Case-based Lessons: A quantitative study of how case studies impact teacher efficacy for the application of principles of motivation

Dissertation

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Abstract

The purpose of this quantitative study was to provide a response to the following question: Does the use of video case studies focused on motivation increase undergraduates' sense of efficacy for applying principles of motivation? I examined the proposed research question using quantitative methods over the course of two 10-week quarters. Participants in the study were undergraduates enrolled in four sections of an educational psychology course. Participants completed four existing measures at three time points. During the second time point subjects were assigned to an experimental group that viewed a video case study or a control group that watched a lecture on motivation. Multiple repeated measures analysis of variance indicated that those who viewed the video case study were significantly less likely to believe in using performance approaches in their future classrooms than those who watched the control video but were slightly more likely to have a lower sense of personal teaching efficacy. Results of this study indicate further research is needed involving greater exposure to cases and deeper integration of cases in teacher education programs.

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Chapter 1: Introduction

Statement of the Problem

Case studies have long been used as central pedagogies in medical, business, and legal professions to foster students' ability to think critically and reflect on realistic, complicated problems. Teacher education programs also utilize case studies, however, limited research exists regarding the potential of case studies to enhance teacher preparation programs in deep and meaningfully ways (Cruickshank, 1996). A case study presents pre-service teachers with a realistic educational event. The case may be real, fictional, or a combination. Furthermore, it may be brief or extended, highly detailed or very general. Candidates then use the case to develop and foster problem solving skills while also applying appropriate theory to frame and support conclusions and decisions (Cruickshank, 1996). A case study provides both novices and experts with a situation that can foster responsibility for problem solving, as well as the ability to develop an action plan and consider multiple solutions to a problem (Silverman, Welty &, Lyon, 1992). In order to carry out the problem solving steps candidates begin to "internalize theory, to understand its applications and adaptations" (Silverman et al., 1992, p. XV).

All teacher education programs utilize a combination of clinical experiences in conjunction with theoretical coursework. However, many programs have not placed candidates in clinical experiences immediately. Additionally, as Kowalski, Weaver and Henson (1990) note, clinical experiences and observation alone do not lead to candidates understanding what makes teachers effective but rather understanding of the skills needed

to be an effective teacher develops when theory becomes internalized in connection with clinical experiences. Case studies offer a way for candidates to begin to view the classroom from a teacher's perspective early on in their coursework and a way for continued bridging of theory and practice for the duration of the program.

Classrooms are fast paced, ever changing and evolving environments comprised of students with diverse backgrounds and experiences. Teacher education programs are designed to prepare candidates who are able to provide the highest quality learning experiences for all students. Hammerness et al. (2005) identified three major areas teacher education programs must successfully address to order to prepare effective teachers: (1) teacher education must lay the groundwork for life long learning, (2) candidates must come to view, think about, and understand teaching from a teacher's perspective rather than that of a student and (3) candidates must come to understand the complex nature of the classroom and develop metacognitive habits that guide decisions while also reflecting on practice in search of continual improvement.

Teachers' sense of efficacy. The beliefs preservice teachers hold have a significant impact on their actions and learning in teacher preparation programs (Pajares, 1992). The development of teacher efficacy in preservice teachers has been extensively researched because once efficacy beliefs are established they are resistant to change (Woolfolk Hoy & Murphy, 2001). Historically teacher efficacy was conceptualized as having two elements, general teaching efficacy and personal teaching efficacy. General teaching efficacy is the belief that teachers, as a profession, can impact the learning of all students regardless of background. Personal teaching efficacy is the belief of an individual teacher that he or she has the ability to reach all students (Tschannen-Moran, Woolfolk Hoy &

Hoy, 1998). Research has found a relationship between teachers' efficacy beliefs and student achievement, teachers' willingness to implement new strategies, and their willingness to stay in the field (Armor et al., 1976 ; Guskey, 1984; Glickman & Tamashiro, 1982). Therefore, an understanding of how preservice teachers' beliefs develop, grow and change in essential for teacher educators. Teacher educators must develop programs and courses that foster positive growth and impact on preservice teachers' developing sense of teacher efficacy.

Also central to program and course development is an understanding of effective pedagogies. Preservice teachers who engage in vicarious learning experiences (learning by watching others model effective practices) are more likely to experience changes in general teaching efficacy beliefs (Waters & Ginns, 1995). Therefore, the types of vicarious learning experiences pre-service teachers are exposed to in their preparation programs needs to be studied and developed in order to find effective pedagogies teacher educators can utilize in course instruction.

When developing effective pedagogies for teacher education, an overall goal for preservice teacher learning is necessary. Preservice teachers often struggle to integrate and apply principles of motivation (Anderman, & Leake, 2005). Hoy (2000) noted that preservice teachers with a low sense of teacher efficacy tended to have a custodial control orientation, hold pessimistic views of students' motivation, believe in strict classroom rules, extrinsic rewards and punishments. Therefore, understanding how teacher educators can utilize pedagogies that depict or draw from vicarious learning experiences, such as video case studies, and how those pedagogies impact efficacy for applying

principles of motivation could provide insight into improving course and program structure.

Research Question

The purpose of this quantitative study was to provide a response to the following question: Does the use of video case studies focused on motivation increase undergraduates' sense of efficacy for applying principles of motivation?

Rational. Even though research has examined how to use case-based pedagogy and how to structure cases, investigation is limited on the impact of cases on teacher efficacy for applying principles of educational psychology. Prospective teachers' sense of teacher efficacy is an ever changing and evolving belief. Creating a deeper understanding of the foundations of individuals' sense of efficacy for applying principles motivation could inform how teacher efficacy develops at various points along the career path. For example, prospective teachers' sense of efficacy for applying motivational theory to the classroom as undergraduates in their first educational psychology course may be correlated with their actual implementation of motivational theory in the classroom in five years. Understanding if the use of case studies is connected to teachers' efficacy to use principles of motivation could prove valuable for teacher educators. Findings could inform pedagogy in teacher education and better prepare undergraduates for their student teaching experiences. Furthermore, the proposed study could serve as a starting point for a longitudinal study that tracks the relationship between the use of case studies and teacher efficacy for using and valuing motivation theories and other principles of educational psychology as teachers graduate and enter k-12 classrooms. When teacher educators know more about the potential impact of case studies on undergraduate

students, they may be better equipped to utilize case-based pedagogies in ways that enhance teacher education experiences.

Definition of Terms

The purpose of this section is to provide a clear, meaningful and relevant definition for each term used in the research question to provide the reader with knowledge of the scope of the questions being researched.

- Case Studies- narratives that present a rich and realistic insight into the complex world of teaching and provide an opportunity for participants to analyze and problem solve while drawing on and applying theoretical knowledge (Cruichshank, 1996).
- Self Efficacy- "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (Bandura, 1986, p. 391).
- Teacher sense of efficacy- a teacher's belief that he or she can influence the learning of all students, even those who are unmotivated or from unsupportive backgrounds (Guskey & Passaro, 1994).

Scope of the Study

Over the course of two 10-week quarters I used quantitative methods to examine the impact of using a video case. Participants in the study were undergraduates enrolled in four sections of an educational psychology course. The course was a requirement for any student considering licensure in early childhood and middle school education. During the first week of the course, I asked the students to participate in the study. During this class visit, participants completed a pretest. The pretest questionnaire contained the

following measures: The Teachers' Sense of Efficacy Scale (TSES, Tschannen-Moran & Woolfolk Hoy, 2001), Mastery Approaches to Instruction, Performance Approaches to Instruction and Personal Teaching Efficacy, all from the Teacher Scales of the Patterns of Adaptive Learning Scales (PALS, Midgley et al., 2000). These measures were selected because they provide insight into efficacy and beliefs about motivation. Chapter three contains a discussion of the measures.

Upon completing the pre-test, participants were randomly assigned to two groups. The first group served as the treatment group. The second group served as a control group. Each group was contacted via email at the end of the week when the topic of motivation was addressed in the course. Participants were asked to attend one of five sessions in a computer lab. Time and day selections were made by participants based on their availability. In the computer lab, participants viewed a brief video online, responded to asynchronous questions on an online survey form, and then completed the TSES and PALS measures a second time. The treatment group watched a video case study and the control group watched a video lecture. Both videos covered the same motivational concepts and were the same length. Participants were able to view the video as often as they liked, however, no subjects viewed the video more than once. Participation in the computer lab sessions counted as one extra credit option in the participants Educational Psychology course for a total of no more than two percent of their final grade. See chapter three descriptions of each video case and Appendix A for the discussion questions.

At the end of the quarter participants then completed a post-test. The post-test consisted of the same measures as the pre-test. Codes were used to pair pre-test data with

post-test data. One $25.00 VISA gift card, was randomly awarded to a participant during the final week of the course.

Limitations of the Study

There are several limitations brought about by the procedures of the inquiry that restrict the conclusions and generalizability that can be drawn from the findings of the study.

- Findings are limited to undergraduates in an introductory educational psychology course. Findings cannot be generalized to all undergraduates, pre-service teachers, nor all students in education preparation programs.
- Furthermore, findings are limited to those participants who came to the mid-point data collection and not representative of the entire course since extra credit was offered as an incentive to come to the second data collection.
- The data collection procedures are limited to one pre-test, and viewing of a brief video and participation in an online response form with a second application of the original pre-test followed by a final post test. Influences of the course instructor and pedagogies used in the classroom cannot be controlled but are mitigated by random assignment.
- Some of the open ended questions utilized at the mid-point data collection were different for the control and experimental group. These slightly different questions therefore became part of the treatment but were not analyzed.

Delimitations of the Study

There are several parameters of this study that determine what will not be examined in the study.

- This study focuses on only one quarter in an undergraduate course and does not provide a longitudinal account.
- The study will not examine pedagogies used by the course instructor.

Significance of the Study

A number of professional audiences will find the results of this study useful. Below I describe how those audiences might apply the findings as well as how the study will further inform the practice of initial teacher preparation.

> "Only when things about us have meaning for us, only when they signify consequences that can be reached by using them in certain ways, is any such thing as intentional, deliberate control of them possible" (Dewey, 1933, p. 19).

This study was developed in the hopes of providing insight into the impact video case studies may have on undergraduates planning to enter the teaching profession—specifically the impact on their sense of efficacy for applying theories and principles of motivation research. Motivation is a concept classroom teachers encounter daily in many different forms and situations. Understanding the degree to which preservice teachers feel they are able to apply motivation concepts in their future classrooms could aid teacher educators, specifically those teaching educational psychology courses, design effective coursework which impacts general teaching efficacy.

Teachers' sense of teaching efficacy tends to decline during the first year of actual teaching as novice teachers are confronted with the complexities of teaching (Hoy & Woolfolk, 1990; Woolfolk Hoy & Burke-Spero, 2005). A richer understanding of the impact of vicarious learning experiences on preservice teachers who have little or no teaching experience could enable teacher educators do develop transitions into early teaching that maintain the optimism and confidence of preservice teachers. Furthermore, the research base for possible pedagogical approaches teacher educators can utilize in conjunction with case studies may be expanded. The use of video case studies and asynchronous online responses may provide a pedagogical approach that can be adapted to other concepts and courses in teacher preparation programs.

Chapter 2: Review of Literature

The following literature review provides an overview of the literature and findings in two main areas: (a) the use of case-based lessons in professional education settings and (b) the antecedents and consequences of teachers' sense of efficacy. The review begins with an overview of the current state of formal teacher education in America, followed by a discussion of the historical role of case-based pedagogy in medicine, law, business and education. Next I describe the current implementation of case-based pedagogy in professional education as well as benefits to students. Directions for further research are noted throughout the body of the review. The literature review concludes with a discussion of teacher efficacy, which provides the social cognitive theoretical framework for this study.

Teacher Education

An ongoing dialogue exists in teacher education about the best way to prepare candidates for the classroom (e.g. Goldhaber, & Brewer, 2000; Wilson, Floden, & Ferrini-Mundy, 2001: Darling-Hammond et al., 2005a; Darling-Hammond et al., 2005b; Glazerman, Mayer, & Decker, 2005; Darling-Hammond, 2006; Kane, Rockoff, & Staiger, 2008). A number of models for teacher education have arisen as the focus of debate.

Historical perspective. Tom (1997) provided a synthesis of the most significant models of education from the early twentieth century to today. The early twentieth

century debate regarding teacher education centered on the study of the "academic model" and the "teaching effectiveness model."

The academic model essentially phased out the education professoriate in favor of strong content knowledge and transfer of knowledge from Arts and Sciences professors to teacher education candidates. The academic model implied that strong content knowledge leads to effective teaching and student learning (Katz, 2007; Teach for America, 2009). Critics of this model noted the lack of pedagogical courses, pedagogical content knowledge (the manner in which teachers relate their subject matter knowledge to their pedagogical knowledge while also considering the learning of their students and the environmental context in which teaching and learning occur), as well as learning theories (Boe, Shin, & Cook, 2007; Cochran, Deruiter, & King, 1993; Korthagen, 2004;;).

In contrast, the teaching effectiveness model was grounded in the notion that research, in the form of the scientific study of education, is the best way to guide teacher education curriculum. This model drew on the historical notion of a science of education. However, this model ignored the contextual nature of teaching such as variations in the classroom, students and subject matter (Tom, 1997). A bridge to unite research, content knowledge, and also the essential component of pedagogical knowledge was needed (McDiarmind, & Clevenger-Bright, 2008).

While rooted in the 1930's, the concept of collaboration in teacher education came to the forefront of teacher education in the 1960s and 1970s. The collaboration model united university based teacher education with practicing teachers in the field (Tom 1997). Goodlad (1994) developed presuppositions designed to rejuvenate teacher education into a school-university partnership concerned not only with content

knowledge and pedagogy, but also with political activism and school renewal. Goodlad also argued for a strong "center of pedagogy" that is focused on the preparation of future teachers and can exist within the institution of higher education or in the schools. Tom (1997) however, noted that in Goodlad's earlier development of this idea in 1990 and further fleshing out in 1994, he failed to fully articulate the design and detail of these centers for pedagogy.

Hence, a vision and understanding of good teacher education was necessary. Darling-Hammond (2006) noted, "…if the nation's classrooms are to be filled with teachers who can teach ambitious skills to all learners, the solution must lie in large part with strong, universal teacher education" (p.5). Societal "…values influencing the scope and structure of teacher education programs today are preparation for work and life, academic learning, human development, and social justice…" (Hansen, 2008, p. 12). Teachers must be able to reach all learners and formal teacher education programs provide candidates with the knowledge and skills to reach all learners (Darling-Hammond, 2006). The collaborative model of teacher education provided a way to unite the theory of the university classroom to the practical environment of the classroom (McIntyre, 2009).

In addition to providing clear and direct connections between theory and practice, teacher educators must model good teaching practices and methods to candidates; this includes fostering teacher education candidates who engage in critical thinking, questioning, and investigation (Garibaldi, 1992). It is essential for teacher educators to model these skills. Modeling allows candidates to see how professors use theory to develop curriculum and methods while also demonstrating the ability to be flexible and

considerate of the many variables in a classroom (Tom, 1997). This type of modeling must place learners as the center figures. Learner-centered education allows the teacher to link prior knowledge to new information while anticipating common misunderstandings, providing multiple opportunities for application, feedback and performance via the use of a variety of activities (Darling-Hammond, 2006).

An additional critical charge of teacher education is to enable candidates to view content knowledge as always growing and developing and not stagnant (Sosniak, 1999). Pedagogical content knowledge, therefore, also changes as advancements and new understandings in a content area occur. The connection must be made between content knowledge and how the content is presented to students in a classroom in ways that enhance and foster learning (Darling-Hammond, Hammerness, Grossman, Rust, & Shulman, 2005a; Tom, 1997). Good teachers have the ability to make content knowledge accessible to all learners by joining their knowledge of how students learn with the teachers' content knowledge (Darling-Hammond, 2006)

Additionally, teacher education serves as a catalyst for candidates to move from the perspective of a student to that of a teacher (Calderhead, & Robson, 1996). Pedagogical thinking is the vehicle to bridge this connection. Tom (1997) noted that as students and observers in a p-12 classroom, candidates view the teacher from a distance and develop a simplified vision of what it means to teach. Teacher education provides a way for candidates to begin seeing and exploring the many pedagogical and theoretical decisions a teacher makes every day. Understanding the practical complexities of teaching enables a candidate to begin developing the skills and mindset to think about pedagogy in teaching (Tom, 1997). In addition, candidates must have the ability to enact

the pedagogical tasks of a teacher; candidates must have the chance to present material, organize and plan for student learning, as well as deal with classroom management issues in the fast paced decision making of a p-12 classroom (Darling-Hammond, 2006).

The discussion of theory into practice is one frequently debated in literature and in classrooms of institutes of higher education (e.g. Allen, 2009; Allen, & Peach, 2007; Berliner, 1986; Brouwer, & Korthagen, 2005; Cochran-Smith, 2005). A clear connection must be made between theoretical knowledge taught at institutes of higher education and the world of the practicing teacher. The ability to apply theory in the classroom is essential for candidates to foster meaningful student learning in ways that meet the students needs (Tom, 1997). Coherence created by teacher education programs is necessary to present a consistent vision of good teaching, with strong links between courses and clinical experiences. Research has shown that teacher education programs with strong coherence have a greater impact on the conceptions and practices of teachers upon program completion than programs that lack coherence between courses and field experiences (Darling-Hammond, et al., 2005a).

The case method is one pedagogy that has been used to make coherent connections between theory and practice.

The Case Method

The goal of this section is to describe the case method as a pedagogical approach in professional education. The section begins with an overview of the historical uses of cases in law, medicine, business, and education. Secondly, I present research regarding how cases are utilized as a pedagogy in professional education, followed by an overview of current recommendations regarding how to teach using the case method. Next is a

summary of research on student perceptions of case-based methods. I then examine evidence regarding the effectiveness of case-based methods on learning course materials and the impact of the case-based approach on professional practice. The section concludes with a discussion of unanswered questions and directions for future research.

Narrative form provides a medium for the expression of human experience. “At its core, a narrative perspective holds that human beings have a universal predisposition to 'story' their experience, that is, to impose a narrative interpretation on information and experience” (Doyle & Carter, 2003, p. 3). Humans understand our lives and experiences by weaving together tales of our lives, filling in gaps, and also casting aside certain events and experiences to create personal histories (Doyle & Carter, 2003). The narrative nature of case-based lessons provides students with a text to analyze, “Just as the reader participates in the production of the text’s meaning so the text shapes the reader” (Rimmon-Kenan, 1983, p. 117).

A case study presents students with a narrative—real, fictional, or a combination—of a complex and realistic educational event. Case studies may be extended accounts or brief and focused. Students then use the case to develop and foster problem solving skills while also applying appropriate theory to frame and support conclusions and decisions (Cruickshank, 1996). What makes the use of case studies a dynamic pedagogical technique is their ability to provide students with the responsibility to solve a problem by analyzing situations and developing action plans (Silverman, Welty &, Lyon, 1992). In order to carry out the problem solving steps, students begin to “internalize theory, to understand its applications and adaptations” (Silverman et al., 1992, p. XV).

Historical use of cases. The use of case studies as a form of pedagogy has been the long-standing tradition in the training of many professions including medicine, law, business, and to a lesser extent, education. Case studies have been used and are currently used to foster experimental exploration, hypothesizing, deduction, and inference. How cases are used in each field varies to some extent (Forrester, 1996). Furthermore, the goals of case-based instruction are significantly different for each professional field (McAninch, 1986).

Cases in legal education. Legal studies have long used the case-based method in a Socratic seminar form (Mertz, 2007). In 1870, Christopher Langdell introduced the case-based method at Harvard Law School. Within two decades the Langdell method became the predominate form of pedagogy used in legal education (Kimball, 2006).

The invention of the case method in legal education was a move away from the traditional method of instruction, lecture, and recitation from texts. The utilization of cases and subsequent rejection of traditional modes of instruction are historically grounded in three reasons. One, during the mid to late 19th century, social sciences vied for a place in higher education and claiming a scientific basis was a way to attain legitimacy at the university. Langdell promoted the idea that law was a science with a complexity that required university study via the use of new pedagogies for the application of inductive methods. Secondly, when Langdell was selected to head Harvard Law School in 1870, the main form of preparation for the bar was apprenticeship. The law curriculum had to prove its superiority to less formal forms of legal study. Hence, the case method became the main pedagogy used to institutionalize legal education. Thirdly, due to the increasing size and complex structure of the American court system, an

overwhelming number of appellate decisions and legal briefs were clogging the courts and needed to be organized. Law students provided the manpower to analyze, sort, and classify legal documents (McAninch, 1986).

Early uses of cases in legal studies were closely tied to the scientific method. There was a belief that law was another form of truth and could be studied and mastered through the application of the scientific method. The cases constituted data and the curriculum was comprised entirely of cases. Consequently, America's growing legal system, with its increasing number of law reports, became systematically organized by law students in a fashion devoid of commentaries, thereby enhancing Langdell's supposition that law is self-contained and evolving. Socratic discussion of appellate court cases replaced textbooks and lectures; students analyzed cases firsthand and induced legal principals (McAninch, 1986).

In the early 20th century, the end goal of case method instruction in legal education moved from the scientific search for ultimate truth to developing legal reasoning and students' independent construction of legal knowledge and principles. In essence, students needed to develop the skill set to "think like a lawyer" and reason through problems using their knowledge of the law (McAninch, 1986). The case method is still the cornerstone of legal education (Garvin, 2003).

Cases in medical education. Shortly after cases became popular in law schools, medical schools began using an adaptation of the Langdell method, commonly termed problem-based learning (Bowe, Voss & Aretz, 2009). Historically, clinical science courses tended to be taught through passive methods such as lecture or demonstration. Therefore, medical students could conceivably graduate without having any direct

contact with patients. Professor William Osler of Johns Hopkins Medical School is credited with revolutionizing medical education with his conception of the clinical clerkship during the early 20th century. The clerkship required medical students to take responsibility for five or more patients until they were discharged or died. Osler then visited the wards weekly to examine patients, listen to case histories and question students on their findings. In conjunction with supervising patients, the medical students were also required to study texts and present and defend possible diagnoses in class. The clinical clerkship combined the Socartic discussion and analysis of the Langdell method in large group class settings as well as one on one with professors but utilized the clinical setting and live patients in place of written cases (McAninch, 1986).

In time, the use of cases in medical education expanded to include problem-based learning prior to clinical experiences. Problem-based learning is typically introduced during the first year of medical school. Students are provided with cases, usually written descriptions of patents presenting a variety of symptoms, and are to engage in whole class discussion regarding symptoms and possible diagnoses. Problem-based learning is student centered and the instructor serves as a facilitator. Multiple hybrid versions of problem-based learning exist in medical schools across the country. Some implement small group discussions, video and multimedia cases as well as the use of discussions, which are highly monitored and directed by the instructor. The use of cases in problem-based learning has become the stepping-stone to clinical practice (Bowe et al., 2009).

The goal of case-based pedagogy in medical education is similar to that of legal education, in that students are expected to develop reasoning skills, however, the main goal of case instruction in medical education is to hone observational skills. Students

must be trained to be astute observers of their patients. Close observation enables students to consider multiple diagnoses and fully account for all symptoms (McAninch, 1986).

Cases in business education. Business schools, in particular, Harvard Business School, also have had a long standing tradition of using cases as a major form of pedagogy (Harvard, 2009). However, unlike law and medicine, case studies in business schools do not focus primarily on developing reasoning or observational skills, but rather, students are taught to improve their decision-making ability. The goal of case-based pedagogy in business education is to prepare future professionals to view and understand all perspectives and be able to anticipate future outcomes as they weigh decisions (McAninch, 1986).

In business schools, the emphasis has historically been to stimulate thinking through group discussion and analysis. In 1908, Harvard Business School became the first business school to use case studies as the core form of pedagogy. Cases were collected by graduates who were instructed to go into the field to identify and then write-up business problems (McAninch, 1986).

Grounded in the Langdell method of Socratic seminars, business schools today still utilize large group discussion of cases. Typically, students are presented with a written case prior to a class meeting. Students review the case and note significant issues and then meet in smaller groups to discuss problems and solutions. Finally, the class meets as a whole group and discusses the case, often large graphic organizers or flow charts are created on the front board or screen of the room to document the discussion (Harvard, 2009).

Cases in education. The historical use of case studies in education is more diverse than that of law, medicine and business. New Jersey State Teachers College at Montclair is responsible for the first documented use of case studies in education in 1925. Student teachers were required to write down problems they encountered in the classroom, attempted solutions, and then the final solution reached. These writings served not only as ways to help students with their problems, but also as material to be incorporated into future professional education courses. New Jersey State Teachers College at Montclair used these homegrown cases by pulling from methods in the legal field, in that solutions that seemed to have work served as guidance for students facing similar situations, as well as business because pre-service teachers engaged in discussion and shared decision making when evaluating cases. However, there was little evidence of cases being used at other teacher preparation programs at the time (McAninch, 1986).

Currently, the use of cases in education centers on the development of judgment and theoretical knowledge to professionalize education and prepare students to think like teachers (Shulman, 1986). The goal of transferring theory into practice is the focus of many instances of case-based pedagogy in education. However, the methods of instruction, format of cases, and outcomes have varied greatly in education (e.g. Casey & Howson, 1993; Cunningham, n.d.; Herman, 1998; Kleinfeld, 1990; Manouchehri & Enderson, 2003).

Format of instruction using cases. Just as professional education programs have differing outcome goals for the use of case-based pedagogy, how cases are used varies greatly. While some disciplines have standard pedagogies utilized by most institutes of higher education, others are significantly different across programs, even at the same

institution. What remains unclear is the best way to use cases in professional education. The answer may always be ambiguous because the course objectives, prior knowledge of students, and learning goals significantly impact case instruction (Dolmans, 1997).

Student-centered approach in business education. The Harvard Business School (HBS) is perhaps the professional educational program most frequently associated with educating graduate students using a case-based method. Central to HBS is the belief that cases place students in the role of decision maker where they must analyze, evaluate, and make multiple recommendations while carefully considering potential outcomes. When cases are utilized in HBS classrooms, 85% of discussion is by students, professors only interject to steer the conversation intermittently. HBS uses a variety of case-based pedagogies; students are exposed to traditional narrative cases as well as multimedia formats including video clips and web based cases in addition to role-playing. The case-based pedagogy used by HBS creates a learner-centered classroom (Harvard, 2009).

At HBS, students follow a structured format for reading, discussing, and evaluating cases. Students are first given the case to read or view and then reflect. Next, students meet in small assigned groups, termed learning teams, to discuss findings and points of interest. The entire 90-student class then meets and the professor guides the discussion to uncover critical issues, analyze problems and then the class develops possible plans of action. Large group participation is central to the success of the case method and 50% of a student's grade is based on in class contributions. Over the course of the MBA program students typically read and evaluate 500 cases (Harvard, 2009).

Problem-based learning in medical schools. Most medical schools use problem-based learning to introduce medical students to clinical practice. Students are presented

with a problem and required to carefully observe signs and symptoms to arrive at a diagnosis in a large class setting (Kim et al., 2006; Shanley, 2007; Bowe et al., 2009).

Critics of problem-based learning within the medical community note the problematic nature of large classrooms of students attempting to engage in one singular discussion. With such a large group of participants, a highly skilled facilitator is needed. Students must engage in active listening because not all of them can participate in the conversation. Therefore, the facilitator must be adept at analyzing and understanding facial expressions and body language. This analysis can allow the facilitator to determine cases of agreement or dissent and then call on participants (Bowe et al., 2009).

An additional concern about the use of the problem-based learning case method of instruction in medical schools is the broad range of perspectives and knowledge in first and second year medical students. When students have varied knowledge of clinical diagnosis, the demands on a facilitator to direct and guide large group discussion while not monopolizing the discussion or lecturing are extreme and may not lead to the best learning experiences for all students. In fact, problem-based learning discussions have been shown to have greatly varying levels of quality and focus (Bowe et al., 2009).

Therefore, medical schools have started to further alter their application of the case method. Pulling from the format used at Harvard Business School and education programs, the medical community has developed a form of pedagogy termed case-method teaching. Students are provided with cases derived from real-life practice. The cases portray complex issues, which require resolution, and a series of interconnected decisions must be made. Multiple sources of data are included to add ambiguity and stimulate alternative interpretations and perspectives. Students are given the cases to

review in advance and identify key issues and complete any necessary research. Smaller study groups then serve as the foundation for discussion and joint development of a resolution or resolutions. Students then reconvene as a large group and chart out (using a white-board, SMART board, etc.) major points to consider, decision points and the interconnectedness of all aspects into a graphic organizer (Bowe et al., 2009).

The case-method teaching approach being adopted by many medical schools attempts to counteract the problems commonly identified with problem-based learning. The use of small study groups ensures that all students have a chance to speak and offer their own analysis and solutions even if they only engage in active listening in the large group setting. Furthermore, to control for the varied levels of knowledge and experience, facilitators plan sessions in advance with set learning objectives and formulate sequences of trigger questions to guide the discussion. The pre-planning of the facilitator does eliminate some of the student-centered discussion promoted by problem-based learning and the case method of HBS, however, it has been shown to lead to richer, more focused discussions for first and second year medical students (Bowe, 2009).

Diverse Case-Based Pedagogy in Education

As evidenced in the first section of this paper, education does not have the strong historical ties to case-based pedagogy. Therefore, a review of contemporary literature regarding how cases are used in the professional education of pre-service teachers does not yield strong continuity. However, many professionals in the field are engaged in research to determine how to best utilize cases in education.

Herman (1998) studied a group of pre-service teachers for three years as they moved through a pre-service teacher education program at a small teaching college on the

East coast. In his study, 129 undergraduates in an Educational Psychology course were engaged in analyzing case studies on a regular basis. Students also were tested at the midterm and final of the course using a pedagogic heuristic device developed by the researcher.

The pedagogic heuristic device developed by Herman (1998) "…is a general set of questions and tasks guiding future teachers in the process of solving educational problems" (p. 392). Participants were provided with photographic and written case vignettes (written cases were one to two pages in length). Participants were then required to identify and link theory to the case, and then develop teacher action plans using the four sections of the pedagogic heuristic device. The first section of the pedagogic heuristic device asked students to analyze the case and develop five theoretical constructs from Educational Psychology that helped them to better understand the teaching and learning presented in the case. The second section of the pedagogic heuristic device required students to define the constructs and describe where the constructs were evident. Participants then developed 10 potential teacher actions and described at least one weakness of each action for the third task of the pedagogic heuristic device. Finally, students created and evaluated a 5-point action plan and determined why it might work or fail. Part of the plan included the considerations a teacher would need to take into account such as, for example, moral, ethical and political considerations (Herman, 1998).

Even though the study yielded some positive results, there are significant weaknesses in such a structured form of pedagogy. Herman's (1998) findings showed that students who did well in evaluating cases tended to have higher grades during the course of the program and higher evaluations by their cooperating teachers. A main

weakness of the study is the students were exposed to the pedagogical heuristic device throughout the semester and it was used as the format for the midterm and final exams. Therefore, students may have scored higher simply because they were familiar with the format, rather than because they had deep understandings of the Educational Psychology constructs. Additionally, Herman's study assumes that written cases are the best form of instruction rather than exploring alternatives such as video based case studies.

Lundeberg and Scheurman (1997) argued that before considering how to use cases in professional education, instructors must first determine when to introduce cases in instruction. The authors claimed that two camps exist related to the use of case studies, one being theoretical instruction prior to being exposed to the case, and the second being exposure to the case prior to theoretical instruction (Lundeberg & Scheureman, 1997). Herman (1998) exposed undergraduates to case studies in class only after they had completed required theoretical readings and then measured their understanding of constructs in educational psychology and student teaching performance evaluations. Herman's study is an example of providing theory before exposure to the case. In contrast, Lundeberg and Scheureman (1997) presented and supported the alternative approach of case study instruction; the presentation of the case prior to theoretical instruction.

Additionally, Lundebert and Scheureman (1997) called for the repeated use of cases to serve as anchors for courses. Findings from the study indicated that participants, who read the cases before they received theoretical instruction, identified more concepts related to learning and motivation than participants who read the cases after theoretical

instruction. Furthermore, repeated exposure to the same case resulted in even higher numbers of concepts identified by the candidates (Lundeberg & Scheureman, 1997).

Outstanding questions regarding the format of instruction using cases. Much still needs to be uncovered regarding the best ways to use case studies in professional education courses. Law, medicine, and business utilize very defined instructional practices and although changes have occurred over the century, these shifts have been minor and cases are still used in generally the same fashion as they were when first implemented. Researchers have continually identified the goal of case studies in education as tools for bridging theory into practice (Shulman, 1986: Herman, 1998; Hewitt, Pedretti, Bencze, Vaillancourt, & Yoon, 2003; Yoon et al., 2006). With this goal in mind, it is conceivable that education must pull from the observational goals of medicine, the reasoning goals of law, and the decision-making goals of business to help pre-service teachers begin to identify significant issues in classrooms and develop solutions based upon theoretical knowledge.

Education professionals must determine how to best present cases. For example, when working with pre-service teachers who have little to no classroom experience, is it better to have highly structured discussions led by the instructor? Should pre-service teachers be exposed to cases individually, in small groups, in a whole class setting or a combination? Law, medical, and business students do not begin fully developing a sense of their profession until they begin their training. Given that pre-service teachers enter teacher preparation programs already having attended schools for 12 or more years, how do their experiences and beliefs about education impact the ways in which cases are presented or how groups are formed in class (Pajares, 1992; Strauss, 2001)?

The diverse structure of teacher education programs in the United States may also have a significant impact on the best way to use cased based pedagogy. For example, are graduate students more skilled in using Socratic seminar methods than first and second year undergraduates? Is it beneficial to expose pre-service teachers to cases before, during, and/or after field experiences and student teaching? Might professional education programs benefit from adopting a more streamlined approach to case-based pedagogy as law, medicine, and business have or are p-12 students better served by the diverse ways cases are used in teacher preparation programs?

Format of cases. Importantly, it is not just the format of case instruction, which has been and is being studied and honed, but also the content of cases themselves. What is presented to students is highly depended on the lesson objectives as well as the prior knowledge of the students. Cases can range from brief to extended written accounts, video of both real and fictitious events, live speakers, and observing live events (Lundeberg, Levin, & Harrington, 1999). Cross-disciplinary literature reviews have identified critical components of cases to ensure students are presented with quality cases to study (Dolmans et al., 1997; Kim et al., 2006).

When studying the use of cases in medical school courses, Gijselaers and Schmidt (1990) found that the quality of cases used explained the variability in functioning of small-group tutorials and time spent on individual study. The researchers concluded that all things being equal, improvement to the quality of a case will result in improved group functioning and time spent in self-study, thereby increasing learning of content, analytical thinking and decision making.

Identified principles of effective cases. Dolmans et al. (1997) called for the medical community to move away from designing cases based on experienced-based knowledge and toward cases built on evidence-based knowledge. The authors defined experienced-based knowledge as instructors and faculty selecting and designing cases based on intuition and professional experiences. Evidence-based knowledge was defined as empirical evidence drawn from multiple studies.

In their literature review, the authors highlighted seven principles of effective case design based on current research in the field. First, cases must connect to prior knowledge so learners can "actively construct explanatory models, which in turn facilitate the processing and comprehension of new information" (Dolmans et al., 1997, p. 186). Therefore, faculty must have knowledge regarding students' past educational experiences and the concepts taught in prior courses. Secondly, cases must contain cues, which stimulate elaboration. Elaboration allows students to increase the relations between concepts and the number of details in semantic networks, which lead to more complex knowledge structures. In turn, multiple retrieval paths are also generated with which to recall acquired knowledge (Anderson, 1990). Third, in line with cognitive theories of situated knowledge, the case must provide a relevant context and resemble a situation the student will encounter in his or her professional practice. The use of similar contexts allows for material to be better stored for future activation by situational cues.

The fourth principle is based on the supposition that scientific knowledge must be integrated with clinical knowledge to produce better diagnostic performance. Fifth, cases must generate self-directed learning as opposed to teacher-centered approaches. Cases must not be too structured but must cause students to actively seek out literature and

research, meaning that cases cannot contain explicit questions or references to research and literature providing solutions. Self-directed learning to an extent, places the student in the role of selecting the content to be mastered and the competences to be fostered. The sixth principle requires cases to create an interest in the subject matter and sustain discussion about multiple solutions and alternatives. Furthermore, the case should increase intrinsic interest. Schmidt (1983) used an experimental design to study the impact of case studies on intrinsic interest in an issue. His findings showed that the experimental subjects where more likely to be interested in attending a lecture on the issue than the control group, who did not read and discuss a case on the issue. The final principle defined by the authors, is a case should match the objectives of the faculty member. The intended learning outcomes must be accomplished and not just an examination of a particular situation.

It is interesting to note that the authors do not draw solely from research on the use of the case method in medicine but pull from other disciplines such as education, psychology, and law. The seven principles for case design are applicable to all disciples. Although principle four, the integration of scientific knowledge with clinical knowledge may seem at first to be specific to the medical profession; it mirrors the notion of content uniting and interacting with pedagogical knowledge and pedagogical content knowledge in education.

The work of Dolmans et al. (1997), is further supported by Kim et al.'s (2006) cross discipline literature review of 100 research studies on the format of case studies. The researchers catalogued emergent themes and identified five core attributes of effective cases. In alignment with Dolman et al.'s prior research, Kim et al. (2006) found

cases must be relevant to learners' interests. Cases must be life like and contain realistic materials without non-pertinent features. Thirdly, cases must be engaging, meaning they offer rich presentations and allow for multiple voices and perspective. Furthermore, cases must be instructional. The authors defined instructional as building upon students' prior knowledge and connecting it to new concepts. However, in contrast to Dolmans et al, Kim et al. (2006) also noted a need for challenging cases. Cases should be presented in increasing difficulty, data should be presented in non-linear fashions and cases, which are rare or unusual in professional practice, should also be included.

The format of cases in professional education varies greatly and does not have the more streamlined pedagogy of medicine, law and business. Teacher educators often use a variety of cases including brief and extensive written cases and written cases that are very structured as well as cases that are highly open to interpretation (Putnam & Borko, 2000). Furthermore, visual cases such as a photo are sometimes used (Herman, 1998). Video clips, multimedia, and hypermedia environments are also utilized as cases in educational preparation programs (Putnam & Borko, 2000). Lampert and Ball (1998) researched the effectiveness of hypermedia in the training of pre-service mathematics teachers. The researchers developed a hypermedia learning environment that combined videotapes of classroom mathematics lessons, instructional materials, teacher journals, student notebooks, students work, and teacher and student interviews, as well as tools for browsing, annotating, and constructing arguments. The varying format of cases in professional education programs leads to a number of unanswered questions.

Unanswered questions regarding the format of cases. Despite the long-standing tradition of case-based pedagogy in professional education, many questions still exist.

Putnam and Borko (2000) noted that even though there is an increased call for case-based instruction, the effectiveness of cases as instructional tools is based more on promise and assumptions than empirical data. The authors call for research about the most effective way to structure cases and what is learned from each form of case. For example, are there differences in what is learned when one is presented with a hypermedia case versus a focused written case? Furthermore, the authors note that the purposes for case use must be considered and researched in relation to selecting the most effective form of case. In some situations a focused case with limited complexity may be preferable to a more open-ended multimedia case. An additional point for consideration is the role of the learner in case-based instruction. What students see in cases and what they bring to cases is an area in need of research.

Student perceptions of cases. When utilizing case studies as a form of pedagogy, the instructional methods, format of the case as well as learning outcomes do not exist in a vacuum, the students engaged in analyzing and meaning making of the cases also play a significant role. The little research focused on student perceptions of cases is fairly positive, but lacking in substance.

Early research regarding the use of cases in teacher education provides positive data regarding student perceptions. In 1932, questionnaires completed by teacher candidates at New Jersey State Teachers College at Montclair revealed that candidates valued the case-based method. Furthermore, these early candidates reported that it helped them identify and solve real classroom problems (McAninch, 1986).

There is some indication that the case method lessens cramming and leads to deeper internalization of material for students. At Harvard Business School, students

have reported a more significant sense of preparation when engaging in case method instruction. Performance and evaluation becomes less about memorizing information and cramming for an exam and more about being able to deeply process information and use it in practical settings (Harvard, 2009).

A quantitative study of the use of cases at two major medical schools in the United States also yielded positive findings about student perceptions of cases. After being exposed to a case and walking through a diagnosis in a large group setting, students were asked to evaluate their satisfaction with case-based instruction. The researchers found that 86% of 80 respondents found the large group discussion of the case to be excellent or very good (excellent representing the most positive response on a Likert scale). Furthermore, in the additional commentary section of the questionnaire, 95% of the 41 respondents who utilized the commentary section noted the preparatory work and interactive discussion substantially contributed to their learning (Bowe et al., 2009).

However, other researchers have found mixed student perceptions regarding the use of cases. Cockburn and Polatajko (2004) researched the use of cases at a two-year occupational therapy Master's program at the University of Toronto. The researchers developed a divergent case method, a hybrid of case-based teaching used in education and problem-based learning from medicine. Students were presented with a variety of cases during the two-year program, including written, videos, live people giving presentations, and published articles. Students were presented with the case and asked to analyze the case in alignment with general and specific questions developed by the instructor. Each student was then required to write three possible solutions or plans of action. Groups of six to eight students were assigned and students were to discuss their

solutions and action plans. The whole class then met with an expert in the area who led a full class discussion of the case and then, because professionals are ultimately responsible for their own actions, each student was required to develop his or her own final plan of action. The authors state that students benefited and gave positive feedback about the connections between theory, evidence, and practice. However, a significant number of students expressed concern regarding the differing styles of faculty in implementing and evaluating the case method (Cockburn & Polatajko, 2004).

Although the study by Cockburn and Polatajko (2004) shed light on the possible problems students perceive in the case method, these researchers overall methods and data analysis were insufficient to fully support their findings. No theoretical framework was provided for the structure of the divergent case method nor were reasons given for the use of guiding questions from the instructor or why students were asked to develop three solutions or action plans but not provide support or rationales for their decisions. Furthermore, a discussion led by an expert in the field does not fit with the typical large group, student led discussion of the case. The authors also did not state how the determination was made that students felt they benefited or experienced a connection between theory, evidence, and practice. Elaboration regarding the differences in faculty expectations and instructions was also not provided. Therefore, the study provided glimpses into future directions to take about research on student perceptions of the case method but did not provide substantial insight.

Outstanding questions regarding student perceptions of cases. Sadly, an exploration of literature on the case-based method yields little about student perceptions of cases. Much research exists on how to develop and teach using cases as well as the

short-term benefits of cases. However, what students take from cases or how they believe cases impact their education is an area in need of further research. Furthermore, little research exists regarding what students bring to the case and how this prior knowledge impacts learning with cases. The influence of faculty expectations, biases, and classroom environments may also significantly impact how students view and respond to cases. Additionally, research is needed to determine what students *actually* learn compared to what students *believe* they have learned (Lunderberg et al., 1999).

Benefits of the case method. Some cognitive goals are met via the effective use of case studies. Cases lend themselves to active and self-structured learning (Shanley, 2007). Furthermore, "The use of cases as concrete examples to support the study of concepts and principles also enhances knowledge acquisition and transfer" (Shanley, 2007, p. 479).

The inclusion of video based cases is becoming increasingly more common in medical schools. Millard (2009) found significant benefits related to knowledge retention and classroom engagement when she utilized video clips from television medical dramas to teach graduate courses in biochemistry. The use of medical cases provides novices with the opportunity to explore and evaluate situations prior to developing recommendations.

A number of studies have provided insight into the potential benefits of using case studies in education (e.g. Herman, 1998; Lundeberg & Scheurman, 1997; Yoon, Pedretti, Bencze, Hewill, Perris, & Van Oostvenn, 2006). Yoon et al. studied the impact of using case studies on sense of efficacy for teaching in elementary pre-service science teachers. Participants (12 pre-service teachers) took part in a case-based lesson for a unit typical of

seventh grade science. The researchers found that even though content knowledge did not improve, pre-service teachers did negotiate and apply previously learned teaching principals to bridge theory into practice. In addition, the use of case methods provided the opportunity for participation for candidates of varied degrees of knowledge. Participants were also able to discuss and relate their personal knowledge and experiences to the science teaching community. The researchers concluded that cases can be used to increase efficacy for pre-service teachers with varying degrees of experience in education courses (Yoon et al. 2006).

Although Yoon et al., (2006) did not find significant improvement in pre-service teachers' content knowledge, this may be due to the design of the study and/or program rather than the uses of case-based lessons. Prior to the study, participants were engaged in intense pedagogical workshops. Even though strong pedagogical knowledge is important, pre-service teachers must have a cohesive foundation of content knowledge, pedagogical content knowledge, and pedagogical knowledge and view these constructs as interrelated (Darling-Hammond, 2006). Focusing intensively on pedagogy prior to working with the cases may have led to a perceived division between content and pedagogy for the participants in the Yoon et al. (2006) study.

Outstanding questions related to the benefits of cases. Yoon et al.'s (2006) findings shed light on the use of case-based lessons in relation to a developing sense of teacher efficacy and the ability to bridge theory into practice. All the participants in the Yoon et al. (2006) study were part of a teacher education program. All participants also had experience teaching lessons in field placements. Therefore, research is needed to determine if the use of cased based lessons enables undergraduates, in the early phases of

teacher education programs, to begin developing a sense of teacher efficacy and the ability to bridge theory into practice.

Additionally, the methods used to study case-based pedagogy need to be expanded. Much research on the use of cases, especially in professional education, is collected via action research where the researcher collects data from his or her own class for the course of the quarter or term. Ultimately, having an outside researcher design and collect data may help alleviate possible biases (Lundeberg et al., 1999).

Case method and professional practice. Very little research exists on the application of case method principles to professional practice. Most evidence about the success of the case method in practice has been anecdotal (McAninch, 1986; Lundeberg et al., 1999). This lack of research can be explained by a number of factors. Lundeberg et al. (1999) argued that it is impossible to study and compare if students who learned via cases retain information better or perform better in professional practice than those who did not learn with a case-based pedagogy. Their supposition was based on the point that cases are only one form of pedagogy students are exposed to during the course of their preparation. The significant lack of evidence regarding the impact of case-based pedagogy on professional practice is a glaring hole in research on case studies. What is particularly interesting is that this hole is evident across disciplines.

Summary. Educators have used case-based methodologies across professional education disciplines for well over 100 years in the United States (McAnich, 1986). Research has documented positive short-term gains for students taught via case lessons (e.g. Herman, 1998; Lundeberg & Scheurman, 1997; Yoon, Pedretti, Bencze, Hewill, Perris, & Van Oostvenn, 2006). Student perceptions of case studies have been fairly

positive (Bowe et al., 2009; Cockburn & Polatajk, 2004; Harvard, 2009). Furthermore, extensive research exists regarding the format of cases as well as effective case instruction (e.g. Anderson, 1990; Dolmans et al., 1997; Kim et al., 2006). However, significant questions remain to be explored regarding the influence of individuals on cases and case instruction, the best way to utilize cases in diverse teacher preparation programs, as well as the role of case-based pedagogy in long-term professional practice.

Teacher Efficacy

Teachers' sense of efficacy is a particular kind of self-efficacy. Self-efficacy, an individual's beliefs about his or her ability to deal effectively within a given area, is a central element of social cognitive theory (Bandura, 1997). Research has consistently found many positive outcomes associated with teachers' sense of efficacy (Fives, Hamman, & Olivarez, 2007; Hoy & Woolfolk, 1990, 1993; Tschannen-Moran & Woolfolk Hoy, 2001; Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998)

Self-Efficacy. Self-efficacy beliefs, personal beliefs about competence in a given area, affect motivation. Self-efficacy is future-oriented and focused on the individual's ability to accomplish a task. Comparisons and appraisals of whether another could accomplish the task are not aspects of self-efficacy. Self-efficacy beliefs are strong predictors of behavior. There are four identified sources of self-efficacy expectations: mastery experiences, physiological and emotional arousal, vicarious experiences and social persuasion. Mastery experiences are one's direct experiences and have the most impact on efficacy beliefs. The level of physiological and emotional arousal affects self-efficacy. For example, feeling scared and anxious lowers efficacy whereas feeling excited and engaged raises efficacy. Vicarious experiences are those that are modeled by another

person. The more the observer identifies with the model the greater the impact on self-efficacy will be. Finally, social persuasion is specific performance feedback or encouragement that can lead a person to be persistent, try harder, or try new strategies in future attempts. Social persuasion is most effective depending on the extend of the credibility, trustworthiness, and expertise of the person delivering the persuasion (Bandura, 1997)

Benefits of Teacher Efficacy. Teachers' sense of efficacy is defined as a teacher's belief that he or she can influence student learning in all students, even those who are unmotivated or from unsupportive backgrounds (Guskey & Passaro, 1994). Teacher efficacy is cyclical, "the proficiency of a performance creates a new mastery experience, which provides new information that will be processed to shape future efficacy beliefs" (Tschannen-Moran et al., 1998, p. 234). Teacher efficacy is one of very few personal characteristics of teachers that is correlated with student achievement. Teachers with a higher sense of efficacy are more likely to work harder and persist longer even with students who are difficult to each because these teachers believe in themselves and their students (Hoy & Woolfolk, 1993; Woolfolk Hoy, 2009). A high sense of teacher efficacy can also have a positive impact on student motivation (Midgley, Feldlaufer, & Eccles, 1989). Teacher efficacy has a positive impact on students' cognitive and affective achievement (Ross, 1998).

Sense of teacher efficacy has been linked to a number of teacher outcomes. Research on first year teachers with high teacher efficacy found reduced levels of stress, stronger commitment to teaching, and greater sense of satisfaction with support and preparation (Hall et al., 1992). High teacher efficacy has been correlated with productive

collaboration to improve teaching skills and increase student achievement (Ross, 1992). Furthermore, teachers with a higher sense of efficacy are more likely to set ambitious goals, utilize challenging teaching techniques, and implement innovative programs (Ross, 1998).

Principles of Educational Psychology. Certain principles of educational psychology are closely connected to teacher efficacy. Student motivation, classroom management, and instructional decisions have all been shown to have a relationship with teacher efficacy. The sense of efficacy preservice teachers have for understanding and applying constructs in educational psychology may impact their developing sense of teacher efficacy as well as how they structure their future classrooms, student interactions, and persistence in the field.

A teacher's sense of efficacy impacts student motivation. Midgely et al. (1989) in a longitudinal study, tracked middle school students as they moved from one grade to the next and found that high-efficacy students more likely to be found in classrooms with high efficacy teachers. When these same students moved to a new classroom with a teacher who also had a high sense of teacher efficacy, their efficacy remained high. However, students experienced a decline in efficacy when placed in a classroom with a teacher who had a low sense of teacher efficacy. Students who moved from a high to a low efficacy teacher had lower motivation than students who had low efficacy teachers for both years.

Instructional decisions and planning are also related to teacher-efficacy. Allinder (1994) found that teachers with a higher sense of efficacy tented to exhibit greater levels of planning and organization. Uniting extensive research on teacher efficacy, Woolfolk

Hoy and Davis (2005) developed a framework to link teachers' efficacy beliefs to student outcomes; teachers with higher sense of efficacy are more likely to use strategies that support student learning and on task behavior. Furthermore, the framework shows instructional decisions by high efficacy teachers are also more likely to focus on content area and use active teaching or direct instruction for greater student learning.

Classroom management choices have also been linked to teacher efficacy. Woolfolk and Hoy (1990) studied student teachers' pupil control orientation and found that high efficacy teachers were more likely to address management problems and find solutions rather than being permissive or controlling. Teachers with a higher sense of efficacy may have more confidence that they can manage students working on a variety of tasks and the ability to look for and make adjustments to controllable factors (Woolfolk Hoy & Davis, 2005).

Principles of educational psychology are directly related to outcomes of teacher efficacy. If undergraduates have a greater sense of efficacy for specific constructs in educational psychology, such as motivation, instructional design, and classroom management, they may have a higher sense of teacher efficacy in their future classrooms because they believe they can apply the constructs of educational psychology in their own classrooms. As evidenced in the above section, a higher sense of teacher efficacy is linked to positive outcomes for students and teachers.

Goal Theory

Over the course of the last two decades, significant research has been done in the field of Educational Psychology on goal theory (e.g. Ames, 1992; Blumenfeld, 1992; Meece, Anderman, & Anderman, 2006; Midgely, Middleton, Gheen, & Kumar, 2002).

This research on goal theory provides a way to understand learning and motivation in light of student's personal goal orientations. Additionally, research has expanded goal theory and also taken into account the nature of the goal structure of the classroom (e.g. Kaplan, Middleton, Urdan, & Midgley, 2002; Meece, 1991; Patrick, 2004; Patrick, Anderman, Ryan, Edelin, & Midgley, 2001; Turner, & Patrick, 2004). Goal theory provides a way to understand patterns of motivation regarding how students orient themselves towards achievement goals (Maehr, & Nicholls, 1990). Achievement goals are considered purposeful behaviors that involve individual development or perception or demonstration of competence (Maehr & Nicholls, 1990; Nicholls, 1984 as cited in Meece, Anderman, & Anderman, 2006). Researchers in goal theory generally agree on two orientations, mastery goals and performance goals. It is important to note that goal orientations and structures are not fixed concepts but may change and occur simultaneously (Ames, 1992). However, mastery orientations and structures have shown significant positive impacts on the students and the classroom (Meece et al., 2006).

Mastery and Performance Orientations. A mastery goal has a focus on how the individual perceives the concept and his or her own learning. Mastery goals are focused on deeply and fully understanding concepts, the desire for personal growth and development as well as striving to accomplish challenging tasks. Regarding evaluation, success is based on self-satisfaction, challenge and interest as well personal growth and development, whereas performance goals are focused on the judgment of others as favorable or unfavorable, social comparisons, competition, the desire to perform better than others. Success is evaluated based on higher achievement or better performance than others or the perceived norm (e.g. Kaplan, Middleton, Urdan, & Midgley, 2002; Meece et

al., 2006). Furthermore, performance orientation is broken down into two sub categories, performance-approach and performance avoidant (Meece et al., 2006). "Performance-approach goals focus on the attainment of favorable judgments of competence; whereas performance-avoidance goals focus on avoiding-unfavorable judgments of ability" (Elliot & Church, 1997; Elliot & Harackiewicz, 1996, as cited in Meece et al., 2006).

Studies have identified the positive outcomes of mastery orientations (Ames, 1992; Meece et al., 2006). Researchers found mastery orientations lead to greater amounts of time spent on tasks, persistence in difficult learning situations, sense of self-efficacy as well a high quality, actively engaged learning involving the use of problem-solving strategies. Additionally, mastery orientations are characterized by the belief that effort leads to success, ability is not fixed, difficulties or failure can be overcome via increase effort and/or changes in strategy choices. Adaptive patterns of learning are present in students with mastery orientations (Ames, 1992; Meece et al., 2006).

The social-relational context of the classroom. It is important to note that goal orientations interact with and are impacted by goal structures in the classroom (e.g. Kaplan et al., 2002; Meece, 1991; Patrick, 2004; Patrick et al., 2001; Turner, & Patrick, 2004). The social-relational context of the classroom is a significant aspect of goal theory, as it has the power to promote and support student motivation and learning (Patrick, 2004). Current research shows a need to include the social-relational context within the concept of mastery structures (Patrick, 2004). Patrick, Turner, Meyer and Midgley (2003) conducted a mixed methods study focused on the relationship between classroom psychological environments and students' avoidance behaviors. Part of the data collected by this study included student perceptions of their classroom. Interestingly,

three environments were found; supportive environments, non-supportive environments and ambiguous environments (Patrick et al., 2003). Characteristics of supportive environments include teacher support (intellectual and emotional), enthusiasm for academics and learning, realistic but high expectations, and confidence that all students can learn. The teachers in supportive environments sought to develop relationships with students that fostered respect and care. Supportive environments also had teachers who focused on student-self control, monitored behavior, and held students accountable (Patrick et al., 2003). Contrastingly, teachers in non-supportive environments communicated that school was not a preferable place to be and provided reasons for students to adhere to avoidance strategies. Teachers did not express the sentiment that all students would succeed and did not provide emotional or intellectual support. Non-supportive environments also conveyed the message that the teacher did not respect students or care to form relationships. Teachers in non-supportive environments were authoritarian (Patrick et al., 2003).

The third environment identified by Patrick et al. (2003), and the critical environment to this study, an ambiguous environment, was characterized by aspects of both supportive and non-supportive environments. Teachers in ambiguous environments tended to express the same positive sentiments as teachers in supportive environments, however, they tended to undercut themselves with weak and ambiguous statements. These teachers tried to form bonds with students but never fully connected. Teachers in ambiguous environments also did not fully understand student development and appropriate tasks. Additionally, ambiguous environments were characterized by teachers stating respect was expected but violators were not held accountable or inconsistently

held accountable. Therefore, these teachers had more frequent cases of misbehavior on the first day of school than teachers in supportive and non-supportive environments (Patrick et al., 2003).

Upon identifying the three environments, Patrick et al. (2003) proceeded to analyze the data in connection with goal theory. In supportive environments, student reports indicated mastery goal structure was present as well as teacher support, compassion, and respect. Student reports from non-supportive environments indicated a higher performance goal structure than supportive environments. Interestingly, ambiguous environments were viewed just as negatively as non-supportive environments by students. Student perceptions of ambiguous environments tended to mirror those of non-supportive environments (Patrick et al., 2003). Because the teacher, in part establishes goal structures, it is important to explore his or her views and actions. Roeser, Marachi, and Gehlbach (2002) noted "Research on teachers' goal-oriented approaches to instruction and the contexts of teaching is considerable less well developed than research on students' goal-oriented approaches to learning and their perceptions of learning contexts despite the important interdependencies between the two" (p. 206). Therefore, further research on perspective teachers' beliefs regarding mastery and performance approaches to classroom instruction is needed to better inform teacher educators.

Conclusion

Upon review of the literature, it is evident that an understanding of the impact of video cases on efficacy for applying specific principles of educational psychology, is missing from the field. This study seeks to determine if the use of video case studies focused on motivation increases undergraduates' sense of teacher efficacy for applying

theories and concepts of motivation research. Specifically, I will test the hypothesis that students exposed to a case study on motivation will have a greater sense of efficacy for applying principles of motivation in their future classroom, a greater belief in mastery approaches to classroom instruction and a decreased belief in performance approaches to classroom instruction. A greater sense of efficacy for applying mastery approaches to instruction may lead to actual application and a greater sense of teacher efficacy, thereby making video case studies a tool for bridging theory into practice.

Chapter 3: Methodology

Research Purpose

The purpose of this study was to determine if the use of video case studies impacted sense of teacher efficacy for applying specific concepts of educational psychology in the broad area of motivation. Furthermore, I sought to determine if video case studies impacted mastery and performance approaches to instruction. Most preservice teachers complete a course in educational psychology during their teacher preparation programs. Understanding how case studies, when used as a pedagogical tool, impacted developing sense of teacher efficacy for applying concepts of educational psychology provided insight into (a) whether preservice teachers bridge the gap from theory into practice and (b) if they believe they have the ability to utilize concepts of educational psychology in their future classrooms. I hypothesized that participants exposed to a case study on motivation would have a greater sense of teacher efficacy for applying that principle in their future classroom and would have greater support for mastery approaches to instruction.

Design. This investigation used an experimental design comparing a control group and a treatment group on a pre-test, mid-point test, and post-test. A variety of measures were utilized in the pre-test. Participants in the treatment group watched a video case based on motivation and participants in the control group and watched a video of a lecture on motivation. Both videos were based on the same concepts of motivation and were the same length. Immediately after viewing their assigned video, participants were

asked to complete the pre-test measures a second time as well as responding to a series of open-ended questions. The post-test consisted of a third completion of the initial pre-test measures.

Hypothesis. The use of video case studies focused on motivation will increase undergraduates prospective teachers' sense of teacher efficacy for applying theories and concepts of motivation research as well increase their beliefs in mastery approaches to instruction and decrease their beliefs in performance approaches to instruction.

- Independent Variable: the use of a video case study on motivation.
- Dependent Variables:
    - Sense of teacher efficacy for applying principles of motivation research.
    - Beliefs about mastery approaches to instruction
    - Beliefs about performance approaches to instruction

Measurement Plan. Four pre-existing and widely accepted measures were utilized in the pre and post-test phase of the proposed study. Demographic data also were collected during the pre-test. The following instruments were used:

The Teachers' Sense of Efficacy Scale (TSES). The short form of the TSES contains subscales for perceived efficacy in instruction, management and engagement (Tschannen-Moran & Woolfolk Hoy, 2001). The TSES was selected because the three subscales align with the three areas of educational psychology selected for the basis of the video cases and also because the instrument provides a comprehensive view of teacher sense of efficacy. Participants' responded to items such as "How much can you do to motivate students who show low interest in school work?" using a 9-point Likert

type scale from 1 (Nothing) to 9 (A Great Deal), the higher the number the greater the perceived efficacy. Please see Appendix C for scale items.

Table 1

Descriptive statistics for TSES subscales and total score for short form

(Taken from Tschannen-Moran & Woolfolk Hoy, 2001).

	Mean	SD	α
TSES	7.1	0.98	0.90
Instruction	7.3	1.2	0.86
Management	6.7	1.2	0.86
Engagement	7.2	1.2	0.81

Patterns of Adaptive Learning Scales (PALS). The following three scales were used from the Teacher Scales of PALS: Mastery Approaches to Instruction, Performance Approaches to Instructions, and Personal Teaching Efficacy (Midgely et al., 2000). Participants' responded to items using a 5-point Likert type scale. These three scales were selected to provide a richer depiction of participants' beliefs regarding motivation. The wording of the items on all three scales was modified from their original form. The items were written to use with practicing teachers. I changed the items from present tense to future tense to use with participants who are preservice teachers. Please see Appendix D for items from all three scales.

Table 2

Descriptive Statistics for Select Patterns of Adaptive Learning Scales

(Midgley et al., 2000).

	Mean	SD	Skewness	α
Mastery Approaches to Instruction	3.44	0.76	-0.16	0.69
Performance Approaches to Instruction	2.21	0.85	0.32	0.69
Personal Teaching Efficacy	3.36	0.66	-0.12	0.74

Control Group. The control group (A) watched a video lecture on motivation. In the video, a middle-aged female discussed definitions and concepts covered in the motivation chapter of *Educational Psychology: Modular Active Learning Edition* (Woolfolk, 2011), the text used in the course. The speaker was selected with the hopes that participants would view the speaker as an instructor. Specifically, the speaker discussed the four general approaches to motivation, the role of arousal, competence and relatedness in the classroom, and personal and situational interest. In the video lecture the speaker defined the concepts and provided general descriptions of how the concepts apply to educational settings but avoided using anecdotes to ensure the video lecture was a non-example of a case study. Appendix E contains a full script of the video lecture.

Treatment Group. The treatment group (B) watched a video of "Graphing Jelly Beans" from Pearson Publishing's *MyEducationLab*, a website that provided multimedia resources, quizzes, discussion questions, and scholarly articles organized into groupings that corresponded to the text used in the class. I chose an existing video case that had

been developed to accompany the Woolfolk (2011) chapter on motivation in order to ensure that the case utilized in the study was well connected to the text material. The *MyEducationLab* website was not used by the course instructors or students. Therefore, material on *MyEducationLab* was directly connected to the modules in the course textbook but students were not exposed to the treatment prior to the study. Discussion questions for the study were also selected from MyEducationLab exercises and quizzes that are directly connected to the specific video case. Pearson Publishing authorized access to the video for the purpose of this study.

The video depicted an elementary mathematics lesson. The teacher in the video used jellybeans as a tool for teaching students how to create a graph. The teacher began the lesson by asking students how they would explain the taste of a jellybean to a person who had never had one. The students generated a variety of ideas and decided tasting jellybeans would better enable them to explain the flavor. Students documented their results and their favorite flavor. The teacher asked the class to develop a way to compile everyone's favorite flavor information. The students worked as a whole class to generate a large graph at the front of the room. The teacher then used the class-generated graph to develop basic math problems. Students then set up and solved the problems. Finally, the teacher had students generate math problems based on the graph for the class to solve.

As noted above, the video was connected on the *MyEducationLab* website to the Motivation and Affect module in the textbook. This video exemplified a number of concepts of motivation and affect. Students were asked to taste and touch the jellybeans as a means of physical arousal. Cognitive arousal was generated via the use of thought proving questions, "How can we organize the information so that we can look at it as a

whole group?" The teacher addressed students' need for competence in a number of ways: she asked students' to help her solve the problem, indicating that students were the experts, she verbalized acceptance of diverse ideas developed by the class and asked a student a follow up question which required the student to explain her conclusion, when a student made a mistake and added rather than subtracted, the teacher gently guided her towards the right answer and implied that making and correcting mistakes was acceptable. The video also depicted students' needs for self-determination were being met, students had input on class activities, the students were led to believe that generating a graphic was their idea, students graphed their favorite flavor and collective preferences, furthermore, students were asked to identify new questions which could be answered by the graph and students were asked to volunteer and share answers. Relatedness was also demonstrated in this video clip, the problem was one the class could solve together, students were allowed to talk quietly to one another and taste the jellybeans, the teacher provided positive nonverbal feedback such as smiles and nods throughout the lesson, and when a student needed assistance, the teacher knelt down so she was level to the student when answering and provided one on one assistance.

The treatment group video was selected as an exemplar of a video case study. The clip presented a typical slice of classroom life. The teacher in the video used creative pedagogy and carried out an effective lesson. Participants in this study had very limited to no actual teaching experience and only a developing knowledge of educational psychology. Therefore, the case was selected as a way to challenge participants to apply their growing knowledge of educational psychology to a positive, effective, and realistic glimpse of classroom life while not overwhelming them with a problem or situation

which they might not have the tools to analyze and respond to at this point in their educational experience. Additionally, the video was selected because it did not affirm any negative stereotypes associated with students and the teaching profession. As Cruichshank (1996) noted, cases should provide a way for participants to analyze and apply theoretical knowledge. McAninch (1986) noted that cases in legal education are utilized as ways to help students begin to think like lawyers and develop independent construction of knowledge in ways that allow for multiple perspective taking. The treatment video was selected because it contained multiple aspects that allowed for perspective taking and the chance to begin independently constructing knowledge of motivation theories in ways that enabled the participant to begin thinking like a teacher.

Sampling. I asked permission of four educational psychology instructors to invite students to participate. Each instructor taught one section of the course, leading to a maximum possible sample of 153 participants over the course of two 10-week quarters. The course is a requirement for most education programs; most enrolled students are considering entering the teaching profession. All four instructors allowed me to speak to the class at which time I asked participants to voluntarily participate in the study. Participants were informed that if they did participate, their responses on the measures would be coded and destroyed one year from the end of the study. Participants were between 19- and 55-year-old college undergraduates considering entering the teaching profession. Participants who were graduate students or had prior K-12 teaching experience were excluded from the study. Participants who did elected to participate in the study were randomly assigned to either the treatment or the control group.

Procedures. I began the study in the fall of 2011 and completed data collection at the end of the winter quarter 2011. The procedures below were repeated for two 10-week quarters.

1. **Before classes began**-I asked four educational psychology instructors for permission to speak to their class and for the dates when each course covered the motivation section of the course textbook.
2. **Week 1**- I asked undergraduate students to participate. Students were informed that participation involved completing one questionnaire in class, viewing a brief video outside of class online, during the quarter, and responding to questions based on the video. After watching the video, participants then completed a second questionnaire online. Attending the video session counted as one extra credit option in their course, totaling no more than two percent of their final grade. Participants then completed a third questionnaire at the end of the quarter in class. Participants were informed that they were eligible to win a $25 Visa gift card. in addition, they were assured that their responses on the surveys were confidential, did not require them to share personal information or experiences or address potentially controversial topics. Participants were then asked to sign an acknowledgement form prior to participation (Appendix B) that made clear:
    a. Questionnaire responses were coded to protect confidentiality.
    b. The researcher and her advisor were the only people with access to the data and codes.
    c. All data was stored in a locked drawer in my home and will be destroyed one year after collection.

3. **Week 2**- questionnaires were coded. Participants were randomly assigned to one of two groups: A=control, B=treatment. Using the information from the cooperating instructors, I determined when each section was discussing motivation and then set up five, one-hour lab times to begin once the motivation unit was completed. Because all four sections taught on essentially the same pacing guidelines, all four sections covered motivation within one week of each other.
4. **Weeks 6**- at the end of week five, I emailed the participants (email addresses obtained via the first questionnaire) and asked them to attend one of the five one-hour computer lab sessions during week six. Participants were told to plan on staying for half an hour. Upon arriving at the computer lab students were be assigned to view the video they had been randomly assigned to and then respond to the questions posted at the end of the video. Finally, upon responding to the questions, participants completed the four initial (pre-test) measures for a second time. Participants were reminded that their participation was voluntary but counted as extra credit towards their Educational Psychology course. Participants were also asked to refrain from discussing the video in class but rather to contact me or the ORRP if they had questions regarding the video or study.
5. **Week 10**- online responses were reviewed to determine the number of participants still active in the study and participants were asked to complete the questionnaires a third time.
    a. Participants who attended the video sessions in the computer lab were asked to complete a final questionnaire in class.

b. I randomly selected a name from a hat (slips participants filled out on the day of the pre-test containing just their first and last name) and that person won the $25.00 gift card. This ensured that completion of the study was not a requirement for the gift card and permited even participants who dropped out of the study a chance to win the incentive.

Statistical Analyses

The four preexisting measures selected for use in this study were analyzed according to their existing protocols. Please see the corresponding Appendices to review items. A final analysis was completed using several repeated measures analyses of variance and qualitative analysis were carried out via coding of the responses to the online discussion questions.

Teachers' Sense of Efficacy Scale. As recommended by Tschannen-Moran and Woolfolk Hoy (2001) mean, standard deviation, and Cronbach's alpha were reported for the total score of the TSES at the pre-test, mid-point and post test phases of the study.

Teacher Scales of Patterns of Adaptive Learning: Mastery Approaches to Instruction, Performance Approaches to Instruction, and Personal Teaching Efficacy. Derived from the sample surveys in the *Manual for the Patterns of Adaptive Learning Scales* developed by Midglet et. al (2000), a 5-point Likert scale was used. Items 1, 6, 8 and 10 constitute the Mastery Approach scale, items 2, 5, 9, 13 and 15 constitute the Performance Approach scale and items 3, 4, 7, 11 and 12 constitute the Personal Teaching Efficacy scale. Items were scored 5, 4, 3, 2, or 1 corresponding to the extent an item is true for a participant, with 5 representing very true and one, not true at all. However, items 4, 7 and 12 were reverse scored with the strongest level of truth

representing 1 and strongest level of not true represented by 5. The higher the cumulative score on each scale the more they believed in the given approach (mastery and performance) and the greater their sense of personal teaching efficacy. The mean score, standard deviation, and Cronbach's alpha for each of the three scales was determined on the pre-test, mid-point, and post-test.

Final Analyses. Repeated measures ANOVAs were completed as the final statistical analyses. The pre, mid-point ,and post-test measures served as the within subjects factors and condition served as the between subjects faction. There were two conditions, one experimental group and one control group.

A qualitative analysis of all online discussion questions was also completed using coding. I reviewed posts for common themes and let participant responses guide the direction of the coding categories. Upon review of identified common themes, like groupings were combined and a discussion of themes is presented in chapter four.

Chapter 4: Results

Introduction

This chapter presents the findings of the research study. Over the course of two 10-week quarters data were collected from undergraduate students enrolled in an educational psychology course. Participants were asked to voluntarily participate in the study. A questionnaire consisting of four measures was administered three times during each quarter. I administered the Teacher's Sense of Efficacy Scale (TSES; Tschannen-Moran & Woolfolk Hoy, 2001) and the following three scales were used from the Teacher Scales of PALS: Mastery Approaches to Instruction, Performance Approaches to Instruction, and Personal Teaching Efficacy (Midgely et al., 2000). Data were collected during week one of the quarter, again after the course instructors had covered the topic of motivation in class (approximately week six of the quarter), and again during week 10 of the quarter. The first and final data collections occurred in the classrooms while the second data collection was in a computer lab where participants were assigned to view either the control video of a standard lecture on motivation or the experimental video of a math lesson in an elementary classroom. See chapter three and Appendix E for greater detail. Additionally, qualitative data were collected during the mid-point data collection in the form of short answer responses to questions following the online video and questionnaire. I used a repeated measures ANOVA to analyze the TSES and PALS data and coding of qualitative responses to analyze the short answer responses.

Presentation of Descriptive Characteristics of Respondents

The participants in the study were enrolled in an undergraduate course on educational psychology. The course is a pre-requisite for admittance into elementary and middle school Master's programs in education at a major mid-west university. In total, 156 participants completed the first questionnaire. The sample was 75% female and 25% male. The majority of participants were at the end of their undergraduate career, 49% were seniors, 39% were juniors, 11% were sophomores and one percent did not identify. Of those in the sample, 68% had prior experience working or volunteering in an educational setting while 32% had no such prior experience. When asked to respond to the question, "How sure are you about entering the teaching profession?" 61% answered "Very Sure" (1), 21% circled response 2 (between "Very Sure" and "Somewhat Sure"), and 8% selected response 3 ("Somewhat Sure"). Only 10% were either "Not Sure At All" or between "Somewhat Sure" and "Not Sure At All" None of the participants were licensed teachers.

Research Question and Associated Hypotheses

I sought to determine if video case studies are an effective pedagogical tool by answering the following question:

- Does the use of video case studies focused on motivation increase undergraduates' sense of efficacy for applying principles of motivation?

Hypothesis. The use of video case studies focused on motivation will increase undergraduate prospective teachers' sense of teacher efficacy for applying theories and concepts of motivation research as well as increase their beliefs in mastery approaches to instruction and decrease their beliefs in performance approaches to instruction.

- Independent Variable: the use of a video case study on motivation.
- Dependent Variables:
    - Sense of teacher efficacy for applying principles of motivation research.
    - Beliefs about mastery approaches to instruction
    - Beliefs about performance approaches to instruction

Quantitative Analysis of Data

Multiple two-way repeated measures analysis of variance (RM-ANOVA) were conducted on the data. The initial data collection yielded a sample of 156, the second collection consisted of 87 participants (control n=43; experimental n= 44) and the final collection was comprised of 81 participants (control n=41; experimental n=40). A power analysis found a sample size of 35 subjects per condition would suffice. A RM-ANOVA was utilized because there were three data collection time points, time served as the within subjects factor and the condition (motivational control video [n=44] or experimental video case study [n=44]) served as the between subjects factor. Therefore, a statistically significant condition by time interaction would indicate the experimental video case study had an effect.

Teachers' Sense of Efficacy Scale. A two-way repeated measures analysis of variance tested sense of teacher efficacy at three different time points in a 10-week quarter. Descriptive statistics indicate some positive change in mean TSES scores overtime and in the experimental group (Table 3), however, there was not a statistically significant main effect on developing sense of teacher efficacy over time, (F_{time}= 2.043, *df* =1.042, 101.097, p = .155) or a statistically significant interaction between the time

points and the type of video intervention used ($F_{\text{time x condition}}$= .966, *df* = 1.042, 101.097, p= .332).

Table 3

Descriptive Statistics for Teachers' Sense of Efficacy Scale Data

	Mean	SD	α	n
Time 1 Control	7.647	.961	.721	43
Time 1 Experimental	7.814	.502	.742	44
Time 2 Control	7.842	.653	.763	43
Time 2 Experimental	8.251	.541	.756	44
Time 3 Control	7.594	.689	.688	43
Time 3 Experimental	7.615	.644	.722	44

Teacher Scales of Patterns of Adaptive Learning: Mastery Approaches to Instruction. Even though Table 4 shows some positive change in means over the three time periods, further examination via a repeated measures ANOVA showed there was not a statistically significant main effect on developing mastery approach over time, (F_{time}= 1.869, *df* =2, 210, p = .157) or a statistically significant interaction between the time points and the type of video intervention used ($F_{\text{time x condition}}$= 1.635, *df* = 2, 210, p= .197).

Table 4

Descriptive Statistics for Mastery Approach Data

	Mean	SD	α	n
Time 1 Control	3.812	.451	.674	43
Time 1 Experimental	3.938	.461	.632	44
Time 2 Control	3.942	.533	.681	43
Time 2 Experimental	3.967	.544	.664	44
Time 3 Control	3.927	.459	.603	43
Time 3 Experimental	3.986	.484	.678	44

Teacher Scales of Patterns of Adaptive Learning: Performance Approach.

Descriptive statistics (Table 5) show little change in performance approach beliefs of the experimental group and a gain and then loss in the control group. There was a statistically significant main effect for performance approach over time, (F_{time}= 5.122, *df* =2, 212, p = .007) and a statistically significant interaction between the time points and the type of video intervention used ($F_{time\ x\ condition}$= 3.280 , *df* = 2, 212, p= .040). Participants in the experimental group showed a decrease in their endorsement of performance approach to instruction, whereas subjects in the control group showed only a very slight decrease in performance approaches to instruction (see Figure 1).

Figure 1. *Performance Approach Results*.

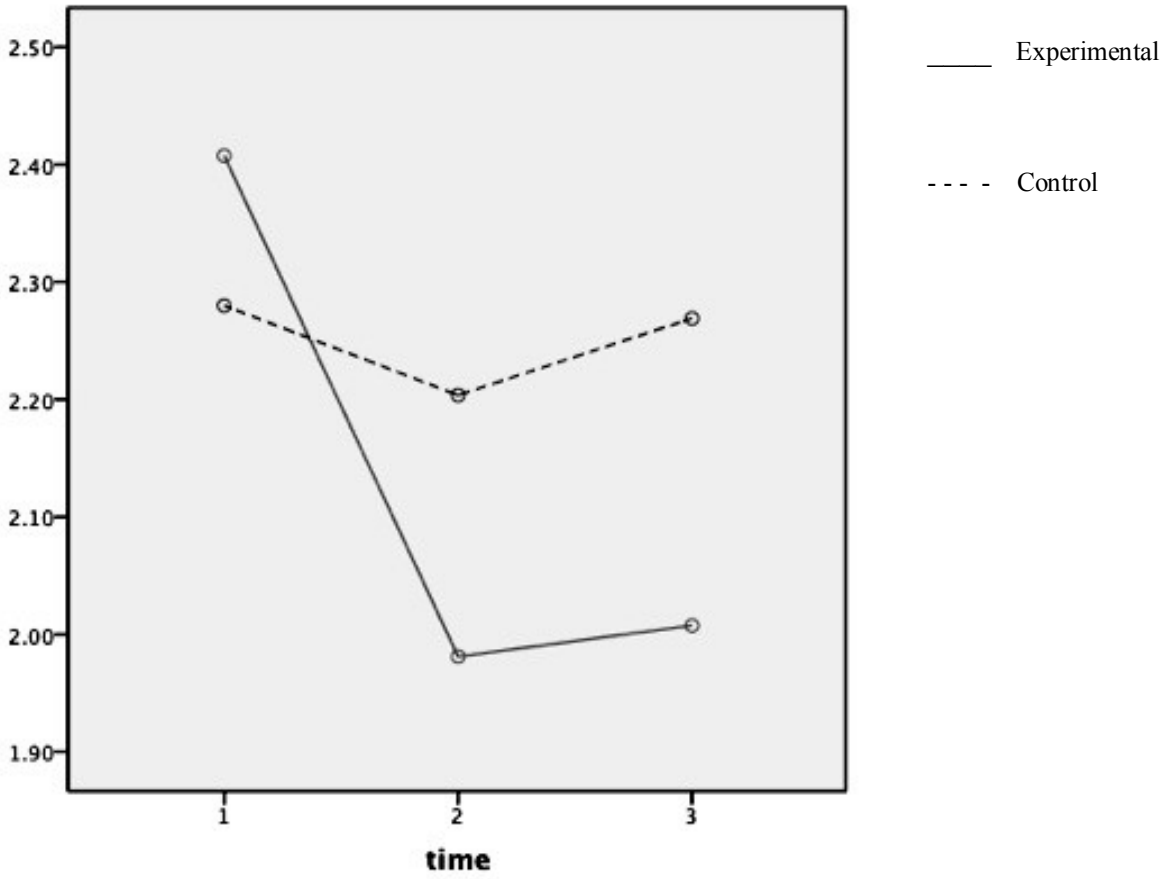

Table 5

Descriptive Statistics for Performance Approach Data

	Mean	SD	α	n
Time 1 Control	2.200	.600	.608	43
Time 1 Experimental	2.408	.606	.653	44
Time 2 Control	2.204	.627	.634	43
Time 2 Experimental	1.981	.659	.694	44
Time 3 Control	2.269	.624	.687	43
Time 3 Experimental	2.008	.648	.634	44

Teacher Scales of Patterns of Adaptive Learning: Personal Teaching Efficacy. A repeated measures ANOVA shows that there was not a significant main effect for developing personal teaching efficacy for time (F_{time}= 0.296, *df* =2, 208, p = .744) however, there was a statistically significant interaction between the time points and the type of video intervention used ($F_{time\ x\ condition}$= 3.391 , *df* = 2, 208, p= .036). As seen in Figure 2 and Table 6, the two groups were very different at the offset and over the course of time, those participants who viewed the experimental case study (condition two) had lower personal teaching efficacy means than those who viewed the control video lecture (condition one).

Figure 2. *Personal Teaching Efficacy Results.*

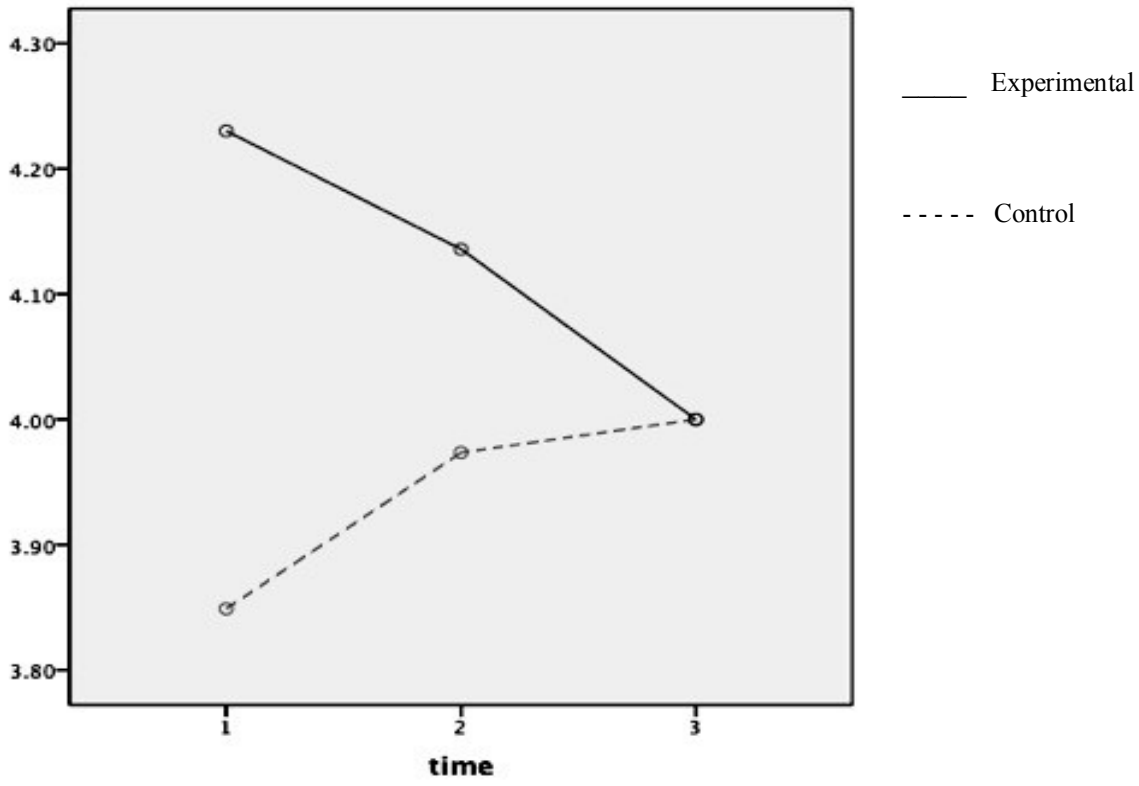

Table 6

Descriptive Statistics for Personal Teaching Efficacy Data

	Mean	SD	α	n
Time 1 Control	3.849	.467	.664	43
Time 1 Experimental	4.230	.434	.698	44
Time 2 Control	3.974	.570	.679	43
Time 2 Experimental	4.139	.459	.607	44
Time 3 Control	4.000	.560	.701	43
Time 3 Experimental	4.000	.641	.654	44

Analysis of Open-Ended Questions

During the second data collection, after viewing either the experimental video of a case study or the control video of a lecture on motivation, participants were asked to respond to a number of short answer questions. Participants had the option to leave fields blank or enter responses. Responses were reviewed and general patterns were identified by me. I began by reading all responses and making bullet points for main ideas or themes I saw in responses. Once I had a bullet point list for each question I reviewed the points to see if any were similar and could be combined under one term or a new overarching term. Since all responses were entered online, I was able to download them in a Word document and then copy and paste them into the categories I identified after initially reviewing the responses. I then reviewed the lists I had created to see if responses

did in fit with the categories I had developed. I have reported my findings in the following sections.

Experimental open-ended responses. Participants were asked to respond to five questions. The first question asked, "What evidence do you see to indicate that students are interested in the activities depicted in the video? Would you characterize the students' interest as personal or situational?" Twenty-seven participants responded to the question. Seventeen participants noted that the students in the video raised their hands, which indicated that they were interested in the activity, "Many students were quick to shoot up their hands, waving back and forth because they knew the answer. There were a lot of volunteers." Eight participants also described students providing responses to the questions. Five participants noted that students were smiling which indicated they were interested in the activity. Three students noted that the students seemed to keep their eyes on the teacher, which showed their interest in the activity. Five participants did not provide any specific details from the video but did indicate that students were interested, "The students appear to be very interested in the activities depicted in the video." Fourteen participants described the students' interest as situational with a correct understanding of the term "situational interest," "I would characterize their interest as situational, the jelly beans are a reward that got students excited about math. The video does not indicate that any of the students would normally care what other people's favorite jelly bean flavor was or had a personal interest in graphs." Six participants described the student interest as personal, four attributed the personal interest to an enjoyment of eating jelly beans and two attributed it to teacher/student interaction, "The interest seems to be personal, they smile because they like the attention of the teacher and

her praise." Three participants described the students' interest as situational and personal, "The students were initially interested in eating jelly beans, so I think that the interest was situational at first, but the joy of eating in class made it personal." Only three participants did not identify if the interest was personal or situational.

The second question asked, "How might students' personal or situational interest influence their motivation towards learning a specific topic?" and was also posed to the control group. Twenty-eight participants responded to this question. Twenty-four participants correctly discussed personal interest to relation to learning a specific topic, "A personal interest would make the students have a greater motivation to learn the specific topic because they would actually care about the topic. They might also be more likely to apply it outside the classroom situation." Of the 24 participants who discussed personal interest, 16 also discussed the role of situational interest in their response, "I think linking the two is beneficial in creating motivation. As a topic becomes more personal, it becomes worthwhile. If a student really likes a certain subject or part of a subject they will be way more motivated to learn about it (personal interest). If the teacher makes the learning seem fun in that situation, again they will be more motivated to learn (situational interest). The reverse is also true, if students hate geography and think they are bad at it, they probably aren't going to be motivated at all…unless the teacher makes the situation somehow seem better." Eight participants referenced the video in their response, "A student that finds personal interest in a topic will be more inclined to learn less interesting topics that are presented along side their topic of interest/situational interest (i.e. bar graphs-less interesting with jelly beans-very

interesting).” Four responses were vague and did not connect to the prompt, “They was all willing to learn.”

The third question posed to the experimental group stated: “What aspects of the class situation do you see as probably helping capture the students’ interest?” Twenty-seven participants responded to the question. Analysis showed similar items were identified by multiple participants. Twenty-five participants noted the use of jelly-beans captured student interest, however, of the 25, 22 also identified at least one other aspect. Twenty participants referenced student participation or active involvement as helping capture student interest, for example, working in groups, moving around the classroom to develop a graph, the hands on nature of eating jelly beans, “Eating jelly beans, being able to participate in an experiment, actively graphing the data. Sharing their opinion about which jelly bean was their favorite with other students in table groups.” Five participants described internal aspects of the teacher and/or students rather than concrete events from the video, for example, “The teacher cares about what the students say and the students seem to know their opinion is valued,” “There was respect between the teacher and students,” “…students felt like they had a lot of control of the activity.” All responses to this question were aligned with the prompt.

The fourth question was also the same for the control group and stated, “When you think about your future classroom, what can you do to capture the students’ interest? Feel free to consider the specific discipline or grade level you plan on teaching as well as your dream physical environment.” Twenty-eight participants responded to the question. A coding system was developed for this question based on the responses. Participants discussed: (a) Tasks, (b) Task and environment in combination, (c) Teacher to student

connection and (d) Teacher to student connection in combination with task (Table 7). Fifteen participants discussed only the importance of task selection in capturing student interest. Eight of the fifteen also noted prior knowledge and/or connection to the real world in alignment with the task, for example, "Starting off every unit by presenting a situation that is relevant to each student's life and then presenting the unit as related (ideally, possibly the solution) will keep students interested and help them understand why information is important to them." Six participants wrote about task selection in conjunction with teacher to student connection. Five participants discussed tasks in combination with the classroom environment. Two participants wrote responses focused on the teacher to student connection as central to fostering student interest. Of the 28 responses, 14 reference specific subject areas or grade levels.

Table 7

Experimental Responses to Question 4

Code	n	Response Example
Task	15	"I will be teaching math and what always helped me was using little blocks to work on fractions so we could manipulate something on our own."
Teacher/Student Connection & Tasks	6	"Since I am going to teach art, I think I would need to be in tune with the culture of my students, get to know them and the community, as this would translate well into any of the projects we might do. I would probably like to let them listen to the music they like as motivation as well."
Task & Environment	5	"I think hands on activities will help capture students' interest. I want them to be able to pick some of the things we read. I would love to have an environment in which we have plenty of displays and books for the students to use at anytime. I would also keep the students in grouped seating."
Teacher/Student Connection	2	"I will respect and know all of my students and make sure they are aware that I care, this will keep them interested."

The final question posed to the experimental group was also presented to the control group and asked, “Why are you considering entering the teaching profession? Was there a specific event or person in your past that influenced your decision to become a teacher?” Twenty-eight participants responded to the question. Nine participants identified teachers they had in the past as inspiring them to become teachers. One subject wrote that her father, who is a teacher, inspired her to go into education. One subject identified that his or her family encouraged him or her to enter the field of education. Additionally, one subject wrote that his high school baseball coach encouraged him to become a teacher and coach. Of the remaining 16 participants, none referenced a specific event as inspiring them to become a teacher. Ten of the 16 participants indicated that they want to become teachers to inspire their students, for example, “I want to change people's lives and make a difference. I feel that I would be able to accomplish this goal, even if I don't see the results immediately, I believe I will be able to make a difference.” The other responses focused on qualities the participants felt they possessed which would make them good teachers. One subject wrote, “I've always enjoyed helping others and have been told I'm naturally talented at getting people excited to learn things and understand them further.” Two participants identified the glory teaching would bring them, “We can only live for so long as humans in this vessel, but through teaching we can have a long lasting effect on the world. We can open students’ minds up to the infinite possibilities human life offers, and allow them to realize that dreams are achievable. Aside from my students' success my only other desire is to be remembered.”

Control open-ended responses. Control participants were asked to respond to four questions. The first question: “How would you define cognitive arousal as it relates to

motivation?" yielded 30 responses. The speaker in the video discussed student need for cognitive arousal, its importance in lesson panning as well as a few general examples, see Appendix E to read the script used in the video. Twenty-seven of the participants correctly defined cognitive arousal. Some responses were brief and general, "It is something that gets students involved or in other words, motivated." Other correct answers were more in-depth "Cognitive arousal is keeping your students interested in what you are teaching about. It means keeping their attention, whether by making connections to their own interest, including physical activity in the lesson, or giving them some autonomy or choice." The speaker in the video lecture discussed cognitive arousal and approximately one and a half minutes later discussed the role of autonomy in the classroom. Three responses did not clearly define cognitive arousal: "If you believe you can do a task you will attempt the task." "If a child is awake they will most likely be motivated to try the task at hand." and "Cognitive arousal as it relates to motivations is you what to get the students encaged in the classroom." While the need for competence is discussed in the lecture, the lecture assumes students are awake in class and the intended meaning of the final response is unclear.

The second question was the same for the experimental group and asked "How might students' personal or situational interest influence their motivation towards learning a specific topic?" Twenty-seven participants responded to this question. The speaker in the control video defined both personal and situational interest and provided examples of each as well as noting situational interest may turn into personal interest (see Appendix E). Twenty-three participants correctly discussed the role of personal interest in motivation towards learning a specific topic. Of the 23, 16 noted that students with a

personal interest in a topic would be more interested or enthusiastic about the topic, five participants defined the concept using a negative description, for example, "If they are not personally interested in a topic they maybe less motivated to learn about that topic." Two participants discussed how personal interest could both positively and negatively impact motivation. Only three participants discussed the role of situational interest, one participant noted "Just because a student does not have personal interest in a subject, such as math, does not mean that they can't develop a personal interest, the teacher just needs to create situational interest. This simply means that a teacher has to invest more time in making the material relevant to that particular student, for example they might not like math but may like to shop. Showing the relatedness of being able to perform percent operations and being able to compute a sales discount in your head could increase personal interest for that student." This response was the only one that included a reference to the teacher. Only one student entered a response that did not seem to relate to the question, "Their efficacy of that subject, their motivation to learn."

Question three provided students with an open ended opportunity and was the same as the experimental group, the question asked, "When you think about your future classroom, what can you do to capture the students' interest? Feel free to consider the specific discipline or grade level you plan on teaching as well as your dream physical environment." In total, 29 participants responded to this question. Thirteen participants noted the subject or grade level they planned to teach. Two participants named schools where they had visited and described the experience, one stated, "I visited X High School and it was state of the art in my opinion. The students were engaged because they had a caring teacher who spoke to them with respect and valued their opinion. There were

supplies and a great place to work and thought provoking projects were assigned. I think this is the dream physical environment."

Similarly to the experimental group, a number of trends were evident in responses that led to a coding system, subject discussed: (a) Physical environment, (b) Tasks, (c) Student to teacher connection, (d) Student to student connection or two or more trends in combination (Table 8). The majority of responses (17) focused on the types of tasks the subject panned to use in his or her classroom, 10 participants noted that the task would be one of interest to students "I will plan activities based on the interests of my students." and seven participants defined tasks as in some way enjoyable "I want to engage students in activities that are fun while they are learning." Six participants responded to the question by focusing on tasks and environment. Five participants discussed the role of student to teacher connection and tasks. One participant discussed the combination of student to teacher connection and environment. Finally, one participant discussed the role of tasks and student-to-student connections.

Table 8

Control Responses to Question 4

Code	n	Response Example
Task	17	"The way you can capture the students interest in what you are teaching is by letting them be creative, play educational games, etc."
Task & Environment	6	"My dream class would be a place where all students feel comfortable, both figuratively and literally. I would fill my classroom with pillows and bean-bags and create reading areas. I would then have students read silently and hopefully they would look forward to the time when they get to relax comfortably and enjoy a book."
Teacher/Student Connection & Tasks	5	"I am going to need to take different approaches and create different assignments to gain interest as well as maintain it. I will also need to be aware of the personalities of my students by getting to know them and then incorporate their interests in my plans."
Teacher/Student Connection & Environment	1	"I will start out the year by having students fill out interest sheets, this will help me get to know them. I will also let them vote on what posters they would like to hang in the room."
Student/Student Connection	1	"I hope to gain the interest of the students by using group work so they get to know each other while also working on items I develop for the lesson."

The final question posed to the control group, as well as the experimental group, asked participants to explore their own backgrounds and interest in teaching. The

question stated, “Why are you considering entering the teaching profession? Was there a specific event or person in your past that influenced your decision to become a teacher?” Twenty-seven participants responded to this question. When analyzing responses, a number of themes became apparent; in most cases, participants identified a person in their past as positively influencing their decision to become a teacher, however, when discussing an event in the past that influenced their decision to become a teacher, the event was usually a negative association.

Ten participants described a former educator as influencing their decision to enter into the field of education, “I had an amazing history teacher my junior and senior year of high school. He truly motivated me to care about what I was learning, and taught me important organizational and study skills along the way. It was more than just a history class it was a life class, and it motivated me to want to have the same impact on a students life.” Of the 11, 6 participants described tasks, skills or events associated with the educator, three expressed that the educator was passionate about learning and his or her content area and two described the care or emotion the educator showed for the subject. Six participants identified a family member as influencing their decision to become a teacher, “My mother, a teacher, has influenced me to become a teacher, and I have grown up enjoying to school and learning.” Four of the six noted that the influential family member was also an educator while the other two both noted that the influential family member supports them in reaching their goals. Nine participants wrote about events that influenced their decision to become a teacher. Six participants wrote about non-educational events that led them to teaching, including: working as a technical writer, working in corrections, tutoring, coaching, working as a camp counselor and

involvement with FFA. Two participants wrote about educational events, the death of a teacher and teachers comparing the subject to his or her sister. One subject focused on current rather than past influential events, “It is the state of the urban student that interests me. This student will not be encouraged and respected unless teachers enter the profession practice encouragement and inspire students to learn.”

Of the nine participants who described an event as influencing their decision to enter the teaching profession, six included negative associations with the event. In addition to the death of a teacher, comparisons to older siblings, participants also noted an array of other events, one completed a personality test that indicated he or she should go into education, however, he or she does not like children so he or she is planning on trying to teach adults, another participant stated that poor teachers in his or her past have made him or her want to change education. Another subject wrote, “I don’t like teaching academics because there was always too much stress get that good grade when I was in school and even in college. Plus, I don’t think there is a subject out there that I would want to do each single day. Sometimes, there is a kid that just doesn’t get something. why should they be "punished" so to speak by a bad grade when maybe they cognitively aren’t ready to be taught that yet. That’s the best part of physical education and coaching. You move at their pace, not yours or some Board of Directors pace.” Finally, two participants explained that they have always been drawn to the teaching profession but did not provide any further details.

Summary

Analysis of data yielded some interesting findings related to the interaction between the use of video case studies and sense of teacher efficacy for applying

principles of motivation research. Quantitative analyses showed that video case studies did not have a statistically significant impact on teacher sense of efficacy or mastery approach. However, participants who viewed the experimental video of classroom lecture were less likely to believe in a performance approach, whereas those who viewed the lecture video on motivation had a slight decrease in their belief in performance approach after viewing the video and a slight increase by the end of the quarter. Analysis also showed participants in the control group exhibited a slight increase in personal teaching efficacy overtime, while the experimental group had a decline. However, this finding is confounded by the fact that the experimental group had a significantly higher baseline for personal teaching efficacy than the control group.

Analysis of the open-ended responses written by the experimental group showed that most participants could identify how cognitive arousal was utilized in lesson to capture student interest. Additionally, analysis of the open-ended responses submitted by the control group indicated that most participants were familiar with the term cognitive arousal as it relates to motivation. Participants in the control group seemed to understand the concept of personal interest more so than situational interest in relation to the classroom whereas, the experimental group showed an understanding of both personal and situational interest. The majority of the participants in both groups identified tasks as central to enhancing student motivation in their future classrooms. However, participants in the experimental group were more likely to also identify the need for understanding students' backgrounds and prior knowledge. When asked to share information about their own background and interest in teaching, most participants in the experimental group did not cite a specific person or event as influencing their decision to enter the teaching

profession bur rather an internal desire and motivation to help others or the possession of skills that are important to teachers. Conversely, most participants in the control group wrote about the positive influence of an individual whereas those who wrote about an event tended to have a negative association with the event.

Chapter 5: Findings, Conclusions and Implications

Summary of the Study

Case studies have a long-standing tradition as pedagogical tools in business, medicine, and law. Limited research exists regarding the potential of case studies to enhance teacher preparation programs in deep and meaningfully ways (Cruickshank, 1996). Understanding how case studies, when used as a pedagogical tool, impact developing sense of teacher efficacy for applying concepts of educational psychology could provide insight about whether preservice teachers are likely to bridge the gap from theory to practice and also if these novices believe they have the ability to utilize concepts of educational psychology in their future classrooms. Therefore, I hypothesized that participants exposed to a case study on motivation would have a greater sense of teacher efficacy for applying motivational principals in their future classrooms. I designed an experimental study to investigate this hypothesis.

Over the course of two 10-week quarters I collected data from participants in four undergraduate educational psychology courses. Pre-test data were collected at the beginning of the courses using four pre-existing and widely accepted measures (TSES, PALS: Mastery Approaches to Instruction, Performance Approaches to Instruction, Personal Teaching Efficacy). The same measures as well as a series of open-ended questions were administered at the mid-point of the quarter. During the mid-point, data collection participants were also divided into experimental and control groups. The experimental group watched a 10-minute case study video of an elementary math lesson

that exemplified the application of motivational principles and the control group watched a 10-minute lecture on motivation. Both groups watched their assigned video prior to final data collection. A post-test consisting of all four measures was then administered to all participants at the end of the quarter. I completed repeated measures ANOVAs for all four measures and then analyzed the open-ended responses from both groups.

Findings and Conclusions

Findings from this study suggest virtually no effects for video case studies on preservice teachers' sense of efficacy for applying principles of motivation in their future classrooms. The most significant positive finding related to the use of video case studies was evident when data from the PALS Performance Approaches scale was analyzed. Participants in the experimental group showed a significant decline in performance approaches whereas participants in the control group saw a slight decline and then a slight increase by the end of the quarter. However, analysis of the PALS Personal Teaching Efficacy showed the experimental group had a significant decline in personal teaching efficacy whereas the control group had an increase. Analysis of the data collected via the TSES indicates there was no significant change in sense of teacher efficacy for either group. Furthermore, analysis of the PALS Mastery Approach data yielded no significant findings. Quantitative results suggest that video case studies may be beneficial in decreasing beliefs in performance approaches but even this possibility requires further examination before any claims can be made.

Analysis of the open-ended questions to both groups provided interesting distinctions between the groups. Both groups were familiar with cognitive arousal, the majority of the participants in the experimental group were able to identify how cognitive

arousal was utilized in the lesson and most participants in the control group were able to correctly define cognitive arousal. This may indicate that either video was an effective tool in conjunction with the assigned course readings and meetings or that either video had no impact and most participants were already familiar the concept.

The majority of the participants in the experimental group were able to express an understanding of personal and situational interest, the majority of the control group seemed to have an understanding of personal interest but did not discuss or define situational interest. The speaker in the control video provided explicit definitions and examples of each term, the teacher in the experimental video developed situational interest in her lesson. This may indicate that watching a video case lesson of theory in practice led to a richer understanding of personal and situational interest. Furthermore, personal interest may have been more easily defined by deducing the meaning from the simple meanings of "personal" and "interest."

The majority of the participants in both groups identified tasks as central to enhancing student motivation in their future classrooms. However, participants in the experimental group were more likely to also identify the need for understanding students' backgrounds and prior knowledge. None of the participants in the control group referenced prior knowledge or knowledge of student background as central to developing interest and motivation in the classroom. The speaker in the control lecture does reference the need for teachers to understand prior knowledge and student background. The teacher in the experimental video connects to prior knowledge by referencing a past lesson. Interestingly, none of the participants in either group discussed fostering student-to-student relationships as a way to increase interest and motivation in the classroom.

A clear distinction was present between groups when asked to share information about their own background and interest in teaching. Most participants in the experimental group discussed an internal desire and motivation to help others or the possession of skills that are important to teachers rather than a specific person or event. Conversely, most participants in the control group wrote about a person or event, which influenced them to enter the teaching profession. Further analysis of the open-ended responses of the control group indicated those wrote about the positive influence on their decision to enter the teaching profession tended to focus on the influence of a specific individual whereas those who wrote about an event, rather than an individual, as influencing their decision to enter the teaching profession tended to have a negative association with the event.

Dolmans (1997) has criticized the study of case-based pedagogies in education and noted that research is ambiguous due to course objectives, prior-knowledge of participants, and learning goals of instructors and participants. The lack of significant findings in this study support claims that the impact of case-based lessons is difficult to find and identify. Furthermore, my findings support the claims made by Lundeberg et al. (1999), case-based pedagogy is only one of many pedagogies pre-service teachers are exposed to and therefore, it is difficult to isolate and analyze the impact of a single pedagogy.

It is possible that the number of exposures to cases impacts the benefit to participants. Herman (1998) found that prolonged use of case-based lessons in teacher education programs led to higher grades and higher evaluations by cooperating teachers. Participants followed a prescribed format for evaluating and analyzing cases on a regular

basis over the course of three years. While the findings of this study indicate that one exposure to a case can lead to a decrease in belief in performance approaches, more exposures may be required to determine if additional significant findings might arise. Lundebert and Scheureman (1997) found significant gains in participants' ability to identify concepts related to learning and motivation in cases when instruction on theory was presented after reading a case. While I did not research when theory was introduced to participants, my findings indicate that it is more difficult than asserted to get strong results from a single exposure. Therefore, more research is needed to determine the impact of prolonged exposure to case-based pedagogies.

Yoon et al. (2006) found that cases could be used to increase efficacy for pre-service teachers with varying degrees of experience in education courses. My findings indicate that case studies led to lower sense of personal teaching efficacy. These conflicting findings may indicate that case studies do not necessarily have a significant positive impact on developing sense of efficacy for undergraduates considering entering teacher preparation programs. Therefore, more research is needed on when case studies are utilized within a teacher education program. It may be that case-based lessons that are set in k-12 classrooms have a more significant and positive impact on pre-service teachers who have experience in an actual classroom, whereas those just entering or considering entering the teaching profession benefit from case-based lessons which depict theory in alternative settings.

Rather than answering questions, my findings create more questions related to case-based pedagogy. A single exposure to a case-based lesson did not yield overwhelmingly positive results, however, the significant findings related to a decrease in

performance approaches warrant further exploration. My findings support claims that researchers looking at case-based pedagogies have yet to find a clear method or methods for isolating and measuring the impact of case studies on participants.

Future Research

Based on the findings of this study, future research on the use of case based lessons to improve preservice teachers' developing sense of teacher efficacy to apply principles of motivation in their own classrooms should be longitudinal. The timeframe of this study was very brief, participants were only enrolled in a 10-week course and given only one exposure to a video case study. Darling-Hammond, et al. (2005a) not that strong coherence in teacher education programs leads to a greater impact on the conceptions and practices of teachers. Given more time, resources and freedom a number of future studies might better inform teacher educators as to the value of case based lessons as a pedagogical tool.

More exposure to case studied could prove beneficial to preservice teachers. For example, video case studies could be used on a weekly basis in two of the four sections of educational psychology. Preservice teachers could watch the videos in class or online outside of class. A variety of tasks could be developed based on the video lessons. Tasks could be designed to align with assigned readings from the textbook and encourage a deeper understanding of concepts from the readings. Furthermore, in class discussions and activities based on the video cases could also foster learning. The same four measures and experimental design utilized in this study could be used to determine if extended exposure to case studies leads to significant changes in preservice teachers'

developing sense of teacher efficacy to apply principles of motivation in future classrooms.

Furthermore, deeper integration of video case studies into a teacher education program could lead to significant findings in multiple areas. A future study might seek to utilize case studies as a central pedagogy as medicine, law and business do. Exposure to video and print case studies beginning with preservice teachers' first education course and continuing on in every education course until graduation could prove to impact preservice teachers' developing sense of teacher efficacy to utilize motivation theories in their future classrooms. Furthermore, streamlined integration of case studies in teacher preparation programs may impact a host of identified issues related to education, for example, teacher attrition rates, commitment to lifelong learning, teacher relationships with parents, community and students, as well as a variety of other issues facing teacher education. Critical to studying the integration of video case studies in a teacher education program would be a long-term study; the researcher would need to continue to track participants in the field for a number of years to fully understand and identify possible correlations.

Additionally, the focus of case studies utilized in teacher education should be studied. In this study I used an exemplary example of a typical classroom lesson. Research on the use of case based lessons should also utilize cases, which contain problems and difficult situations. Additionally, cases which contain potential explosive events should be studied. Furthermore, cases which contain a variety of participants, such as parents, administrators, other teachers and community members should be studied. The variety and versatility of case based lessons provides for many future research endeavors.

Summary

Case based lessons are a viable pedagogy for teacher education programs which need to be further researched in order to fully understand their potential value. Using experimental design and a single exposure, participants in the experimental group exhibited a decrease in performance approaches but a slight decrease in personal teaching efficacy when compared to the control group, which showed a slight increase in performance approaches and an increase in personal teaching efficacy. The experimental group was more likely to identify an internal desire or motivation to enter the teaching profession, while the control group was more likely to identify the positive impact of a specific individual or the negative impact of an event. Furthermore, the experimental group was more likely to understand personal and situational interest than the control group which demonstrated only a knowledge of personal interest. Both groups found engaging tasks as central to student motivation. In order to better understand the potential for case studies as pedagogy in teacher education, more research is needed regarding the consistent and repeated use of varied case studies in a single course or, preferably for the duration of a teacher education program.

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Appendix A: Open Ended Questions

Motivation Discussion Questions-Control Group A

After watching the video lecture, please post your responses to the following questions.

How would you define cognitive arousal as it relates to motivation? How might students' personal or situational interest influence their motivation towards learning a specific topic?

When you think about your future classroom, what can you do to capture the students' interest? Feel free to consider the specific disciple or grade level you plan on teaching as well as your dream physical environment.

Why are you considering entering the teaching profession? Was there a specific even or person in your past that influenced your decision to become a teacher?

Motivation Discussion Questions-Treatment Group B

After watching the video clip of an elementary mathematics lesson, please post your responses to the following questions.

What evidence do you see to indicate that students are interested in the activities depicted in the video? Would you characterize the students' interest as personal or situational?

What aspects of the class situation as probably helping capture the students' interest?

In what ways might you improve the lesson to make it more engaging and interesting?

Why are you considering entering the teaching profession? Was there a specific even or person in your past that influenced your decision to become a teacher?

Appendix B: Participation Letter

The Impact of Video Case Studies on Teachers' Sense of Efficacy

The attached questionnaire is part of a research study. Participation is voluntary, and participants may withdraw at any time without penalty or loss of benefits.

The purpose of this study is to determine the impact of video case studies on teachers' sense of efficacy and valuing of the principles of educational psychology. You are being asked to participate in this research study because you are currently taking a course in educational psychology.

You are being asked to complete the attached questionnaire which will take approximately 15 minutes. You will then be contacted and asked to watch one of two videos of an event of educational significance in a computer lab during the quarter. The videos are less than 10 minutes. After watching a video you will then be asked to respond to no more than four discussion questions online and then complete a questionnaire. Watching the video and responding to the questions will take approximately 30 minutes. Finally, you will be asked to complete a questionnaire at the end of the term which will take approximately 15 minutes. In total, you will be asked to spend one hour completing the three aspects of the study.

Your responses on the questionnaires and online platform will remain confidential and will be destroyed one year from today.

If you participate in this study your name will be entered into a drawing for a $25.00 Visa gift card and be able to earn extra credit in your Educational Psychology course.

Questions, concerns, or complaints about the study may be directed to the Principal Investigator, Dr. Eric Anderman (eanderman@ehe.osu.edu) and Kathrine O'Neil (614-204-9791 or oneil.95@buckeyemail.osu.edu)

For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact Ms. Sandra Meadows in the Office of Responsible Research and Practices at 1-800-678-6251.

I, _____ willing agree to participate in this study and complete the attached questionnaire.

_____ _____

Signature Date

General Information

Last Name: _____

First Initial: _____

Email: _____

Gender: M F

Class Rank: Freshman Sophomore Junior Senior Graduate N/A

Are you or have you ever been a licensed teacher: Yes No

Have you ever worked or volunteered in an educational setting where you were responsible for children for more than two consecutive weeks (for example, daycare, summer camp, Sunday school, etc.)?

Yes No

How sure are you about entering the teaching profession?

Very Sure		Somewhat		Not sure at all
1	2	3	4	5

Appendix C: Teachers' Sense of Efficacy Scale

Teachers' Sense of Efficacy Scale[1] (short form)

	Teacher Beliefs	How much can you do?								
	Directions: This questionnaire is designed to help us gain a better understanding of the kinds of things that create difficulties for teachers in their school activities. Please indicate your opinion about each of the statements below. Your answers are confidential.	Nothing		Very Little		Some Influence		Quite A Bit		A Great Deal
1.	How much can you do to control disruptive behavior in the classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2.	How much can you do to motivate students who show low interest in school work?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
3.	How much can you do to get students to believe they can do well in school work?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
4.	How much can you do to help your students value learning?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
5.	To what extent can you craft good questions for your students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
6.	How much can you do to get children to follow classroom rules?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
7.	How much can you do to calm a student who is disruptive or noisy?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
8.	How well can you establish a classroom management system with each group of students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
9.	How much can you use a variety of assessment strategies?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
10.	To what extent can you provide an alternative explanation or example when students are confused?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
11.	How much can you assist families in helping their children do well in school?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
12.	How well can you implement alternative strategies in your classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

Appendix D: Patterns of Adapted Learning Scales- Select Scales

Mastery Approaches to Instruction:

In my future classroom:

1. I will make a special effort to recognize students' individual progress, even if they are below grade level.

6. During class, I will often provide several different activities so that students can choose among them.

8. I will consider how much students have improved when I give them report card grades.

10. I will give a wide range of assignments, matched to students' needs and skill level.

Performance Approaches to Instruction:

In my future classroom:

2. I will give special privileges to students who do the best work.

5. I will display the work of the highest achieving students as an example.

9. I will help student understand how their performance compares to others.

13. I will encourage students to compete with each other.

15. I will point out those students who do not do well as a model for the other students.

Personal Teaching Efficacy

3. If I try really hard, I will get through to even the most difficult student.

4. Factors beyond my control will have a greater influence on my students' achievement that I will.

7. Some students are not going to make a lot of progress in a year, no matter what I do.

11. I am certain that I will make a difference in the lives of my students.

12. There is little I can do to make sure that all my students will make significant progress in a year.

14. I will be able to deal with almost any learning problem.

Participant Survey

Here are some questions about yourself as a future teacher. Please circle the number that best describes what you think.

1. I will make a special effort to recognize students' individual progress, even if they are below grade level.

1 2 3 4 5

NOT AT ALL TRUE VERY TRUE

2. I will give special privileges to students who do the best work.

1 2 3 4 5

NOT AT ALL TRUE VERY TRUE

3. If I try really hard, I will get through to even the most difficult student.

1 2 3 4 5

NOT AT ALL TRUE VERY TRUE

4. Factors beyond my control will have a greater influence on my students' achievement that I will.

1 2 3 4 5

NOT AT ALL TRUE VERY TRUE

5. I will display the work of the highest achieving students as an example.

1 2 3 4 5

NOT AT ALL TRUE VERY TRUE

6. During class, I will often provide several different activities so that students can choose among them.

1 2 3 4 5

NOT AT ALL TRUE VERY TRUE

7. Some students are not going to make a lot of progress in a year, no matter what I do.

1 2 3 4 5

NOT AT ALL TRUE VERY TRUE

8. I will consider how much students have improved when I give them report card grades.

1 2 3 4 5

NOT AT ALL TRUE VERY TRUE

9. I will help student understand how their performance compares to others.

1 2 3 4 5

NOT AT ALL TRUE VERY TRUE

10. I will give a wide range of assignments, matched to students' needs and skill level.

1 2 3 4 5

NOT AT ALL TRUE VERY TRUE

11. I am certain that I will make a difference in the lives of my students.

1 2 3 4 5

NOT AT ALL TRUE VERY TRUE

12. There is little I can do to make sure that all my students will make significant progress in a year.

1 2 3 4 5

NOT AT ALL TRUE VERY TRUE

13. I will encourage students to compete with each other.

1 2 3 4 5

NOT AT ALL TRUE VERY TRUE

14. I will be able to deal with almost any learning problem.

1 2 3 4 5

NOT AT ALL TRUE VERY TRUE

15. I will point out those students who do not do well as a model for the other students.

1 2 3 4 5

NOT AT ALL TRUE VERY TRUE

Appendix E: Control Lecture Script

Hello,

This video lecture will provide you with a brief overview of motivation in teaching and learning. In the field of educational psychology motivation is defined as an internal state that arouses, directs and maintains behavior. Motivation research tends to focus on one of five areas of study: choices, getting started, intensity, persistence or thoughts and feelings. As a teacher, each of your students is likely to present a different motivational challenge yet you have to teach the entire class. Understanding theories and concepts of motivation can aid you as a classroom teacher in meeting the needs of all your students and creating a classroom environment which supports learning.

Lets review the four general approaches to motivation which you learned about in your educational psychology course,

1. Behavioral views of motivation utilize reinforcers, rewards and incentives to condition appropriate behaviors and responses and punishers to extinguish undesirable behaviors. Extrinsic, meaning external factors are the source of motivation in behavioral views of motivation. B.F. Skinner is the researcher most often associated with behavioral views of motivation.
2. Humanistic views of motivation, such as those developed by Maslow and Deci focus on intrinsic sources of motivation. Remember that intrinsic motivation is motivation associated with activities that are their own reward. Humanistic views

propose that motivation is influenced by the need for self-esteem, self-fulfillment and self-determination.

3. Cognitive views of motivation also focus on an intrinsic source of motivation. Cognitive theorists such as Weiner and Graham focus on motivational influences such as beliefs, attributions for success and failure as well as expectations.

4. Finally, sociocultural views of motivation also center on intrinsic sources of motivation. Factors which are considered influential to motivation include engaged participation in learning communities and maintaining identity through participation in activities of the group. Lave and Wenger are key theorists in sociocultural motivation theories.

As you learned about these general views of motivation, you may have found one or more most aligned with your own views of teaching and learning. It can sometimes be difficult to understand how to transfer concepts and ideas from theories into your own classroom. You may complete readings and understand them but be left wondering what the information means for your daily activities and routines as a classroom teacher. Certainly all teachers want their students engaged and active in the classroom but how do you make that happen? Theories of motivation and motivation research really can help you create a classroom where all students learn, feel welcome and are engaged. Lets now consider some central aspects of motivation that will aid you as a teacher.

As a teacher, it helps to keep basic human needs in mind:

- **Your future students have a need for arousal:** Human beings function more effectively when they have ongoing stimulation. In some cases, this stimulation may involve physical activity. In other cases, it may be more cognitive in nature; for instance, a brainteaser or puzzling phenomenon might encourage people to think effortfully and creatively in order to solve or explain it. Often teachers will start a lesson in a unique or creative way to grab their students' attention right from the start. This is not to say that every lesson has to start out with fireworks but getting students to begin thinking about a concept or topic from the very start of the lesson can stimulate engagement. From a practical standpoint, this means you need to be sure to plan your lesson in advance so you can consider how you will stimulate your students and keep them aroused during your lesson. This also means you need to understand the concept you are teaching and what aspects might make it interesting, puzzling or unique to your students. Which brings us to the third practical aspect of arousal, you have to know your students, what will interest them? Developmentally, what tasks and problems will keep them engaged?
- **Secondly, your future students have a need for competence.** Human beings function more effectively when they believe they have mastered certain aspects of their environment. As a teacher, you need to make sure your expectations for appropriate classroom behavior and classroom routines are clear. For example, do all students know how to ask you a question? Do they approach your desk or raise their hand? When students complete an independent task early what should they

do until their classmates are also done? For example, should they take out their free reading book and read silently until you transition to the next activity? When students feel competent in the classroom environment they feel more comfortable, they know the expectations and routines so they can focus on learning.

- **Thirdly, your future students have a need for self-determination.** Human beings function more effectively when they feel they have some autonomy and self-direction regarding the things they do and the courses their lives take. As a teacher, this means giving your students choices and a certain amount of freedom. Fostering self-determination also means careful planning and again knowing the needs and interests of your students. It also means being flexible and able to adapt when a lesson takes a direction you had not anticipated.
- **Finally, your future students have a need for relatedness.** Human beings function more effectively when they feel socially connected to others and believe that they have other people's affection and respect. The environment you create in your classroom has a profound effect on your students' ability to connect to you and their classmates. Fostering affection and respect in the classroom begins on the very first day of school. Your students are always watching so it is important that you model as well as clearly explain appropriate behavior for your classroom.

In addition to the basic human needs of your future students, keeping in mind the distinctions between personal interest and situational interest can also help you motivate your students to learn.

- **Personal interest is defined as,** Long-term, relatively stable interest in a particular topic or activity. Many of us have activities, topics, hobbies, etc which we have enjoyed for almost as long as we can remember.
    - **For example, I have been an avid reader since I was a young child. I love fiction and find time to read for pleasure everyday. As a student, projects where I was able to select a book and complete some type of assignment always drew me in. Regardless of whether it was writing a paper, giving a presentation, creating a multi-media artifact or any other product, if I could pick a book and read it, the teacher had my interest right from the start.**
- **Conversely, situational interest is defined as** Interest evoked by something in the immediate environment—perhaps something with one or more of the following qualities:
    - It is new, unusual, unexpected, or emotion-packed.
    - It involves hands-on, physical activity.
    - It involves thinking about people or cultures (for example, personality traits or holidays).
    - It involves thinking about nature (for example, dinosaurs, the ocean, outer space).
    - It relates to students' own lives and lifestyles (for example, television shows, or popular music).
    - It involves tackling a challenging yet achievable task.

Although situational interest itself is temporary, it can sometimes nurture the beginning of a more enduring personal interest. I am sure you can recall an assignment or lesson you participated in as a student which created an immediate interest. These lessons are typically the ones we remember because our interest was peeked and we were challenged.

You may have noticed that many of the points I just discussed corresponded to internal factors of your future students such as their needs, interests and curiosity which also align with the definition of intrinsic motivation which I mentioned at the very start of this lecture.

As a teacher, understanding intrinsic motivation can help you plan lessons which interest and appeal to your students. Keep in mind the following principles describing aspects of intrinsic motivation when thinking about your future students.

- Children seem to have a natural predisposition to explore their environment. As Piaget suggested, they are naturally curious about their world and actively seek out information to help them make sense of it. Use their natural curiosity to build lessons which promote exploration
- Children strive for consistency in their understandings of the world. In general, they prefer that the things they learn about a topic are logically consistent and in other ways "hang together" in a way that makes sense. As a teacher, think about

how you can make these connections clear, because they are not always logical for students. Also anticipate where misunderstandings may occur.

- Children tend to choose activities at which they think they can be successful. In other words, they prefer activities for which they have high **self-efficacy**. This certainly does not mean you shouldn't challenge your students but be sure you know your students and place them in situations where they face appropriate challenges so they can feel successful.
- Children also prefer activities for which they have some autonomy. Children are more intrinsically motivated when they have a **sense of self-determination**, a belief that they have some choice and control regarding the things they do and the direction their lives take. Creating choices in lessons can easily be done with advance planning.
- **Situational interest** is evoked temporarily by something in the environment—perhaps something that is new, unusual, or surprising.
- Consistent with the basic human need for relatedness, most children and adolescents have social goals that make interacting with other people a high priority. Group work and partnering when well structured and monitored, can lead to excellent learning experiences.

As a future teacher, the choices you make in your lessons and how you structure your classroom will impact your students' motivation to learn. Understanding the role of motivation theories and research in the daily choices you make as a teacher will better

enable you to reach all students and create a classroom where all students feel accepted and look forward to learning.