moving towards this philosophy of teaching, however, it is important for educators to examine recent studies involving lecture.

Statistical difference not found. Many researchers have found little difference between the implementation of lecture and newer innovative teaching techniques. For example, one study suggested that there are not significant differences in test scores between traditional lecture and problem-based learning (Beers, 2005). In another study, significant differences were not found between students who received instruction via traditional lecture versus students who received instruction via computer in their ability to implement a technical skill; however, higher student satisfaction and improved cognitive knowledge were seen in the students who received instruction via computer (Jeffries, 2001). In yet another study comparing traditional lecture and computer based instruction, there is not significant data to display one method as advantageous over the other (Lazari & Simons, 2001). These studies display that lecture can be equal to many teaching strategies in specific instances.

Many researchers have found little difference between the implementation of lecture in comparison to newer, innovative teaching techniques. For example, one study

done in a nursing program found that there are not significant differences in test scores between traditional lecture and problem-based learning (Beers, 2005). This study began with the hypothesis that there was a difference between lecture and problem-based learning (PBL) using content based on diabetes. After the participants completed a pretest, the group was divided in half; one was taught via PBL and the other via traditional lecture. Once both groups' pre and post-tests were compared using an independent t-test, the end result found a null hypothesis as no statistical difference was seen between the two groups. In yet another study comparing traditional lecture and computer based instruction, there is not significant data to display one method as advantageous over the other (Lazari & Simons, 2001).

A study was conducted at Purdue University in the Human Factors Engineering course consisting of 61 participants that examined student content retention following a lecture using Power Point versus traditional lecture (without slides). For assessment purposes, a 20-question multiple choice quiz was utilized to measure performance. Graphic scores, alphanumeric scores, and auditory scores were calculated to find the percent correct for each quiz. The results indicated that graphics are retained more effectively with the use of PowerPoint; there is not a significant difference when it comes to the retention of alphanumeric information, and students retained 15% more auditory information from the lecturer. It has been suggested that students pay more attention to the information on the Power Point slides than what the lecturer is presenting. It is evident that traditional lecture can be more effective depending on what information the presenter wants to get across (Savoy, Proctor, & Salvendy, 2009).

In a study completed on the campus of Valdosta State University, the academic achievements of students taught college algebra via traditional lecture versus online

instruction were compared. For the online instruction, the Interactive Mathematics software by Academic Systems Corporation (ASC) was implemented. Two items were looked for to measure results: (a) retention rate and (b) score on the departmental final exam. During class registration, it was distinguished that some sections would be computer-based instruction while other sections would be traditional. It was found that no statistical difference existed between the two instructional methods for retention rates or academic achievement on the final examination (Lazari & Simmons, 2001). However, there are many examples in the literature where statistical differences are found.

Statistical differences found. Significant differences were not found in the ability of 42 junior baccalaureate nursing students at a large university in the Midwestern United States to implement a technical skill (oral medication administration) who received instruction via traditional lecture versus students who received instruction via computer or CD-ROM; however, higher student satisfaction and improved cognitive knowledge were seen in the students who received instruction via computer (Jeffries, 2001). Data was developed by implementing a pre and posttest design that included a 40-item cognitive measurement tool developed by the instructor of the course based on the class learning objectives. Four expert nurse faculty members in the department validated the cognitive measurement test by analyzing the test results as well. The skill aptitude was calculated by adopting key points from the students' textbook based off of a given checklist. Student satisfaction was measured using an 11-item Student Satisfaction Scale. This study is pertinent because it displays a greater satisfaction in learning, which is inevitably linked to motivation as seen in Keller's (1987a) ARCS model.

In effort to confront the problem of measuring the link between student engagement and learning, a Classroom Behavioral Analysis System (CBAS) was developed (Bulger, Mayer, Almeroth, & Blau, 2008). The CBAS, which measures

student engagement in a computer-equipped classroom, kept track of the number of off-task and on-task Internet visits in a traditional lecture-based lesson compared to a lesson based on interactive-simulation. The results found that students visited more on-task sites and less off-task sites during the interactive-simulation than during the lecture-based lesson. The study suggested that lecture is not as effective in holding student engagement (Bulger et al., 2008), which is directly linked to attention as seen in Keller's framework of motivation (1987a). In sum, this study (Bulger et al., 2008) proposed that lecture lacks in holding motivation because students are not as engaged as they would be in an interactive-based instruction.

Similarly, baccalaureate-nursing students involved in experiential, interactive, method-based courses displayed significantly increased positivity toward subject matter related to nursing research than those in a traditional lecture based course. The attitudes of the students were measured using questionnaires at the end of the term and then compared using a two-tailed t-test (Pugsley & Clayton, 2003). Because this study finds interactive based teaching to increase student satisfaction and Keller (1987a) included satisfaction in his framework of motivation, this study supports the notion that lecture is less effective in increasing student motivation than that of interactive-based instruction.

Three different instruction methods were measured against one another to find whether or not the level of student engagement was equaled, more, or less appreciated by the students. The instructional methods of traditional lecture, student-constructed, and self-teaching were presented to 62 tenth grade students in suburban New York. To measure student learning styles the Dunn, Dunn and Price Learning Style Inventory (LSI) was implemented; the LSI measures student learning preferences based on five basic stimuli and configures each student's learning style. The Comparative Value Scale (CVS) was implemented to measure student attitude toward one of the three teaching

styles. The final instrument used was an instructor-constructed criterion including a pre and posttest to measure academic achievement. The study lasted 3 weeks and consisted of three groups with each group receiving one of the three instructional methods for a week. Once the attitudes of students were measured using the CVS, learning preferences evaluated with the LSI and academic achievement assessed through the instructor's assessment, the results were analyzed. Significant increases in academic achievement and motivation were found with the implementation of student-constructed instruction and self-teaching instructional methods as compared to traditional lecture (McManus, O'Connell, Dunn, & Denig, 2003). This study is significant because it finds lecture to be lacking in comparison to more actively based instruction for motivation as well as academic achievement.

Two groups of high school students were measured for student engagement using the experience sampling method (ESM) which asks students about their perceived levels of "interest, enjoyment, and concentration in a given activity" (Johnson, 2008, p. 72). This study did not require observations as it was driven by perceptions of the subjects. The first group of students attended a non-traditional school that emphasized relational learning, group decision-making, and collaborative work. The second group of students attended a traditional school based on grades, lecture, and predominately independent work. The attendees of the non-traditional school reported higher levels of engagement during lecture, independent work, and school in general than their counterparts. The results of this study support the study's hypothesis, which notes that student engagement is more prevalent in students who are in relational based instruction methods such as student instruction and group-work than those students in a traditional classroom that involves a lecture-based instruction method (Johnson, 2008). Student engagement is linked to student motivation as seen in under the umbrella of attention in Keller's (1987a) motivational model ARCS.

In a North Carolina based study involving 3,688 academically able participants as determined by tests scores and achievement, factors effecting achievement in Algebra I were viewed. Data was collected from two sources including Algebra I scores from the North Carolina Educational Research Data Center (NCERDC) as well as the Duke University Talent Identification Program (TIP). The structural equation modeling (SEM) tool was then implemented to measure multiple variables simultaneously and to answer four questions regarding Algebra I student achievement; one of those questions addresses the effects of lecture on achievement which is pertinent to this study. The study suggested that lecture did not have significant impact on homework and mathematical achievement where as discussion did have significant impact both on time spent on homework and academic achievement (Matthews & Farmer, 2008). The educational implication from this study is to increase class discussion over lecture in able Algebra I courses because it increases time spent on homework, which can be viewed as increased motivation, as well as academic achievement.

In a study driven to view the differences in discussion and lecture on the social influence of high school students, two groups were randomly created among the participants. One group would hear a message through lecture and the other group would hold a guided discussion, both focused on the replacing of toxic products with non-toxic products. A questionnaire was given to the students to determine the attitudes, learning, and perceptions of the message presented. Results from the 357 participants supported the hypothesis that discussion was more effective for changing attitudes, increasing learning, and improving perceptions towards the message than lecture (Werner, Sansone, & Brown, 2008).

A study examining learning from the traditional lecture method versus the questioning

method was conducted involving 43 college students at the University of California Santa Barbara. The study viewed two lab experiments, each of which implemented a 25 slide PowerPoint used to instruct on educational psychology. The lab experiments were identical in procedure but differed in the academic level of participants, as the first experiment used lower-division students while the second experiment used upper-division students. In each experiment students were divided into two groups: a questioning group, which received four inserted questions, and a control group, which received four corresponding statements and explanations by the professor. The questioning group responded to the questions using the personal response system (PRS), which allows students to use a remote control to answer questions as well as view the class results once all students have answered the multiple-choice question. A retention test was implemented and resulted in the questioning group scoring higher than the control group in the first experiment. In the second experiment the questioning group outperformed the control group on a transfer test. This empirical evidence suggests that students learn more effectively when questioning is implemented than when solely lecture is used as an instructional method (Campbell & Mayer, 2009).

In an effort to increase academic achievement for college algebra students, the Mathematics and Computer Science departments at Valdosta State University implemented the Supplemental Instruction (SI) model. The SI model is designed to assist students in difficult courses and involves tutor sessions in between class meetings led by students who assist their peers with study skills and strategies. This study was conducted in an effort to view the effectiveness of the SI model versus traditional lecture. Several sections of college algebra were opened; some were SI courses while others were not. Lower students were encouraged to sign up for the SI courses. The pedagogical difference was that the SI courses included a fifty-minute student led instruction time

while the traditional courses held only traditional lecture. Data was collected for three consecutive courses from the final exam, high school grade point average (GPA), and SAT mathematics score. Results displayed no statistical difference in the results of the final exam test scores. However, the data revealed that students in the SI course did have lower high school GPAs and lower SAT mathematics score. According to the article, the study suggests that students who enter as weaker in math students as seen in the SI courses can score equal to stronger incoming students as a result of the SI course (Lazari & Simmons, 2003). The researcher notes that no control was used to view the final exam results of weaker students enrolled in a traditional lecture course. A control would more effectively validate the SI implementation as the reason for the equal scoring between stronger and weaker incoming math students. Even without the prescribed researcher's amendment, this article still adds to the research suggesting that lecture is less effective than other modes of instruction.

At Arizona State University an extensive study was conducted in the undergraduate level on the perceptions of effectiveness for the lecture method. The study viewed general chemistry courses and found that student-centered small group learning instruction was perceived to be more effective than lecture method. This quantitative study implemented student surveys measuring student attitude toward each instruction model. The results indicate that 84% of the students felt team the student-centered small group method was a more effective route to learning than lecture and 90% felt that small group learning increased responsibility of the learner (Dinan & Frydrychowski, 1995). The researcher felt that although this study supported perceptions of student-centered learning as

motivating, it lacked evidence of effectiveness seen in academic results; it did, however, display satisfaction of the student, a component of Keller's (1987a) ARCS model for motivation.

In a study at a state university in the United States, students perceptions for four objectives were measured including enjoyment, learning, motivation, and career application as a result of five different teaching technologies including: projector, power-point, video, the Internet, and lecture. Students self reported grade point average and perceptions of professor effectiveness. The goal of the study was to find differences in perceptions of teaching methods, the most effective combination of instructional methods, and what contributes most to student performance. Data was retrieved from 215 business students who had taken a two-page questionnaire which included the Student Perceptions of Technology Scale (SPOTS), a measurement tool developed for this study to measure student perceptions of the listed objectives in relation to the noted teaching methods. Results display that video has the highest score for enjoyment; Power Point connects the most to learning and motivation, while the Internet is most linked to career application. Pertinent to the researchers study, lecture was scored lowest for enjoyment Tang and Austin (2009). It should be noted that enjoyment is linked to satisfaction as seen in Keller's (1987a) ARCS model which concludes that this study adds to the dearth of research that lecture is seen as less motivating to students than other instructional methods.

With the inception of iTUNES University, a website where students can access lectures via

podcast, mobile-learning (m-learning) is often provided for students to listen to lectures in a comfortable setting of their choice 24 hours a day, which some claim to be a motivating factor. This study examines whether the resulted learning from a lecture heard via podcast helps, hurts, or is not factor. Participants in the study were general psychology students enrolled in a small liberal arts college in New York. The experiment included posttest for students who were either in a two session podcast-only course or in a two-session lecture-only course. The students in the podcast section also receive PowerPoint notes from the lecture. Student's GPA and SAT scores were obtained to take into account the differences among students before the class. It was found that the students were not significantly different in regards to incoming GPA and SAT scores. At the end of the term, each section would take a final exam to evaluate if statistical differences existed between the two treatments as seen in academic performance. Results display those students in the podcast section scored significantly higher than students in the class lecture-only section. In addition, a questionnaire given to the students in the podcast-only section displayed that they preferred the podcast to the classroom lecture opportunity. As the study notes, this new generation of students, who has not experienced life without cell phones and the Internet, is more eager to use technology in learning than any generation before (McKinney, Dyck, & Luber, 2009). It is evident that lecture is a less motivating instructional method in this study than that of using a podcast of a lecture.

This study examines student perceptions of academic learning and performance in a traditional lecture environment to a student-activating learning environment. The participants

included 578 first year elementary teacher students in a Child Development course. One group of students was taught in the traditional lecture format with multiple- choice tests used for assessments. Four other groups were taught via student-activating methods and assessed in different formats including: multiple-choice tests, peer reviewed, a portfolio, and a case-based assessment. In effort to gather data, the Course Experience Questionnaire (CEQ) was used to measure perceptions of learning and an unexpected standardized test was implemented to measure learning. The results displayed that the lecture- taught students perceived their experience to be positive while student's perception in the student-activating methods setting varied in extremes of negative and positive. The key suggested finding to this study was that perceptions, whether positive or negative, of the instructional method correlate with resulted student learning as seen on the standardized test. The recommendation, then, is to find the teaching method that best fits student's preference (Struyven, Dochy, & Janssens, 2008).

Educators everywhere are seeking ways to provide classrooms with instructional techniques that are rigorous and provide engaged students with opportunities for collaboration and experiential situations (Zemelman et al., 1998). Before moving away from the traditional lecture, however, it is important to view the data results when comparing traditional lecture with other instructional techniques such as Socratic Seminar. There are studies that claim no statistical difference between lecture and alternative-teaching techniques such as problem based learning (Beers, 2005) and online instruction (Lazari & Simons, 2001). Other studies suggest statistically significant differences in favor of alternative techniques such as taking courses online (Jefferies, 2001), targeting student engagement (Bulger et al., 2008), experiential method based

courses (Pugsley & Clayton, 2003) and student-directed courses (McManus et al., 2003). The alternative teaching technique of focus for this study is Socratic seminar.

Socratic Seminar

Socratic Seminar is an alternative teaching technique to traditional lecture that provides not only rigor but also a student-focused and student-driven construct, opportunities for experiential thought, and shared discussion, all of which contribute to increased motivation. For this reason, Socratic seminar is the focus for this study as a proposed alternative technique to traditional lecture for the sake increasing motivation in the classroom. Before looking at the theory of Socratic seminar, it is important to study its deep roots planted by infamous teachers of Western Civilization.

History of Socratic methods. The Socratic methods derive from the Greek philosopher Socrates, who lived in Athens from 470-399 BC and was a contemporary of Aristotle, Xenophon, and Plato, all of whom give differing testimonies. Because Socrates wrote none of his ideas and philosophies down, we are dependent mainly upon Plato's dialogues, where we see Socrates leading his followers to self-contradictions through questioning, and then to true knowledge (Knezic, Wubbels, Elbers, & Hajer, 2009). According to author and teacher Copeland (2005), the goal of Socrates methods are to, "improve student's reasoning skills and ultimately move toward more rational thinking and ideas more easily supported with logic" (p.7). Socrates believed that teaching students to think independently was more important than getting the right answers and the process of questioning taught students to think (Copeland, 2005). The Socratic Method, or *maieutiké tèchne* as it is in Greek, can be translated to the English word midwifery. Socrates, whose mother was a midwife, felt that his job was similar to midwifery; instead of helping to deliver babies however, he helped his students deliver

knowledge. Ironically, Socrates and was accused, tried, and executed for corrupting the minds of the young (Parker, 1979). This corrupting of the young had its roots in the belief that each of his students had untapped knowledge that he could help them to examine through his methodology (Copeland, 2005). Although Socrates' method and philosophy had significant impact on Greek and Roman thought, his ideas were largely forgotten during the Middle Ages. During the Renaissance Era, Socrates' philosophy was once again studied due to a revived interest in Greek tradition. It was not until the 20th century when Neo-Kantian German philosopher Leonard Nelson revived Socrates' method in the field of education by holding student seminars at the University of Göttingen where he taught philosophy. Nelson took aspects from Socrates' method as seen in Plato's Dialogues such as questioning from an unknowing perspective and teaching how to think for oneself while using Kant's examination of our preconditioned knowing. In short, the resulting pedagogy was not seen to increase knowledge, but deepen it (Knezic et al., 2009).

During the Great Books movement between 1910 and 1940, colleagues in the world of education began implementing Socratic method (Copleand, 2005). Scott Buchanan coined the term *Socratic Seminar* in his work with St. John's College New Program (Strong, 1996), which is the term used for this study.

Socratic Seminar hit mainstream education in 1982 when Mortimer Adler's *Paidea Proposal: An Educational Manifesto* was released. Adler (1982) stressed the need for all students to be given an opportunity to receive an education of a democratic society, one that would give "preparation to go on learning, either at advanced levels of schooling or in adult life, or in both" (p. 15). Adler's program was three fold consisting of goals,

means, and areas of operations. His goals included acquisition of knowledge, development of skills, and enlarged understanding of ideas and values. The means to each of these goals included lecture (for knowledge), supervised practice (for skills), and Socratic Seminar (for enlarged ideas and values). Adler (1982) described Socratic Seminar as an instructional method that "stimulates the imagination and intellect by awakening the creative and inquisitive powers. In no other way can children's understanding of what they know be improved, and their appreciation of cultural objects be enhanced" (p. 29).

The idea of Socratic Seminar has continued to show up in organizations such as The Touchstones Discussion Project (Copeland, 2005; Mee, 2000), The Center for Socratic Practice, Junior Great Books, and the Coalition of Essential Schools (Copeland, 2005). Strategies for implementing Socratic Seminar have varied, such as Copeland's Socratic Circles, but they are all modified from the "principles and methodology of Socratic Seminars started in the 1920s" (Copeland, 2005, p. 9). Now that the history has been described, the theory of Socratic Seminar and similar methods will be explored.

Theory of Socratic Seminar. Under the umbrella of Socratic methods are multiple pedagogies claiming their origins to be from Socrates' methods including: Socratic Questioning, Socratic Case Method, Socratic Dialogue and Socratic Seminar. The methods are strikingly similar but employed for differing applications and so defined with slight variations making it important to differentiate between these Socratic methods. Socratic Questioning has been prevalent in psychotherapy and education yet is not clearly defined in any literature (Carey & Mullan, 2004). Yang, Newby, and Bill (2005) described Socratic Questioning as using probing and clarifying questions in a

discussion, while Morell (2004), who uses Socratic Questioning for teaching business ethics, described Socratic Questioning as a cross examination for the sake finding contractions. Socratic Case Method, which is similar to Socratic Questioning, is best known for being the most popular teaching method for United States law schools and defined as having a primary goal to seek underlying principles through a teacher led class discussion (Parkinson & Ekachai, 2002). Socratic Dialogue can be defined as:

> a philosophical group dialogue in which the participants guided by a facilitator and a number of ground rules strive to reach a consensus in answering a fundamental question on the basis of a real-life example or incident with the purpose of achieving new insights (Knezic et al., 2009, p. 2).

Socratic Seminar, the primary term used for this study, is interchangeable with Socratic Dialogue as seen in other studies (Knezic et al., 2009) featuring Socratic Dialogue. The focus for this study is Socratic Seminar, which is a systematic process of questioning and dialogue centered on ideas from a text where students are encouraged to discuss many possible answers (Copeland, 2005; Lambright, 1995; Strong, 1996). As Copeland (2005) points out, "it is the nature and process of that conversation that differs radically from the typical teacher–led, question-and-answer discussion" (p. 9). Unlike traditional lecture, which consists of a teacher pontificating information to students as they respond with answers, Socratic Seminar is student-centered (Polite & Adams, 1996; Strong, 1996) and so engages students with the content by dialoguing with their peers.

The purpose of Socratic Seminar is to examine current beliefs, improve reasoning skills, and ultimately move toward more rational thinking. As Copeland (2005) notes, the goal is not for the participants to debate, but for them to reach a "common vision of truth

and understanding that serves all members of the group equally" (pp. 26-27). Socratic Seminar goes beyond collecting information and getting an answer; instead, the aim is to learn how to think critically (Copeland, 2005). A review of literature illustrates the academic benefits for Socratic Seminar and includes critical thinking (Copeland, 2005; Polite & Adams, 1996; Strong, 1996), creativity (Copeland, 2005; Lambright, 1995), reading, speaking and listening (Copeland, 2005).

As discussed in the introduction, a growing body of literature displays Socratic Seminar provides motivation for students (Copeland, 2005; Mee, 2000; Strong, 1996). According to Strong (1996), through participation in Socratic Seminar "students become intrinsically motivated lifelong learners" (p. 131). It has been suggested that Socratic Seminar is motivating because it makes content relatable to students (Polite & Adams, 1996; Strong, 1996; Tredway, 1995), improves confidence and self-esteem (Strong, 1996), and creates an active learning environment (Lambright, 1995; Strong, 1996). Now that the benefits have been proposed, it is necessary to look at the process and structure of Socratic Seminar.

Empir

ical research on Socratic Seminar. The empirical research on Socratic Seminar, as well as similar variations of Socratic Methods, have not been extensive as Knezic et al. (2009) have indicated; however, several empirically based research studies have been completed and are examined below of which only a few are non-collegiate classroom based studies (Clark-Koellner, Stallings, & Hoover, 2002; Metzger, 1998). In effort to expand the research, all of the described Socratic Methods have been included as well as studies at the collegiate level (Castell & Bridges, 2007; Parkinson & Ekachai, 2002; Yang et al.,

2005) and in the business world (Griessler et al., 2004). In addition, a brief section on empirically driven student-led discussion studies is examined (Applebee, Langer, Nystrand, & Gamoran, 2003; Castell & Bridges, 2007).

At the high school level, empirical research has seen the application of Socratic Seminar resulting in students who more engaged and performing at a higher academic level than those receiving traditional lecture (Clark-Koellner et al., 2002; Metzger, 1998). Creating high interest in mathematics is the goal of the Standards (Clark-Koellner et al., 2002), which is why the entire math department at Forest Park High School in Forest Park, Georgia, uses Socratic Seminars several times each year. For this study, all six teachers in the math department taught the same lesson by applying Socratic Seminar in each of their assigned sections as well as a control for one of their sections in which traditional lecture was applied. Quantitative results suggested that students in the Socratic Seminar sections outperformed students in the traditional lecture method sections. Qualitative results implied that math students described Socratic Seminar sections as more fun and engaging in comparison to the traditional lecture style courses (Clark-Koellner et al., 2002). This study is relevant because it pertains to high school students and displays positive results for Socratic Seminar in comparison to traditional lecture; however, the manner in which data was collected is not thoroughly explained and therefore is not necessarily dependable for statistical accuracy.

After years of exploring techniques to teach high school students how to improve reading comprehension with little success, high school teacher Margaret Metzger (1998), found her solution in Socratic Seminar. Metzger based her implementation of Socratic Seminar on Dennis Gray and Mortimer Adler's Paidea Seminar approach in effort to

teach students the skills needed to interpret a difficult piece of literature by holding a noncompetitive student led discussion with the goal of a complete understanding of multiple interpretations of the text rather than one right answer. In her experiment, 48 high school freshmen students went through a series of Socratic Seminars using multiple texts led by the author. Metzger noted that at the beginning of her experiment she did a lot of talking, but as the experiment went on she spoke less and less finding that students learned more when they led as they were forced to discover answers. In addition, Metzger implied that when she did become involved in the discussion, it was for the sake of asking how students had come to a specific understanding of a text. At the end of Metzger's experiment she measured student learning with a final exam and students opinions of the Socratic Seminar based unit. Results from the final exam displayed that 47 of the 48 students "did well" on the exam. In addition, the qualitative results of the student surveys displayed students felt enthusiastic about the Socratic Seminars (Metzger, 1998). This study is useful because it suggests high school students finding motivation and learning from Socratic Seminar as seen in the data. However, it is not clear whether the results are reliable for research purposes because no control group existed and it is unclear what is meant by students "did well" on the final exam. Although this study points to Socratic Seminar being a quality and motivating method of teaching, more in depth research is needed to add to the body of quality research on Socratic Seminar in the high school classroom.

At the collegiate level empirical research has been seen applying the Socratic Case Method (Parkinson & Ekachai, 2002) as well as Socratic Questioning (Yang et al.,

2005). Studies display both of these Socratic methods result in increased critical thinking as described below.

At Texas Tech University, the Socratic Case Method was used in an experiment to teach principles of public relations in a comparative experimental study. The study involved 227 undergraduate students in two courses, one course was taught in the traditional lecture method while the other implemented a slightly modified form of the Socratic Method referred to as the Socratic Case Method. Pre and post questionnaires were administered for quantitative data as well as discussion groups with 50 students for supplemental purposes. Student perception of a Socratic Case Method was viewed in contrast to the traditional lecture method in respects to: knowledge retained, confidence of ability to apply knowledge, practice of critical thinking, opportunity for problem solving, motivation to work in public relations, and satisfaction of the course. The results displayed that there were not statistical differences found for four of the categories; however, the Socratic Case Method based course yielded statistically significant student perceptions of increased opportunity for critical thinking and problem solving (Parkinson & Ekachai, 2002).

A quasi-experimental study examining the effects of Socratic Questioning on critical thinking skills (Yang et al., 2005) was completed with veterinarian students. This study differed from others because the Socratic Questioning intervention occurred online. The online Socratic Questioning-based discussions were analyzed using a coding scheme and revealed that the students who had participated in the treatment group had developed significantly deeper levels of critically thinking skills. Data was also collected quantitatively using the California Critical Thinking Skills Test (CCTST) and displayed

significantly higher levels of critical thinking for students involved in the online Socratic Questioning treatment group. This study adds to the research for promotion of developing critical thinking skills due to Socratic methods, especially for online courses. Socratic Methods, such as Socratic Dialogue, have also been empirically researched outside of the education field. For example, one research project employed the use of Socratic Dialogue to examine what extent the teaching tool is appropriate for the discussion of ethics in regards in public debate for xenotransplantation (Griessler et al., 2004). Two Socratic Seminars of the same content were held in three countries, Spain, Austria, and Germany. For data collection purposes, participants completed self-reports while non-participating evaluators observed and implemented pre and post interviews. Results suggested not only an increase in awareness, but also an increased understanding of the content and an improved ability to communicate interpersonally. The greater part of participants recommended Socratic Dialogue to be used in the future as it provided a clear framework for discussion that is democratic in nature (Griessler et al., 2004). Although this research was not done at an educational institution, it is evident that Socratic Dialogue can be used for teaching content while improving communication of learners.

Student led discussions are similar to Socratic Seminars because the students, not the teachers, are leading the class while the teacher serves only as a facilitator. Empirical research has been completed at the middle school, high school and collegiate level as seen below to display student increase in their joy for learning (Castell & Bridges, 2007; Clarke & Lane, 2005) as well as increased understanding of the content (Applebee et al., 2003; Castell & Bridges, 2007).

In a study examining discussion-based approaches to understanding literacy in 64 middle school and high school classrooms, results implied discussion-based instruction methods for teaching literacy as effective for internalizing the knowledge and skills necessary to engage independently in literacy. Controls for previous knowledge as well as many other significant variables such as background and academic history were taken into account. Discussion was described as at least 30 seconds of an exchange of ideas involving more than two students related to subject matter. Measures were taken through teacher and student questionnaires for student literacy performance as well as with Nystrand's CLASS 3.0, which is a program for analyzing classroom and discussion. Each class was observed four times, students and teachers completed questionnaires in the spring and students were assessed in the fall and spring (Applebee et al., 2003). This study accurately displays the value of dialogic instruction in the middle school and high school classroom for student performance, but does not view student motivation.

In a study on students at the undergraduate level at Penn State University (Castell & Bridges, 2007), professors defined their student led seminar courses as containing student led discussions with the instructor serving as a facilitator, which is similar to Socratic Seminar as students are leading an depth discussion. For this study, both authors taught a course in their area of expertise where students took turns leading class in teams of three or four by forming questions from instructor-selected readings. The student created questions were discussed first with the instructor for consultation and then distributed to the class 48 hours prior to the student led discussion class. Students were graded on their participation in discussions, weekly reaction papers, their ability to lead class discussion,

as well as an end of the term paper on a topic indirectly related written in a social science style to be presented the last week of the class. All classes were measured by two standard University student surveys and compared to the results of identical courses taught by the same professors in a traditional lecture style. In the results of the first survey, which averaged the seminar course scores and compared them to the averaged lecture based course scores, seminar style courses received higher ratings for quality of course, quality of instructor, adequacy of information learned, and instructor's skill in encouraging students to apply concepts. In the second survey, which was qualitative, 71% of students described the thing they liked best about the course was the discussion based format (Castell & Bridges, 2007). This study supports the notion that students are motivated by the discussion-based classes and find view it superior in quality to lecture based courses at the undergraduate level.

Studen

ts in another study held at the undergraduate level perceived that their learning was enhanced as a result of student discussions. In this study, student discussions were fused into the course throughout the semester as tutorial sessions rather than being a part of the class itself. Focus group interviews showed qualitative evidence that students preferred the discussion based intervention while quantitative data displayed evidence that students who participated in the discussion groups outperformed students in the control group who did not have opportunities for discussion based tutorial sessions. While the results do not claim that the discussion groups are the reason for the students outperforming the control group, the focus groups had suggestive evidence that students flourish and enjoy the meaningful discussion provided by the small group discussions (Clarke & Lane, 2005).

from the middle school and high school level display student perception towards Socratic Seminar as enthusiastic and engaging. Results for academics were suggested to be superior for Socratic Seminar in relation to traditional lecture as seen in the results. However, the studies were questionable as they lacked sufficient evidence for their methods. At the collegiate level, it was clearly seen that Socratic Seminar resulted in increased critical thinking and problem solving as well as joy towards the process. The method is also as seen successful outside the education field because it enhances learning and the ability to communicate. Student-led discussion, which is similar to Socratic seminar as they are not run by the teacher and focus on the learner, resulted in more motivated students and perceptions of superiority towards the discussion based model over the teacher led lecture. There is a need for empirical studies on the motivational results of Socratic Seminar at the secondary level.

Summary

The purpose of this chapter was to explore research in the areas of motivation, traditional lecture, and Socratic Seminar. The history of motivation was viewed in light of the major theories that have been researched, then defined and categorically described between extrinsic and intrinsic. The ARCS's Model of Motivational Design, which synthesizes the major research on motivation into four conditions, is described as it is the model used for this study to define motivation. Recent research displays educational motivation as being positively impacted by student choice, praise, high expectations, and opportunities for independent thinking. Lecture, which was found to be a traditional way of teaching dating back to ancient European universities, was viewed in research by

comparing it to other teaching techniques. Some studies display lecture as having no significant differences in effectiveness while more studies display lecture as being less successful in comparison with other teaching strategies. Socratic Seminar was then analyzed from a historical perspective, dating back to the time of Socrates, defined from multiple perspectives, and empirical research taken into account. The research suggests that Socratic Seminar style courses can result in student satisfaction towards their courses, critical thinking skills, communication, as well as increased academic performance. However, it was seen that a lack of empirical studies have been completed at the secondary level. From this research it is evident that more research needs to be done to view the motivational outcomes on students participating in Socratic Seminar versus traditional lecture at the secondary level.

Chapter III. Methodology and Procedures

Purpose Question

The purpose of this study was to identify the extent to which, if any, differences exist in the relationship between students' motivation toward learning and the degree of their teachers' fidelity to Socratic Seminar methods of instruction versus traditional lecture methods.

This chapter begins with a description of research design and rationale, moves to population and sample, and then focuses on setting, sampling procedures, human participants, procedures and instrumentation. The internal reliability and analytical techniques are also discussed before the chapter concludes with a summary.

Research Design and Rationale

A quantitative correlational design was implemented with a cross-sectional data collection administered post-implementation of traditional lecture and post-implementation of Socratic Seminar over a three-week period. The differences in two correlations were analyzed: (a) students' motivation toward learning by teachers' fidelity to Socratic Seminar methods of instruction and (b) students' motivation toward learning by teachers' fidelity to traditional lecture methods of instruction. Motivation towards learning among high school students who receive instruction via Socratic Seminar versus traditional lecture is the desired phenomenon to be measured by the researcher. The unit of analysis was 11th grade English students at Lutheran High School of Orange County enrolled in English class. The rationale for implementing this study at the high school level was due to the lack of reputable research on student motivation for learning as a result of Socratic Seminar found in this age group.

There have been studies at the middle school and high school level displaying student perception towards Socratic Seminar as enthusiastic and engaging; in addition, studies have displayed superior academic results as a result of Socratic Seminar in relation to traditional lecture (Clark-Koellner et al., 2002; Metzger, 1998). However, these studies done at the middle school and high school level were questionable as they lacked sufficient evidence for their research methods. At the collegiate level, studies have indicated that Socratic Seminar resulted in an increase in critical thinking and problem solving as well as joy towards the process of learning (Castell & Bridges, 2007; Parkinson & Ekachai, 2002; Yang, 2005). In addition, studies done in the business world (Griessler et al., 2004) have indicated an increase in understanding of the content and an

improved ability to communicate interpersonally. While much reputable research has been done on motivation towards learning as a result of Socratic Seminar in the primary grades, collegiate level, and in the business world, there is a need for reputable research at the high school level.

One data source for this study was a slightly modified version of the Course Interest Survey ([CIS] see Appendix A) used with permission of the author (see Appendix E). The rationale for using the modified version of Keller and Subhiyah's (1993) CIS is that it was designed specifically to measure student motivation as defined by the ARCS Model (Keller, 1987a) towards learning as a result of a teaching strategy. The CIS measures each of the four psychological constructs found in the ARCS Model, which encompass the major research on motivation from the lens of classroom instruction.

In addition, the Degree of Implementation Survey (see Appendix B) was implemented to measure the degree of the teachers' fidelity to Socratic Seminar methods of instruction versus traditional lecture methods.

Population and Sample

The sampling method to be used was a census of all students enrolled in 11th Grade English at Lutheran High School of Orange County. The rationale for conducting a census rather than a sample is formed by the small population size, which totals, 130 students. A census had the added benefit of allowing the researcher to review detailed responses from every student.

Setting

The setting for this study was at Lutheran High School of Orange County (Lutheran) located in the city of Orange, California. Lutheran is a co-educational Christian school established in 1973; it utilizes 166 faculty and staff members to support 1400 students, grades 9-12. Lutheran is accredited by the Western Association of Schools and Colleges (WASC) as well as the National Lutheran School Accreditation Organization (NLSA). Lutheran offers state and nationally recognized programs in academics, athletics, and in the arts. The class of 2009-2010 average SAT score was 1560, which is in the 50th percentile of the nation. The class of 2009-2010 average ACT composite score was 23, which is also in the 50th percentile. While most families at Lutheran are able to pay the $11,000 annual tuition, 14% of the families are on financial aid. In addition, the demographics of the student population consist of 78.7% Caucasian, 9.9% Hispanic, 4.7% Asian, 4.3% African American, 2% other, and .04% Native American. The quantitative research will take place in the English classrooms.

Sampling Procedures

In order to obtain the necessary participants the researcher first confirmed with Jack Prues, the Vice Principal, for approval to complete the research and access the students and English teachers at the school. Next, the researcher sought permission from teachers to participate in the study via e-mail. To gain motivation for teacher participation, the researcher offered participating teachers analyzed data for comparing the two instructional methods as seen by students' responses. Teachers consent to participate in the study was collected using the "Informed Consent for Participation in

Research as an Instructor" (see Appendix E). These were distributed and collected during the teacher training session.

Once the teachers agreed to participate, the researcher met with the teachers involved for a training session (described further below) at Lutheran for the implementation of Socratic seminar and traditional lecture as defined in this study. Following the training, the researcher contacted all involved English teachers via e-mail to coordinate a three-week period in which it is possible to survey Socratic Seminar and traditional lecture. Once the dates were set, the researcher came to Lutheran a week before the quantitative data research began to discuss the research with the English teachers. At this time, the researcher asked what content the teachers were planning on teaching during the data collection time. The instructional content was equivalent for Socratic Seminars and traditional lectures.

Socratic Seminar Training Session

In effort to provide consistency for the implementation of Socratic seminar in this study, the researcher provided one 30-minute training session at Lutheran for the 11th grade English teachers from Lutheran two weeks prior to the data collection phase. The curriculum for the training was developed from the Background and Theory of Socratic seminar sections of this paper. The training was implemented using a Socratic seminar in effort to model the instructional strategy. The training began as the teachers were asked to read a four-page article by Tredway (1995) entitled "Socratic Seminars: Engaging in Intellectual Discourse". This was one of the articles used by the researcher in the development for the definition and purpose of Socratic seminar for this paper and will be the chosen text for the training Socratic seminar. The teachers sat in a Socratic circle

while the researcher began with the following opening question, "What is the purpose of Socratic seminar?" As the group discussed the researcher wrote key ideas on the board. Once the group came to a common understanding for the purpose and the discussion was adequately discussed, the researcher asked, "What are the key components for Socratic Seminar?" Next, the researcher provided a document with the purpose and essential components of Socratic seminar as defined for this study for the reading of the group (see Appendix G). At this point, the researcher asked to compare and contrast the group's ideas in regards to purpose and key components for Socratic seminar. Lastly, the researcher asked for the components found in this document to be included in the Socratic seminars, which will be used for data collection purposes.

Traditional Lecture Training Session

A training session for the implementation of traditional lecture was also necessary to ensure consistency of implementation for this study. For this reason, the researcher also provided one 30-minute training session at Lutheran for the 11th grade English teachers for the implementation of traditional lecture from Lutheran directly following the Socratic Seminar training session. Because two differing styles of lecture have been defined under the umbrella of traditional lecture, hierarchic and chaining, both were discussed and considered acceptable for data collections purposes.

The curriculum for the training was developed from the Background and Theory of traditional lecture sections of this paper. In effort to model the desired instructional strategy, the researcher provided a traditional lecture to the teachers in regards to the elements necessary for a traditional lecture. The researcher lectured in hierarchic form and provided his personal lecture notes in hierarchical form (see Appendix H), which also

included examples of chaining style lecture. Once the traditional lecture was completed, the researcher checked for understanding by asking if the audience had any questions regarding lecture.

Human Participants

The participants did not interact with the researcher because the researcher did not personally distribute or collect the survey and is in no way affiliated with the school. All 11th grade students enrolled in English were invited to participate in the study by their teacher. Participants in the study were informed of the nature of the research and given the option to withdraw or participate. The participants were notified that Lutheran had no involvement in the study and participation in the survey in no way reflects on to their course grade or outcome. Before students were able to participate in the study, a parental consent (see Appendix I) and assent for a minor (see Appendix J) or a participant consent (see Appendix K) were obtained from students who were 18 years of age or older. The consents provided full disclosure of the participant's involvement, description of the study, and were given without any form of coercion. If the participant was a minor, his or her parent or legal guardian had to sign the parental consent (see Appendix I) and he or she had to sign the assent for a minor (see Appendix J) before the student was allowed to participate in the study. If the student was a non-minor (18 years of age or older), the participant had to sign the participant consent (see Appendix K). In order to distribute the consents, the English teachers passed out the consent forms during class. During this class time the teacher described the study to the students and asked them to bring the form back the following day by reading a script provided by the researcher (see Appendix L). This class time took place the week prior to the beginning of the actual study. The

teachers involved kept a tally of students who returned their consent forms on a teacher provided class roster. During the actual survey, teachers did not pass the survey to any students who had not returned their consent forms. The necessary sample size of 102 students was obtained within three days of the beginning of the study.

Once the necessary number of 102 parental consents was obtained, the quantitative data research strategy began. Any survey forms turned in from students who did not have prior consent were discarded. For students who choose not to participate, a course relevant reading was assigned and offered to participants to read as other students took the survey; they were required to be in class for the instructional time as the content was relevant to the course. Teachers only provided the survey to students who had been marked by the teacher on their roster that indicated students had returned both their minor and parental consent forms.

Risks for this study included boredom of taking a modified version of the CIS (see Appendix A) six times, fatigue, and the loss of class time for the sake of research. Students were given a maximum of 10 minutes to complete the surveys in effort to minimize use of class time; teachers read directions form a script provided by the researcher with instructions adopted from Keller & Subhiyah's (1993; see Appendix L). Potential benefits included a better understanding of the motivational tendencies for these students that would better inform the faculty at Lutheran as well as similar settings. It was estimated that students would benefit more from the Socratic Seminar sessions and the traditional lecture would serve as a typical high school lesson. Students remained anonymous to the extent of names and demographics, but were specific to the extent of

grade level, class, and school. Individual student names were not used in this study to protect confidentiality and privacy rights for each student.

As already described, participants were minors so their parents were contacted signed off on a written consent allowing their children to participate. Pepperdine's Institutional Review Board (IRB) as well as the Vice Principal at Lutheran was asked to approve the written consent before being issued to the parents. The written consent indicated that all students would be asked to share their personal perceptions of motivation on a survey.

Procedures

The quantitative data collection spanned the time of an eight-week period. The researcher and English teachers coordinated prior to the eight-week period to confirm dates for the parental and participant consent distribution and collection, Socratic Seminars with surveys to follow, and traditional lectures with surveys to follow for the 11th grade English courses. Once the dates were confirmed, the first week consisted of distribution and collection of consent forms during English class time. Parental consent forms (see Appendix I) were used for minors and participant consent forms (see Appendix K) were used for students who were 18 years of age or older. It is important to note that this school runs on a block schedule so the teachers may not see students everyday. Teachers used time at the beginning of class during the first day they saw their class in the first week in effort to distribute and explain the research study and consent forms. Students were notified that participation did not include the involvement in the instructional strategies, only involvement in the taking of the surveys. The teacher asked for the consent forms to be signed and returned the following day the class met at the

beginning of English class. Parents were asked on the parental consent form to review the forms with their student and were notified that they were able to ask the researcher any questions should they have concerns before returning the form. Students who did not bring consent forms on the due date as a result of forgetfulness or carelessness were encouraged by the teacher to bring them the following day. During weeks 2 through 8 of data collection, teachers implemented three Socratic Seminars with the modified CIS survey (see Appendix A) and Degree of Implementation survey (see Appendix B) administered and collected directly following each Socratic Seminar. Teachers also implemented three traditional lectures with both surveys administered and collected directly following each traditional lecture. The instructions (see Appendix M) for both surveys were read by the teacher to the class each time the survey was administered. Since the students were evaluating the teachers' adherence to the instructional methods, teachers designated a student to collect the surveys and roll sheet in a large envelope (provided by the researcher) that the student sealed and delivered to the Vice Principal at the end of each session. The Vice Principal kept the large envelopes with the data in his office until the researcher picked them up. The researcher collected the data each day at 4:30pm once all classes had been completed. The two instructional strategies were counterbalanced; they were never implemented back-to-back, but rather follow and precede one another. In addition, the order of implementation was counterbalanced with some starting with Socratic Seminar and others with traditional lecture.

In an effort to prepare for the data collection period, the researcher made five packets (one for each English class) using yellow envelopes, each of which contained seven items: one overview of the study script for the teachers (see Appendix L), 40

parental consent forms (enough for each student with extras; see Appendix I), 40 minor assent forms (see Appendix J), 40 participant consent forms (see Appendix K) directions for the CIS (see Appendix M) and Degree of Implementation Survey for the teacher to read (see Appendix B) as well as 240 modified CIS surveys (enough for each student to take six times; see Appendix A) combined with 240 Degree of Implementation surveys (enough for each student to take six times). The teachers kept the blank surveys in their desk until the next administration of surveys. Following the final implementation of the surveys, the teacher gave the blank surveys to the designated student to put in the envelope.

In addition to the directions, students were asked to provide an identification number, which was to be the first three letters of their mother's name and the numbers from their street address. Students were given 10 minutes post-instruction during class time for completion of the surveys upon which time the teacher collected the data. The researcher kept the data in his office in a locked cabinet until all the data was analyzed**.** Once the data was analyzed all data is to be kept by the researcher in a confidential file for 3 years. After 3 years the researcher will use a shredder to destroy the data.

Instrumentation

There were two instruments implemented for this study, the modified CIS (see Appendix A) and the Degree of Implementation survey. The first measured student motivation towards learning while the second measured the degree of teachers' fidelity to Socratic Seminar methods of instruction versus traditional.

Course Interest Survey. The CIS was not created for general motivation for school learning, nor does it measure that; the CIS measures motivation toward learning for a specific situation. In one example, CIS scores from 200 Georgia students were correlated with their course grades and grade point averages, Keller and Subhiyah (1993) noted, "All of the correlations with course grade are significant at or beyond the .05 level, and none of the correlations with grade point average are significant at the .05 level" (p. 5). This displays the validity of the CIS for situational specific measure of motivation and not general motivation towards learning.

The CIS was originally created to measure the motivation towards learning in light of a specific course but can be adapted to alternative situations by trading the words "this course" to words such as "this lesson" or "this lecture" (Keller & Subhiyah, 1993). A modified version of the CIS (see Appendix A) will be used to quantitatively measure student motivation towards learning as a result of the traditional lecture and Socratic Seminar. Dr. Keller has given personal consent of its modification and use for this research (see Appendix E). The modification consists of substituting the word "course" to "the lecture method used in this course" or to "the dialog method used in this class" applied appropriately following lecture or Socratic Seminar making the survey situation specific rather than generalized to the entire course. The wording was developed by the author of the instrument for this research via personal communication (see Appendix E). It should be noted that while all items are stated in the positive, they are a reflection of the opposite of the item being measured and therefore scored in reverse (see details under "Scoring" section).

The development process for this instrument resulted from 10 adults, mostly graduate students, who had reviewed a number of motivational tools and researched the concepts and strategies that make up what is now referred to as the ARCS Motivational Model. In an effort to make sure that the newly constructed tool was not ambiguous, the 10 adults took the new survey twice. The first time they were to "fake good" (Keller & Subhiyah, 1993, p. 2) and the second time they were asked to "fake bad" (Keller & Subhiyah, 1993, p. 2). That is, the first time they took the survey they intentionally scored it as though the course was completely motivating; the second time they took the survey they marked it as though the course was totally "unmotivating" (Keller, 2006, p. 2). Keller found some questions were found to be ambiguous as seen when students "faking good" scored some questions as motivating so he revised or deleted the questions.

The results provided a quantitative response to the question of motivation towards learning as described by high school students as a result of Socratic Seminar versus traditional lecture.

Degree of implementation. In addition, the researcher created an instrument for determining the degree of teachers' fidelity to Socratic Seminar methods of instruction versus traditional lecture. This instrument was created by taking the essential components of instructional strategy according to the literature and asking the participants if those essential components are present. Table 4, seen below, displays the instructional strategy, essential component, literature describing the component as essential, and the questions associated with each essential component. The purpose of

creating Table 4 was to show content validity connecting each item on the survey to the literature.

Table 4

Development of Degree of Implementation Survey

Instructional Strategy	Essential Component	Literature Linking Strategy and Component	Statement Associated with Essential Component
Socratic Seminar	Students seated in a circle	(Copeland, 2005; Lambright, 1995; Strong, 1996; Mee, 2000).	You sat in a circle during today's class.
	Students engaged in discussion		You engaged in the discussion during class today.
	Text (or portion of text) selected	(Copeland, 2005; Lambright, 1995; Strong, 1996; Mee, 2000).	There was a text (or portion of text) selected by the teacher for you to read in preparation for today's class discussion.
	Opening question provided by the teacher	(Copeland, 2005; Lambright, 1995; Strong, 1996; Mee, 2000).	During class today, the teacher provided an opening question for you.
	Student led discussion	(Copeland, 2005; Lambright,	During class, you and your fellow students provided more discussion than did the teacher.

		1995; Strong, 1996; Mee, 2000). (Copeland, 2005; Lambright, 1995; Strong, 1996; Mee, 2000).	
Traditional Lecture	Teacher dominates speaking Student note taking an expectations	(Strong, 1996; Copeland, 2005; (Bligh, 2000; Brown, 1978)	Your teacher provided most of the speaking in class. Your teacher expected you to take notes from his/her lecture content

Scoring

There are four subscales in the CIS; each subscale encompasses one of the four constructs from the ARCS Model (Keller, 2006). Each subscale was scored and a total scale score was to be calculated as well. The subscale results served to enable the researcher to view each construct individually while the total scale was to provide an overall number. There are 34 questions, the minimum score is a 34 and the maximum is a 170 making the midpoint 102. Because the survey is specific to each situation, norms do not exist and therefore norms for distribution do not exist. Total scores and subscale scores will be determined by summing the responses. The following questions are summed under the subscale of attention: 1, 4, 10, 15, 21, 24, 26, and 29; the following

questions are summed under the subscale of relevance: 2, 5, 8, 13, 20, 22, 23, 25, and 28; the following questions are summed in the subscale of confidence: 3, 6, 9, 11, 17, 27, 30, and 34; the following questions are summed in the subscale of satisfaction: 7, 12, 14, 16, 18, 19, 31, 32, and 33. Some questions, nine total, are given in a negative manner so their scores will be reversed, "5 = 1, 4 = 2, 3 = 3, 2 = 4, and 1 = 5" (Keller, 2006). These questions include: 4, 26, 8, 25, 6, 11, 17, 7, and 31.

In effort to score the Degree of Implementation Survey, each ordinal level was been assigned a number. Specifically, "definitely false" equals a score of one, "mostly false" is a score of two, "don't know" is a score of three, "mostly true" is a score of four, and "definitely true" is a score of five. For questions one through five, the higher the number equates to a higher fidelity to Socratic Seminar methods by teachers and a lower number equates to a higher fidelity towards traditional lecture. For questions six and seven, a higher number equates to a higher fidelity to traditional lecture by teachers and a lower number equates to a higher fidelity towards traditional lecture.

Internal Reliability

In regards to the CIS (Keller, 2006), past research found that "internal consistency estimates, based on Cronbach's alpha, were satisfactory" (p. 5). The reliability estimate for each scale was as follows: attention = .84, relevance = .84, confidence =.81, satisfaction = .88, for a total scale of .95. These results qualify the CIS as an internally reliable instrument for measuring motivation towards teaching instruction.

Analytical Techniques

Once the surveys were completed, the researcher tallied all the scores within their subscales

using the CIS scoring guide (Keller, 2006) as well as the Degree of Implementation Survey. The researcher was then able to provide a quantitative response to the question of students' motivation toward learning by teachers' fidelity to Socratic Seminar methods of instruction and students' motivation toward learning by teachers' fidelity to traditional lecture methods of instruction. Then, the researcher was to apply the Fisher r-to-z transformation. Because motivation to learn is an interval variable and lecture method and Socratic Seminar are nominal, a t-test (analysis variance) would be appropriate (Tuckman, 1999).

Chapter 4: Results

Overview

The purpose of this study is to identify the extent to which, if any, differences exist in student motivation towards learning among students in high school English courses as a result of instruction via Socratic Seminar versus traditional lecture.

Research Question

This study focused on the analyzing of the following two research questions:

RQ1.To what extent, if at all, are there differences in the motivation toward learning of students in high school English courses as a result of instruction via Socratic Seminar versus tradition lecture?

RQ2.To what extent, if at all, is there a relationship between teachers' fidelity in implementation of Socratic Seminar and their students' motivation toward learning?"

The population for the study included 139 11th grade students at Lutheran High of Orange County. In effort to measure student motivation towards learning the researcher administered a modified version of Keller's Course Interest Survey (CIS) (see Appendix A). In effort to measure the degree of teachers' fidelity to Socratic Seminar methods of instruction versus traditional lecture, the researcher used the Degree of Implementation Survey, which was developed by the researcher for this study. Both surveys were implemented a total of six times; three times following a Socratic seminar and three times following a traditional lecture. This resulted in 106 respondents in the researcher's analysis.

Modifications of Procedures

There are several differences in the implemented study from what was proposed by the researcher in the procedures section of Chapter 3. The Institutional Review Board has reviewed and approved these modifications. First, the study spanned eight weeks rather than the anticipated three. This was done upon petition of teachers who needed more time to implement the requested methods of teaching (traditional lecture and Socratic seminar) three times each. Second, the population was moved from 12th grade English students to 11th grade English students. This change resulted in a change of population size from 130 to 139 and thus a change in necessary sample size[1] from 97 to 102. The change in grade level also resulted in two teachers available to participate in the study rather than five. Lastly, the procedures had called for students to provide an anonymous identification number, which included the first three letters for their mother's maiden name followed by the numbers of from their home address. This was not completed accurately and therefore unavailable data collection. For this reason, the analytical techniques were modified.

As seen in the analytical techniques section of chapter three, the researcher intended on tallying each participant's individual responses and applying a Fisher r to z transformation followed by a t-test to provide a quantitative response. Because the collection of data students' identification numbers were not recorded, it was not possible to track individual students and apply the proposed tests. In effort to provide a quantitative response to the question of students' motivation toward learning by teachers' fidelity to Socratic Seminar methods of instruction and students' motivation toward learning by teachers' fidelity to traditional lecture methods of instruction, the responses

[1] Sample size calculator used to determine sample size

were viewed as a group through the application of chi-squares. The researcher applied chi-squares to analyze the group's results for each question from the modified CIS (see Appendix A). Then, the results were analyzed via Cramer's V, also known as Cramer's phi, to measure effect size of the instructional strategy on students' motivation. Cramer's V was used within the individual constructs of motivation as described by the CIS, which include: attention, relevance, confidence and satisfaction. Utilizing the Quinnipiac University Instructors Resource Guide (n.d.) for Statistics the following guidelines for interpreting Cramer's *V* correlations were adopted:

- Cramer's *V* = .25 or higher Very strong relationship
- .15 to .25 Strong relationship
- .11 to .14 Moderate relationship
- .06 to .10 weak relationship
- .01 to .05 No or negligible relationship

By applying these modifications, the first Research Question is addressed via testing of the first hypothesis, that students receiving English instruction via Socratic Seminar would report significantly higher levels of motivation towards learning than when receiving English instruction via traditional lecture. However, due to the lack of collecting student identification numbers, the researcher was not able to address the second Research Question.

Data Analysis

The following is an explanation of results regarding the first Research Question, organized according to each construct of motivation followed by the results of the Degree of Implementation.

Attention

Student ratings were compared for eight items pertaining to attention based on whether they received Socratic or lecture style. For six of the eight items, no statistically significant differences were found. For the other two items (see Table 5) statistically significant differences were found. Inspection of these results indicate Socratic Seminar teaching style received statistically significant more favorable ratings for students' focus during class (Statement 26) as students were more likely to daydream during a lecture; this style of instruction can be explained for 14% of the difference from lecture if explained by the instructional method rather than other extraneous variables. Lecture style received statistically significant more favorable ratings for making students feel

Table 5

Items Measuring Attention with a Statistically Significant Difference

Statement	*P*-Value	Cramer's *V*	Experienced more often in following method
1. The instructor knew how to make us feel enthusiastic about the subject matter in today's class.	>0.01	0.16	Lecture
26. I often daydreamed while in today's class.	0.02	0.14	Lecture

Note. The numbers indicated in the statement column represent the number of the statement as seen on the Course Interest Survey (see Appendix A).

enthusiastic (Statement 1); this style of instruction can be explained by 16% of the difference from Socratic seminar rather than other extraneous variables.

Relevance

Student ratings were compared for nine items pertaining to relevance based on whether they received Socratic or lecture style. For five of the nine items, no statistically

Table 6

Items Measuring Relevance with a Statistically Significant Difference

Statement	*P*-Value	Cramer's *V*	Experienced more often in following method
2. The things I learned in today's class will be useful to me.	0.02	0.14	Lecture
20. The content of today's class relates to my expectations and goals.	0.02	0.14	Lecture
22. The students actively participated in today's class.	>0.01	0.18	Socratic Seminar
28. The personal benefits of today's class were clear to me.	0.03	0.13	Lecture

Note. The numbers indicated in the statement column represent the number of the statement as seen on the Course Interest Survey (see Appendix A).

significant differences were found. For the other four items (see Table 6) statistically

significant differences were found. Inspection of these results indicates the lecture teaching method received statistically significant more favorable ratings for three of the four items. These items measured for students' perceptions of things learned (Statement 2), content relating to personal expectations and goals (Statement 20) and personal benefits (Statement 28); the preponderance of the teaching method implemented accounting for the difference rather than a different variable was seen as 14%, 14%, and 13% respectively. Table 6 also indicates that a statistically significant difference is seen favoring Socratic seminar regarding active participation in class (Statement 22); this style of instruction accounts for 18% of the difference.

Confidence

Studen

t ratings were compared for eight items pertaining to confidence based on whether they received Socratic or lecture method. For five of the eight items, no statistically significant differences were found. For the other three items (see Table 7) statistically significant differences were found. Inspection of these results indicate Socratic seminar received statistically significant more favorable ratings for two of the three items, these two items measured students' perception of personal success in class (Statement 9) and dependence of success in class contingent on self (Statement 27). The preponderance of the teaching method is explained by 18% and 13% respectively for each statement rather than numerous extraneous variables. Lecture received statistically significant more favorable ratings for the amount of feedback to determine success in class (Statement 34), this method of instruction accounts for 13% of difference measured.

Table 7

Items Measuring Confidence with a Statistically Significant Difference

Statement	*P*-Value	Cramer's *V*	Experienced more often in following method
9. Whether or not I succeeded in today's class was up to me.	>0.01	0.18	Socratic
27. As I was in today's class, I believed that I could succeed if I tried hard enough.	0.04	0.13	Socratic
34. I got enough feedback to know how well I did in today's class.	0.04	0.13	Lecture

Note. The numbers indicated in the statement column represent the number of the statement as seen on the Course Interest Survey (see Appendix A).

Satisfaction

Student ratings were compared for nine items pertaining to satisfaction based on whether they received Socratic or lecture method. For eight of the nine items, no statistically significant differences were found. For the remaining item (see Table 8) statistically significant differences were found. Inspection of these results indicates lecture method received statistically significant more favorable ratings for the amount of effort provided by the student to achieve success (Statement 7). The weight given to the implemented instructional method rather than other extraneous variables was 13%.

Table 8

Items Measuring Satisfaction with a Statistically Significant Difference

Statement	*P*-Value	Cramer's *V*	Experienced more often in following method
7. I had to work hard to succeed in today's class.[a]	0.03	0.13	Lecture

Note. The numbers indicated in the statement column represent the number of the statement as seen on the Course Interest Survey (see Appendix A). [a] This statement is written in reverse.

Degree of Implementation

Student ratings were compared for seven items pertaining to degree of implementation based on whether they received Socratic or lecture method. Statistically significant differences were found in all seven of the items. Inspection of these results (see Table 9) indicate Socratic seminar to be favorable for statements regarding students' sitting in a circle (Statement 1), students engaging in discussion (Statement 2), pre-reading assignment (Statement 3), a teacher provided opening question (Statement 4) and student-centered discussion (Statement 5). The instructional method implemented accounts for 48%, 34%, 25%, 26%, and 33% of the difference, respectively. Lecture method was favorable for statements regarding teachers as the primary speaker (Statement 6) and teacher expectation for taking notes (Statement 7). This instructional method explains 34% and 27% of the difference seen opposed to other extraneous variables.

Table 9

Items Measuring Degree of Implementation with a Statistically Significant Difference

Statement	*P*-Value	Cramer's *V*	Experienced more often in the following method
1. You sat in a circle during today's class	>0.01	0.48	Socratic
2. You engaged in the discussion during class today.	>0.01	0.35	Socratic
3. There was a text (or portion of text) selected by the teacher for you to read in preparation for today's class discussion	>0.01	0.25	Socratic
4. During class today, the teacher provided an opening question for you.	>0.01	0.26	Socratic
5. During class, you and your fellow students provided more discussion than did the teacher.	>0.01	0.34	Socratic
6. Your teacher provided most of the speaking in class.	>0.01	0.34	Lecture
7. Your teacher expected you to take notes from his/her lecture content.	>0.01	0.27	Lecture

Note. The numbers indicated in the statement column represent the number of the statement as seen on the Degree of Implementation Survey (see Appendix B).

Summary

Regarding attention (see Table 5), Socratic seminar is preferred over lecture for focus during class (Statement 26) as students were more likely to daydream during a lecture, while lecture is preferred over Socratic seminar with statistically significance

concerning students feeling of enthusiasm toward the subject matter (Statement 1). The instructional style of Socratic seminar accounted for a moderate relationship (14%) of the variance for focus while the instructional style of lecture accounted for a strong relationship (16%) for the difference rather than other extraneous variables.

Concerning relevance (see Table 6), lecture was preferred with statistical significance for statements measuring students' perceptions of things learned (Statement 2), content relating to personal expectations & goals (Statement 20) and personal benefits (Statement 28). There was a moderate relationship (14%, 14%, and 13%, respectively) between the instructional method and the variance measured. A statistically significant difference was seen favoring Socratic seminar for active participation in class (Statement 22), there was a strong relationship (18%) seen between the instruction method and the difference.

With respect to confidence (see Table 7), when it came to self-reported success in class (Statement 9) and success in class as being dependent upon self (Statement 27), Socratic seminar received statistically significant more favorable ratings. There was a strong relationship (18%) between the method of instruction and the difference regarding self-reported success. There was a moderate relationship (13%) between the style of teaching and the variance for when it came to success in class as being dependent upon self. For items measuring the amount of feedback received for effort (Statement 34), lecture received favorable ratings, the instructional method accounted for a moderate relationship (13%) of the difference.

In view of satisfaction (see Table 8), lecture was preferred with statistical significance when

it came to the amount of effort provided by the student to achieve success (Statement 7); the instructional method accounts for a moderate relationship (13%) of this difference.

In assessing the degree of implementation, it was found with statistical significance that instructors utilizing Socratic seminar were committed to the style of instruction as students more likely to have the experiences of sitting in a circle (Statement 1), engaging in discussion (Statement 2), having a pre-reading assignment (Statement 3), a teacher provided opening question (Statement 4) and student-centered discussion (Statement 5). The method of teaching implemented accounts for very strong relationship (48%, 35%, 25%, 26%, and 34%) with the variance. The results from the degree of implementation also display instructors implementing lecture method as dedicated to the style of instruction as students were more likely to experience the teacher as the primary speaker (Statement 6) and provide an expectation for taking notes (Statement 7). The method of instruction is seen to have a very strong relationship (34% and 27% respectively) with the variance.

These data will be discussed in Chapter 5 along with a summary of findings, implications for schools and recommendations for further research.

Chapter V: Discussion

Introduction

This chapter begins with a comparison between the literature that agrees and disagrees with this study's findings. Next, the researcher discusses controversies in the literature followed up with a synthesis of those controversies for the purpose of conveying the need for this study. Then, conclusions and implications are made by the researcher followed by recommendations for future research, policy, practitioners, and lastly a summary of the completed study.

Literature Supporting the Findings

An analysis of the current results indicates that when instructors implemented Socratic Seminar students were more likely to be actively participating in class compared to lecture (Statement 22). This is similar to a study at the high school level with quantitative results suggesting students were engaged more in comparison to the traditional lecture based courses (Clark-Koellner et al., 2002). Parallel findings to the researcher's results are seen in another study at the high school level in the English classroom where students felt engaged as a result of Socratic Seminar (Metzger, 1998) as indicated by 47 of the 48 participants. The researcher's results also support studies displaying greater student engagement for interactive lessons in comparison to lecture (Bulger et al., 2008; Johnson, 2008).

Further analysis of the research suggested that Socratic Seminar is favorable for providing more responsibility for success on the student opposed to the instructor. In support of this finding, a study completed at Arizona State University by Dinan

and Frydrychowski's (1995) indicated that 90% of students felt learner responsibility increased due to small group discussion over lecture.

Literature Not Supporting the Findings

An examination of the findings revealed that students preferred lecture to Socratic Seminar in in the area of feeling enthusiastic towards the subject matter (Statement 1). However, results by Tang and Austin (2009) at a state university differ with the present study's results. Their study found lecture as the lowest for enjoyment by students in comparison to a variety of alternative teaching techniques. Additionally, contrasting findings to the researcher's results are seen at the high school level in the English classroom where students felt more enthusiastic as a result of Socratic Seminar (Metzger, 1998) rather than lecture. Another quantitative study at the high school level suggested that students had more fun in comparison to the traditional lecture based courses (Clark-Koellner et al., 2002). Similarly, in Pugsley and Clayton's (2003) study with nursing students results suggested that experiential based courses, such as Socratic Seminar, produce greater amounts of positivity towards the subject matter do lecture based courses.

Controversies in Literature

By comparing the present study's results with prior literature it can be seen that this research bridges a number of gaps in the research already completed. One gap that this study fills is the need to view quality research at the high school level. While there have been studies done at the high school level, the quality of that research is questionable. For example, in Clark-Koellner et al.'s (2002) study at the high level involving six math teachers in Forest Park, Georgia, results suggested that students felt the Socratic Seminar based classes were more engaging. However, the study lacked a

control class (such as lecture) to compare the results of student perceptions towards Socratic Seminar. In addition, their results lack clarity, as the article did not have specific detail as to what is meant by *student engagement* or explain how the results were compiled. Another problem with their study is that the ability of the teachers to implement Socratic Seminar was not taken into account or measured.

In another study done at the high school level, Metzger (1998) studied her own English classroom; the fact that the teacher is also the researcher calls into question social desirability of responses. The actual results from Metzger's study indicated that 47 of 48 students, "did well" on a test following Socratic Seminar, but it is not clearly defined what warrants a, "did well" for a test versus a "did not do well." In the same study, it notes that student's felt "enthusiastic" towards Socratic Seminar; however, how students felt towards the actual content rather than the instructional method is not defined. In addition, a control group was not involved to compare the tests results and how students felt towards the Socratic Seminar. It could be reasoned that students feel "enthusiastic" about Metzger's class no matter what instructional method is implemented, but it is impossible to tell without the necessary control group.

To find results that are more dependable it is necessary to view findings at the collegiate level and middle school level. However, these studies differ in multiple ways from the research in this study. For example, studies done by Parkinson and Ekachai (2002) at Texas Tech University and Yang et al. (2005) at a veterinarian school display increases in critical thinking and problem solving in favor of Socratic Case Method and Socratic Questioning over traditional lecture. While these studies are useful and noteworthy, they were not seeking to measure for student motivation as defined in the

ARCS Model (Keller, 1987a) towards learning nor did they examine at the exact same instructional strategy. Similarly, other studies at the collegiate setting have the similar shortcomings, such as Castell and Bridges' (2007) experiment at Penn State University comparing discussion-based methods to lecture or Clarke and Lane's (2005) research comparing small group discussion to lecture based courses. These studies are all similar in that they were done at the collegiate level instead of the high school level, measuring for a phenomenon other than student motivation toward learning, deviated from the Socratic Seminar method, and the facilitating professors were not measured for their fidelity to implement the given instructional strategy. In fact, there are many more studies viewed by the researcher at the collegiate level that implement an alternative teaching technique featuring a discussion-based instructional model similar to Socratic Seminar during class time. These, however, are similar to the examples already mentioned as they neither involved students at the high school level nor measured student motivation as defined by the ARCS Model (Bulger et al., 2008; Dinan & Frydrychowski, 1995; Johnson, 2008; Keller, 2006; McKinney et al., 2009; McManus, O'Connell, Dunn, & Denig, 2003; Pugsley & Clayton, 2003; Tang & Austin, 2009; Werner, Sansone, & Brown, 2008).

In prior studies in which lecture had no statistical differences as compared to alternative instructional methods, not only was the alternative instructional technique inherently different than Socratic Seminar, but the desired phenomenon to be measured was not equivalent to this study. For example, in Beers' (2005) study at a nursing program, lecture was found to be equivalent to problem-based teaching by measuring test scores.

Similarly, Lazari and Simmons' (2001) research compared lecture and computer-based learning by viewing test scores. Similar discrepancies can be found in studies by Jeffries (2001) at a nursing program as well as in the work of Savoy et al. (2009) at Purdue University.

Conclusions and Implications

While educational leaders are looking to improve test scores, this researcher believes that educators should be instilling a joy or motivation toward learning in students that will last a lifetime. If students are motivated toward learning our students will enter into the world as people who pursue learning for a lifetime. For this reason, understanding which methods of instruction are best for student motivation is essential to teaching.

The results of past research as well as the present study, however, display a more complicated answer than simply suggesting that either of the two methods of instruction studied would be more motivating for student learning. Rather, it was found that in certain areas of motivation Socratic Seminar was more motivating towards learning than lecture while other areas of motivation were perceived to be higher as a result of lecture. For this reason, the researcher believes it is important for teachers to maintain a balance of lecture and Socratic Seminar throughout their instruction. Employing both instructional methods will provide opportunities for each area of student motivation to be addressed on a regular basis.

For example, both Socratic Seminar and lecture support attracting students' attention. Students' attention is often lost because students are indifferent or lack curiosity toward a given topic. However, lecture can support attention in the area of

enthusiasm while Socratic Seminar can keeps students from daydreaming throughout the class. Since both of these are important to student motivation, each method of teaching can enhance the other. Similarly, both Socratic Seminar and lecture can contribute to relevance. Making a topic relevant through connecting it to students' lives is a part of motivation, but this can be difficult as students vary in goals, interests, and learning styles. Lecture is supportive toward relevance in the areas of students' personal goals, benefits to their lives and the clarity of content to their life, while Socratic Seminar offers a better opportunity for students to participate in class. It appears that there is a difference in student motivation when it comes to perception of understanding content versus perception towards the process. Upon inspection of the individual items seeking to measure relevance that displayed results with statistically significant differences (See Table 6), it seems that items that are content-related, such as content learned in class being useful, relating to personal goals or being beneficial, are preferred for lecture while items that are process-related, such as participation in class are preferred for Socratic Seminar. Further, an increase of confidence can contribute to student motivation and can be supported by both teaching styles in differing ways. Socratic Seminar can support student confidence in the area of student perception toward ownership over their own success, while lecture can have more of an impact on students' perceptions towards feedback on their progress in class. The present study's results suggest that lecture was seen to support a feeling of needing to work hard during class, though Socratic Seminar may contribute in other areas of motivation.

It should be noted that the CIS (see Appendix A) measures for the presence of perceived frequency of an action, such as participation in class or a feeling of needing to work hard, not preference for that action.

In view of each area of student motivation, it is clear than both instructional strategies are necessary to support student motivation; leaving one of these methods out deprives students of an opportunity to be more motivated towards learning in multiple areas. A balanced instructional approach of lecture and Socratic Seminar typically requires the addition of Socratic Seminar to the classroom, since lecture is already the predominant method of teaching (Bligh, 2000; Costin, 1972; Cueso, 1996).

These implications lend themselves to high school principals and English teachers that seek to instill motivation toward learning in their students. High school principals and English teachers have an opportunity to create a change by instilling an increased amount of motivation toward learning in their students.

Recommendations for Future Research

Prior to this study, quality research had been undertaken at the collegiate level and in the business world regarding Socratic Seminar, but was lacking at the high school level. As a result of this study the researcher has found results that suggest that the high school students in this study are more motivated towards learning in some areas by Socratic Seminar and more motivated by lecture in other areas. However, research is still required regarding differences in motivation toward learning between those of different ethnicities, genders, socio-economic strata, grade levels, subject content being taught, and public versus private school.

Additionally, it was found in this study that when there was a significant difference between Socratic Seminar and lecture for student motivation, the difference was explained only in part to the method of instruction. Therefore, further study should address this matter.

Methodological Enhancements

Limitations of this study included time and money. If the researcher had greater resources there are a number of items that could have enhanced the study. For example, the study could have employed trained observers instead of self-reporting, thereby increasing the reliability of the study. In addition, the study could have included more students across multiple schools, tracked longitudinally over the course of several years. Groups of students who had substantially more sessions of Socratic Seminar or lecture respectively in high school could be compared to students who had significantly less sessions of Socratic Seminar or lecture respectively in high school with post-secondary motivation and grade point average examined. This could provide an insight into the long-term impacts of student motivation toward learning resulting from Socratic Seminar versus lecture in high school. Another valuable enhancement would be taking into account students' personalities or learning preferences and examining to what they report as motivating them to learn. Lastly, multiple measures of student motivation towards learning could be implemented in differing subject areas.

Policy Recommendations

Given the findings of this study, the researcher recommends the implementation of Socratic Seminar as part of the single-subject credential curriculum for English

teachers. Since lecture is already the dominant form of teaching found in classrooms (Bligh, 2000; Costin, 1972; Cueso, 1996), the researcher believes it is unnecessary to provide further training in this method as well. A new curriculum would focus on the research, theory, and application of both instructional methods and result in teachers who are well equipped to instill student motivation towards learning.

Practitioner Recommendations

The researcher recommends a focused professional development similar to the one implemented in this study. Local principals should instruct his or her teachers by utilizing the Socratic Seminar method rather than lecture, as did the researcher for the purpose of modeling and motivation. In addition, creating a common assessment for what quality Socratic Seminar looks like with the English teachers can create a common understanding of Socratic Seminar and provide a rubric for the principal to observe and provide feedback to the teachers. Teachers at school sites without the recommended professional development should apply a balance of these instructional strategies through the integration of Socratic Seminar as described in their instruction.

Summary

Instilli

ng motivation towards learning in their students is often a major challenge for high school teachers. Instilling motivation in students is critical, however, because as it increases, so too does student learning (Lumsden, 1995; Vansteenkiste et al., 2005). In an effort to define motivation in this context, Keller's (1987a) research can be infused as it incorporates the major research on motivation in the classroom from the past several decades. According to Keller's research, the ARCS Model unveils the four conditions

that are necessary for motivation to be present: (A) attention, (R) relevance, (C) confidence, and (S) satisfaction. These conditions served as the framework for examining motivation toward learning for this study. There have been numerous attempts to create student motivation towards learning through a myriad of instructional strategies. Among those teaching techniques is Socratic Seminar, an inquiry based teaching method where the teacher's role is to provide questions from a text, piece of music, or art in an effort to lead students into a discussion as they sit in a circle (Copeland, 2005; Lambright, 1995; Strong, 1996). This teaching instruction differs from teacher-centered traditional lecture that lacks the level of student engagement seen in Socratic Seminar (Polite & Adams, 1996; Strong, 1996). While there has been a wealth of research on instructional techniques that increase motivation towards learning (Eccles, Wigfield, 1993; Eccles, Lord, 1991; Keller, 1987a; Lumsden, 1994) and a plethora of research on the theory of Socratic Seminar (Adler, 1982; Lambright, 1995; Polite & Adams, 1996; Strong, 1996; Tredway, 1995), there is a lack of research which links student motivation towards learning and Socratic Seminar at the high school level.

The researcher examined prior literature regarding history, theory and empirical research concerning motivation, traditional lecture, and Socratic Seminar. In regards to motivation, dominant theories were viewed, described and classified between extrinsic and intrinsic. This literature points to student choice, praise, high expectations, and opportunities for independent thinking as being prominent factors for student motivation towards learning. Recent research on lecture is mixed. Some results suggest lecture as being an equally effective teaching technique to alternative techniques, while many studies display these alternate teaching techniques as superior. Prior research suggests

that Socratic Seminar can result in satisfaction toward their courses, critical thinking skills, communication, as well as increased academic performance. Little empirical studies, however, had previously been conducted at the secondary level. For this reason, a need continues for research needs at the secondary level to view student motivation towards learning as a result of Socratic Seminar.

For this study, a quantitative comparative and relational design was implemented with a cross-sectional questionnaire administered post-implementation of three traditional lectures and three Socratic Seminars over an eight-week period. Two questions were to be analyzed in this study: students' motivation toward learning by teachers' fidelity to Socratic Seminar methods of instruction and students' motivation toward learning by teachers' fidelity to traditional lecture methods of instruction, though the second of these matters were not able to be analyzed due to difficulties with data collection. The researcher applied chi-squares and Cramer's V to analyze the group's results for each question from the modified CIS (see Appendix A). Then, the results were analyzed within the individual constructs of motivation as described by the CIS: attention, relevance, confidence and satisfaction. The study was completed at an independent Christian high school located in Orange County in three 11th grade English classes where Socratic Seminar was already a normal teaching strategy.

The results from this study suggest that students' motivation toward learning is largely higher as a result of Socratic Seminar versus lecture in a number of areas of motivation. Lecture was found to be preferred over Socratic Seminar in other areas of motivation. In addition, teachers implementing Socratic Seminar were more likely to have students sit in

a circle, have students engage in discussion, provide an opening question, provide a text to be read prior to class and for the class to be student-centered. Teachers implementing lecture where more likely to be the primary speaker and hold the expectation for student note taking.

In effort to increase student motivation in English classes at the secondary level, a balance of Socratic Seminar and lecture should be a regular practice. Since lecture is already an integrated part of instruction (Bligh, 2000; Costin, 1972; Cueso, 1996), the integration of Socratic Seminar is necessary to address an increased amount of areas for student motivation. To accomplish this task it is recommended to include the instruction of Socratic Seminar in the curriculum for all Single Subject credentialing programs. The first step towards implementing Socratic Seminar is providing English teachers and principals at the high school level professional development focused in the implementation of Socratic Seminar. Teachers could then be held accountable through a common rubric created at the local school site, enhancing buy-in and understanding for Socratic Seminar. Teachers without the prescribed professional development are encouraged to apply both instructional strategies and to integrate Socratic Seminar by utilizing the descriptions found in this study.

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APPENDIX A

Course Interest Survey

John M. Keller
Florida State University

1 = Not true
2 = Slightly True
3 = Moderately true
4 = Mostly true
5 =Very true

1. The instructor knew how to make us feel enthusiastic about the subject matter in today's class.
2. The things I learned in today's class will be useful to me.
3. I feel confident that I did well in today's class.
4. Today's class had very little in it that captures my attention.
5. The instructor made the subject matter of today's class seem important to me.
6. You had to be lucky to get good grades in today's class.
7. I had to work hard to succeed in today's class.
8. I do NOT see how the content of today's class relates to anything I already know.
9. Whether or not I succeeded in today's class was up to me.
10. The instructor created suspense when building to a point.
11. The subject matter of today's class was just too difficult for me.
12. I feel that today's class gave me a lot of satisfaction.
13. In today's class, I tried to set and achieve high standards of excellence.
14. I felt that the grades or other recognition I received were fair compare to other students.
15. The students in today's class seemed curious about the subject matter.
16. I enjoyed working for today's class.
17. It was difficult to predict what grade the instructor will give me for assignments pertaining today's class.
18. I am pleased with the instructor's evaluations of my work compared to how well I think I have done.
19. I feel satisfied with what I got done in today's class.
20. The content of today's class relates to my expectations and goals.
21. The instructor did unusual or surprising things in today's class that were interesting.
22. The students actively participated in today's class.
23. To accomplish my goals, it was important that I do well in today's class.
24. The instructor used interesting teaching techniques in today's class.
25. I do NOT think I benefited much from today's class.
26. I often daydreamed while in today's class.
27. As I was in today's class, I believed that I could succeed if I tried hard enough.
28. The personal benefits of today's class were clear to me.
29. My curiosity was often stimulated by the questions asked or the problems given on the subject matter in today's class.
30. I found the challenge level in today's class to be about right: neither too easy, nor too hard.
31. I felt rather disappointed with today's class.
32. I felt that I received enough recognition for my work in today's class by means of grades, comments, or other feedback.
33. The amount of work I had to do was appropriate for today's class.
34. I got enough feedback to know well I did in today's class.

APPENDIX B

Motivational Categories of the ARCS Model (1987b)

Categories & Subcategories	Process Questions
Attention	
A.1 Perceptual Arousal	What can I do to capture their interest?
A.2 Inquiry Arousal	How can I stimulate an attitude of inquiry?
A.3 Variability	How can I maintain their attention?
Relevance	
R.1 Goal Orientation	How can I best meet my learners needs?
R.2 Motive Matching	How and when can I provide my learners with choices, responsibilities, and influences?
R.3 Familiarity	How can I tie the instruction to the learner's experience?
Confidence	How can I assist in building a positive expectation for success?
C.1 Learning Requirements	How will the learning experience support or enhance the student's beliefs in their competence?
C.2 Success Opportunities	How will the learners clearly know their success is based on their efforts and abilities?
C3. Personal Control	How can I provide meaningful opportunities for learners to use their newly acquired knowledge/skill?
Satisfaction	What will provide reinforcement to the learners' success?
S.1 Natural Consequences	How can I assist the students in anchoring a positive feeling about their accomplishments?
S.2 Positive Consequences	
S.3 Equity	

Note. From "The Systematic Process of Motivational Design," by John Keller, 1987, *Performance and Instruction, 26*, 1-8. Copyright (1987) John M. Keller. Adapted with permission from author.

APPENDIX C

Motivational Design Activities and Process Questions

Phases & Activities	Process Questions
Define	
1. Audience motivation analysis	What are the audience's motivational attitudes toward the courses to be offered?
2. Motivational objectives	What do I want to accomplish with respect to the motivational dynamics of the audience? How will I determine whether I have accomplished my motivational objectives?
3. Motivational criterion measures	
Design	
4. Generate potential strategies	How many possible strategies are there that might accomplish the motivational objectives?
5. Select strategies	Which strategies seem to be most acceptable for this audience, instructor, and setting?
6. Integrate strategies	How do I combine the instructional and motivational components into an integrated design?
Develop	
7. Prepare motivational materials	How do I locate or create motivational materials to achieve the objectives?
8. Enhance existing instructional materials	How do I rework the instructional material to improve its motivational appeal?
9. Development test	How can I get feedback as to whether these motivational strategies are likely to work?
Pilot (Evaluate)	
10. Implement with T-pop	How do I prepare for and conduct a pilot test with representatives of the target population?
11. Evaluate effects	How can I detect the expected and unexpected motivational effects of the

(Continued)

12. Certify or revise	Course? How do I determine whether the course should be revised or go “online”?

Note. From “The Systematic Process of Motivational Design,” by John Keller, 1987, *Performance and Instruction, 26*, 1-8. Copyright (1987) John M. Keller. Adapted with permission from author.

APPENDIX D

Letters

Dr. Keller,

I have been searching for an instrument to measure the motivation of students towards various teaching methods and I have come across a number of references citing the Course Interest Survey created by yourself. I am inquiring to see if you would be willing to let me use the CIS for my research. I would appreciate your help, please feel free to contact me anytime via phone or e-mail.

Monday, June 15, 2009 11:19 PM

Dear Ben,

Thank you for your kind message! I am happy to give you permission to use the CIS. The attached document contains the instrument and scoring information

Sincerely,

John K.

John M. Keller, Ph.D.

Florida State University

Official ARCS Model Website: http://arcsmodel.com

Professional Website: http://mailer.fsu.edu/~jkeller/JohnsHome/

Sent: Tue 6/16/2009 11:01 AM To: Roberson, Benjamin (student) Subject: CIS

Dr. Keller,

I would like to make sure I am using your CIS instrument correctly. Can the CIS be used to measure a student's reaction to a specific classroom technique and compare it to the use of another technique? For example, I am comparing the motivation of students as a result of the implementation of traditional lecture versus Socratic Seminar in the same classroom with the same instructor. I did find in Molly Mee's dissertation on the Motivation of Socratic Seminar (2000) the following pertinent information, "Keller maintains that the word course can be substituted with other words such as class, seminar, lecture, and discussion (J.M. Keller, personal communication, March 5 2000)." Perhaps I can modify the CIS instrument by substituting the word "course" for "today's class?" Would this suffice? Thank you for your thoughts.
Ben Roberson-----Original Message-----

Sent: Monday, June 22, 2009 7:44 PM **To:** John M. Keller **Subject:** RE: CIS

Ben,

Yes, you are correct. You could even make the reference more specific by saying “the lecture method used in this course” in the one case, and “the dialog method used in this class” for the other setting. But, if you want to say “this course” in both classes to keep the wording the same, that would be good.

This instrument is a situation-specific measure, so it is okay to specify the exact situation in which you are using it.

Best wishes,

John K.

John M. Keller, Ph.D.

Florida State University

Official ARCS Model Website: http://arcsmodel.com

Professional Website: http://mailer.fsu.edu/~jkeller/JohnsHome/----------

Sent: Tue 6/22/2009 11:01 AM To: Roberson, Benjamin (student) Subject: CIS

Dear Ben,

That will be okay.

Thank you,
John K.

John M. Keller, Ph.D.
Professor Emeritus
Educational Psychology and Learning Systems
Florida State University

Official ARCS Model Website: http://arcsmodel.com

Professional Website: http://mailer.fsu.edu/~jkeller/JohnsHome/

Announcement (now available): Keller, J.M. (2010), *Motivational Design for Learning and Performance: The ARCS Model Approach.* New York: Springer.

"Good judgment comes from experience, and a lot
of that comes from bad judgment."
From "Don't Squat with Your Spurs On:
A Cowboy's Book of Wisdom."

From: Roberson, Benjamin
Sent: Sunday, June 20, 2010 8:17 PM
To: John Keller
Subject: Request for Use of Tables

Dr. Keller,

I am working on my literature review for my dissertation which includes two tables from your 1987 article entitled, "The Systematic Process of Motivational Design." My professor Dr. Doug Leigh has asked me to seek permission from you to adopt the tables from the article, the title of the tables are "Motivational Categories for the ARCS Model" and "Motivational Design Activities and Process Questions" and are listed as "Table 1" and Table 2. I appreciate your support and am happy to provide more information. Thank you Dr. Keller,

Ben Roberson

APPENDIX E

Degree of Implementation

Directions: For each of the following statements, circle the response that best fits.

1) You sat in a circle during today's class.

Definitely False *Mostly False* *Don't Know* *Mostly True* *Definitely True*

2) You engaged in the discussion during class today.

Definitely False *Mostly False* *Don't Know* *Mostly True* *Definitely True*

3) There was a text (or portion of text) selected by the teacher for you to read in preparation for today's class discussion.

Definitely False *Mostly False* *Don't Know* *Mostly True* *Definitely True*

4) During class today, the teacher provided an opening question for you.

Definitely False *Mostly False* *Don't Know* *Mostly True* *Definitely True*

5) During class, you and your fellow students provided more discussion than did the teacher.

Definitely False *Mostly False* *Don't Know* *Mostly True* *Definitely True*

6) Your teacher provided most of the speaking in class.

Definitely False *Mostly False* *Don't Know* *Mostly True* *Definitely True*

7) Your teacher expected you to take notes from his/her lecture content.

Definitely False *Mostly False* *Don't Know* *Mostly True* *Definitely True*

APPENDIX F

Informed Consent for Participation in Research as an Instructor

Participant/ Instructor: _____ _____

Principal Investigator: Ben Roberson, Head of School at Calvary Christian School & Educational Leadership Administration & Policy Student at Pepperdine University.

Title of Project: *Effects of Socratic Seminar on High School Student Motivation*

1. I, _____ (Instructor's Name), agree to participate in the research study being conducted by Ben Roberson under the direction of his advisor Dr. Douglas Leigh.
2.The overall purpose of this research is to identify the extent to which, if any, differences exist in the relationship between students' motivation toward learning and the degree of their teachers' fidelity to Socratic Seminar methods of instruction versus traditional lecture methods; both of which are standard instructional procedures and which are being implemented regardless of participation in the study.
3. My participation will involve the following: Implementing Socratic Seminar three times as defined by the study, implementing traditional lecture three times as defined by the study, implementing 2 a surveys three times each. The first is the Course Interest Survey which has 34 questions on a scale from 1 to 5 (1 being "Not True" and 5 being "Very True") which will determine if the student felt the instruction was motivating or not. The second survey is the Degree of Implementaiton Survey which has seven questions on a scale from 1 to 5 (1 being "Definitely False" and 5 being "Definitely True") which will determine the degree of' teachers' fidelity to the provided instructional method. The surveys will take about 10 minutes to answer. Students will take the survey six times, once after each of three Socratic Seminars and once for each of three traditional lectures.
4. I understand that the possible benefits from this research are: a better understanding of the motivational tendencies for these students that would better inform the faculty at Lutheran as well as similar settings.
5. I understand that there are certain risks and discomforts that might be associated with this research. These risks include: boredom of taking the CIS (Keller, 2006) six times, fatigue, and the loss of class time for the sake of research. Students are given a maximum of 10 minutes to complete the surveys in effort to minimize use of class time.
6. I understand that my participation is voluntary and that I may refuse to participate and/or withdraw my consent and discontinue participation in the project or activity at any time without penalty or loss of benefits to which I am otherwise entitled.
7. I understand that the investigators will take all reasonable measures to protect the confidentiality of my records and my identity will not be revealed in any publication that may result from this project. The confidentiality of my records will be maintained in accordance with applicable state and federal laws. Under California law, there are

exceptions to confidentiality, including suspicion that a child, elder, or dependent adult is being abused, or if an individual discloses an intent to harm him/herself or others.
9. I understand that the investigator is willing to answer any inquiries I may have concerning the research herein described. I understand that I may contact Ben Roberson or his supervisor, Dr. Douglas Leigh if I have other questions or concerns about this research. If I have questions about my rights as a research participant, I understand that I can contact Dr. Yuying Tsong, Interim Chairperson of the GPS IRB Board of Pepperdine.
10. I will be informed of any significant new findings developed during the course of my participation in this research, which may have a bearing on my willingness to continue in the study.
11. I understand that in the event of physical injury resulting from the research procedures in which I am to participate, no form of compensation is available. Medical treatment may be provided at my own expense or at the expense of my health care insurer which may or may not provide coverage. If I have questions, I should contact my insurer.
12. I understand to my satisfaction the information regarding participation in the research project. All my questions have been answered to my satisfaction. I have received a copy of this informed consent form, which I have read and understand. I hereby consent to participate in the research described above.

_____
Instructor's Signature

_____

Date_____

I have explained and defined in detail the research procedure in which the instructor has consented to participate. Having explained this and answered any questions, I am cosigning this form and accepting this person's consent.

_____ _____
Principal Investigator Date

APPENDIX G

Socratic Seminar Training

PURPOSE AND ESSENTIAL COMPONENTS FOR SOCRATIC SEMIANR TRAINING SESSION FOR THE RESEARCHER'S STUDY

For this study, there are five primary components to a Socratic Seminar: the text, opening question, leader, students, and the Socratic circle as seen in the literature (Lambright, 1995; Mee, 2000). Each of the five components is essential for the seminar. The text must be read prior to the discussion; almost any text will work as long as it contains an abstract idea (Lambright, 1995). Copeland (2005) noted that material can be taken from any subject, current event, piece of music, or selection of art, as long as it raises questions in the student's mind. The only bad text would be one that leaves participants with nothing to discuss (Copeland, 2005; Lambright, 1995). The opening question follows the text, is open-ended, and should pique the curiosity of the students (Strong, 1996). The leader's role can be broken down into four parts: selecting the text and opening question, keeping the discussion on task (Copeland, 2005; Lambright, 1995), assessing and evaluating individual students and group performance and guiding students in developing a deeper understanding of the text (Copeland, 2005). Strong described a shift in power from the teacher to the students as the teacher interacts rather than dominates the conversation (1996). This makes the participation of the students vital, as Mee described, "Without willing participants there can be no Socratic Seminar" (2000, p.61). Students must be brought into the conversation, which can be difficult for teachers who are used to leading the conversation. Author and teacher Molly Mee noted that some teachers have unwilling students sit outside the Socratic Seminar circle, but it is the teacher's job to engage the students into the conversation so exclusion from the circle is no longer necessary. However, according to Copeland (2005), students love to talk and if they don't talk it is most likely caused by one of three reasons: students are uncomfortable discussing the topic with an adult present, participants aren't able to make connections with the text, or the text is too difficult. A basic rule of thumb in Socratic Seminar is that all members have an equal voice; thus, the most appropriate seating arrangement is that of a circle or semi circle. In this arrangement, all participants can see each other and stay engaged in dialogue (Copeland, 2005; Mee, 2000). As Copeland (2005) pointed out, "it is the nature and process of that conversation that differs radically from the typical teacher–led, question-and-answer discussion" (p.9). Unlike traditional lecture, which consists of teacher pontificating information to students as they respond with answers, Socratic Seminar is student-centered (Polite & Adams, 1996; Strong, 1996) and so engages students with the content by dialoguing with their peers.

The purpose of Socratic Seminar is to examine current beliefs, improve reasoning skills, and ultimately move students toward more rational thinking. As Copeland (2005) noted, the goal is not for the participants to debate, but for them to reach a "common vision of truth and understanding that serves all members of the group equally" (p. 26-27). Socratic Seminar goes beyond collecting information and getting an answer; instead, the aim is to learn how to think critically (Copeland, 2005). A review of literature illustrates the academic benefits for Socratic Seminar; these benefits include critical

thinking (Copeland, 2005; Polite & Adams, 1996; Strong, 1996), creativity (Copeland, 2005; Lambright, 1995), reading, speaking and listening (Copeland, 2005).

APPENDIX H

Traditional Lecture Training Session

ESSENTIAL COMPONENTS FOR TRADITIONAL LECTURE

I. Traditional Lecture.

1. Definition

(a) The goal of lecture is for students to acquire information

(b) Lectures have traditionally been defined as the oral communication of information for the purpose of learning (Bligh, 2000; Brown, 1978)

2. Essential Components

(a) Traditional lecture expects students to copy or take notes because they are part of a one-way transmission

(b) The learner is assumed to take responsibility for the learning, as the lecturer is responsible to deliver the up-to-date and pertinent information. The goal of lecture is for students to acquire information.

3. Two Classifications of Lecture

(a) In the 1970's Bligh provided a classification system for styles of lecture (1972)

(b) The classification of lectures has since been updated by Bligh (2000) and is now categorized into two common forms of organization, hierarchic and chaining, but each of these forms has numerous variations and they are commonly used in conjunction with each other.

(c) For this study, these two forms of lecture, hierarchic and chaining, will be used to define traditional lecture.

II. Hierarchic Style Lecture (1 Classification of Traditional Lecture)

1. Classification Hierarchy

(a) The most basic form as information and ideas are grouped under unifying features and headings accordingly

(b) This is an ideal form of organizing a lecture with the goal of providing facts

(c) The downside to lecturing this way is that it only provides the information or idea in one context and may not be applied to more situations drives "boredom" (Bligh, 2000, p. 72).

(d) The problem of boredom coupled with the notion that lecture doesn't "stimulate interest or thought" (Bligh, 2000, p. 72), insinuates that lecture should only be used for less able students according to Bligh (2000).

Example of Lecture in Hierarchic Form

I.
1.
(a)
(b)
(c)
2.
(a)
(b)
(c)
3.
(a)
(b)
(c)

II.

Figure 1. Example of Lecture in Hierarchic Form Note. Reprinted from, *What's the use of Lectures* (p.54), by D.Bligh, 2000, San Francisco, Ca: Jossey-Bass. Copyright 2000 by Jossey-Bass. Reprinted with permission.

2. Problem-Centered
   (a) Constituted as a hierarchic form, consists of a problem asked by the lecturer with information, arguments, and hypotheses thereafter all stemming from the original question.
   (b) This form is considered hierarchic because each hypothesis given is under the scope of the initial problem. Evidence and inferences are taught in line with each hypothesis as seen in the modified (Bligh, 2000) example of problem-centered lecture in Table 2 (see Chapter 2).
   (c) The problem-centered approach is thought to arouse student's motivation and so is considered preferable although more difficult to implement. For best success, the problem must be clear, attainable, and synthesize the objectives to be taught (Bligh, 2000).

Example of Problem-Centered Lecture Form

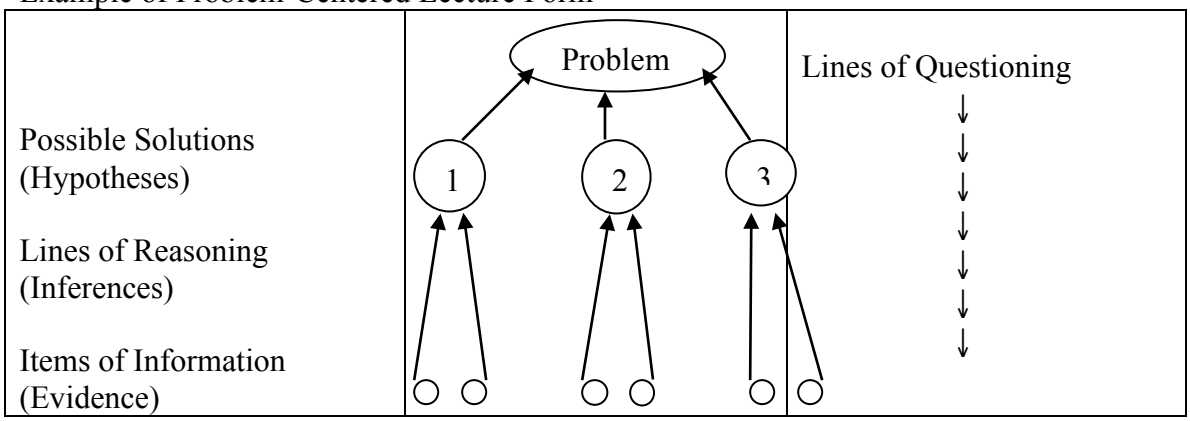

Figure 2. Example of Problem-Centered Lecture Form. Reprinted from, *What's the use of Lectures* (p.73), by D.Bligh, 2000, San Francisco, Ca: Jossey-Bass. Copyright 2000 by Jossey-Bass. Reprinted with permission.

III. Chaining Style Lecture (1 Classification of Traditional Lecture)

1. Chaining is more like a story;
   (a) The presentation is given in sequence of time or reason, much like normal speech.
   (b) It is important to note than when chaining is implemented, a lecturer should be sure to take stock, or, remind students of what they should be learning.
   (c) Taking stock during a chaining form of lecture can be done by writing key points on the board, power point, or on a provided outline of notes.

Figure 3. Example of Chaining Form of Lecture

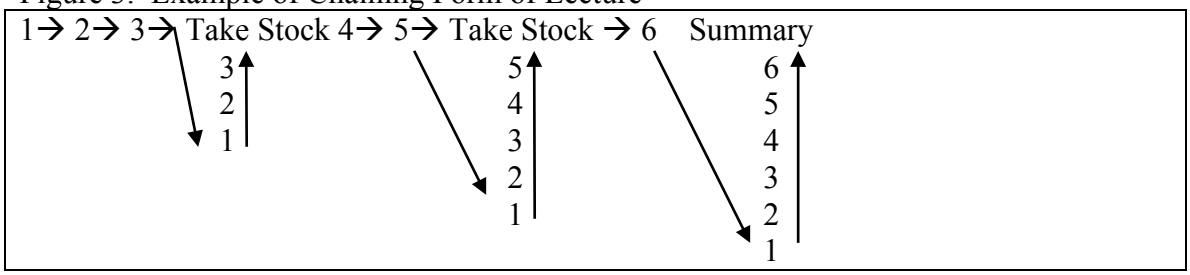

Figure 3. Example of Chaining Form of Lecture. Reprinted from, "*What's the use of Lectures* (p.75), by D.Bligh, 2000, San Francisco, Ca: Jossey-Bass. Copyright 2000 by Jossey-Bass. Reprinted with permission.

APPENDIX I

Informed Parent Consent for Participation in Research

Participant/ Student: _____

Principal Investigator: Ben Roberson, Head of School at Calvary Christian School & Educational Leadership Administration & Policy Student at Pepperdine University.

Title of Project: *Effects of Socratic Seminar on High School Student Motivation*

1. I, _____ (Parent's Name), agree for my child to participate in the research study being conducted by Ben Roberson under the direction of his advisor Dr. Douglas Leigh.
2.The overall purpose of this research is to identify the extent to which, if any, differences exist in the relationship between students' motivation toward learning and the degree of their teachers' fidelity to Socratic Seminar methods of instruction versus traditional lecture methods; both of which are standard instructional procedures and which are being implemented regardless of participation in the study.
3. My child's participation will involve the following: answering 34 questions on a scale from 1 to 5 (1 being "Not True" and 5 being "Very True") which will determine if the student felt the instruction was motivating or not and answering seven questions on a scale from 1 to 5 (1 being "Definitely False" and 5 being "Definitely True") which will determine the degree of' teachers' fidelity to the provided instructional method. The survey will take about 10 minutes to answer. Students will take the survey six times, one for each of three Socratic Seminars and one for each of three traditional lectures. Participation does not include involvement in the instructional strategies because they are a regular practice, only the taking of the survey. My child's participation in the study will take two 10 minute periods, both during English class time.
4. I understand that the possible benefits to my child's education or society from this research are: Potential benefits include a better understanding of the motivational tendencies for these students that would better inform the faculty at Lutheran as well as similar settings.
5. I understand that there are certain risks and discomforts that might be associated with this research. These risks include: boredom of taking the CIS (Keller, 2006) six times, fatigue, and the loss of class time for the sake of research. Students are given a maximum of 10 minutes to complete the surveys in effort to minimize use of class time.
6. I understand that my child may choose not to participate in this research by not completing the minor consent form.
7. I understand that my child's participation is voluntary and that my child may refuse to participate and/or withdraw my consent and discontinue participation in the project or activity at any time without penalty or loss of benefits to which I am otherwise entitled.
8. I understand that the investigators will take all reasonable measures to protect the confidentiality of my records and my identity will not be revealed in any publication that

may result from this project. The confidentiality of my records will be maintained in accordance with applicable state and federal laws. Under California law, there are exceptions to confidentiality, including suspicion that a child, elder, or dependent adult is being abused, or if an individual discloses an intent to harm him/herself or others.

9. I understand that the investigator is willing to answer any inquiries I may have concerning the research herein described. I understand that I may contact Ben Roberson or his supervisor, Dr. Douglas Leigh if I have other questions or concerns about this research. If I have questions about my rights as a research participant, I understand that I can contact Dr. Yuying Tsong, Interim Chairperson of the GPS IRB Board of Pepperdine.

10. I will be informed of any significant new findings developed during the course of my participation in this research which may have a bearing on my willingness to continue in the study.

11. I understand that in the event of physical injury resulting from the research procedures in which I am to participate, no form of compensation is available. Medical treatment may be provided at my own expense or at the expense of my health care insurer which may or may not provide coverage. If I have questions, I should contact my insurer.

12. I understand to my satisfaction the information regarding participation in the research project. All my questions have been answered to my satisfaction. I have received a copy of this informed consent form which I have read and understand. I hereby consent my child to participate in the research described above.

Parent or legal guardian's signature on participant's behalf if participant is less than 18 years of age or not legally competent.	Participant's Signature
	Date
Date	Witness
	Date

I have explained and defined in detail the research procedure in which the subject has consented to participate. Having explained this and answered any questions, I am cosigning this form and accepting this person's consent.

Principal Investigator	Date

APPENDIX J

Informed Participant Consent for Participation in Research
(For students 18 years of age or older)

Participant/ Student: _____

Principal Investigator: Ben Roberson, Head of School at Calvary Christian School & Educational Leadership Administration & Policy Student at Pepperdine University.

Title of Project: *Effects of Socratic Seminar on High School Student Motivation*

1. I, _____ (Participant's Name), agree to participate in the research study being conducted by Ben Roberson under the direction of his advisor Dr. Douglas Leigh.
2.The overall purpose of this research is to identify the extent to which, if any, differences exist in the relationship between students' motivation toward learning and the degree of their teachers' fidelity to Socratic Seminar methods of instruction versus traditional lecture methods; both of which are standard instructional procedures and which are being implemented regardless of participation in the study.
3. My participation will involve the following: answering 34 questions on a scale from 1 to 5 (1 being "Not True" and 5 being "Very True") which will determine if the student felt the instruction was motivating or not and answering seven questions on a scale from 1 to 5 (1 being "Definitely False" and 5 being "Definitely True") which will determine the degree of' teachers' fidelity to the provided instructional method. The survey will take about 10 minutes to answer. Students will take the survey six times, one for each of three Socratic Seminars and one for each of three traditional lectures. Participation does not include involvement in the instructional strategies because they are a regular practice, only the taking of the survey. My participation in the study will take two 10 minute periods, both during English class time.
4. I understand that the possible benefits to my education or society from this research are: Potential benefits include a better understanding of the motivational tendencies for these students that would better inform the faculty at Lutheran as well as similar settings.
5. I understand that there are certain risks and discomforts that might be associated with this research. These risks include: boredom of taking the CIS (Keller, 2006) six times, fatigue, and the loss of class time for the sake of research. Students are given a maximum of 10 minutes to complete the surveys in effort to minimize use of class time.
6. I understand that I may choose not to participate in this research by not completing the minor consent form.
7. I understand that my participation is voluntary and that I may refuse to participate and/or withdraw my consent and discontinue participation in the project or activity at any time without penalty or loss of benefits to which I am otherwise entitled.
8. I understand that the investigators will take all reasonable measures to protect the confidentiality of my records and my identity will not be revealed in any publication that may result from this project. The confidentiality of my records will be maintained in

accordance with applicable state and federal laws. Under California law, there are exceptions to confidentiality, including suspicion that a child, elder, or dependent adult is being abused, or if an individual discloses an intent to harm him/herself or others.

9. I understand that the investigator is willing to answer any inquiries I may have concerning the research herein described. I understand that I may contact Ben Roberson or his supervisor, Dr. Douglas Leigh if I have other questions or concerns about this research. If I have questions about my rights as a research participant, I understand that I can contact Dr. Yuying Tsong, Interim Chairperson of the GPS IRB Board of Pepperdine.

10. I will be informed of any significant new findings developed during the course of my participation in this research which may have a bearing on my willingness to continue in the study.

11. I understand that in the event of physical injury resulting from the research procedures in which I am to participate, no form of compensation is available. Medical treatment may be provided at my own expense or at the expense of my health care insurer which may or may not provide coverage. If I have questions, I should contact my insurer.

12. I understand to my satisfaction the information regarding participation in the research project. All my questions have been answered to my satisfaction. I have received a copy of this informed consent form which I have read and understand. I hereby consent my child to participate in the research described above.

_____
Participant's Signature

_____
Date

_____
Witness

_____
Date

I have explained and defined in detail the research procedure in which the subject has consented to participate. Having explained this and answered any questions, I am cosigning this form and accepting this person's consent.

_____ _____
Principal Investigator Date

APPENDIX K

Assent Forms for Use with Minors

WHICH IS MORE MOTIVATION, SOCRATIC SEMINAR OR TRADITIONAL LECTURE?

My name is Ben Roberson, and I am the Head of School at Calvary Christian School in Santa Ana and a student in the Educational Leadership Doctoral Program at Pepperdine University. Your parents have given me their permission to speak with you about a study I am conducting on how to provide the most motivating instructional strategies. I would like to invite you to participate in this study if you are interested. Before I explain more about the study, I want you to know that the choice to participate is completely up to you. No one is going to force you to do something you are not interested in doing. Even if you start the study and decide that you are no longer interested in continuing, just let your teacher know and we will discontinue the study.

Let me tell you about what you will be asked to do if you decide to help me out. You will answer 34 questions on a scale from 1 to 5 (1 being "Not True" and 5 being "Very True") which will determine if you felt the instruction was motivating or not. You will also answer a survey with 7 questions to help determine the degree of implementation your teacher has provided for their instructional strategy. The survey will take you about 10 minutes to answer. You will take the survey six times, three times after a Socratic Seminar and three times after a lecture. The goal of the survey is better understand whether or not high school students are motivated towards learning from Socratic Seminar or Traditional Lecture.

If you get bored or tired during our meeting, just let your teacher know, and we can take a break. If you are bothered by some of the things we talk about, let me know so we can talk about what is bothering you. Most of the time what you say to me will not be repeated to your parents unless you wish for me to do so. The only exception would be if I am convinced your parents might be helpful to you if they knew what was going on. If such information comes up, we will talk about it before I speak with your parents.

Your participation in this study may not provide information that will be helpful to you, but what is hoped is that what I find out from you may be of help in the future to others who are undergoing a similar experience. When the results of this study are published or presented to professional audiences, the names of the people who participated in the study will not be revealed. If you have any questions, you may contact me. You may keep a copy of this form if you wish.

_____ _____

_____

Youth's signature

Date

_____

_____
Researcher's signature

Date

assent obtained

APPENDIX L

Overview of Study Script for Teachers

My name is Ben Roberson, and I am the Head of School at Calvary Christian School in Santa Ana and a student in the Educational Leadership Doctoral Program at Pepperdine University. I would like to invite you to participate in this study if you are interested. Before I explain more about the study, I want you to know that the choice to participate is completely up to you. No one is going to force you to do something you are not interested in doing. Even if you start the study and decide that you are no longer interested in continuing, just let your teacher know and we will discontinue the study.

Let me tell you about what you will be asked to do if you decide to help me out. You will answer 34 questions on a scale from 1 to 5 (1 being "Not True" and 5 being "Very True") which will determine if you felt the instruction was motivating or not. You will also answer a survey with 10 questions to help determine the degree of implementation your teacher has provided for their instructional strategy. The survey will take you about 10 minutes to answer. You will take the survey six times, three times after a Socratic Seminar and three times after a lecture. The goal of the survey is better understand whether or not high school students are motivated towards learning from Socratic Seminar or Traditional Lecture.

If you get bored or tired during our meeting, just let me know, and we can take a break. If you are bothered by some of the things we talk about, let me know so we can talk about what is bothering you. Most of the time what you say to me will not be repeated to your parents unless you wish for me to do so. The only exception would be if I am convinced your parents might be helpful to you if they knew what was going on. If such information comes up, we will talk about it before I speak with your parents.

Your participation in this study may not provide information that will be helpful to you, but what is hoped is that what I find out from you may be of help in the future to others who are undergoing a similar experience.

When the results of this study are published or presented to professional audiences, the names of the people who participated in the study will not be revealed.

If you have any questions, you may contact me at broberson@ccschool.org

APPENDIX M

Instructions for Surveys

In effort to maximize the use of this study and retain confidentiality, please enter your student identification code by entering the first three letters of your mothers name and the numbers of your home address. The following two surveys will be recorded on the same scantron.

Course Interest Survey
John M. Keller
Florida State University

1. There are 34 question statements in this questionnaire. Please think about each statement in relation to the instructional materials you have just studied, 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.

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

3. Record your responses on the answer sheet that is provided, and follow any additional instructions that may be provided in regard to the answer sheet that is being used with this survey. Thank you.

Degree of Implementation Survey
Ben Roberson
Pepperdine University

1. There are 7 questions in this questionnaire which directly follow the Course Interest Survey. Please read each question in relation to the instructional strategy you have just received. Provide an answer that that truly applies to you, and not what you would like to be true, or what you think others want to hear.

2. Think about each statement by itself and indicate the phrase that best fits. Do not be influenced by your answers to other statements.

3. Record your responses on the scantron answer sheet that is provided, and follow any additional instructions that may be provided.

APPENDIX N

Permission for Republication of Tables for Traditional Lecture

Campbell, Brenton - Hoboken

From: Safdar, Sheik - Hoboken
Sent: Tuesday, October 19, 2010 12:19 PM
To: Campbell, Brenton - Hoboken
Subject: FW: Republication/Electronic Request Form

Categories: Permissions

BC,

Please find below a dissertation request for you to process.

Thanks

Sheik Safdar| Permissions Coordinator
[redacted]

-----Original Message-----
From: PermissionsUS@wiley.com on www.wiley.com [mailto:webmaster@wiley.com]
Sent: Sunday, October 17, 2010 9:53 PM
To: Permissions - US
Subject: Republication/Electronic Request Form

A01_First_Name: Ben
A02_Last_Name: Roberson
A03_Company_Name: Pepperdine Universtiy
A04_Address [redacted]
A05_City: [redacted]
A06_State: Ca
A07_Zip: [redacted]
A08_Country: USA
A09_Contact_Phone_Number: [redacted]
A10_Fax:
A11_Emails: [redacted]
A12_Reference:
A13_Book_Title: "What's the Use of Lectures"
A40_Book_or_Journal: Book
A14_Book_Author: Donld Bligh
A15_Book_ISBN: 9780787951627
A16_Journal_Month:
A17_Journal_Year:
A18_Journal_Volume:
A19_Journal_Issue_Number:
A20_Copy_Pages: 6 Tables: The tables I would like to use in my research include: "Example of Hierarchic Form," "Example of Problem-Centered Lecture Form," "Example of Chaining Form of Lecture," "Example of a Variation Form for an Anatomical Comparison," "Number of experimental comparisons of lectures with other methods where promotion of though it the criterion," and "Number of experimental comparisons of lectures with other methods where acquisition of information is the main criterion."
A21_Maximum_Copies: 1
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