

DISSERTATION

THE REAL FACTOR: HOW RELEVANCE AND LEARNING COMBINE TO CREATE
STUDENT ENGAGEMENT IN THE CLASSROOM

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ABSTRACT

THE REAL FACTOR: HOW RELEVANCE AND LEARNING COMBINE TO CREATE STUDENT ENGAGEMENT IN THE CLASSROOM

This dissertation investigates the effect of teacher behaviors on student engagement in the classroom, and the relationship between student engagement and learning, with specific attention given to transformational learning. In this study, I define engagement as students being mentally attentive and interested in what is happening in the classroom – socially engaged with the Professor and other students, and enjoying the experience of learning. Data collection for this study was conducted at a large, Research I, land-grant university in the mountain west and involved interviews with eight university professors, six student focus groups, 24 classroom observations, and survey data from over 500 students. This dissertation reports a typology of teaching styles and a model of engagement based on the intersection of relevance and learning (the REaL model). While each style used a different approach to teaching, several common elements emerged amongst the most engaging teaching styles and professors. The results of the study indicate that incorporating important pedagogical elements such as making the material relevant to students, using emotional narratives, and bringing an authentic persona into the classroom are critical to engagement, and far more important than specific teaching methods such as lecture or discussion. Teachers should focus their efforts not on adopting a particular teaching style, but on creating a classroom experience in which relevance and learning combine to create student engagement. Other theoretical findings include a conceptualization of engagement as an internal process, and the corresponding theory that students need not actively participate in course discussions and activities in order to be engaged and learning. This

dissertation concludes with a discussion of the importance of these findings for practical implementation in the classroom.

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CHAPTER 1: INTRODUCTION

Again, I'm going to turn it around. The student has to be engageable. The student has to be motivated to be there. A lot of that is intrinsic, internal. Why are you there? Why are you in college? Why are you in this program of study? Why is this course important enough to be in your course of study? (Professor Hall)

I just had a student in my office today saying, and this is going to sound like praise for me, and I don't mean it that way, "If more teachers were like you I would have learned more." And my response to her was, "It's really your responsibility." Great, thank you. Thank you for the compliment. But it really is your responsibility to learn. So I really don't want to hear about it. (Professor Banner)

Professor Hall and Professor Banner have little in common as teachers. Professor Banner teaches in the humanities; Professor Hall teaches in the physical sciences. Professor Banner is beloved by his students; Professor Hall's students are bored by him. Professor Banner is the most engaging professor in the current study; Professor Hall is the least engaging. Despite all these dissimilarities, Professor Banner and Professor Hall shared at least one commonality: both believe that students are responsible for their own engagement and learning in the classroom.

The sentiments expressed above are shared by many college and university professors. Students are often seen as the sole source of their own motivation, engagement and learning. For example, in a study by Gupta et al. (2006: 99) the predictors of student performance collected for the study were:

...sex, age, major, current semester load, number of work hours per week, number of children at home, number of high school, and remedial math courses taken, number of years since the last of these was taken, total number of 100-level courses taken, attitudes toward mathematics study, instructor rank, course location (on-campus vs. off-campus), class size, use of technology in the course, use of tutoring, and number of missed classes.

Thirteen of these 17 variables are student characteristics, only one measures a teacher characteristic (instructor rank), and only one (use of technology in the class) measures a teacher behavior. Common wisdom (and common research design) assumes that whether a student

succeeds or fails in a course is dependent upon that student's personal intelligence, motivation and effort (e.g., Stipek 1998); but what if individual student characteristics are not the sole determinant of a student's engagement, learning, and academic performance?

Student engagement and learning are certainly dependent, in part, on the individual student's drive and abilities, yet student engagement is a complex process that depends strongly on other factors such as the classroom environment and the professor's teaching style (Hayes and Allinson 1996; Marks 2000). As the opening quotes suggest, many academics view student engagement as intrinsic to the individual, leaving the interactional aspects of student engagement, as an area of academic inquiry, largely unexamined.

In addition, what little research has been conducted on the interactional aspects of engagement has been done largely by educational scholars, not by sociologists, despite the discipline's history of critiquing an educational system that perpetuates inequality through mechanisms such as tracking¹ (Hallinan 1994) and unequal funding of schools (Condrón and Roscigno 2003). Sociologists have long critiqued inequality of opportunity in education, stretching back to Durkheim (1956), and have proposed various structural solutions to this social problem (e.g., Johnson 2002). Few, however, have studied the potential for the processes of engagement to transform student learning and student achievement.

This dissertation begins to address this problem by filling the gap in our current understanding of how *teachers* can engage students by modifying their *own* behaviors and attitudes in the classroom. Drawing on the work of Freire (1970) and the tradition of critical pedagogy, this dissertation seeks to contribute to the literature on how educators might better serve students, not as subject experts dispensing knowledge, but as facilitators of and

¹ The division of students into separate tracks, ostensibly on the basis of ability (e.g., students on the college prep track and students on the remedial track).

collaborators in learning. The remainder of this chapter will introduce the topic of college student engagement, provide a brief summary of the evidence for locating responsibility for engagement outside the student, outline the sociological relevance of the study, and provide an overview of the research project and the goal of this dissertation.

SITUATING THE STUDY OF STUDENT ENGAGEMENT

Modern neuroscience boldly refutes the conventional wisdom that responsibility for being engaged rests with the individual (Medina 2008). If science will no longer allow us to hold individual students solely responsible for their own engagement in the classroom, where, then, should we turn? Brain experts such as Medina (2008) have argued that the human brain is wired to learn best under certain circumstances, such as when it is alert and well-exercised. Hartley and Davies (1978) provide evidence that students only remain engaged with material for 10 minutes before ‘tuning out.’ In fact, we actually pay closer attention when our attention is continually shifted, rather than remaining focused on one topic (Langer 1997). There is also support for the use of different types of presentation styles and media when delivering information: Najjar (1996) reports that multisensory presentations create better learning, as different types of media (e.g., text, pictures, videos, etc.) can create different linkages that reinforce one another during recall.

Shirey (1992) confirms that which many already suspected – people do not pay attention to subjects in which they are not interested. As we are usually interested in topics that create an emotional response in us, it is not surprising that information linked to emotional content is far more likely to be recalled later, when compared to information not linked to strong emotions (LaBar and Cabeza 2006). Indeed, we pay the most attention to the emotional components of our memories (Dolcos, LaBar and Cabeza 2004).

Medina and his contemporaries give us permission to venture into the realm of *unconventional* wisdom, to suggest that perhaps connecting the material to emotional content, making use of multi-media presentations, or restructuring lectures into shorter segments may all contribute to student engagement. While many teachers have little control over the size or location of their classroom, the level of technology available in the teaching space, or the time of day during which their class is scheduled, all teachers have control over their own behaviors in the classroom. It is for this reason that the present study will focus on the ability of teacher behaviors to influence students' engagement and learning in the classroom.

SOCIOLOGICAL RELEVANCE

The discipline of sociology has studied ideology for decades (e.g., Engels and Marx 1965). Ideology has been a primary focus of sociological inquiry because of the way in which it shapes society. Equally important is the way in which ideology perpetuates misconceptions about social reality that cause individuals to act against their best interests; for example, the ideology of the American Dream (Hochschild 1996).

The dominant ideology about education in the United States is that an individual's intellectual ability and effort account for the bulk of that individual's learning and performance in school. This is evidenced by a Google search for "characteristics of successful students," which returns twice as many results (~21 million) as a search for "characteristics of successful teachers" (~9.9 million results). There are more than twice as many web sites dedicated to characteristics of successful students as those dedicated to characteristics of successful teachers. This ideology is especially prevalent in higher education. For example, 8 of the top 10 Google search results for "characteristics of successful students" are linked to an .edu domain, the domain for colleges and universities. These sites include checklists and guides for students that

identify student behaviors for success (e.g., going to class, reading the material, and being prepared). Likewise, (Kuh et al. 2006) in their comprehensive review of the literature on student success, found that student characteristics were often cited as a primary determinant of student success, both in preparation for, and during college, while teaching and learning approaches comprised only a small subset of the literature.

The prevailing ideology that students are responsible for their own learning suggests that professors do not require any training in effective teaching; they need only be subject experts in their discipline. Indeed, training in teaching is entirely voluntary for most future professors, while research and scholarship are required (Boyer 1991). This norm suggests that most academic departments subscribe to the ideology that professors need only be subject experts to be effective teachers. This ideology is reproduced with each wave of new professors. These newly minted faculty members have, necessarily, excelled in the current educational system to the point of earning a Ph.D. (or a Masters). The “banking” method of depositing information with students during lecture and withdrawing it from them on exams (Freire 1970) necessarily worked well for them and so new faculty may believe it will work well for others.

In this way the academy perpetuates itself, allowing into its ranks only those students who conform to its ideals of learning and scholarship, and barring entry to students who find academia boring and irrelevant. Parkin (1979) labels this type of exclusionary behavior “social closure” and cites it as the primary method of maintaining class differences. In addition to contradicting the goals of sociological traditions such as liberation sociology, this type of closure is harmful to the intellectual diversity of the academy. If sociologists want students to consider a career as a sociologist – even if they merely want *all* students to embrace the sociological imagination – then they must reconsider how courses are taught, and to whom classroom

instruction is being tailored. If teaching is important to student learning, then the academy must begin to train its professors to be not just competent subject experts, but also competent teachers, as some countries are already beginning to realize (Postareff, Lindblom-Ylänne and Nevgi 2007; Trowler and Bamber 2005).

When teachers believe in the dominant ideology that student characteristics are the primary determinant of student success, they need not examine their own role in facilitating student success. This dissertation challenges the dominant ideology, and challenges teachers to consider how their teaching impacts student success, not only in sociology courses but in all college classes.

THE CURRENT PROJECT

This research is framed by the dual hypotheses that student engagement is primarily the product of teacher behavior and that student engagement is correlated with student learning outcomes. While the dominant ideology argues that student learning outcomes are based primarily on the motivation and intelligence of individual students, this dissertation examines whether student learning outcomes may be more closely associated with student engagement and teacher behaviors in the classroom. Specifically, this dissertation analyzes what teacher behaviors work best to engage students in the classroom. This dissertation is based on a survey of students enrolled in eight different classes in the spring of 2012, focus groups of a selection of those students, observations of the classes surveyed, and personal interviews with the professors responsible for teaching each class. These data collection methods allowed me to develop a strong sense of each professor's teaching style, which I describe below. These descriptions provide a basic overview of the teaching methods employed by each professor, which may be

useful while reading the remainder of the dissertation. These descriptions are written in my own words, based on my observations, and do not include any specific quotations or field notes.

Professor Allan

Professor Allan primarily lectures from PowerPoint. While some slides contain text that the students are intended to copy down, most slides depict charts, graphs or images. The slides are typically used to complement concepts that Professor Allan is verbally presenting, not to provide the information directly. In addition, Professor Allan always points out to students what information will *not* be on the test (and thus is not necessary to record), as well as pointing out what information is important. He uses many examples to illustrate the ideas he imparts and often relates stories, sometimes personal, but usually about some interesting event in the public domain, to connect what he is talking about with the real world. He does not often ask for student input, nor does he encourage class discussion, but he answers students' questions as they arise. He does not use in-class activities, i>Clickers, videos, or other non-lecture techniques. He does not walk around the class and he does not move much in front of the class. He occasionally uses stories or images that strike an emotional chord, eliciting pity, disgust, laughter, or other emotions, depending on the story. He does not require *any* reading for the class.

Professor Banner

Professor Banner begins each class by saying, "There's no place I'd rather be than right here talking with all of you about rhetoric." His primary teaching method is a modified version of the Socratic Method in which he asks students questions intended to lead them through a dialogue about the topic of the day. He never uses PowerPoint, instead lecturing while walking across the stage and, frequently, around the room and into the audience. He often varies his intonation and gestures ranging from sweeping gestures and a booming voice to simple hand

movements and soothing tones. He was raised by a preacher and often embodies qualities of a preacher himself, sermonizing about his subject and the lessons to be learned from the text the students are reading. He uses technology only rarely; he does not use i>Clickers or in-class activities, but does begin every class with an in-class writing exercise. His lectures are powerful and moving, encouraging the students to think reflectively, take action, and live with integrity.

Professor Clark

Professor Clark primarily lectures from PowerPoint, but incorporates class discussion, in-class writing exercises, i>Clicker questions, and videos into her lectures. She consults her notes frequently and walks around the stage, but never into the audience. She uses some emotional videos (e.g., a documentary about a woman dealing with Obsessive-Compulsive Disorder) and provocative questions and videos (e.g., would you have sex with an attractive stranger?). She goes through a massive amount of information each class session. Many of her PowerPoint slides display text (often with an accompanying image). Her i>Clicker questions engage the students by either asking their opinion about something or asking a content-based question; afterward she will tell them the correct answer and how they did.

Professor Danvers

Professor Danvers evenly divides his class sessions between lectures and in-class activities that take the entire session. When lecturing, he uses PowerPoint slides that display a mix of images, maps and words. He stands in front of the podium as if having a personal conversation with the students, relating historical events in narrative form. He recites poems from the era he is discussing, even singing at one point. He also tells personal stories that relate to the subject matter. There is not a lot of discussion in the class on lecture days, but the students ask clarifying question and he occasionally asks questions of them. He walks around the

classroom, up into the audience, which makes students who are texting or nodding off pay attention. When doing in-class activities he explains the activity and then either walks around the classroom (and out in the foyer where some groups meet), checking on the students, or he sits at the front of the class meeting with students who come up to see him individually. He returns every student's paper individually, after a brief conference with the student about her or his essay.

Professor Etienne

Professor Etienne primarily lectures without PowerPoint. She uses the white board to write down important terms and concepts. She asks for student participation infrequently and answers student questions when they are asked. Occasionally she has students work in groups to complete an in-class activity. She doesn't use a computer, instead using a doc cam to project any necessary information onto the screen. She does not walk around. She is very calm and relaxed and does not use much inflection – she very rarely displays outward signs of excitement or passion.

Professor Frost

Professor Frost primarily lectures from PowerPoint, but he often intersperses the lecture with short video clips, i>Clicker questions, or classroom discussion. Even though the class is very large, he still encourages discussion with the class, asking for students to answer questions and offer their opinions and experiences. He often uses personal anecdotes to illustrate the concepts covered in the lecture, frequently using humor as well to communicate his stories. He is obviously excited about the topic, gesturing, walking around the room, and expressing his excitement both through his tone of voice and actually verbalizing to the students his passion for the subject. Most of his slides include images, some of which include images only, which he uses

to illustrate course concepts. He tries to relate the material to students' lives and seems to genuinely care about the students in the class.

Professor Garrick

Professor Garrick lectures without PowerPoint, writing her notes on a white board before the class begins, and lecturing from those notes. She encourages some discussion with the class, but students note that she is very sarcastic, and can sometimes come off as condescending or rude. Other students like her sarcasm. Sometimes the class slips away from her and students begin conversing on their own, sometimes with hostility. She appears interested in the subject but not in the class, seeming at times disinterested and at others aloof.

Professor Hall

Professor Hall often uses the doc cam to work through equations with the students, showing them how they are done in real time via the doc cam. He also uses PowerPoint to provide more standard lectures. Often his slides include charts or graphs, not just text. He occasionally performs experiments for the students, using the doc cam so that students can see the physical demonstration. He tries to include them, asking them how they think the experiment will turn out, etc. Often he will ask for participation from the class but receive none, giving the impression that he is simply completing equations for his own benefit on the stage, with very little interaction with the students. He occasionally uses funny videos at the beginning of class. It is clear he wants to engage students, but for some reason, they do not seem to want to engage with him, most of the time. He has a "bumbling professor" aura, sometimes talking to himself or catching himself in mistakes, seemingly oblivious to the fact that the entire class is watching.

REVIEW OF CHAPTERS

The descriptions above should be of help when navigating the following chapters. In Chapter Two, I review the literature on engagement and teacher behaviors, and reveal gaps in the current research, concluding with a discussion of how this dissertation helps to fill those gaps. In Chapter Three, I outline the research questions, data collection methods, measurement techniques, and a description of the analytic processes used in this dissertation. As a mixed methods study, I focus primarily on the quantitative results of the investigation in Chapter Four and present the qualitative results of the study in Chapter Five. In Chapter Six, I summarize the important findings and implications of the dissertation and provide guidance for practical use and further study.

It is my hope that this study will not only contribute to the scholarship of teaching and learning, but that the findings will be used to inform teachers, and especially college and university professors, who wish to improve their own teaching and to share responsibility for their students' engagement in the classroom. As one student of the very engaging Professor Banner boldly stated in a focus group:

When you said everybody needs to take his class, I think professors need to take his class, either with Professor Banner or [another professor], because both of those two know how to teach. There's a lot of professors on campus that don't know how to teach, and it's taken out on the students in the sense that they say, "Why don't you understand this? Why aren't you interested?" "Because you're not making it interesting. You're a professor, this is your job, to make us want to learn. It's not to teach us, it's to make us want to learn." I think there's a huge difference.

While readers of this study may never take a class with Professor Banner, I hope that by reading this dissertation and understanding how Professor Banner and other engaging professors teach, they will find ways to make the students in their own classes want to learn.

CHAPTER 2: LITERATURE REVIEW

Student engagement is a frequently studied topic in educational literature because of its many benefits for student achievement (Carini, Kuh and Klein 2006; Fredricks, Blumenfeld and Paris 2004; Marks 2000; Skinner and Belmont 1993b). Specifically, engagement in class has been shown to predict GPA and college degree attainment (Svanum and Bigatti 2009) and to contribute to more effective learning in the classroom (Finn and Rock 1997; Osterman 2000). For these reasons, engagement is of central importance to research on student learning, performance, and achievement.

OVERVIEW

This literature covers three substantive areas. First, I outline a typology of learning theories. Second, I examine the various definitions and conceptualizations of engagement and summarize the definition of engagement that will be used in this dissertation. Third, I examine the factors reported to contribute to student engagement in the classroom, linking each reported predictor to a theory of learning. I consider the intersection of engagement and learning with race, class and gender throughout the literature review.

This review focuses primarily on studies of students' engagement in the classroom, in response to external influences (including teacher behaviors). Although this dissertation is focused on student engagement in the *college* classroom, I also review articles on engagement in elementary, middle and high-school classrooms, in order to capture some of the seminal works on student engagement.

As this study focuses on student engagement inside the traditional classroom, I do not review research on the effect of extracurricular options such as service-learning on students' engagement. Likewise, I do not cover studies on engagement in the online classroom. Although

much of the existing research on *college* student engagement is based on the National Survey of Student Engagement (NSSE), this survey is “too broad in scope and a survey of student educational experiences more than a theoretical explanation of student engagement” (Steele and Fullagar 2009: 6). I therefore also do not review research based on the NSSE, which focuses on engagement on the college campus, rather than in the college classroom.

THEORIES OF LEARNING

Theories of learning fall into one of four major areas: physiological learning theories, cognitive learning theories, behaviorist learning theories, and interactionist learning theories. Physiological learning theories focus on the processes that take place on a physical level within the brain, such as synapses firing or electrical fields being reorganized, and were pioneered by Skinner (1950). Although often associated with physiological theories of learning, Piaget (1952) straddles the divide between physiological and cognitive theories, positing four stages of cognitive development that correspond to four stages of physiological development in children.

Theories of cognitive learning hypothesize that “developing competence in any domain represents a process of skill acquisition” (Schunk 2004: 280). These theories focus not on the physiological processes occurring in the brain, but on the mental processes occurring in the more abstract “mind.” Gardner (1983) argues that cognitive ability does not necessarily directly correlate to traditional measures of learning (i.e., standardized test scores), or intelligence (i.e., IQ tests). Proponents of learning styles (see below) argue that students learn better under certain circumstances, in certain environments, or based on a certain combination of stimuli (e.g., Kolb 1984).

Behaviorist theories go one step further, suggesting that learning is what can be observed through a person’s behavior rather than the unobservable changes taking place in the mind

(Skinner 1950). This theory is linked to “operant conditioning,” which posits that learning (and the corresponding changes in behavior) can be modified by external forces, the classic example of this theory being the dog who is conditioned to salivate at the sound of a bell (e.g., Skinner 1950).

All of the above theories support the ideology that students are primarily responsible for their own learning. Interactionist approaches to learning suggest that learning emerges from interaction with others. For example, social learning theory, as originally proposed by Bandura (1963) suggests that people learn from those around them, mimicking and then internalizing the behaviors and norms of others. Slightly more interactive in nature is the social cognition theory of Vygotsky (1967), who hypothesizes that children learn when they are engaged in social activities with other children, or instructors. Even more interactive is the community of practice, in which all participants learn from one another and thereby excel at their subject of study (Lave 1991).

Another theory of learning that is of particular importance to this study is transformational (or transformative) learning theory. Transformational learning focuses on acquiring new skills and knowledge, but on changing students’ perspectives. As (Mezirow 2000: xiv) suggests, within the paradigm of transformational learning, “Rationality, self-awareness, and empathy are assumed values.” Transformational learning or growing theory, as it is called by Fox (1983), is as much a theory of teaching as it is learning, as the teacher seeks to not facilitate not only the students’ intellectual development, but their emotional development as well. This theory of learning is often paired with a dialogic and relational form of teaching, to better facilitate transformation of students’ belief systems (Lysaker and Furuness 2011). In constructing

the survey for this dissertation, learning has been conceptualized as transformational, as well as traditional.

WHAT IS ENGAGEMENT?

There is a great deal of disagreement in the literature on what exactly constitutes student engagement. In their review of the literature on engagement, Parsons and Taylor (2011: 4) list academic, cognitive, intellectual, institutional, emotional, behavioral, social, and psychological engagement as among the possible definitions of engagement. From these numerous types of engagement, two broad categories of engagement are of interest to the present study:

cognitive/mental engagement and social/behavioral engagement. As outlined in Chapter 1, modern neuroscience suggests that cognitive engagement (interest and attention) is largely dependent upon outside factors (Medina 2008). As such, this type of engagement is most relevant to this study, as this study seeks to measure and define what outside factors influence student engagement. Social engagement is also important to this study because it captures the image of engagement commonly portrayed in the media and envisioned in the minds of many teachers: the student with his or her hand raised, waiting to answer a question, or the group of students huddled together talking over a group problem.

Engagement can also be conceptualized as students actually enjoying the experience of learning. Martin and Furr (2010: 21) suggest that when looking for engagement one should “Check for fun. Do you see evidence that students experience joy in learning? Is the teacher modeling enjoyment of learning?” This understanding of engagement is equally important to the definition of engagement adopted for this dissertation. I define engagement, therefore, as students being mentally attentive and interested in what is happening in the classroom, and enjoying the experience of learning.

Student disengagement has been defined in almost as many ways as student engagement. Macheski et al. (2008) specifically mention student disengagement in the title of their article, yet never define what is meant by the term. Others define the term only in opposition to student engagement (e.g., Marks 2000; Quible 2002). As with engagement and the NSSE-based literature, some authors focus on student disengagement from school more generally, rather than student disengagement in the classroom (e.g., Balfanz, Herzog and Mac Iver 2007; Tinto 1982). Beck (2005) measured student disengagement in the classroom by tracking students' response times and rates of correct answers to questions asked by the teacher, conceptualizing students' disengagement in class as the speed and rate of incorrect answers of such responses. Despite this variety of definitions, however, none of these conceptualizations (save for Beck's very specific definition) address students' behaviors in the classroom while they are disengaged, a gap in the literature this dissertation attempts to address.

SURVEYS OF STUDENT ENGAGEMENT

Several authors attempt to measure student engagement through the use of surveys. These surveys were used to construct the survey described in Chapter 3. Handelsman et al. (2005) include measures of relevance, active learning, and student skills and abilities in their survey. They report four factors: skills, emotion, participation/interaction, and performance. Of particular interest, the "emotion" component of their survey includes questions measuring both relevance (e.g., "finding ways to make the course material relevant to my life") and motivation (e.g., "really desiring to learn the material") (Handelsman et al. 2005: 187). While Handelsman et al. collapse these two categories into a single factor, my findings suggest that relevance and emotion are two separate factors.

Koljatic and Kuh (2001) present a longitudinal study of student engagement using a survey that measures the areas of student-faculty contact, cooperation among students, and active learning to predict engagement. In a pilot survey by Jeni Cross (2011), students were asked to help create a survey of student engagement based on their responses to the question: what makes learning fun and engaging? This survey included questions such as “I watch the clock” and “I lose track of time in this class.” All of these surveys ask questions about active class participation to measure engagement, but few focus on internal mental engagement in the classroom; something this dissertation seeks to address.

As mentioned above, the National Survey of Student Engagement (Kuh 2001) focuses primarily on students’ engagement on campus. While the survey includes questions that ask about “thinking critically and analytically” and “understanding yourself,” these questions are prefaced with the phrase, “To what extent has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?” These questions therefore measure students’ engagement broadly, across all courses and even outside the classroom. Langley (2006), citing this issue, attempts to measure student engagement in the classroom while complying with the specific benchmarks set forth by the NSSE; for this reason I was able to draw some questions from Langley’s survey. Even though other versions of the NSSE (i.e., BSSE, BCSSE, CSSE, FSSE, HSSSE, and MSSSE) include many of the same questions, I examined all of these surveys when creating the survey for this study.

WHAT CAUSES ENGAGEMENT?

Because there is a great deal of disagreement about what constitutes engagement, there is also a great variety of opinions about what causes engagement. Steele and Fullagar (2009: 6) assert that, “Existing definitions [of engagement] lack a strong conceptual foundation and often

confuse the antecedents and outcomes of engagement with facets of engagement.” Below I review the various explanations for what causes engagement, taking care to exclude those studies that confuse engagement with its “antecedents and outcomes” such as learning, motivation, grades, and participation (as I conceptualize engagement as mental and internal).

Engagement as an Individual Characteristic of the Student

Many scholars conceptualize engagement as an intrinsic trait found in varying levels amongst individual students. This conceptualization falls under physiological and cognitive learning theories, in which proficiency in learning is the responsibility (or characteristic) of the student. Engagement as an intrinsic characteristic of students is also the dominant ideology of student success, as discussed in Chapter 1. Urdan and Schoenfelder (2006) argue that individual student characteristics such as intrinsic motivation and high self-esteem, rather than teacher’s actions, determine a student’s level of engagement. Pascarella and Terenzini (2005) echo this sentiment, suggesting that course engagement is a student characteristic that continues to develop throughout a student’s academic tenure. Pintrich and Schunk (2002) also cite intrinsic motivation as being the primary driver of student engagement, although they also allow for other factors, including the effect of the teacher and the classroom. In contrast, Schuetz (2008: 22) argues that engagement is not developed over time, but rather a characteristic present in all humans, “one that emerges naturally unless impeded or suppressed by social-contextual factors.” Finally, McKinney and Reed (2007) suggest that engagement may emerge from a combination of specific traits, profiling the engaged sociology major as a young, white student with strong personal motivation and active class participation.

Matching Learning Styles

Another commonly discussed predictor of engagement focuses on the interaction between teachers and students; arguing for the presentation of the material in a way that matches a student's learning style. For example, some students may be more engaged by images or examples than by words or theories. Models of different learning styles attempt to capture the various ways in which students learn differently from one another. While seemingly interactionist in nature, because of the focus on matching teaching styles with learning styles, theories of learning styles are largely cognitive, focusing on *how* different students learn differently. These models first appeared in the 1970s and have been a mainstay of education literature ever since. These models range in scope and complexity, as well as the aspects of learning considered important to a learning style (see, for example, Dunn and Dunn 1979; Felder and Silverman 1988; Fleming 2001; Gregorc 1979; Kolb 1984). Every model stresses, however, that individual students have specific ways in which they learn best, and that learning is facilitated by teaching behaviors that provide opportunities for various learning modalities.

One of the major debates in this literature has been the relative importance of accommodating learning styles to student success. The National Academy of Engineering (2011) now lists "Advance Personalized Learning" amongst its 14 grand challenges for engineering. But several authors challenge the legitimacy of the "matching hypothesis," that students academically achieve best when their learning style is paired with a complementary teaching approach. Ford and Chen (2001) found only limited and conditional support for the hypothesis, noting that gender was a significant mediating variable. Pashler et al. (2008) also found little support for the matching hypothesis in their review of the literature, and even found some

research which seemed to directly contradict common wisdom, arguing that a focus on matching styles may actually hinder students' academic progress.

In addition to debunking the common wisdom of style-matching, Doyle and Rutherford (1984) point out that, regardless of the accuracy of the hypothesis, the obstacles facing a teacher who wishes to implement such a strategy are enormous; accommodating the varying styles of the dozens of students in a single class is simply not practical. Similarly, Dunn and Dunn (1979) argued that learning and teaching styles do not always cluster neatly together. Likewise, Pashler et al. (2008) asserted that any study which found evidence in favor of the matching hypothesis would be both limited to the learning styles measurement instrument studied and would have to demonstrate a robust level of significance in order to justify the time and expense of implementing the learning-style assessment in the classroom. No such study has yet been published. Despite a lack of evidence that matching learning styles improves academic achievement, however, researchers have found that students are still more *engaged* when their professor's teaching style matches their learning style (Canino and Cicchelli 1988; Hayes and Allinson 1996; Witkin et al. 1977).

Relevance

Making the course material relevant to students' lives (i.e., connecting the material to students' personal experiences, interactions, or perspectives) is frequently mentioned as one of the best ways in which teachers can facilitate student engagement in class (e.g., Akey 2006; Heller, Calderon and Medrich 2003; Perrone 1994). Relevance begins with a shared language that moves beyond academic jargon. Macheski et al. (2008: 45) argue that when teaching sociological theory or methods:

The challenge for teachers who are interested in building an engaged community of learners is how to take the course content and find ways that create a common language

of discourse. Such a language of discourse must move beyond the nomenclature of the sociological content taught.

This statement suggests that theories of relevance would support an interactionist theory of learning, in which common language is paramount.

Students find relevance to be an important determinant of engagement as well. When Bishop and Pflaum (2005) asked middle school students to illustrate engaging experiences in the classroom, relevance appeared again and again. Being able to apply the material they were learning in class to their own experiences kept the students interested and engaged with what they were learning.

Simply ensuring that the material is relevant to students' lives is not sufficient, however. Teachers need to help students *understand* the relevance of the material (Palardy 1999). Helping students to understand relevance can take several forms. Claxton (2007: 13) argues that relevance must be wedded to responsibility and reality, using questions such as "Where else could you use that?" and "Can you imagine yourself using that at home?" as a litmus test for relevance. Relevance alone is not enough to engage students; they must also see real effects of their learning and have some control over how their learning takes place.

Relevance appears to have especially beneficial effects for women. Thompson and Windschitl (2002) found that the relevance of course material to students' sense of self and identity development had a profound effect on class engagement for the at-risk women in their study. Likewise, Murphy, Lunn and Jones (2006) report that while all students benefitted from an effort to make physics relevant to social and personal issues of importance to the students, female students showed much greater increases in learning and engagement due to relevance than did male students.

Presenting material in a *culturally* relevant manner has also been identified as a predictor of student engagement, especially amongst Latino students (Garcia-Reid, Reid and Peterson 2005). Cejda and Hoover (2011: 148) found that professors who best engaged their Latino students understood their culture: “Many encouraged students to share their culture in classroom assignments and discussion. When warranted, they stressed cultural relevance to the course content.”

Relevance appears to have many benefits in terms of engagement, especially for women and students of color. By connecting the material to students’ lives, professors are able to help students *want* to learn the content. This desire to learn translates into engagement in the classroom – motivation to participate in the course in order to receive information of value to the student.

Classroom Environment and Emotional Resonance

Several authors focus not on specific teacher behaviors in the classroom, but on the ways in which teachers can create an overall environment or classroom climate that is conducive to student engagement (Marks 2000). This aligns very clearly with the interactionist theories of learning, in which the interaction between learners and the teacher is paramount. As suggested above, emotional resonance with students can be very effective in promoting classroom engagement. Macheski et al. (2008) argue that, “Constant attention to students’ emotions, especially in, but not limited to, moments when their fears and anxieties increase, allows faculty and students to celebrate successes and to normalize mistakes.” This is echoed by Reyes et al. (2012: 701), who argue that “when teachers create a sense of community, respond to students’ needs, and foster positive relationships—all of which are indicative of classrooms with high

[Classroom Emotional Climate]—academic success likely ensues, perhaps because students are more engaged and enthusiastic about learning.”

Engaging students on an emotional level can lead to the cognitive engagement that facilitates learning; furthermore, the more teachers emotionally engage with the subject, the more students will engage as well (Baylin 2010). Reyes et al. (2012) discovered a positive relationship between the emotional climate of a classroom and engagement, with engagement mediating the relationship between classroom climate and academic achievement; when the classroom is conducive to learning, students are more engaged and achieve better.

A major factor in the classroom emotional climate is the nature of the teacher-student relationship. Students seem to experience emotional engagement when they have positive interactions with their professors, and Sagayadevan and Jeyaraj (2012) found that emotional engagement with the professor was also a significant factor in predicting students’ learning. Noddings (1996) suggests using stories to engage students emotionally in the classroom. This practice also has the benefits of enhancing the human relationship between students and teacher, and of connecting the material to real-world relevance.

Technology

The use of technology as a teaching tool primarily supports an interactionist model of learning. Technology has been linked to student engagement both inside and outside the classroom. Outside the classroom, researchers have detailed the benefits of online simulations (McLaughlan and Kirkpatrick 2004), blogging (Walatka 2012), and Web 2.0 technologies such as social networking sites (Vaughan 2010). Studies examining the benefits of technology inside the classroom identify clickers (Terrion and Aceti 2012), Twitter (Junco, Heiberger and Loken 2011), and text-to-screen services like polleverywhere.com (Tremblay 2010) as technologies

that successfully engage students in the class session. These technologies share the common feature of enabling a more interactive class session, especially in a larger classroom. (Gasiewski et al. 2012: 37) suggest that:

Students are more engaged when professors create an atmosphere that promotes asking questions, where there is no such thing as a question that is too elementary. Most importantly, when professors utilize active learning pedagogies, like clickers or strategies that offer immediate feedback, adapt their teaching to ensure more students have grasped the material, or use web based pedagogies that make the most of new technologies for illustrating concepts, students are more engaged in courses.

Thus, technology itself does not facilitate engagement, but rather facilitates active learning, an interactive classroom, and the ability to illustrate difficult concepts more easily.

Kearsley and Shneiderman (1998: 20) suggest that “students must be meaningfully engaged in learning activities through interaction with others and worthwhile tasks.” Their principle argument, however, is that technology can facilitate this sort of engagement in ways that teachers alone cannot. Thus authors who cite Kearsley and Shneiderman’s engagement theory are primarily concerned with the use of technology to engage students in the classroom. While the use of technology is certainly one of many potential strategies for engaging students in the classroom, it is hardly the only method of capturing and maintaining student engagement.

Active Learning

Interactionist theories of learning promote class interaction, especially through discussion or in-class activities, collectively termed active learning. Students report being more engaged (maintaining interest and attention) when traditional lecture is combined with cooperative learning tasks and class discussion (Cavanagh 2011; Delialioglu 2012). While technologies like clickers can facilitate class discussion, cooperative learning exercises are less reliant on technology. Students who have the opportunity to participate in inquiry-based group exercises are more engaged in class (Summerlee and Murray 2010). Numerous authors have also reported

success in engaging students through group collaborations (e.g., Ormrod 2011; Pedersen 2010), in-class activities/games (e.g., Winston 2003), and simulations (e.g., Wills, Brewster and Fulkerson 2005).

In-class activities require the proper structure to promote engagement, however. Activity engagement theory, which emerged from the discipline of psychology, argues that using extrinsic motivations combined with intrinsic motivations may actually undermine children's interest in an activity. Higgins et al. (1995) argue that the same may actually be true of combining intrinsic activities, if the initial activity is less attractive than the additional intrinsic activity.

Facilitating Flow

Like Higgins et al, Shernoff et al. (2003) also examine student engagement through a psychological lens, using the perspective of flow theory. Their research suggests that high-school students reported being most engaged when both the challenge put to them and their own ability were a good match and both at a high level. This type of engagement describes the psychological concept of flow, or completely focused motivation (i.e., being "in the moment") (Csikszentmihalyi 1990a). Steele and Fullagar (2009) also found that professors can play a role in helping students to achieve flow by supporting student's autonomy, setting clear goals, building challenging tasks and assignments, and providing helpful feedback to students. While flow is a promising area of inquiry for student engagement, very little work has been done on the experience of flow in classrooms, the bulk of such research being primarily focused on the workplace and in athletic performance (see Jackson et al. 2001; Steele and Fullagar 2009).

HOW DOES ENGAGEMENT AFFECT LEARNING AND ACHIEVEMENT?

While theories of engagement and theories of learning have some overlap, a handful of researchers have focused specifically on the relationship between learning, engagement, and

student achievement. The relationship amongst the three variables appears to be that teachers affect engagement and engagement affects student learning and/or achievement.

Skinner and Belmont (1993a) found a reciprocal effect between teacher behaviors and student engagement; specifically, that when teachers were involved in students' learning and provided them with autonomy and support, students were more engaged. Likewise, when students appeared more motivated, teachers were more likely to be supportive and involved in their learning. Others, such as Klem and Connell (2004) and Reeve et al. (2004) found a direct correlation between teacher behaviors such as providing students with supported autonomy, and students' levels of classroom engagement.

Regarding the link between engagement and achievement, Finn (1993) reports that student engagement is positively associated with achievement for eighth graders and Newmann (1992) reports similar results for students in high schools. Thus, there is already some evidence that student engagement does lead to positive student learning outcomes for K-12 students, though little research has been done at the collegiate level. Likewise, Curran and Rosen (2006) found that student *attitudes* were based primarily on the instructor and course topic. Student attitudes are conceptually different than student engagement, however, indicating the need for research such as the present study to further examine the relationship between teacher behaviors and student engagement. If student learning outcomes are indeed linked to engagement, and engagement is tied to teacher behaviors, then teacher behaviors have a profound effect on student learning outcomes, possibly even a more significant impact than individual student attributes.

CONCLUSION

The literature on engagement is plentiful when it comes to primary and secondary school engagement in the classroom and campus-wide college engagement, and sparse with regards to

college engagement inside the classroom. As mentioned above, the bulk of the literature on college engagement since 2001 has been focused on the NSSE survey instrument. Also of note is the relative dearth of articles addressing how students respond to teacher behaviors aimed at engaging students in the classroom when compared on the basis of demographic variables such as race and gender.

Reyes et al. (2012) suggest that future researchers studying engagement would do well to focus their efforts on examining teacher–student interactions that promote student engagement. Likewise, there is a need for research focused on engagement in higher education that eschews the now typical model of using NSSE results to draw conclusions about student engagement in colleges and universities. This dissertation aims to contribute to the body of knowledge in the field of engagement by providing research on engagement by teacher behaviors in the post-secondary classroom.

Much of the literature on engagement focuses on engagement as an external phenomenon, connecting engagement to interactionist theories of learning. Other engagement literature connects engagement to cognitive theories of learning, focusing on engagement as facilitated by appropriate learning styles. What is needed is a synthesis of the two, acknowledging the interactional nature of student engagement, while underscoring the idea that engagement is a cognitive process. As revealed in this dissertation, engagement takes place primarily within the mind of each student, but requires interaction with (or at least observation of) peers or a professor. The current literature fails to fully capture the *process* of student engagement, instead focusing on engagement as an outcome. This dissertation seeks to fill in this gap in the literature by conceptualizing engagement as a process, and explaining how and why students engage in that process.

CHAPTER 3: METHODS

While authors such as Pintrich and Schunk (2002) suggest that student learning outcomes are based primarily on the motivation of individual students, I examined whether student learning are more closely associated with student engagement in the classroom. As such, this project investigated two primary research questions:

1. What teacher behaviors work best to engage students in the classroom?
2. How does student engagement affect student learning?

This study considered three variables: student engagement, student learning, and teacher behaviors. Both learning and engagement can be conceptualized as outcomes as well as processes. At the beginning of the research process (when composing these research questions), I conceptualized learning and engagement as outcomes. I conceptualized learning as the new knowledge, skills, or perspectives acquired as a result of a course. I conceptualized engagement as a state of being alert, attentive, and interested in the material being presented in the course.

As I reviewed the findings of my data, I began to conceptualize both engagement and learning differently. I conceptualized learning as a verb – as the *process* of acquiring new knowledge, skills, and perspectives (e.g., “I am learning to read.”). In the REaL model presented in Chapter 4, it is the process of learning that, combined with the relevance of the material, creates engagement. Likewise, my conceptualization of engagement changed throughout the study. Like learning, I eventually conceptualized engagement as a verb – as the process of meaningfully participating in class, by paying attention to what is happening in class and mentally making connections between the material being presented or discussed, and their own lives. This is the engagement that emerges in the REaL model.

Likewise, I originally conceptualized teacher behaviors as specific actions taken by teachers in the classroom (e.g., moving around, calling students by name, using in-class exercises, etc.). As the study progressed, however, I found that these specific actions had very little impact on student engagement. Rather, I found that it was the combination of such behaviors that created the overall effect of engagement, by creating a classroom in which the students were emotionally invested in the material, understood its relevance to their lives, and resonated with the professor. It was not the interactions with students, but the purpose and manner of those interactions that affected student engagement.

RESEARCHER POSITIONING

I am a graduate student and instructor at the university I studied, although I had no significant prior relationships with any of the professors studied. My pedagogical preference is for transformational learning, which influenced the conceptualization of learning used in this dissertation. I want my students to develop emotionally and ethically as well as intellectually. I pursued this research because I am interested in student engagement inside the classroom and attempt to engage my students as a teacher.

I have participated in several workshops, luncheons, and retreats on teaching and care deeply about teaching and learning. I come from a background in student affairs and believe that higher education and learning are about personal learning and transformation; I want to understand how to best serve students in the classroom, not only as scholars, but as developing young adults.

RATIONALE FOR A MIXED METHODS STUDY

Creswell and Clark (2007) suggest that qualitative and quantitative methods can be employed together to achieve triangulation and causation when one data source may be

insufficient. This study utilized four data collection strategies: 1) student surveys, 2) student focus groups, 3) personal interviews with professors, and 4) field observations in the classroom. The student surveys allowed me to collect data on individual student characteristics as well as students' perceptions of professors' level of engagement. Student focus groups provided me with the opportunity to hear directly from students about their experiences in the class. Interviews with professors gave me insight into how and why the professors taught the way they did, as well as their ideology about student engagement. Finally, classroom observations allowed me to directly observe the interaction between teachers' behaviors and students' responses. By combining data from several sources, I was better able to understand **how** teacher behaviors affect student engagement. In addition, classroom observations allowed me to identify the time order of student engagement and teacher behaviors, which I would not have been able to do with the cross-sectional survey data.

One portion of my research involved quantitative analysis of survey data. Neuman (2006: 151) suggests that quantitative research emphasizes precisely measuring variables and testing hypotheses. To answer my first research question I tested the hypothesis that teacher behaviors have an effect on student engagement. In order to better understand the complex relationships between teacher behaviors, student engagement and learning outcomes, I used factor analysis and correlation matrices.

The other portion of my research involved qualitative analysis of interviews, focus groups, and field observations. Creswell (1998: 15) defines qualitative research as a process in which "The researcher builds a complex, holistic picture, analyzes words, reports detailed views of informants, and conducts the study in a natural setting." Although I also did quantitative analysis to assess the statistical relationship between various teacher behaviors (as observed by

student respondents) and student engagement (as reported by student respondents), fully understanding how students are engaged (or not) in the classroom required a more comprehensive examination of the interaction between students and teachers. Additionally, the statistical modeling used to correlate teacher behaviors with student engagement only allowed me to explain how engaging the professor's behaviors are over the entire semester; such modeling did not allow me to comment on the relationships between specific teacher behaviors and student engagement, in the instant that a given behavior occurs. Observing professors and students in the classroom allowed me to witness firsthand the immediate effects of teacher behaviors on student engagement, in the moment. These observations also allowed me to make causal statements about the effect of teacher behaviors on engagement, supplementing the correlational findings of the statistical analysis.

Likewise, conducting student focus groups and personal interviews with professors allowed me to not only relate a more textured story about the relationship between teacher behaviors and student engagement, it also allowed me to ask open-ended questions about teacher behaviors and student engagement. Respondents often provide vague or incomplete answers to open-ended questions when completing self-administered surveys (Fowler 2002: 10), so being able to ask these questions in the student focus groups allowed me to capture richer data. These student comments provided crucial data for confirming my observations of teachers and interpreting the results of the student surveys.

SAMPLE SELECTION

Purposive or judgmental sampling is appropriate when the researcher wishes to select unique cases that are especially informative (Neuman 2006: 22). Because I wanted to explore student engagement as it relates to teacher behaviors in the classroom, I chose to use purposive

sampling in order to ensure that my cases represented both extremes of the student engagement spectrum. While the term “sampling frame” is usually used to refer to random sampling (Fowler 2002), I use it here to refer to the two groups from which my final purposive sample was drawn.

In the first stage of sampling, I obtained a list of all professors teaching courses which fulfilled an All University Core Curriculum (AUCC) requirement in spring 2012 from Colorado State University’s institutional research department. From this list I further narrowed the sampling frame to include only professors teaching a “large” course, as large courses are the most difficult in which to engage students both because of their size and the variety of students in the course taking it because it is a requirement rather than a personal interest. I defined large courses as a minimum enrollment of at least 90 students. While I initially intended to set the minimum enrollment at 100 students, after examining the data it became evident that a substantial number of professors (n=10) taught ‘large’ sections of 90-99 students. Excluding these professors would have unnecessarily narrowed the sampling frame.²

I then conducted a search on a popular professor rating web site for each professor remaining in the sampling frame. Before using the web site as a source of information on professors’ relative rankings amongst students, I conducted an informal face validity test with my advisor, Dr. Jeni Cross, using several faculty members considered by our colleagues in the department to be engaging teachers and several faculty members considered to be un-engaging teachers. While the number of raters was small, we both concurred that the rankings on the web site seemed to match our own observations. We also compared the web site scores to average teacher evaluations on the end of course surveys, and found them to be generally consistent with the web site ratings.

² The smallest class included in the study enrolled 120 students; the largest class enrolled 270 students.

I recorded the number of ratings and the average rating from students enrolled in classes with each professor, as indicated on the professor rating web site in fall 2011. Excluded from this semifinal sampling frame were those professors who were not listed on the web site, or who had fewer than nine total student ratings. As my intention was to recruit a selection of extremely engaging professors and a selection of professors who were not as engaging, this list was then sorted by average rating, forming two final sampling frames. Those professors with an average rating of 4.5 (no professor with nine or more ratings received an average rating of 5) formed the high engagement sampling frame while those professors with an average rating of 2.5 or lower formed the low engagement sampling frame (professors with “average” ratings of 3.0-4.0 were not included in either sampling frame). These ‘cutoff’ points were set as high (and low) as possible in order to sample the greatest difference in professors (Stinchcombe 2005) .

RECRUITMENT

After creating two sampling frames I approached professors in each group, beginning with the extremes (the highest rankings and the lowest rankings). I approached professors by asking to meet with them in person to discuss the study, through an initial e-mail contact. I adjusted which professor I approached next on the basis of attempting to maintain parity of departments, colleges, tenure track status, and gender, until four professors from each sampling frame had agreed to participate in the study. While I do not report the specific departments or identifying characteristics, to maintain confidentiality, my final sample included: women and men, tenured and adjunct faculty, and faculty from the colleges of liberal arts, natural sciences, and veterinary medicine and biomedical sciences.

When recruiting professors for the study I informed the professor that I was conducting a study on teacher behaviors and student engagement and that I was studying professors teaching

large, AUCC courses. Six professors declined to participate before I finally succeeded in recruiting eight professors for the study, citing reasons from business to disinterest. Once a professor agreed, I informed her or him of the various time commitments involved (three classroom observations, a one-hour interview, a 20 minute survey administered in class, and a possible focus group of students in the professor's class) and I asked the professor to sign an informed consent form.

As I report in Chapter 4, more engaging professors are usually more interested in their students' success and the role they play in that success. Less engaging professors are less interested in the role they play in students' success. This phenomenon also appeared during recruitment for this study; it manifested as a marked difference in ease of recruiting between the high engagement group and the low engagement group. The first four professors from the high engagement group that I approached, after hearing the purpose and potential benefits of the study for students and educators, immediately agreed to participate in the study. In contrast, six professors from the low engagement group declined to participate in the study before I was able to recruit four professors willing to participate in the study.

DATA COLLECTION AND ANALYSIS

The Survey Instrument

Before creating a survey instrument to administer in the classes included in the study, I first reviewed several surveys on student engagement (e.g., Handelsman et al. 2005; Koljatic and Kuh 2001; Langley 2006). From these surveys, I created a list of over 200 questions relevant to student engagement and collated the best questions from this list, based on my conceptualization of engagement *in the classroom* (many questions in previous surveys addressed student engagement outside of the classroom, especially the NSSE and its derivatives). I then generated

additional survey questions based on my review of the literature on student engagement. These additional questions were included to evaluate a student's level of flow (Csikszentmihalyi 1990b), general engagement, and engagement with the material beyond the classroom. All survey questions were included based on the review of the literature on causes of engagement. Thus, I included questions to measure the students' use of technology, matching learning styles, participation in active learning exercises, the professor's use of relevance, etc.

After creating the initial survey instrument, I approached three professors in the sociology department and asked each for permission to administer the survey in one of her or his courses in order to pre-test the instrument. After obtaining permission from each of the three professors, I administered the pre-test survey to the three classes and asked several colleagues to review the survey for question and instruction clarity and comprehension, as suggested by Fowler (2002: 114). The preliminary results indicated good diversity of student engagement between the three professors, which seemed to indicate a robust survey instrument. In addition, the survey was completed within the allotted time-frame of 10 minutes.

After reviewing the results of the first survey, I ran a second pretest of the survey in one of the classes. After pre-testing the survey a second time, I refined the survey to include several questions which could be used to measure and control for other causes of student achievement such as family support (Henderson and Berla 1994), academic aptitude, and prior knowledge of the course subject (Thompson and Zamboanga 2004). I also randomized the order of the questions in each section of the survey and placed the demographic section of the survey at the end, as questions which could be perceived as sensitive (e.g., questions about socio-economic status and GPA) should be reserved for the later sections of a survey instrument (Fowler 2002: 110). Because learning and engagement were originally conceptualized as outcomes, the survey

questions measuring learning and engagement were intended to capture learning outcomes and the state of engagement (static concepts). Instead, these questions captured the process of learning and students' experiences with the process of engagement. The final survey is included as Appendix M.

Response rate for the final survey was relatively high, averaging about 49% of total class enrollment for all professors except Professor Banner, who requested that I administer the survey at the end of class. This change resulted in a significantly lower response rate (26% of total enrollment), as many students chose to simply leave class early rather than complete the voluntary survey. This almost certainly resulted in some sampling bias (discussed in Methodological Limitations, below) in responses for Professor Banner.

Before administering the survey in each class, I presented the students with the IRB-approved recruitment script in Appendix A. Students gave their implied consent by physically completing the survey (Berg 2007: 78). In most classes, the professor or teaching assistant(s) assisted me in distributing the surveys to the students while I explained the nature of the study and requested the students' voluntary participation.

After collecting the surveys, the Scantron sheets were submitted to the University Testing Center, where data files for each professor were created. I formatted each of these files in Excel before importing each into SPSS. The data was then re-coded from Scantron responses (A-E) to interval values (1 to 5), with the direction of the values dependent upon whether the question was positively or negatively phrased.

After properly coding the survey responses for analysis, I created a missing values variable to calculate how many missing values each respondent had on his or her survey. Because 92% of respondents had two or fewer responses missing, respondents with three or

more missing responses and those with more responses than questions were deleted. The survey respondents included in the study had the following demographic characteristics:

Table 3.1: Survey Respondent Demographics

	N	Percentage
Male	233	41.5%
Female	324	57.7%
Year in School		
Freshmen	279	49.6%
Sophomore	152	27.0%
Junior	86	15.3%
Senior	41	7.3%
Neither Parent Attended College (First Generation)	147	26.2%
Eligible for Pell Grant	142	25.3%
Race/Ethnicity		
African American/Black	18	3.2%
Asian/Pacific Islander	17	3.0%
Latino or Hispanic	41	7.3%
White	452	80.4%
Other	29	5.2%

Field Observations

I conducted a total of 24 classroom observations between February 13 and April 26, 2012. I conducted three observations of each professor, at dates determined by the professor's availability, the course schedule, and the suitability of the day's content (e.g., I did not observe sessions during which exams were administered, films were shown for the entire class, or guest lecturers led the class). I offered each professor the opportunity to suggest one class session for me to observe, which he or she believed to be a particularly engaging class. Professors B, C, D, and F (all engaging professors) suggested dates that would be good for me to observe, while Professors A (engaging), E, G, and H (all non-engaging) suggested that I come at any time. In addition to the suggested dates, all of the professors also agreed to allow me to observe their classes at any time, without notice. Aside from the one suggested date in each class, my observation sessions were unannounced. I attempted to spread out the observations of each professor over the course of the semester, and to observe each class on at least two different days of the week.

My presence and the purpose of my research were known to the professors under observation, casting me in a participant-as-observer role (Gold 1958: 220) with respect to the professors in the study. I did not volunteer my presence in the classroom, casting me in a complete observer role (Gold 1958: 221) with regard to the students in most classrooms. Several professors insisted on explaining my presence to their students during my first classroom observation, however, and in these classrooms I took on a participant-as-observer role. In all classrooms I interacted as little as possible with the students and there was very little evidence of students modifying their behavior based on my presence in the classroom. The only verbal comment addressing this issue was made by a student in Professor Etienne's class who told me that if I saw her dozing off it was because she took some medication that made her drowsy. I assured her that I was not tracking her personally, nor judging any specific student's behavior. The lack of such comments and other observable behaviors indicates there were no invalidating reactive effects (Lofland et al. 2006: 91) that may have otherwise resulted from my presence in the classroom.

When observing, I chose seats in the classroom from which I had a clear view of both the Professor and the students, in order to best observe both the professor's behaviors and students' responses to those behaviors. While jotted notes usually consist only of key phrases, quotes, and words the researcher is able to jot down during inconspicuous moments (Lofland et al. 2006: 109), I was able to make use of a laptop computer throughout my observation period. This allowed me to take much more thorough and detailed jottings than usual for a field observation. Although these jottings were much more detailed than traditional jottings, I focused my observations and jottings on key components of the interactions in the classroom (Emerson 1995: 32). I did not, for example, record details regarding the specific information covered by the

professor in a given lecture, but instead focused on the length, style and delivery of the lecture, the students' reactions to the lecture, and the interaction between the students and the professor, if any. Likewise, even though I was largely a non-participant observer in the classroom, merely being present for the day's lesson drew me into the role of a student experiencing the course and thus I made several commentaries about my own feelings and impressions of the class session. These asides (brief, reflective bits of writing that interpreted specific happenings in the classroom through my own perspective) were noted separately in my field notes (Emerson 1995: 101). Even though I was able to take detailed jottings while observing each class session, I made every effort to type up full field notes immediately after completing my observation period, as waiting to do so would negatively impact my ability to recall additional information, ideas, hunches, or impressions about what I had observed (Emerson 1995: 14; Lofland et al. 2006: 111).

Focus Groups

I chose to conduct focus groups with students from six of the classes I observed; three classes taught by professors with poor ratings on the web site and three classes taught by professors with high ratings. The rationale behind this decision was that these six focus groups would give me an adequate sample of students in classes taught by professors at both ends of the ratings spectrum. In retrospect, I believe conducting a student focus group for each professor would have provided additional, useful data (see Methodological Limitations, below).

The focus groups were designed to collect information from students on their engagement in the class. I drafted a schedule of questions to help systematize the process and included possible probes and follow-up questions in my schedule, to be used to stimulate conversation amongst the participants, if necessary (Berg 2007: 155). The schedule focused on themes of

engagement, effort, and the professor's teaching style and methods. This schedule is included in Appendix K. I also created a short survey to use as an introductory activity prior to the group discussion, as suggested by Berg (2007). I collected the surveys after each focus group and coded these along with the focus group transcripts. The survey, which closely mirrors the focus group schedule, is included as Appendix J.

In order to incentivize students to participate in the focus groups I began by offering free pizza and soda to all participants. When this method proved unsuccessful, I switched to offering participants \$10 cash for their participation, which proved more successful. The number of participants in each focus group ranged in number from two to seven. Students were recruited in class, usually at the beginning or end of a class session during which I was conducting an observation, and with the consent of the professor. I used a standardized recruitment script (included as Appendix D). I initially passed out a description of the focus group, along with an informed consent form to students who showed interest. After passing out six such packets in my first attempt and having no students attend the focus group, however, I altered my recruitment technique to allow me to follow up with the students. Instead of asking interested students to see me after the class was over, I wrote or projected my e-mail address in a clearly visible location in the classroom and asked interested students to e-mail me directly. I also asked each professor to follow-up with an all-class e-mail to students, reiterating the information I had presented in class and providing my contact information again. In this way I was able to follow-up with the volunteers before the scheduled focus group with an e-mail reply reminder which, combined with the \$10 cash incentive, greatly improved turnout.

Each focus group session lasted about one hour. I facilitated each session, along with a secondary facilitator who acted primarily as an observer/recorder. Students were greeted,

offered informed consent forms, and asked to complete the introductory survey discussed above. After 5-10 minutes the students were asked to join in a (recorded) group discussion on student engagement, which generally followed the protocol included in Appendix K. The students who volunteered for the focus groups were predominantly white, with a relatively even mix of women and men, reflecting the composition of the students in the classes.

Interviews

I also conducted semi-structured interviews with each of the eight professors in the study, using a schedule of questions. This structure gave me the freedom to digress and probe beyond the initial questions, based on a professor's responses (Berg 2007: 95). I chose a semi-structured interview style so that I would be sure to gather similar information from each professor and also so that I would have room to ask about specific behaviors I may have observed in the classroom.

The interview schedule (see Appendix L) was designed to address each professor's attitude toward and methods used to spark student engagement. I included questions about the professor's teaching philosophy, engagement strategies, and training. While I did not pretest the interview schedule, the semi-structured format allowed me to clarify any confusing questions and to ensure that the meaning of my questions was clear to the subject. All interviews were recorded and I took sparse notes throughout each interview to help me remain an active listener (Lofland et al. 2006: 106). Interviews lasted between ten and sixty minutes³; I conducted each interview in a location on campus chosen by the professor.

Analysis

I had recordings from each focus group and interview professionally transcribed and then imported the transcripts into NVivo. As the transcripts were not created by me, I reviewed each

³ Professor Etienne (an unengaging professor) only spoke for 10 minutes, giving very brief answers to many questions. Despite this brevity, I recorded several for informative comments that revealed her opinions on student engagement in the classroom. The other interviews all lasted 45-60 minutes.

transcript while listening to the recording of the transcript in order to correct any transcription errors, as suggested by Lofland et al. (2006: 107). I also imported all of my field notes into NVivo, in addition to the open-ended surveys completed by students before each focus group.

I began my analysis by using open coding to identify emergent themes in the data (Emerson 1995). This coding was not entirely without structure, however, as the general themes of student engagement and teacher behaviors were the central foci of the coding. I made several notes regarding emergent themes that were not directly related to these topics, but I primarily identified and coded specific teacher behaviors and student behaviors related to engagement. I also coded for particularly insightful or illustrative quotations, to use to support my assessment of the trends and patterns in the discussion (Berg 2007: 163).

After creating dozens of codes, I collapsed many of these more granular codes into larger themes such as relevance, emotion, engagement, and disengagement. I used these themes to create the typologies presented in Chapter 4 and to identify the engaging behaviors reported in Chapter 5. By using the same codes and themes across all of my qualitative documents I was able to quickly identify and collate all of the material related to a particular theme. This allowed me to create thick descriptions of each teaching style and provide numerous examples of particularly engaging and unengaging behaviors.

ETHICAL CONCERNS

Researchers must weigh the potential benefits of a study against the potential risks or harm to the participants (Berg 2007). If the benefits outweigh the risks, then the research is ethically permissible. This study involved neither direct risk nor direct benefit to the participants, creating a balance between potential risks and rewards. This study does provide for the possibility of a larger positive impact if teachers adopt the suggestions outlined in Chapter 6. The

direct benefits of this study were minimal but may be realized in the improvement of engaging teaching. If professors are able to better engage students in their classes, students may also see a benefit in terms of learning and achievement.

Similarly, the risks of this study were minimal. Students were allowed to decline to participate in the survey research without penalty, however as Berg (2007: 72) notes, “Even if no punishments are intentionally planned, if students believe that not taking part will be noticed and might somehow be held against them, they have been manipulated.” This concern was largely mitigated by the size of the classes in which the survey was administered, and the nature of the collection process. Specifically, in all but one case, students were asked to complete the survey during the class period. Those abstaining from participation did not have to “out” themselves by leaving the room or otherwise drawing attention to their lack of participation. They could sit quietly at their desks and work on whatever they wished while giving the appearance of completing the survey. In the one case in which the survey was administered at the end of class, Professor Banner left the room, allowing students who wished to abstain from participation to leave class without being noted by the professor. Professor Clark offered students extra credit for completing the survey: all students were allowed to “click in” with their iClickers to receive the extra credit independent of their actual completion of the survey. Students who volunteered for focus groups contacted me directly, with no opportunity for the professor to track their involvement.

While many scholars cite covert field research as an ethical concern (Berg 2007: 76), the observations I conducted in classrooms were not entirely covert, as my intent and presence was always known to the professor whose class was under observation, if not always to the students

enrolled in that class. All students were effectively anonymous to me and I received no student complaints about the nature of the research or my methodology.

The confidentiality of the professors who participated in this study was also a concern. The names of the professors in the study have been changed. In several cases identifying characteristics have been changed as well, although some professors gave me permission to include their identifying characteristics in the study; these have not been changed.

METHODOLOGICAL LIMITATIONS

Every Professor except for Professor Banner allowed me to administer the in-class survey at the beginning of class. Professor Banner asked that I administer the survey at the end of the class period, citing pedagogical reasons for not wanting to disrupt the beginning of class. In order to accommodate Professor Banner's request I chose to administer the survey at the end of class. Although the class did not officially end for another fifteen minutes, many students chose to leave class early rather than participate in the survey. This resulted in a significantly lower number of respondents in Professor Banner's class (n=30) than in the other courses I studied. In addition, the students who remained to take the survey were very likely the most engaged and committed students in the class, as evidenced by their willingness to remain in class even after Professor Banner had left the room.

While this may have biased Professor Banner's engagement score in the quantitative analysis (which was the highest of any professor studied), Professor Banner was also distinctive in terms of the qualitative data. His students reported very high engagement and enthusiasm for his course and my observations of his classes confirmed that he was a very engaging professor. Based on the qualitative data, the survey data on Professor Banner is very likely representative of the class as a whole.

Another limitation was the choice to conduct a “sample” of student focus groups. Although I initially determined that a sample of focus groups (students of three “high engagement” professors and three “low engagement” professors) would be sufficient to achieve an understanding of students’ feelings about engaging behaviors, this proved to be a deficiency in the study. As the study progressed, it became apparent that the analysis was focusing on the styles of individual professors, not just similarities and differences across the two groups (high and low engagement). Additional focus groups for professors Danvers and Etienne would have provided useful data on those professors, the effects of their teaching behaviors, and the teaching styles of those professors.

There was inconsistency in the sample size for both focus groups (from 2 to 7 students) and surveys (from 30 to 161 respondents). The impact of the reduced survey sample size for Professor Banner is discussed above. The smallest focus group (2 students) was limiting in terms of both the lack of a variety of student voices, and the difficulty in creating a conversation amongst the participants. Fortunately, both students responded to each other’s comments and created a dialogue amongst themselves. The difficulty in recruiting students for the professor (Hall), despite the very large class size, was informative, given that the professor was the least engaging professor in the study.

Another limitation was that the respondents for both the focus groups and the survey were self-selected. It is possible that the students who volunteered for these methods of data collection had extreme views about the professor (either love or hate) and volunteered for a focus group or completed a survey in order to share their strong opinions. Although the incentive of \$10 cash should have encouraged all students to participate in the focus groups, regardless of the strength of their opinions, the survey was completely voluntary and, with the exception of

Professor Clark (as noted above), there was no incentive offered for completing the survey. With the exception of Professor Banner's students, however, most students who were physically present in class at the time the survey was administered voluntarily participated in the survey, suggesting that there was very little sampling bias for that instrument.

While I did attempt to recruit professors from several disciplines and colleges, not all disciplines or colleges were represented in the study, and all professors were recruited from a single university. I also did not control for differing research demands (and thus time available to dedicate to teaching) for different departments. The small number of professors in the study limited my ability to make generalizations about the findings, although similarities between engaging professors did suggest some degree of universality my findings. I also observed specific behaviors that encouraged engagement – like making the material emotionally challenging to students – across disciplines, from the humanities to the physical and biological sciences. Likewise, engaging professors were both tenured and adjunct faculty, and unengaging professors were also both tenured and adjunct.

CHAPTER 4: THE REAL FACTOR

When I began this project, I intended to construct a linear model that would explain the connection between teacher behaviors, engagement and learning. I found instead that one teacher behavior in particular – making the material relevant to students – was not simply the strongest predictor of student engagement; it was a crucial prerequisite for engagement. Relevance, Engagement and Learning (REaL) all combined to create an experience in which students felt invested and committed to the learning process. While this finding was unexpected, it had face validity and was supported by the analysis of both the qualitative and quantitative data.

In this chapter, I describe my statistical analysis of the survey data. I begin by explaining the rationale behind the construction of several scale variables, including engagement. Next, I present and analyze the results of an exploratory factor analysis. I then explain the creation of several new scale variables, including the REaL scale variable. I conclude by discussing the implications of this finding and suggesting directions for future research.

CONCEPTUALIZING ENGAGEMENT AND TEACHER BEHAVIORS

To answer the research question, “What teacher behaviors work best in the classroom?” I created a scale from the survey data to measure the latent variable of student engagement. I also created scale variables based on my review of the literature, which suggested that emotion (LaBar and Cabeza 2006), relevance (Macheski et al. 2008), active learning (Cavanagh 2011), accommodating multiple learning styles (Hayes and Allinson 1996), and successful use of technology (Kearsley and Shneiderman 1998) all served to engage students in the classroom. Finally, I created a scale variable measuring how personable the professor appeared because my classroom observations suggested that a professor’s presentation of self was linked to engagement.

To create each scale, I first determined which items conceptually captured the latent variable of interest. I then ran a confirmatory factor analysis for the set of items measuring a given concept. Next, I removed variables that loaded under 0.6 on the primary component, as suggested by Cabrera-Nguyen (2010). I have reproduced the initial factor loadings for the Engagement scale variable below. A list of each variable name and its associated survey question can be found in Appendix N.

Table 4.1: Factor loadings for first three factors extracted from analysis of engagement items.

Engagement items	Component factor loading		
	Engagement ($\alpha = 0.92$)	Component 2	Component 3
I find myself watching the clock during class.	.701	-.172	.094
I pay attention during class.	.785	-.159	-.188
I work with other students to discuss ideas or solve problems in class.	.061	.719	.366
Other students text or read the paper in class.	.516	-.358	.173
I lose track of time in this class.	.715	-.073	.161
Students in this class interact with each other and respond to each others' comments.	.387	.408	.611
I participate actively in class learning experiences.	.586	.540	-.331
I practice active listening during class discussions.	.751	-.037	-.270
I find the ideas presented in class interesting.	.819	-.118	.053
The content of this class is engaging.	.881	-.126	.093
I am engaged in this class.	.860	.000	-.114
I am an active participant in class discussions.	.486	.628	-.379
The professor is engaging.	.803	-.131	.215

Extraction Method: Principal Component Analysis.

Creating the Engagement Scale Variable

As detailed above, I conducted a confirmatory factor analysis of those survey items which were conceptualized as reflecting student engagement, to determine how to best capture the latent variable of engagement. The eight variables which loaded best on the Engagement component were combined to form a single scale that measured classroom engagement ($\alpha = .92$).

Notably, the items addressing *other* students' engagement in the class, such as TextReadPaper ("Other students text or read the paper in class") and StudentsInteract ("Students in this class interact with each other and respond to each others' comments") did not load at 0.6 or higher.

While ActiveListening ("I practice active listening in this class") factored very well with other indicators of engagement, ActiveParticipant ("I participate actively in class learning experiences") and ActiveParticipantDiscuss ("I am an active participant in class discussions") did not load well with the other variables. This finding suggested that my conceptualization of engagement should focus not on students' participation in classroom discussion and debate, but on the internal mental engagement of students. This hypothesis was also supported by my qualitative data, including the following classroom observation, in which I made a parenthetical notation indicating that students remain engaged even when not directly participating in class discussion:

Observation of Professor Frost: The PowerPoint slide has two questions on it: "Does TV violence really harm people? Why does TV contain so much sex and violence?" This slide remains on the screen while the class discusses video game violence. Discussion on the slide follows for the next 6 minutes, concluding with a non-traditional (older) student sharing a fairly lengthy (1 minute) story.

[I notice that the same students are answering all the questions (maybe half a dozen out of the class of 300). The other students are still paying attention to the discussion, however, and appear engaged.]

Creating the Teaching Behaviors Scale Variables

I used the same method of confirmatory factor analysis described above to create the scale variables for the teacher behaviors listed below. As with Engagement, I used scale reliability analysis to determine the Cronbach's Alpha for each scale. Below I describe which variables were included in each scale variable and report the Cronbach's Alpha for each scale.

Relevance: The six variables which loaded best on the Relevance component (ApplyToWorld, PersonalExp, RelevantToMyLife, and ApplyLessonsInReal) were combined to form a single scale that measured the perceived real-world relevance of the course ($\alpha = .84$). The survey questions associated with these variables were:

- We apply ideas in class to real-world situations.
- The professor encourages me to make use of personal experiences to learn the content.
- The professor finds ways to make the course material relevant to my life.
- I will be able to apply what I have learned in this class out in the real world.

Emotion: The five variables which loaded best for the Emotion component (UseHumor, EmotionalReaction, PersonalStories, EmotionallyChallenging, and ProfExpressEmotion) were combined to form a single scale that measured the professor's use of emotion in the course ($\alpha = .83$). The survey questions associated with these variables were:

- The professor uses humor in class.
- I have an emotional reaction to class discussion or lecture.
- The professor shares personal stories about herself or himself
- The professor challenges me emotionally.
- The professor expresses genuine emotion in class.

PersonalStories, while originally conceptualized as measuring a professor's presentation of self (Personable), loaded much better with the professor's use of emotion.

Personable: The five variables which loaded best on the Personable component (AuthenticPerson, ProfIsPersonable, ProfCares, ProfApproachable, and ProfExpectsSuccess)

were combined to form a single scale that measured the professor's authenticity and caring in the classroom ($\alpha = .87$). The survey questions associated with these variables were:

- The professor seems like an authentic person.
- The professor is personable.
- The professor cares about me as a person.
- The professor is approachable.
- The professor expects me to succeed.

Although it fit conceptually with the other variables, PraisedForEffort ("I am praised for my effort (speaking in class, doing the reading)") loaded poorly (0.512) on the Personable component and reduced the scale reliability from .87 to .86 when included; it was therefore removed. While I initially hypothesized that there may be a separate latent variable measuring how nurturing the professor appeared to his or her students, the variable ProfCares and ProfExpectsSuccess both loaded with the variables measuring authenticity, leading me to collapse the two conceptual categories into one latent variable – Personable.

Active Learning: The six variables which loaded best on the Active Learning component (WorkWithOthers, InClassWriting, GroupExercises, StudentsInteract, ActiveParticipant, ActiveParticipantDiscuss,) were combined to form a single scale that measured the professor's use of active learning strategies in the classroom ($\alpha = .73$). The survey questions associated with these variables were:

- I work with other students to discuss ideas or solve problems in class.
- We are given in-class writing exercises.
- The professor assigns in-class group exercises.

- Students in this class interact with each other and respond to each others' comments.
- I participate actively in class learning experiences
- I am an active participant in class discussions.

Notably, ProfLeadsDiscuss (“The professor leads all-class discussions”) did not factor well with the other variables, indicating that students differentiated between discussion and other forms of active learning. Also, while StudentsInteract only had a factor loading of 0.582, it increased the scale reliability from .71 to .73 and thus was included in the scale.

Technology: The four variables which loaded best on the Technology component (ProfUsesMedia, AudivisualFeelConnected, ProfUsesTech, and ProfUsesVisualAids) were combined to form a single scale that measured the professor’s successful use of technology in the classroom ($\alpha = .89$). The survey questions associated with these variables were:

- The professor uses a variety of media (videos, pictures, music) in class.
- The audio and video setup helps me feel connected to each class session.
- The professor uses appropriate technology tools to effectively communicate the content.
- The professor uses visual aids in class.

This scale did not include the variables which measured the *students’* use of technology in the course, such as IUseComputer (“I use a computer or other technology to help me learn in this class”) and ProjectsRequireTech (“I engage in projects and lessons that require technology in this class”), neither of which loaded well onto this component, or together.

Learning Styles: The three variables which loaded best on the Learning Styles component (ProfSupportive, VarietyTeachingStrategies and TeachingStyleMatches) were

combined to form a single scale measuring how well a professor was perceived to accommodate students' learning styles ($\alpha = .70$). The survey questions associated with these variables were:

- The professor is supportive of my learning needs.
- The professor uses a variety of teaching strategies (i.e., group work, in-class writing, discussion, lecture).
- The professor's teaching style matches my learning style.

EXPLORATORY FACTOR ANALYSIS

The scale variables I initially created relied on the conceptualization of the various teacher behaviors, student engagement, and student learning outcomes as separate variables, as hypothesized in the linear model of engagement and learning depicted below. Specifically, I hypothesized that student engagement was based not on students' individual characteristics, but on the way in which the professor taught the course. Engagement, in turn, predicted how well students would learn the material in the course.

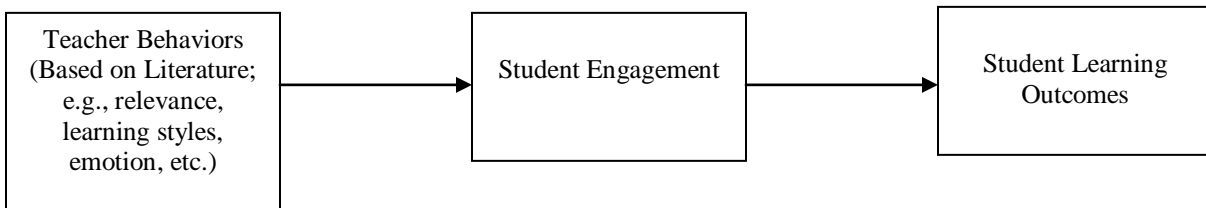


Figure 4.1: Predicted relationship among teacher behaviors, student engagement, and student learning outcomes.

In analyzing the data, I found that many of the teaching methods that I hypothesized to have an impact on engagement (e.g., discussion, active learning techniques, walking around the classroom, praising students' work, learning students' names, lecturing) did not have an effect on engagement at all. The scale variables for Relevance, Emotion, Personable, Learning Styles, and

Technology, however, all had an effect on engagement, with Relevance being by far the biggest predictor of engagement.

When I attempted to answer my second research question, “How does student engagement affect student learning outcomes?” however, I found that many of the same scale variables that predicted Engagement also predicted Learning. This led me to construct a new model, in which some teacher behaviors predicted both Engagement and Learning, in addition to Engagement predicting Learning.

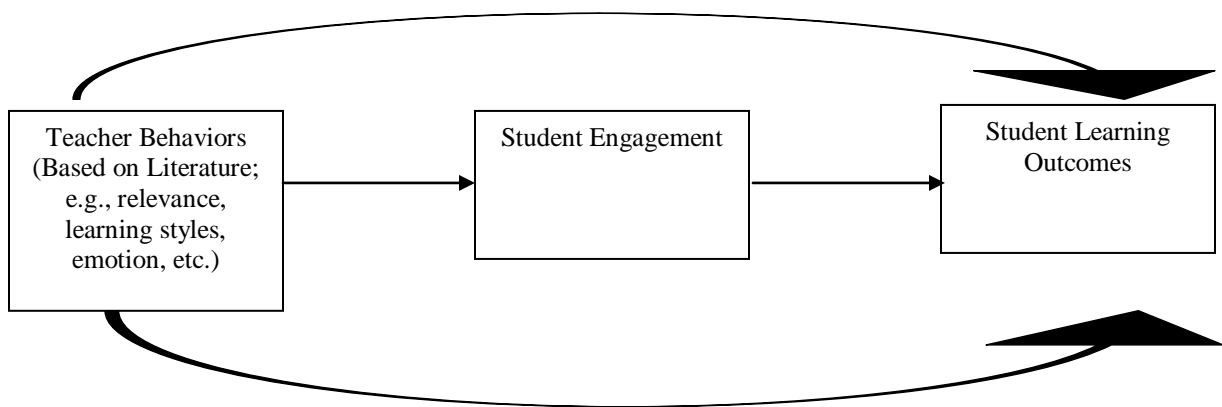


Figure 4.2: Actual relationship among teacher behaviors, student engagement, and student learning outcomes.

In analyzing the data further I discovered that the scale variables I created to capture Engagement ($\alpha=.92$), Learning ($\alpha=.92$) and Relevance ($\alpha=.84$) were very highly correlated with each other, as shown in the table below.

The correlations between Relevance, Engagement and Learning prompted me to run an exploratory factor analysis of all of the survey items that had been used to create the scale variables for Engagement, Relevance, Learning, Personable, Active Learning, Technology, Emotion, and Learning Styles. The exploratory factor analysis revealed that many of the survey

items loaded onto a *single* component, indicating that many items I had conceptualized as measuring separate latent variables were actually measuring a single latent variable.

Table 4.2: Pearson Correlations between Engagement, Relevance, and Learning

	EngagementScale	RelevanceScale	LearningScale
EngagementScale	1	.775**	.858**
RelevanceScale	.775**	1	.812**
LearningScale	.858**	.812**	1

** Correlation is significant at the 0.01 level (2-tailed).

I then conducted a more extensive exploratory factor analysis, including survey questions 1-58 (see appendix N). After eliminating items that did not load well (above 0.3) on any component, as well as those that were the only item to load on a component, I re-ran the factor analysis. I was left with the six components reported in tables 4.3 and 4.4; these components together explained the majority of the variance.

In conducting the factor analysis I chose to use six component factors for the following reasons: the exploratory factor analysis reported six components with eigenvalues ≥ 1 ; these six components accounted for 64.2% of the variance, with minimal gains in variance (2% or less) achieved by adding additional components; and the scree plot showed that the eigenvalues dropped off steeply after the first component (REaL) and leveled out almost entirely after the sixth component (Active Learning). I rotated the factors in order to separate them into as many different items as possible. I chose to use oblique rotation⁴, because the component factors were highly correlated, as shown in Table 4.5 (Tabachnick 2013). SPSS offers two oblique rotation methods; I chose to use promax rotation⁵ as suggested by Gorsuch (1983).

⁴ Oblique rotation reports both a pattern and structure matrix; it is used when the factors are assumed to be correlated.

⁵ Promax rotation is a computationally efficient type of oblique rotation.

Table 4.3: Rotated factor loadings for first six factors extracted from analysis of selected survey questions (pattern matrix)

		Component factor loading					
		REaL ($\alpha = 0.95$)	Personable ($\alpha = 0.90$)	Emotion ($\alpha = 0.84$)	Technology ($\alpha = 0.89$)	Participation ($\alpha = 0.80$)	Active Learning ($\alpha = 0.63$)
Relevance	We apply ideas in class to real world situations.	.838				-.308	
	The professor uses examples to illustrate difficult concepts.	.545					
	The Professor encourages me to make use of personal experiences to learn the content.	.441		.388			
	The Professor finds ways to make course material relevant to my life.	.540		.307			
	I will be able to apply what I have learned in this class out in the real world.	1.005					
Engagement	I find myself watching the clock during class.					.438	
	I pay attention during class.	.447				.445	
	I work with other students to discuss ideas or solve problems in class.	-.314					.685
	I participate actively in class learning experiences.					.687	
	I practice active listening during class discussions.					.588	
	I find the ideas presented in class interesting.	.532					
	The content of this class is engaging.	.547					
	I am engaged in this class.	.374				.451	
Engagement	I am an active participant in class discussions.					.815	.303
	The professor is engaging.		.434				
Learning	I have the opportunity to explore new ideas in class.	.576					
	I use concepts from class in discussions outside of class.	.709					
	This class has changed how I think.	.667					
	I spend time thinking deeply about a number of course topics.	.328			.363	.317	
	I have gained a better understanding of myself as a person because of this class.	.481			.383		
	I could explain the content of this course to a friend.	.679					
	This class has changed how I view the course content.	.566					
	I have gained new knowledge from this class.	.750					
	I have acquired new skills in this class.	.797					
	I am learning a lot.	.763					

		Component factor loading					
		REaL ($\alpha = 0.95$)	Personable ($\alpha = 0.90$)	Emotion ($\alpha = 0.84$)	Technology ($\alpha = 0.89$)	Active Participation ($\alpha = 0.80$)	Active Learning ($\alpha = 0.63$)
Authenticity	The professor shares personal stories about herself or himself.		.352	.799			
	The professor seems like an authentic person.		.788				
	The professor is personable.		.764				
Nurturing	The professor is supportive of my learning needs.		.404				
	The Professor cares about me as a person.		.612				
	The professor is approachable.		.892				
	The Professor expects me to succeed.		.626				
Emotion	The professor uses humor in class.		.407	.568			
	I have an emotional reaction to class discussion or lecture.			.753			
	The Professor challenges me emotionally.			.815			
	The Professor expresses genuine emotion in class.		.585	.390			
Multiple Senses	The professor uses a variety of media (videos, pictures, music) in class.				.970		
	The audio and video setup helps me feel connected to each class session.				.806		
	The professor uses visual aids in class.				.961		
Technology	The professor uses appropriate technology tools to effectively communicate the content.				.820		
Flow	I lose track of time in this class.			.311			
Learning Styles	The professor uses a variety of teaching strategies (i.e. group work, in-class writing, discussion, lecture)				.363		.602
In-class Activities	We are given in-class writing exercises.		.356				.706
	The Professor assigns in-class group exercises.						.792

Iterated principal component extraction, with promax rotation. Factors with loadings less than 0.300 are suppressed. Items used for each scale are shown in bold.

Table 4.4: Rotated factor loadings for first six factors extracted from analysis of selected survey questions (structure matrix)

		Component factor loading					
		REaL ($\alpha = 0.96$)	Personable ($\alpha = 0.90$)	Emotion ($\alpha = 0.80$)	Technology ($\alpha = 0.89$)	Active Participation ($\alpha = 0.73$)	Active Learning ($\alpha = 0.75$)
Relevance	We apply ideas in class to real world situations.	.674	.342	.548	.353		
	The professor uses examples to illustrate difficult concepts.	.673	.546	.511	.527		
	The Professor encourages me to make use of personal experiences to learn the content.	.720	.536	.707	.540	.369	
	The Professor finds ways to make course material relevant to my life.	.773	.610	.690	.512	.387	
	I will be able to apply what I have learned in this class out in the real world.	.814	.530	.460	.348	.421	
Engagement	I find myself watching the clock during class.	.539	.480	.439	.385	.598	
	I pay attention during class.	.692	.500	.410	.407	.684	
	I work with other students to discuss ideas or solve problems in class.						.703
	I participate actively in class learning experiences.	.463	.307	.326		.734	.331
	I practice active listening during class discussions.	.621	.482	.405	.342	.740	
	I find the ideas presented in class interesting.	.789	.613	.617	.431	.577	
	The content of this class is engaging.	.852	.687	.669	.514	.604	
	I am engaged in this class.	.765	.582	.546	.525	.741	
	I am an active participant in class discussions.					.731	.383
The professor is engaging.	.765	.792	.646	.633	.463		
Learning	I have the opportunity to explore new ideas in class.	.704	.540	.564	.385	.411	
	I use concepts from class in discussions outside of class.	.738	.449	.515	.325	.542	
	This class has changed how I think.	.798	.488	.664	.435	.536	
	I spend time thinking deeply about a number of course topics.	.616	.343	.608	.320	.579	
	I have gained a better understanding of myself as a person because of this class.	.751	.491	.715	.478	.506	
	I could explain the content of this course to a friend.	.718	.554	.412	.408	.457	
	This class has changed how I view the course content.	.747	.486	.580	.447	.575	
	I have gained new knowledge from this class.	.712	.547	.344	.377	.448	
	I have acquired new skills in this class.	.759	.497	.413	.521	.481	
	I am learning a lot.	.846	.635	.506	.507	.571	

		Component factor loading					
		REaL ($\alpha = 0.96$)	Personable ($\alpha = 0.90$)	Emotion ($\alpha = 0.80$)	Technology ($\alpha = 0.89$)	Active Participation ($\alpha = 0.73$)	Active Learning ($\alpha = 0.75$)
Authenticity	The professor shares personal stories about herself or himself.	.436	.539	.757	.355		
	The professor seems like an authentic person.	.582	.813	.395	.457	.344	
	The professor is personable.	.655	.868	.480	.547	.404	
Nurturing	The professor is supportive of my learning needs.	.572	.628	.483	.416	.403	.305
	The Professor cares about me as a person.	.491	.682	.433	.364	.408	.342
	The professor is approachable.	.493	.830	.325	.483	.365	
	The Professor expects me to succeed.	.519	.704	.404	.434		
Emotion	The professor uses humor in class.	.587	.674	.740	.523	.311	
	I have an emotional reaction to class discussion or lecture.	.492	.308	.732		.399	
	The Professor challenges me emotionally.	.547	.304	.808	.341	.395	
	The Professor expresses genuine emotion in class.	.598	.758	.666	.496	.312	
Multiple Senses	The professor uses a variety of media (videos, pictures, music) in class.	.394	.398	.343	.861		
	The audio and video setup helps me feel connected to each class session.	.565	.516	.441	.860	.325	
	The professor uses visual aids in class.	.338	.445		.841		
Technology	The professor uses appropriate technology tools to effectively communicate the content.	.521	.567	.403	.867	.314	
Flow	I lose track of time in this class.	.632	.460	.610	.496	.537	
Learning Styles	The professor uses a variety of teaching strategies (i.e. group work, in-class writing, discussion, lecture)	.449	.432	.335	.531		.647
In-class Activities	We are given in-class writing exercises.						.712
	The Professor assigns in-class group exercises.						.788

Iterated principal component extraction, with promax rotation. Factors with loadings less than 0.300 are suppressed. Items used for each scale are shown in bold.

Table 4.5: Component Correlation Matrix

Component	REaL	Personable	Emotion	Technology	Active Participation	Active Learning
REaL	1.000	.661	.663	.576	.586	.089
Personable	.661	1.000	.523	.574	.422	.128
Emotion	.663	.523	1.000	.465	.419	.141
Technology	.576	.574	.465	1.000	.322	.093
Active Participation	.586	.422	.419	.322	1.000	.120
Active Learning	.089	.128	.141	.093	.120	1.000

Extraction Method: Principal Component Analysis.

Promax rotation produces both a pattern matrix and structure matrix, both of which are presented above. There is some debate over whether the researcher should interpret the pattern matrix or interpret the structure matrix (Tabachnick 2013: 632). I examined both the structure matrix and the pattern matrix to determine the latent variable being measured by each factor. Because the pattern matrix only reports the coefficients of each variable, these values cannot be compared in the same way in which factor loadings can be compared (e.g., excluding items with a factor loading below a certain threshold). I instead examined the coefficients of each item across all factors and selected the highest coefficient to determine the appropriate factor loading. I have provided the Cronbach's Alpha for the items selected for inclusion (in bold) in each scale.

REaL

The survey data strongly suggested that relevance, engagement and learning are inextricably linked. While I originally conceptualized these as three different ideas, the data clearly showed that all three were measuring the same latent variable. In selecting the items to include in the final REaL scale, I looked at both the pattern matrix coefficients and the structure matrix factor loadings. I included variables which appeared in bold for the REaL component on

both matrices (indicating that the variable has the highest coefficient in the pattern matrix and the highest factor loading in the structure matrix).

Table 4.6: Factor loadings for items used in the REaL scale variable.

	<u>Component factor loading</u>
	REaL ($\alpha = 0.96$)
We apply ideas in class to real world situations.	.649
The professor uses examples to illustrate difficult concepts.	.666
The Professor encourages me to make use of personal experiences to learn the content.	.742
The Professor finds ways to make course material relevant to my life.	.792
I will be able to apply what I have learned in this class out in the real world.	.784
I pay attention during class.	.705
I find the ideas presented in class interesting.	.818
The content of this class is engaging.	.879
I have the opportunity to explore new ideas in class.	.709
I use concepts from class in discussions outside of class.	.745
This class has changed how I think.	.817
I spend time thinking deeply about a number of course topics.	.658
I have gained a better understanding of myself as a person because of this class.	.777
I could explain the content of this course to a friend.	.704
This class has changed how I view the course content.	.772
I have gained new knowledge from this class.	.691
I have acquired new skills in this class.	.740
I am learning a lot.	.841
I am engaged in this class.	.805

Principal component analysis with no rotation. Scale scores are based on means of unstandardized items.

For variables that appeared in bold for different components depending on the matrix, I had to make a decision about which variables to assign to the REaL scale, and which to assign to other scales. For example, the variable ThinkDeeply (“I spend time thinking deeply about a number of course topics”) had a higher coefficient for the Emotion component, but a better factor loading with the REaL component. I chose to retain this variable in the REaL scale as it both loaded best with the REaL component and made more sense conceptually as a measure of

learning than emotion. IAmEngaged (“I am engaged in this class”) was another problematic variable, loading best with REaL, but having the highest coefficient in Active Participation. I decided that the variable was a better measure of students’ overall engagement, not simply their participation in class, and thus included it in the REaL scale. Finally, I decided to include ProfessorIsEngaging (“The professor is engaging”) in the Personable scale, as it both factored better with that scale, and measured a characteristic of the *professor* rather than the students’ engagement with what was happening in the classroom.

Personable

The Personable scale measured the authenticity and perceived humanity of the professor inside the classroom. Many professors adopted a professorial persona inside the classroom, but those who scored high on this scale found a means to communicate their shared humanity to the students. To create the Personable scale, I used the items that appeared in bold on the Personable component in both the structure and pattern matrices. These items measured both the professor’s authenticity and her or his concern for students as people, suggesting that being caring and being relatable were intertwined in students’ minds. Two items included in the scale were not originally conceptualized as measuring the professor’s authenticity or caring, however.

ProfIsEngaging (“The professor is engaging”) was originally conceptualized as a measure of engagement, but loaded best with the Personable component in both matrices, suggesting that this variable measured the ability of the professor to connect with students rather than students’ engagement with the course content. Likewise, ProfExpressEmotion (“The professor expresses genuine emotion in class”) was originally conceptualized as a measure of emotion, but appeared instead to measure students’ appraisal of the professor’s essential humanity.

Table 4.7: Factor loadings for items used in the Personable scale variable.

	Component factor loading
	Personable ($\alpha = 0.90$)
The professor seems like an authentic person.	.802
The Professor expresses genuine emotion in class.	.797
The professor is personable.	.873
The professor is supportive of my learning needs.	.714
The Professor cares about me as a person.	.733
The professor is approachable.	.805
The Professor expects me to succeed.	.715
The professor is engaging.	.833

Principal component analysis with no rotation. Scale scores are based on means of unstandardized items.

Emotion

The Emotion scale was the most difficult to conceptualize and the most difficult to observe in the classroom. This scale measured students' emotional responses in class, whether positive or negative. In selecting items for the Emotion scale I found that PersonalStories ("The professor shares personal stories about herself or himself"), originally conceptualized as a measure of a professor's authenticity, loaded best with the Emotion component in the structure matrix and had the highest coefficient for Emotion in the pattern matrix. This suggested that personal stories have emotional resonance for students. While the coefficient for ThinkDeeply ("I spend time thinking deeply about a number of course topics") was highest for Emotion, it was only slightly lower for REaL. ThinkDeeply also loaded better with the REaL component in the structure matrix, and was better conceptualized as a measure of learning than of students' emotional connection to the material. Likewise, LoseTrackTime ("I lose track of time in this class") had a higher coefficient for Emotion but loaded better with REaL and was best conceptualized as a measure of engagement.

Table 4.8: Factor loadings for items used in the Emotion scale variable.

	Component factor loading
	Emotion ($\alpha = 0.80$)
The professor uses humor in class.	.786
I have an emotional reaction to class discussion or lecture.	.775
The professor shares personal stories about herself or himself.	.790
The Professor challenges me emotionally.	.799

Principal component analysis with no rotation. Scale scores are based on means of unstandardized items.

Technology

The Technology scale measured the professor's appropriate use of technology in the classroom, including audiovisual presentations. The Technology scale was relatively straightforward to create. I included all the items that appeared in bold for Technology on both matrices.

Table 4.9: Factor loadings for items used in the Technology scale variable.

	Component factor loading
	Technology ($\alpha = 0.89$)
The professor uses a variety of media (videos, pictures, music) in class.	.864
The audio and video setup helps me feel connected to each class session.	.859
The professor uses appropriate technology tools to effectively communicate the content.	.877
The professor uses visual aids in class.	.870

Principal component analysis with no rotation. Scale scores are based on means of unstandardized items.

Active Participation

The latent variable I labeled Active Participation posed a theoretical conundrum: Are students engaged because they are active participants by their own personal orientation, or are do they actively participate because they are engaged? In constructing the scale for Active Participation, I included ActiveParticipant ("I participate actively in class learning experiences") and ActiveParticipantDiscuss ("I am an active participant in class discussions"), both of which

loaded well with the Active Participation component in the structure matrix and had high coefficients in the pattern matrix. The relationship of the variable IAmEngaged (“I am engaged in this class”) to ActiveParticipation was less clear. Students may have conceptualized being engaged as active participation in class, accounting for IAmEngaged having a higher coefficient for Active Participation than for REaL. IAmEngaged loaded better with the other REaL variables, however, and I therefore chose to exclude the IAmEngaged variable from the Active Participation scale. ActiveListening (“I practice active listening in this class”) appeared to belong on the scale (appearing in bold on both matrices), but conceptually it did not measure active *participation*. In addition, the inclusion of ActiveListening in the scale reduced the scale reliability. Likewise, while WatchTheClock (“I find myself watching the clock during class”) appeared in bold on both the pattern and structure matrices, conceptually it did not fit with the other variables, and its inclusion in the scale reduced the scale reliability as well. This left only two variables, ActiveParticipant and ActiveParticipantDiscuss as the measures of Active Participation.

Table 4.10: Factor loadings for items used in the Active Participation scale variable.

	Component factor loading Active Participation ($\alpha = 0.79$)
I participate actively in class learning experiences.	.909
I am an active participant in class discussions.	.909

Principal component analysis with no rotation. Scale scores are based on means of unstandardized items.

Active Learning

The Active Learning scale measured the professor’s use of active learning techniques in the classroom. These included in-class writing exercises, group work, and other activities during which the students interacted with one another to better learn the material. All of the variables

included on this scale appeared in bold for the Active Learning component on both the pattern and structure matrices.

Table 4.11: Factor loadings for items used in the Active Learning scale variable.

	Component factor loading
	Active Learning ($\alpha = 0.75$)
I work with other students to discuss ideas or solve problems in class.	.704
We are given in-class writing exercises.	.780
The Professor assigns in-class group exercises.	.808
The professor uses a variety of teaching strategies (i.e. group work, in-class writing, discussion, lecture)	.723

Principal component analysis with no rotation. Scale scores are based on means of unstandardized items.

CORRELATIONS

After creating the scale variables, I created a bivariate correlation matrix to discover the correlations between the different scales. Both Personable and Emotion were very highly correlated with REaL, and Technology was moderately correlated with REaL. Active Learning had a very low correlation with REaL. Active Participation had only a moderate correlation with REaL and relatively low correlations with the other variables.

Table 4.12: Pearson correlations for selected variables.

	REaL	Personable	Emotion	Technology	Active Learning	Active Participation
REaL	1	.774**	.721**	.530**	.222**	.457**
Personable	.774**	1	.635**	.559**	.342**	.361**
Emotion	.721**	.635**	1	.415**	.205**	.324**
Technology	.530**	.559**	.415**	1	.160**	.194**
Active Learning	.222**	.342**	.205**	.160**	1	.365**
Active Participation	.457**	.361**	.324**	.194**	.365**	1

** Correlation is significant at the 0.01 level (2-tailed).

DISCUSSION

The primary finding of my analysis is that survey items measuring Relevance, Engagement and Learning all load together on the same factor (the component labeled REaL). In

this section I discuss what this means for student engagement and learning in the classroom. I hypothesize that in courses with professors who are able to facilitate a REaL experience, students learn about the course material and *also* come to understand its relevance to their lives.

Relevance does not cause students to learn, nor does learning cause students to understand the relevance of what they are learning. Rather, students are engaged when they are both learning new content *and* understanding its importance. Understanding the relevance of the course material makes learning interesting; learning about new content that is relevant to students' lives makes the content engaging and it makes students pay attention to what is being taught, because they understand that it has real value to them.

As I will show in the next chapter, the professors who are able to incorporate both learning and relevance into their courses are the professors who have the most engaged classrooms. The less relevant the lesson is to students, the less engaged they become; professors who only deliver information, without placing it in context, are the least engaging. Learning is just as important as relevance to engagement, however. Professors who help their students to truly understand the content are more engaging than those who simply deliver the information. And as I will show in the next chapter, the least engaging professor in the study neither helps his students to learn the content, nor to understand its relevance.

An engaging teaching style is supplemented by an authentic, invested persona, and an emotional connection between the students and what is happening in the classroom. Proper use of technology may also help to facilitate a REaL experience for students. As shown above, being a personable, caring instructor and connecting emotionally with students is highly correlated with the REaL variable. While the causal relationship between these variables and student engagement cannot be determined by this statistical analysis, it is clear from my observations

that these factors also affect student engagement, largely by creating an environment in which it is easy for students to create their own connections to the material, and to the instructor. This has led to the creation of a revised model of engagement and learning, in which the aforementioned behaviors facilitate the REaL experience:

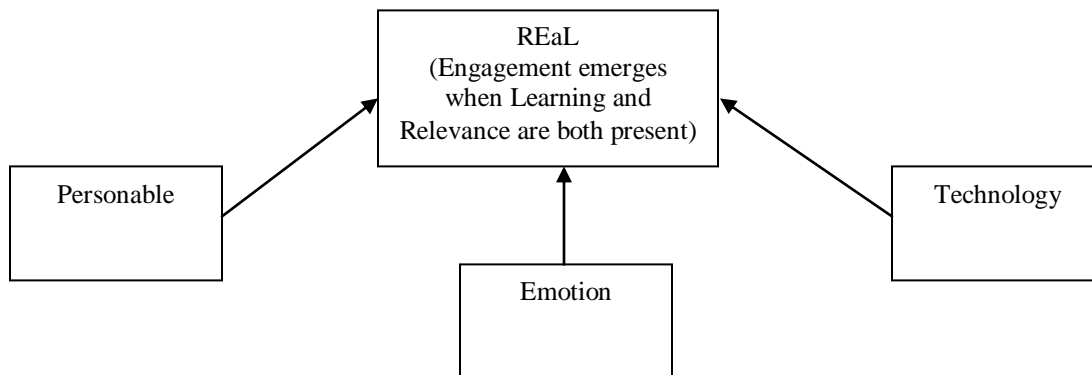


Figure 4.3: Factors facilitating the REaL experience.

The REaL experience (i.e., introducing students to new material and helping them understand its relevance) is at the heart of student engagement. The other factors depicted in the model above can help facilitate the REaL experience by creating connections and facilitating understanding, but they do not create engagement directly. The best professors are able to successfully engage students because they make the process of learning easy for students by: making personal connection with students so they want to learn from the professor, properly using technology to facilitate students’ learning, and providing students with the opportunity to emotionally connect with the material and the professor.

Analysis by Race, Class and Gender

Analysis of survey results by race, income, gender, and first-generation status revealed that the average REaL score remained relatively consistent (at about 3.50) across demographic categories, with African-Americans reporting slightly lower levels of REaL and those identifying as racially “Other” reporting slightly higher levels of REaL. African-American students also

reported slightly higher levels of Emotion, Active Learning, and Active Participation than average. Asian students reported slightly lower levels of Active Participation than average. First-generation, low-income, Latino, and female students did not report much deviation from the overall average for any factor.

These results suggest that the findings of this study can be generalized across categories of race, gender, income, and first generation status. African-Americans, the only group to report considerably different results on more than one factor, were also one of the least populous groups in the study ($N = 17$), resulting in somewhat higher than average standard deviations. A larger sample of African-American students may bring means for this group closer to the overall group means.

The mean REaL scores by professor, by demographic groups, do not reveal any patterns regarding higher or lower scores for a certain group of students. While some engaging professors are very successful at achieving high REaL scores for first-generation students (e.g., Professor Allan and Professor Clark), others see a drop off in REaL scores for first-generation students (e.g., Professors Banner and Danvers). There is a similar lack of a pattern for the unengaging professors in the study. This suggests that individual professors may be engaging in behaviors or teaching methods that speak to subordinated groups, independent of their students' overall level of engagement in the classroom. As detailed below, further research is needed to explore these effects on REaL for subordinated groups.

Table 4.13: Mean Scores on First Six Components by Demographic

	All	Men	Women	White	African- American/ Black	Latino/ Hispanic	Asian/ Pacific Islander	Other (Race)	Parent Earned Degree	First Generation	Not Pell Eligible	Pell Eligible (Low- Income)
REaL	3.52 (0.855)	3.52 (0.792)	3.53 (0.902)	3.52 (0.865)	3.41 (0.907)	3.49 (0.841)	3.46 (0.819)	3.76 (0.732)	3.51 (0.843)	3.56 (0.895)	3.62 (0.805)	3.49 (0.875)
Personable	3.79 (0.852)	3.84 (0.805)	3.76 (0.888)	3.78 (0.854)	3.90 (0.735)	3.71 (0.977)	3.96 (0.705)	3.97 (0.792)	3.78 (0.838)	3.84 (0.895)	3.88 (0.762)	3.77 (0.877)
Emotion	3.09 (0.919)	3.09 (0.894)	3.10 (0.941)	3.06 (0.933)	3.36 (0.819)	3.10 (0.930)	2.94 (0.763)	3.36 (0.857)	3.07 (0.912)	3.15 (0.946)	3.15 (0.855)	3.08 (0.944)
Active Learning	2.41 (1.034)	2.54 (1.002)	2.32 (1.049)	2.39 (1.005)	2.79 (1.307)	2.41 (1.151)	2.65 (1.089)	2.47 (1.062)	2.40 (1.011)	2.42 (1.090)	2.33 (1.065)	2.43 (1.024)
Active Participation	2.72 (1.028)	2.77 (0.992)	2.68 (1.059)	2.70 (1.011)	3.00 (1.200)	2.61 (1.186)	2.44 (0.982)	3.02 (0.881)	2.71 (0.967)	2.72 (1.189)	2.85 (1.080)	2.67 (1.006)
Technology	3.80 (1.024)	3.80 (0.993)	3.83 (1.050)	3.79 (1.023)	3.74 (1.031)	3.70 (1.289)	3.71 (0.889)	4.31 (0.558)	3.82 (1.026)	3.77 (1.029)	3.93 (0.989)	3.77 (1.037)
Valid N	545	224	316	441	17	40	15	27	396	145	136	402

Note: Standard Deviations appear in parentheses.

Table 4.14: Mean REaL Scores for Professors by Demographics

	All	Male	Female	White	Non-White	Parent Earned Degree	First Generation	Not Pell Eligible	Pell Eligible (Low- Income)
Professor Banner	4.43 (0.454)	4.32 (0.546)	4.53 (0.366)	4.47 (0.444)	4.23 (0.504)	4.51 (0.423)	4.29 (0.490)	4.47 (0.427)	3.89 (0.670)
Professor Clark	4.00 (0.526)	3.83 (0.562)	4.21 (0.394)	4.03 (0.520)	3.73 (0.552)	3.98 (0.541)	4.04 (0.490)	4.00 (0.491)	3.98 (0.640)
Professor Allan	3.89 (0.604)	3.92 (0.478)	3.86 (0.709)	3.89 (0.561)	3.88 (0.851)	3.81 (0.514)	4.06 (0.767)	3.88 (0.537)	3.89 (0.727)
Professor Frost	3.80 (0.674)	3.76 (0.701)	3.82 (0.664)	3.75 (0.675)	4.01 (0.588)	3.80 (0.704)	3.82 (0.598)	3.75 (0.699)	3.94 (0.606)
Professor Garrick	3.19 (0.790)	3.16 (0.686)	3.22 (0.887)	3.28 (0.773)	2.53 (0.595)	3.16 (0.761)	3.25 (0.867)	3.07 (0.785)	3.36 (0.792)
Professor Danvers	3.13 (0.726)	3.34 (0.706)	2.97 (0.727)	3.11 (0.759)	3.12 (0.672)	3.17 (0.645)	2.93 (0.902)	3.01 (0.759)	3.39 (0.632)
Professor Etienne	2.83 (0.786)	2.70 (0.763)	2.94 (0.804)	2.88 (0.792)	2.56 (0.762)	2.79 (0.838)	2.94 (0.653)	2.85 (0.849)	2.75 (0.408)
Professor Hall	2.62 (0.746)	2.80 (0.729)	2.50 (0.747)	2.55 (0.740)	3.01 (0.364)	2.72 (0.737)	2.11 (0.578)	2.65 (0.743)	2.50 (0.781)

Note: Standard deviations appear in parentheses.

Directions for Future Research

A new study is needed to explore the relationship between the REaL variable and student performance. This study would employ multilevel analysis to understand how individual student performance (e.g., grades) is affected by a professor's ability to create a REaL experience in the classroom. The current study has examined multiple students who share the same professor; a future study will need to track the performance of multiple students across multiple professors, and obtain a REaL score (reported by the students) for each of those professors.

Such a study would employ a multilevel model in which the REaL score of individual professors would comprise the level 2 predictor and individual students would comprise the level 1 predictor. Individual students' grades in each class would constitute the dependent variable. This study would require multiple data points for the independent variables (professors and students) and the dependent variable (students' grades).

The research would require access to each professor's unique grade distribution and the average GPA of each student. The researcher would then use the professor's aggregate REaL score to predict the variance between each student's mean GPA and her or his grade in the class as the dependent variable, while controlling for that professor's unique distribution of grades. Thus, the model would predict variance in student performance based on the REaL score of the professor teaching the course. I hypothesize that a professor's REaL score will have a positive effect on student performance (i.e., the higher a professor's REaL score, the higher the student's *relative* grade in the course), controlling for overall GPA and the professor's grade distribution.

This type of study would help to underscore the importance of student engagement for improving student achievement, as well as debunking the commonly held belief that students' individual efforts are the only determinants of student success. While grades may not be a direct

reflection of learning outcomes, they are nevertheless an important variable to consider because of their impact on students' lives. Grades determine, at least in part, whether students stay in college or fail out; whether students are able to retain scholarships; admissions into graduate programs; and future possibilities for employment. If professors can help students to achieve better grades through creating a more REaL experience in the classroom, the results would have a profound impact on students' life chances.

Likewise, further study is needed on the engagement of subordinated groups. Such a study could use professors whose students of color, female students, or low-income students report higher REaL scores than their peers in dominant groups as case studies, attempting to understand what these professors do in the classroom to better engage students from subordinated groups.

CONCLUSION

Despite my initial hypothesis that the relationship between teacher behaviors, engagement, and learning was a linear relationship, the data presented in this chapter suggests that relevance, learning, and engagement are intertwined. The REaL model illustrates that when students are presented with new material and understand its relevance to their lives, they are engaged. A professor's relationship with the students, the students' emotional connection to the material, and the proper use of technology can all help to facilitate the REaL experience. While this model is theoretical, the narrative evidence from classroom observations, student comments, and remarks by professors supports the REaL model. As I will show in Chapter 5, professors who are best able to connect the relevance and importance of what students are learning in the classroom have the most engaged classes. These professors are considered to be engaging by their students, a positive feedback loop that makes students more receptive to learning.

CHAPTER 5: A TYPOLOGY OF TEACHING STYLES

How do teacher behaviors engage students? To answer this question I observed professors in the classroom, spoke with their students, and spoke with the professors themselves. As suggested in the previous chapter, the ability to create a REaL experience for students is vital to student engagement in the classroom. In this chapter, I outline a typology of teaching styles based on observations, interviews, and focus group comments. I then describe each component of the typology and explain why each is important. Finally, I describe teaching style, providing both narrative comments and illustrative examples throughout.

ENGAGEMENT BY PROFESSOR

My initial impressions of how engaging each professor would be in the classroom were based entirely on the professor's ranking on the professor rating web site I used to create the sampling frame. As I began to observe each Professor and interviewed the professors and their students (in focus groups), my impressions of each professor's level of engagement changed. After all of my qualitative data collection and analysis was complete, I ranked the professors in the study in terms of the comparative level of student engagement in their classes (see Table 5.1 below). I later recorded a mean score on the REaL scale I created (see Chapter 4) for each professor. I have included those means in the table below.

Two pairs of professors (Allan and Frost; Garrick and Danvers) were interchanged between my qualitative assessment of students' engagement in class and the students' quantitative reporting of their engagement. Both of these pairs had extremely close REaL scores and were simply shifted one position in the ranking. This triangulation of the data suggests that both the qualitative and quantitative analysis were reasonably consistent in capturing the general level of engagement in the classroom.

Table 5.1: Descriptive statistics for Real Scale by professor

Professor	N	Minimum	Maximum	Mean	Rank Order	Researcher Ranking
Professor Banner	30	3.42	5.00	4.428 (0.454)	1	1
Professor Clark	89	1.95	4.95	3.999 (0.526)	2	2
Professor Allan	54	1.79	5.00	3.885 (0.604)	3	4
Professor Frost	161	1.26	5.00	3.801 (0.674)	4	3
Professor Garrick	51	1.74	4.58	3.189 (0.790)	5	6
Professor Danvers	55	1.11	4.32	3.129 (0.726)	6	5
Professor Etienne	40	1.21	4.05	2.834 (0.786)	7	7
Professor Hall	74	1.26	4.37	2.622 (0.746)	8	8

Note: Standard deviations appear in parenthesis

In the typology below I list five professors as using engaging teaching styles and three as using unengaging teaching styles. Although I originally recruited what I believed to be four engaging professors and four unengaging professors, one professor resisted this initial classification. Professor F was ranked low on the professor rating web site, but both my observations and the survey and focus group data I collected confirmed that his students were very engaged in the classroom. I hypothesize that Professor F's ratings may have been based on previous teaching experiences at another institution (possibly online). Regardless, the web site ratings did not reflect Professor F's students' engagement in the classroom.

CLASSROOMS

One possible variable in a professor's level of engagement is the room in which he or she taught. I observed professors teaching in four different rooms. Some of the most engaging professors taught in the oldest, most unappealing rooms, while some of the least engaging taught in newly renovated constructed or recently classrooms; the appearance of the classroom did not appear to affect the engagement of the students.

I observed Professor Allan teaching in the following room:



Figure 5.1: Classroom used by Professor Allan

This classroom is an older room with panels in muted browns, blues, and tans covering the whitewashed cinderblock walls. Three dry erase boards are mounted on the wall at the front of the class with a drop down projector screen hanging over the central board. The projector itself juts from the ceiling, which is comprised of basic corkboard ceiling

tiles with fluorescent panel lights. There used to be windows along the top of the left wall, but they have since been painted over. White pillars stand up against the side walls at regular intervals, three to a side, and wooden beams connect the pillars on either side of the room across the ceiling. The back wall is painted yellow. Individual, free-standing desk chairs sport backs that recline at the top and graphite desktops. The carpet is a basic short length multicolored affair in shades of blue.

I observed Professors Banner, Clark, Etienne, and Garrick teaching in the following room:



Figure 5.2: Classroom used by Professors Banner, Clark, Etienne, and Garrick.

This classroom is a newly renovated classroom with long table-desks with attached swivel chairs. There are five rows of curved lights overhead, with floodlights to illuminate the stage (they are off currently). The projector screen is set into the wall and the projector itself is somehow hidden. Four white boards adorn the wall at the front of the class, with a lectern off to one side. There is a table on the stage and a doc cam on the lectern. Two double doors stand on each side of the class. The wood is all done in a light finish. Smaller upward facing lights are set into the walls around the classroom.

I observed Professor Danvers teaching in the following room. While the description is accurate, the room was so old and run-down that it has been gutted and is being remodeled. I was unable to capture an image of the original room on camera:



Figure 5.3: Classroom used by Professor Danvers.

This classroom is an older room with a pull-down screen at the front of the class and a white board on wheels on the stage. A ramp leads up to the stage on one side, steps on the other. A doc cam rests on the lectern. Individual, drab green chairs are bolted to the ground in rows with attached desks that swivel up from the side. The chairs do not turn, swivel, or recline at all. The walls are whitewashed cinderblocks, although some are covered in a dark wood paneling. Basic florescent light panels adorn the corkboard ceiling tiles with flood lights set in between them. The projector juts from the ceiling, near the front of the class. What looks like a sound booth sits at the back of the class.

I observed Professors Frost and Hall teaching in the following room:



Figure 5.4: Classroom used by Professors Frost and Hall.

This classroom is a very nice lecture hall. While it is set up for teaching, it could easily be used for the performing arts. Stadium seating fills the center of the auditorium, with plush chairs sporting retractable arm desks. On either side of the main seating area, at the top of the room, are a row of 8-10 seats overlooking the rest of the classroom. I choose to sit in one of these sections, looking down on the professor and the rest of the students in the class, to better observe their reactions.

TYOLOGY OF TEACHING STYLES

In observing each professor's teaching style I began to see commonalities between some of their styles. I also observed that certain combinations of teaching techniques were more successful at engaging students when employed together. Specifically, those professors able to

combine relevance with learning were best able to engage students in the classroom, supporting the REaL hypothesis suggested in Chapter 4.

After analyzing the qualitative data, I created a typology of the teaching styles that I observed. I have grouped these styles into five different teaching types which are, in order of most engaging to least engaging: Directed Dialogue, Interactive Lecture, Storytelling Lecture, Sage on the Stage, and Self-Directed Learning.

Table 5.2: Descriptions of Teaching Styles

Directed Dialogue	The professor leads the class in a modified in dialogue, using a modified Socratic method to help students come to understand the relevance of the readings, and learn the material.
Interactive Lecture	The professor uses a variety of teaching methods, including videos, interactive iClicker questions, in-class writing exercises, and class discussion to illustrate the relevance of the material and help students understand the content.
Storytelling Lecture	The professor uses stories and personal anecdotes to illustrate the concepts presented in class.
Sage on the Stage	The professor lectures for most of the class period, allowing for minimal class discussion.
Self-Directed Learning	The professor lectures for the entire class period, relying on students to learn the material on their own.

Other teaching styles may certainly exist, and these five styles should be seen as a non-exhaustive selection of analytic categories intended to help facilitate an understanding of student engagement in response to teacher behaviors. While three of these styles only include observations of a single professor, they should be considered as ideal types rather descriptions of an individual professor.

Note: For the purposes of the teaching styles typology, only the lecture-based portion of Professor Danvers’s class corresponds with the Storytelling Lecture style. The active learning portion of the class is wholly unique to Professor Danvers and is not included in the typology below, being an exception rather than an ideal type.

Table 5.3: Typology of Teaching Styles

Teaching Style	Professors	Student Engagement	Relevance of Material	Depth of Relevance	Dissemination of Information	Presentation of Material	Presentation of Self in the Classroom
Directed Dialogue	Banner	Very High	Individual morality, universal ethics, everyday life, social issues	Deep; relevance to students' sense of self	Primarily Socratic Method with some lecture	Verbal*	Excited disposition, authentic but distanced persona, discussion leader, subject expert
Interactive Lecture	Clark, Frost	High	Everyday life, social issues, public events	Moderate; relevance to student's day-to-day lives	Lecture with some discussion	Verbal, textual, still images, video	Excited disposition, relatable persona, entertainer, subject expert
Storytelling Lecture	Allan, Danvers	High	Social issues, public events	Moderate; relevance to student's day-to-day lives	Primarily lecture	Verbal, textual, still images*	Authentic persona, storyteller, subject expert
Sage on the Stage	Etienne, Garrick	Moderate	Public events	Shallow; relevance to society as a whole	Lecture with some discussion	Verbal, textual*	Subject expert
Self-Directed Learning	Hall	Low	None	None	Primarily lecture	Verbal, textual, still images*	Subject expert

*While these professors do occasionally show films in class, video is not incorporated into most class sessions.

Relevance of the Material

At the heart of the typology is the level of relevance that the professors bring to the material. Most professors make some effort to incorporate relevance into the classroom. The degree to which each is successful, however, is one of the defining elements of the different teaching styles. While many of the professors are able to relate the material to recent public events such as news stories or incidents on campus, this level of relevance is the least engaging for students. In addition, professors using the less engaging styles are not able to meaningfully connect these events to the course material; students perceive attempts to draw in outside material as extraneous to the course material:

Student of Professor Garrick: Not a very good [teaching style]. The teacher wastes a lot of time, goes off topic a lot, and isn't too engaging.

Professors who make use of more engaging styles find a way to incorporate the relevance of the material to important social issues like racism, sexuality, and war. The most engaging professors make the material seem to directly impact student's lives, pointing out the application of the subject to the students' own experiences as citizens and as humans. In contrast to the less engaging styles, professors at this level (and the next) are able to connect jokes, anecdotes, and events back to the material:

Student of Professor Banner: He likes to keep the class engaged he is able to make jokes and tell stories but stay focused on content. He is very exciting and interesting.

The Directed Dialogue style used by Professor Banner goes even further, challenging students to consider how the lessons learned in class can be applied to clarify their own sense of justice, morality, and personal integrity. At this level of relevance, learning the material and better understanding oneself become almost synonymous.

Dissemination of Information and Presentation the Material

The dissemination of information in the classroom is an interesting component of teaching styles, largely because of its irrelevance for engagement. Several professors use PowerPoint to lecture; three teaching styles rely on the slideshow lecture as a primary form of delivering information to the students. Likewise, two teaching styles rely on verbal lecture only, with no media used in the classroom. Both the Directed Dialogue style and the Sage on the Stage style eschew PowerPoint, yet students seem to appreciate this in Professor Banner's class and resent it in Professor Garrick's class:

Student of Professor Banner: Professor Banner lectures, without PowerPoint (which is great in my opinion), and tries to engage and keep the attention of his students.

Student of Professor Garrick: I stay awake and listen but that's about the extent. Material is given mostly verbally; there are no visuals or other sensory materials to spark interest.

Likewise, when Professor Hall lectures in the Self-Directed Learning style, students tune out, whereas the Storytelling Lecture is able to engage students without the additional media and technology used by the professors who conduct an Interactive Lecture. These similarities in presentation do, however, mask nuanced differences in the use of each technique (e.g., although both are primarily verbal styles, the Professor employing the Directed Dialogue style engages students in dialogue while the Sage on the Stage professor lectures at them). These distinctions are discussed in greater detail within the description of each style.

Presentation of Self in the Classroom

Another dimension that differentiates the various teaching styles is the professor's presentation of self in the classroom. Presentation of self includes dress, vocal inflection, gesturing, movement, and the revelation of personal information. Like relevance, there is a hierarchy of presentation of self that roughly corresponds to students' engagement in the

classroom. All professors present themselves as subject experts (note this does not mean they present themselves as an absolute authority), but some professors do little else. Professors using the Sage on the Stage style, as well as the professor who uses the Self-Directed Learning style, bring only their interest in the subject into the classroom. While they may engage students in dialogue, this is largely done to answer students' questions about the material and to confirm their own mastery of the subject. Professors who employ the Storytelling Lecture style also bring an authentic self into the classroom that students can detect and to which they can relate. The professors who adopt the Interactive Lecture style add an additional layer of personality onto their presentation of self, presenting themselves not only as authentic individuals, but also as professors who are enthusiastic and excited about the subject matter and the privilege of teaching. Professor Banner, as part of his Directed Dialogue also presents an enthusiastic persona and a sense of his own humanity, as well as situating himself not as an entertainer, but as a discussion facilitator whose role it is to bring students into the conversation and help them arrive at learning through the process of exploring and critically analyzing the ideas presented in the readings for class.

Engagement by Teaching Style

As outlined in the typology above, the teaching styles I observed fall into a hierarchy with regard to students' engagement in the classroom. The Directed Dialogue style of Professor Banner is the most engaging style I observed, primarily because Professor Banner is able to make everything the students learn relevant not only to their lives, but to their souls. He goes on a journey of exploration and inquiry with them, bringing his authentic self into the classroom and leading them through the narrative each day with enthusiasm and poise. Students describe

Professor Banner's lecture style as reminiscent of a sermon, both in terms of a pleasing rhythm and cadence, and in terms of delivering a message about morality.

Student of Professor Banner: Excellent! It is almost like watching a sermon sometimes (not a bad thing). He seems fair, is charismatic, and has great poise. Keeps students interested in what he is saying.

The Interactive Lecture style of Professors Clark and Frost is one of two other engaging styles I observed, driven largely by the enthusiasm and willingness of the professors to bring their own experiences into the classroom as tools for teaching. These professors embrace a variety of teaching styles in order to connect with a variety of learning styles. They incorporate lecture, discussion, videos, surveys, and slideshows in almost every class and they are committed to engaging students through these media.

The Storytelling Lecture style is more subdued than the Interactive Lecture, but equally effective in engaging students. These professors do not exude enthusiasm or seek to entertain students in the same technologically-savvy fashion as their more exuberant colleagues, but they nevertheless bring their humanity into the classroom. Presenting an authentic and relatable persona in the classroom does not require that a Professor display her or his enthusiasm or excitement by gesturing, moving around, or constantly telling jokes. Students cite the quiet confidence and understated humor of Professor Allan (who speaks very softly and does not often move around the classroom) as very engaging.

Student of Professor Allan: His style is quiet but engaged, but very knowledgeable. He is completely confident in this competence.

Student of Professor Allan: I really appreciate that the teacher has a good level of student understanding and a great sense of humor.

Professor Danvers has a very similar, personable disposition and both professors incorporate stories and personal anecdotes that illustrate the concepts discussed in class and their

relevance to students' lives. There is very little discussion and no technology (aside from PowerPoint) incorporated into these classes, but students still seem to engage with the professors and the material.

The Sage on the Stage style is perhaps best described as the “classic” lecture style. The professors stand at the front of the classroom, writing notes on a board and lecturing to the students. These classes are rarely interactive, though discussion does break out from time to time. The professors are there to lecture and when they do bring their personalities into the classroom, students are expected to agree with their assertions and opinions rather than question them.

The Self-Directed Learning style is the least engaging teaching style I observed. The professor makes very little effort to connect the material to a broader context, leaving students with little to do in class but copy down equations and theoretical explanations. Many students simply “zone out” in class or skip class altogether, at the suggestion of the professor. The Professor does not engage with students in the classroom, neither asking nor answering student questions with any regularity, instead he fixates on completing the equations and covering the slides for each class.

DETAILED DESCRIPTIONS OF EACH TEACHING STYLE

The Directed Dialogue

The most engaging teaching style I observed was employed by Professor Banner. My observations of high student engagement were corroborated by the survey data, which indicated that Professor Banner had the highest mean REaL score (4.43) of the professors studied (although also the lowest N, as discussed in Chapter 3: Methodological Limitations). Professor Banner also ranked highest of the professors studied on the professor rating web site. I have

named Professor Banner's teaching style the Directed Dialogue. This style is the most engaging because Professor Banner strikes a balance between helping the students learn the material and helping them find the relevance of the material. His questions force the students to consider not only how rhetoric is important, but why it is important to each of them individually.

Professor Banner leads a dialogue with the class, but he is not asking for the students' opinions during this process. Rather he uses a modified version of the Socratic Method, asking the students questions intended to help them comprehend the class material, and specifically the day's reading.

Professor Banner: Well, yeah. In this classroom, with the big group, one thing is, it's a very, very gentle form of the Socratic Method. Again, there's a link, so we're going to read Socrates and Plato early, and we're going to practice that to some extent, question and answer. It's a very revised form because the Socratic Method only works face to face with small groups, and that's not what we have here. It's also a revised form because I'm not trying to make anybody look stupid, which Socrates regularly is, although I am, as you perhaps have noticed, willing to say when the student is completely wrong, but hopefully in a gentle and humane and somewhat humorous way. So even though it's 120, I do want interaction and engagement.

Observation of Professor Banner: The next few minutes are a recap of the reading, but most of the important pieces of information are supplied by the students after Professor Banner prompts them to offer the answer. For example: "And because I become irrational I do what to my beloved?" "But it's a bad speech because...?" "And why do we know it's foolish?" "And if love comes from the gods, can love be bad?" "What happens to your soul if you do something wrong?" "So what does Socrates set out to do?"

Professor Banner will often begin a round of dialogue with a question intended to gauge the students' comprehension of the readings before asking more directed questions to guide the students to a conclusion.

Observation of Professor Banner: His cadence remains slower, his voice lower as he gently explains Augustine's point. He then turns to write on the white board, asking "Where does [Augustine] turn to find examples of great oratory?" As the students answer he continues questioning them until they have arrived at the conclusion that Augustine turned to the apostle Paul, who was classically trained in the Roman tradition of oratory.

By being transparent about his method and motives, Professor Banner makes it clear to the students that dialogue is critical to the class and that their participation is both expected and necessary for the class to function properly.

Observation of Professor Banner: He launches into a string of questions designed to get students thinking. “But why?” “What’s he afraid of?” “Temperance? What’s temperance mean, why temperance?” “Why? Why though?” “Why not go ahead and partake of the beauty right now?” “What does the good horse see?” He stresses, “*This is the heart of the dialogue, we’ve got to figure this out,*” and this time he does not answer his own question, but makes the students come up with the answer.

Student of Professor Banner: He puts a lot of responsibility on us as students. He was like, “You’re responsible for the reading. That’s why you’re here. I expect you to do the reading, because if you don’t do it, we can’t talk about it. I will do my part. I will do the reading. I know and I will help you, but you have to do it and you have to come to class.” He puts that responsibility on us instead of just being like, “Just come to class, I’m going to basically read to you out of the book.”

Because this question-and-answer dialogue is so important to the structure of the class, Professor Banner reassures students that their input is valuable, even if they hazard an incorrect guess, in order to keep the dialogue flowing and the students participating. He always offers a verbal reward for students for participating in the discussion.

Observations of Professor Banner: He asks, “What are the three styles of speaking?” “A student answers incorrectly and he responds, “Oh I like that answer, but no. Good try. I appreciate the try.”

When he asks, “How do you know you’ve really moved someone?” and a student answers incorrectly, he says that the answer is “not quite right,” and asks again.

He asks for other reasons why Christianity would be opposed to rhetoric. After a few seconds he says, “You don’t know from your readings, so you’re guessing, but that’s OK,” signaling to the students that they are free to hazard a guess. When a student answers incorrectly he gently rebuffs him and then offers his own answer.

Student of Professor Banner: He does something that very few teachers do. He turns wrong answers, especially obviously wrong answers, into almost a joke. You feel comfortable just saying something, even if you know it might not be right, just to try and advance the conversation a little bit.

Student of Professor Banner: He'll explain why it's wrong in the context, which makes it easier to be wrong, because then you understand why it's wrong and you can work your way to a right answer.

This method seems to be very effective at engaging all of the students in the class, even when only a handful of students are answering the questions. I recorded many instances of student engagement during these dialectic exchanges, including the dialogue below. This observation is also an excellent example of how engagement can be largely internal – even though only a handful of students are interacting with Professor Banner, the entire class is paying attention to the exchange and is clearly engaged with the dialogue.

Observation of Professor Banner: When he is finished relating Pizan's biography he asks, "What argument does she make in the reading? What's the role of rhetoric for Pizan?" He waits for 10-15 seconds before asking a new question, breaking it down into a "Yes or no?" answer, then resorts to fill-in-the-blank questions: "How does she influence society?" "So what does the princess help him do?" "Why does Pizan suggest the princess may want to prevent war?" "When war happens what happens?" Students dutifully answer each of the questions and he affirms their answers or gently guides them in a different direction when they are wrong. He takes them through the logic of why a woman would want to prevent war, having them fill in the blanks to get to the conclusion that if men die in war it is hard for women to take care of their families. I can tell the students are actively listening, because when he moves to the side of the classroom, heads turn to follow him.

Student of Professor Banner: I could speak up more, but overall I attend class and take notes every day.

While dialogue with the class takes up a good portion of the class time, Professor Banner will incorporate short, 3-5 minute 'mini-lectures' into the class, frequently after the students have arrived at the conclusion Professor Banner was guiding them toward. These are often opportunities to help students understand the relevance of what they have been learning and discussing. Professor Banner will use personal anecdotes to illustrate the concepts being discussed, connecting the course material to stories and events to which the students can relate.

Observations of Professor Banner: He offers a personal anecdote about his high school years relating to religious conversion experiences. He is quick to note, "I'm not making

any argument for or against conversion experiences” or Christianity. “This is purely about my own experience.” The students seem very interested in his story. He weaves in humor, is considerate of students’ beliefs and seamlessly ties it back into the topic at hand, explaining that all Christians in the early years of the religion got there through conversion experiences by necessity, and that when you convert you reject everything that came before – including rhetoric.

Student of Professor Banner: He has really—I’ve been in classes where teachers just go—like right now I’m in [another course], and she just goes on and on. I’m like, “Why are you telling me this? Why does that matter? I don’t care about your daughter or your dogs.” But he tells jokes and stories and never, ever loses content. He never loses the focus of where we’re going with the class. And it’s really nice, because he’s telling a story and you know that he’s going to tie it in and you can almost see that he’s tying it in.

Students distinguish the relevance of Professor Banner’s stories, jokes and examples from those of other professors. Because students expect Professor Banner’s narratives to be relevant, they pay attention to these stories, making the material easy to learn and digest. The opposite holds true for professors who do not connect their stories to the course material – students expect that such stories will be irrelevant and immediately tune out when they begin.

Professor Banner’s anecdotes have the effect of making the material relevant to students *and* bringing Professor Banner’s life into the classroom in a way that students appreciate and connect with. They perceive Professor Banner as authentic and relatable, which makes them respect him as a teacher and want to engage with him.

Student of Professor Banner: I think a lot of teachers forget the fact, and they need to keep it in the front of their minds, that they, too, were college students once. They went out. They went to the bars, made mistakes, got too drunk. They did those things. He will bring it up. He’ll talk about just a general drunken night or certain mistakes that people will make. It makes you feel like he knows, and he admits to making his own mistakes. It’s really nice that he keeps it relatable and keeps it on a kind of relationship basis.

Student of Professor Banner: I also think when he takes a stance on something, whether it be sexual activity of our age group or drinking habits of our age group or politics, he doesn’t do it explicitly. You can tell he has an idea about something and you try and buy into it just because you know that he’s thought about it in a way that makes sense. You respect him as a person before you even respect him as a teacher. And when he comes and he’s teaching you, that makes you listen to him a little more, because he’s a person before he’s a teacher.

Student of Professor Banner: I definitely feel like I am engaged because Professor Banner kind of makes it the students' responsibility to move the class along. I feel really guilty about going to class without reading.

This connection helps facilitate Professor Banner's creation of a REaL experience. Because students are committed to participating in the class, Professor Banner can ask more of them and help them to learn the material on a deeper level; this sort of deeper learning requires buy-in from the students in a way that simple lecture does not.

While students perceive that Professor Banner is sharing a great deal of himself in the classroom, Professor Banner maintains that he only shares surface-level details of his life with the students – just enough to engage them. It is not necessary or desirable, he argues, to share too much personal information with the students.

Professor Banner: I bring stories about my dog. I'll tell jokes about getting speeding tickets. But I almost never bring in—they know who my father is a little bit and that I come from a particular religious heritage, those stories work well here at Colorado State. They wouldn't work well at [a] Community College, where I taught, where the religious experiences are far more diverse. But I don't talk about my partner, I don't talk about [her], what I eat for dinner. There's a lot of me that gets held back, and one of the things I hear from students when they're in my office, there's this difficult transition. They think they want to get to know me personally, so they come to the office, and they don't find me any more revealing in the office than they do in the classroom, and they get confused.

Student of Professor Banner: It's sort of cool, too, because you can tell that he's not hypocritical in the sense that you can tell that this is how he actually represents himself in everyday life. When I took gender communication, one of the things he was always talking about was gender inclusive. And the entire semester all of us were discussing, did we think he was married? Did we think he was hetero- or homosexual? You can't tell, because he does such a good job of remaining neutral and presenting a completely objective viewpoint on everything. It's interesting.

As the comment above illustrates, rather than seeing this withholding of information as being inauthentic or deceptive, students appreciate that Professor Banner does not reveal all of his personal opinions and the details of his lifestyle in class. Professors such as Professor Garrick bring too much of themselves into the classroom while others such as Professor Hall do not bring

enough. Professor Banner, however, is able to strike a balance between personability and professionalism that draws students into the discussion rather than turning them off.

Perhaps most important to his relationship with students, Professor Banner *wants* to be in the classroom, teaching his students, and he communicates this to his students. He is passionate about teaching and wants his students to be passionate too, and he models this enthusiasm in the classroom.

Professor Banner: The second piece of that, then, is a teaching style where I try to be passionate about what I'm doing. Part of that has to do with the interaction, the question and answer, with my willingness to riff on things, to get engaged myself. I want them to be engaged, and the way to do that is to be engaged. So a demonstration of what I call passion and commitment, in this case to rhetoric. I want them to be passionately committed to something. It can be *Magic: The Gathering*, that's fine, as long as they're passionately committed about something obviously worthwhile in the world. Then my teaching style will try to demonstrate that, so it's kind of formative.

Student of Professor Banner: He starts class just about every day by saying, "There's no place I'd rather be than here talking to you about rhetoric." He doesn't say, "Teaching you," he says, "Talking to you about rhetoric." It's like, you know—sometimes you can tell they don't want to be there. He just—you can tell he wants to be there. He tells us he wants to be there. You believe him, you trust him. The first day we had class, the first day it was canceled, and the next day we went right into everything. He was like, "I want to do this. I want to teach you. I'm here for you." I really like that he does that.

Student of Professor Banner: I really like the class. I like the way he teaches, the content is difficult and has the—it could be really boring, but he makes it really exciting and kind of fun to learn about and apply to our own life. I talk about this class the most with my friends. I'm like, "Think about this." I've definitely been the most engaged—I've been in college for four years, and this is the only class that I've actually been like, I'm bummed when I have to miss it.

Professor Banner's students pick up on his excitement and are infected by it, wanting to be in class and regretting missing it, because they feel they are missing out on something important. It is not just that students want to be in class to be entertained; they want access to the life lesson that comes with each session.

To get to the life lesson, however, students must participate in the class's narrative arc. Every class session is carefully crafted to create a narrative arc, leading students from a preliminary exploration of the topic, into a deeper dialogue, and then to a conclusion with relevance for their daily lives and their personal, moral, and spiritual well-being. This narrative arc is the epitome of the tension between learning and relevance and the core of Professor Banner's teaching style. Professor Banner helps the students to learn the content while giving them hints at its relevance to their lives, challenges them to apply the lesson to their lives throughout the period, and then finally delivers the ultimate relevance of the day's readings at the end of class. I noticed this flow while observing class sessions and Professor Banner encapsulates it nicely:

Professor Banner: I try to move each class period to have a bit of a narrative arc. Here's a little background, let's dig into the text, let's learn a couple of details, let's begin to do some analysis, let's have a payoff at the end of the day. What's our life lesson for the day from that? Tomorrow, a little bit of background, some details, some analysis, what's our life lesson? Every day I try to have that kind of narrative arc to it. I'm thinking about that quite a bit. I don't know what the life lesson is going to be, sometimes there is a good one, sometimes there isn't. That's been in my head, that that's what we're doing. And the semester has a narrative arc, too. So where each day we're learning a little bit more about rhetoric, what's the overall life lesson? I don't know. You tell me. Is there a life lesson? What is it?

This narrative arc does not simply explain the relevance of the material to the students; rather it holds the relevance of the material in tension with new ideas, asking students to become co-creators of their own learning and asking them to uncover the relevance of the material to *their* lives, as individuals. This is the essence of the REaL experience.

Student of Professor Banner: I think there are concepts we can take home and discuss. They're not necessarily something where you're just in class and then you write it down and then take a test and it's gone. They're sort of day-to-day applications, and you have to think about, "Am I being moral? Am I representing what I want to represent? Am I representing our youth, our culture in the way it should be represented?" Things you're constantly thinking of instead of just in and out.

Student of Professor Banner: I've told friends, "If you ever feel like getting up in the morning and starting your day off really good, just come and sit in his class and just listen."

Students recognize the value of this experience and engage with it, not necessarily in terms of active participation in the class (i.e., answering questions), but by actively thinking about the concepts being discussed and the relevance for their lives. The combination of learning and relevance creates an experience that is easy for students to mentally engage with, and which makes learning "sticky" – students think about the concepts not only in class, but even after the lesson has ended.

This narrative arc is fluid in nature, allowing Professor Banner to adapt to dips in engagement in the classroom. He is able to change topics, use a relevant joke, or vary the tempo of the discussion in order to retain students' engagement with the material, always bringing it back to how everything is relevant to what the students are learning.

Observation of Professor Banner: Five minutes later the discussion about the soul has drawn out for a time and a few students are yawning looking around. Professor Banner makes another cultural reference about a pick-up line related to the discussion, "You have a little bit of God in you. Try that some evening." Then he slows down, speaks slightly more softly (which reminds me of a sermon), bringing the attention of most students back to the front. He reads from the book in a poetic tone, still speaking softly, slowly; much differently than his usual flair.

The reading is about love and drugs and magic so he concludes by asking, "But what the hell does any of that have to do with rhetoric?" At this transition point a female student sitting next to me comments to her friend, "Shit's getting real in here."

Each class has an emotional narrative to it as well, a mixture of humor, incisive commentary on social issues, and challenging personal introspection that draws students into the REaL experience. The series of chronological observations below illustrates this emotional arc, and how it contributes to the tension between learning and relevance, which results in consistent student engagement.

Observation of Professor Banner: After a couple of announcements about outside events, Professor Banner makes a joke about only going to a reception to get free food. He ties the joke into the topic of the day by joking, “Who would know? But your *soul*... so that would kind of blow for you.”

This is followed by a joke about what is happening to your soul if you cheat, referring back to topic of the day. He incorporates a bit about plagiarism almost effortlessly (he covered the guidelines for a writing assignment earlier), using humor to make his point.

Later Professor Banner asks about casual sex. “What happens to your lover’s soul?” “What happens to the soul’s wings?” “What happens to your soul?” He follows this with questions about intimate sex. But when we do it for larger beauty “what happens to your soul?” “And what happens to your lover’s soul?” “You might have less sex, but it might be way better.”

Still later he transitions back to rhetoric, asking “How many of you had a private conversation sometime today?” “And when you did that did you think to yourself, “Oh my God, my soul’s at stake?” “Socrates says, everything you do counts.” He makes the readings relevant to the students, impressing upon them that *everything you do matters*.

Toward the end of the class he speaks to the students directly, concluding with more of a sermon than a lecture. He refers back to the reading, describing it eloquently and from memory. He reads a powerful passage of a prayer to the gods to conclude the class, five minutes early. After class I hear a student comment aloud to a friend, “This class is a great way to start my morning. It’s like a sermon – I love this class.”

Professor Banner keeps students’ attention with humor, personal anecdotes, and references to taboo subjects like sexual intercourse. Like a good preacher, he takes his “congregation” (his students) through the entire gamut of emotions: humor, inspiration, and even a touch of guilt, inviting the students to enter into critical introspection.

While very effective, Professor Banner’s teaching style is almost entirely verbal. There are few visuals and only one “Active Learning” activity each day, a writing assignment at the beginning of each class. Professor Banner stresses that the lack of technology is intentional, that connecting directly with the students is one of the keys to the success of his method.

Professor Banner: The teaching style leaves out some things. There’s not a lot of visual stuff going on. There’s not a lot of audio stuff going on. There are almost no PowerPoint slides. I think some students miss that, there’s no doubt that they do, but that’s in part because they’re used to taking notes in that kind of way. My real hope is to try to engage

with the students, not have the students engage with the screen or the technology. So then there's kind of a hope that this kind of question and answer sort of procedure, and my passionate commitment to this, allows us to connect, allows students and me to connect over this topic.

The Directed Dialogue teaching style leaves out technology and most in-class activities, but excels at creating engaging experiences for the students. Professor Banner's method keeps students in tension between learning the content and understanding its relevance to their lives. While students may have different learning styles in terms of being visual or aural learners, Professor Banner accommodates students' desires to make connections between the material and their own lives, and their desire to make a personal connection with the professor. Professor Banner's face-to-face teaching style facilitates these relationships by removing the obstacles to making emotional and personal connections with the students.

Student of Professor Banner: Maybe not diverse as much, it's just very different than what I've ever seen. Sometimes it's almost like watching a sermon, a pastor speak. He's very charismatic. He has poise. He's confident. He keeps students interested in what he's saying, and that's very rare. It's a class where I feel bad trailing off. Whereas there's a few classes here in the sociology department where I trail off the entire class. I can't stay with it. So he's just—he keeps everybody engaged the entire time.

Because Professor Banner is so engaging, it is worth presenting a vignette of one of his classes to illustrate how he develops a rapport with the students *throughout* the class period, drawing them into serious discussion by first setting up a collegial atmosphere in which playful banter is permitted and then asking students to critically examine some of the issues they had been previously been joking about.

Observation of Professor Banner: Professor Banner starts a film clip and turns down the lights in the room, then walks up into the classroom to watch the film. Almost all of the students seem to be watching the film. The clip is from *Showdown in Little Tokyo*, a movie referenced in the day's reading. In the clip Dolph Lundgren protects Brandon Lee by beating up several Japanese antagonists. After the film clip ends Professor Banner jokes, "Everything about that is great" and the students laugh.

After turning up the lights he asks the students about what happens in the clip. What are they doing? What are they talking about? “We’re telling the audience that he’s what kind of man?” He continues asking about what happens in the movie and the students answer. At one point early in the discussion Professor Banner reenacts beating up the bad guys while holding a teacup, which gets the students laughing.

He begins to focus the discussion on masculinity, asking, “What are the various ways we know that Dolph Lundgren is masculine?” When a student answers that he is tall, Professor Banner makes a joke about his own height and the students laugh. The students suggest other aspects of masculinity: a strong jaw, white skin, muscled, confidence. Many students are laughing and most students seem engaged even when they are not answering the questions.

Professor Banner asks why Brandon Lee is portrayed as less masculine, possibly feminine in the movie clip. He walks up into the classroom, asking about how men demonstrate their heterosexuality. He also recalls a line from the movie in which Brandon Lee tells Dolph Lundgren, “You have the biggest dick I have ever seen” and a black male student says, “Oh it’s that movie.” Professor Banner makes a joke about the student’s comment, “Oh it’s the dick movie,” which elicits lots of laughter. An entire conversation about the scene follows.

Five minutes later Professor Banner switches topics from sexuality to how “whiteness” is done in the film. He asks the class how whiteness gets done in the film, and then asks where the movie takes place. A student answers “Koreatown,” and Professor Banner very definitively states that it is not in Koreatown; another student answers correctly that the film takes place in Little Tokyo. When Professor Banner asks about other markers of whiteness, a black female student answers that the Asian men Lundgren beats up have accents, marking them as foreign. Pushing the students a little further, Professor Banner asks about Brandon Lee’s ethnicity, bringing them to the conclusion that all Asians are lumped into same category. A student near the front is naming Asian ethnicities *ad nauseum* and Professor Banner makes a joke that he could keep going on forever.

Ten minutes later Professor Banner switches topics again, this time asking about the portrayal of masculinity in the film. Several students offer examples of masculinity in the film and Professor Banner gives his own example of masculinity in Western films. A student brings up the scene in the film with the “dick” and the other students chuckle. Another student notes that masculinity ties into sexuality and Professor Banner confirms that this is an important point and expands on it, asking, When we want to call into question a man’s worthiness, what do we say to him? “You’re a...?” A student tactfully asks if the word Professor Banner is looking for starts with an ‘f,’ and Professor Banner says yes, “You’re a faggot. That’s so gay.” And we don’t mean that positively. The room is silenced by this statement; the atmosphere is suddenly serious, the students somber.

Only 2-3 students (out of about 100) are on their phones or otherwise actively disengaged. Most students are taking notes or actively listening.

As suggested by the REaL model proposed in Chapter 4, Professor Banner draws on his personal relationship with the students to create an atmosphere of both collegial fun and critical inquiry that the students immediately assimilate into. He creates emotional connections to the material, using both humor and discomfiture to draw the students into a relationship with the content. And he uses technology *effectively*, not unnecessarily, showing the necessary film clip and then moving on with the class. All of these behaviors help to set up a class experience in which students are tuned in to the importance of the content, not only as academic knowledge, but as it pertains to their own lives. Students are eager to learn about and talk about the material that their charismatic Professor asks them to discuss, and are readily able to grasp its relevance to them even without Professor Banner explicitly stating such.

If Professor Banner's Directed Dialogue style creates the epitome of a REaL experience, each of the other styles described below create the REaL experience to a lesser extent. While Professor Banner is able to incorporate all of the behaviors that facilitate a REaL experience, and draw attention to the material's relevance while also involving the students in their own learning, other styles leave out one or more of these components. As such, the Directed Dialogue best represents and illustrates the REaL model proposed in Chapter 4.

The Interactive Lecture

Another highly engaging teaching style is the interactive lecture. This teaching style relies primarily on lecture from PowerPoint, but is liberally interspersed with films, discussion, images, i>Clicker questions, and anecdotes. Students participate in the class by answering i>Clicker questions and by discussing the class material with the Professor and each other. This discussion format is very different from that of the Directed Dialogue style, however, both in appearance and purpose.

Whereas Professor Banner engages his students directly in questions about the material, Professors C and F take a survey approach to discussion, either using i>Clickers or simply asking for a show of hands about how many people hold a given opinion. In addition to structuring discussion differently, the questions asked also address the students' experiences and opinions rather than the course content; where Professor Banner tries to ask the students questions to get them to engage directly with the readings, the professors who use the Interactive Lecture style use student experiences and opinions to illustrate the readings and course concepts.

Observation of Professor Clark: She puts up an i>Clicker question. "If an attractive student (stranger) approached you on campus today and asked you to sleep with him/her tonight, what would you say?" The students snicker and speak quietly to each other about this controversial question. Professor Clark quickly explains that the reason why she asked the question is connected to genetics research. The students are clearly engaged by the question, asking questions, talking with each other, etc.

Observation of Professor Frost: Professor Frost asks the students to respond to these questions via i>Clickers: "Do you have a television set in your room/apartment/home?" "On average, how many hours per week do you watch television?" After these questions have been answered, Professor Frost asks, "Show of hands, how many people have more than 1 TV?" The students raise their hands and he asks, "More than 2?" He then asks the students to indicate how many TVs they own using their i>Clickers, even though the question is not on the slide. He ups the number of TVs to 3 or more, 4 or more, and finally 5 or more and people click in with their responses. The students seem very engaged, clicking in and conversing with one another.

This technique is successful at engaging the students in the discussion, but does not force a deeper exploration of the content.

Likewise, while these professors strive to make the material interesting and relevant to students (and succeed in doing so), there is no narrative arc to the class in the same way that Professor Banner guides the students through the process of learning and then provides them with an applicable life lesson at the end of each class. In the Interactive Lecture, personal anecdotes, illustrative videos, and even the students' own survey responses serve to illustrate the

relevance of the material to everyday life and, occasionally, to students' personal lives. The relevance of the material is constantly reinforced, but never held in suspense.

Like the Directed Dialogue, this teaching style begins with the professors' attitude about education and learning. These professors see themselves as entertainer-educators, whose job it is to excite and engage students in the classroom in order to facilitate learning.

Professor Clark: Most important aspect of teaching? I'm repeating terms, but the excitement factor. With the large class that you were observing, it might sound corny, but I see myself as the marketing rep for psychology. For most of those students, they are only going to take this one psych class, and psych is one of those classes where people can be—I have conversations with my dad, who took psych here with [another professor], one of our most well-known professors in the psych department, and he remembers it! And I want that. And I think psychology is easy, the material is easy to do that with. They encounter psychology daily, so I want them to be good consumers of that information, but then also understand how psychology connects with their life.

Professor Frost: Entertain, it starts with entertain. My dad was a teacher for 32 years, my mom for over 35, in the public schools, fifth grade and first grade. My dad also played in a band for 40 years and is now back at 70 playing again. When I was little I would hear things like, "Teachers say they don't have to be entertainers, but good luck." You have to be able to keep the attention of folks, hold their attention, and present things in a way that is entertaining to them, because then the retention will be higher. So on the one hand, people think, maybe that system is like, you're addicted to your band days when you were getting up in front of people. But the reality is retention happens when you're more relaxed, when you're entertained. You remember those types of things. Speakers who do that are more engaging than people who just sort of come up and lecture. I'm just thinking about something you might go to at college. So one of my teaching philosophies is have fun, be entertaining.

Notably, what these professors describe as "entertainment" is better defined as engagement.

Professor Clark talks about connecting the material to students' lives and Professor Frost talks about holding students' attention. The term "entertainment" suggests diversion; these professors are talking about engaging students with the material, not distracting them or creating meaningless fun.

The professors' passion for teaching and entertaining translates well in the classroom.

While not as infectious, nor overtly stated as that of Professor Banner, students pick up on the

professors' excitement and thrive on the passion that these professors bring into the classroom.

Student of Professor Clark: You can tell she's really into what she does, whereas some classes you just don't get as much out of because the person teaching it isn't as much into it or as knowledgeable about the subject. I think it's been one of the better classes I've taken.

Student of Professor Clark: I would say that my engagement directly mirrors the engagement of Professor Clark. I come to class consistently because it is interesting and thought provoking. As students we have the opportunity to ask questions and have conversations after class. The audio and visual components make this class enjoyable.

Student of Professor Frost: I just think it's cool. It is a 100[-level] class, so you're going to have a variety of kids taking it, but for some reason, everyone comes to class every day. I think it has a lot to do with him being so passionate about sociology. You can really see that whenever he's talking. He wants you to be involved.

Sharing personal anecdotes and encouraging student participation both contribute to a sense of these professors' authenticity in the classroom. Their passion comes through, as does their caring about students as individuals. Students respond to this authenticity with a willingness to learn, allowing these professors to create a small-class atmosphere in very large classes.

Professor Clark: I think being authentic is huge. I learned that as I was learning to be a psychotherapist as well, a psychologist, because it was like, "OK, I like that, but if I go in there and do that as you, I'm going to fail." It's not going to look pretty. But if I could take pieces of that and make it mine, that will make for a good, effective delivery. And the same thing is true of teaching. I see plenty of people doing things as teachers that I would love to do. I don't know that I know how to pull it off. There are certain things that just—with a personality style, they just fit better.

Student of Professor Clark: Like, when it was Valentine's Day, she was like, "I won't be there for Valentine's Day. I'm spending it with my daughters, they're six and seven." And she went on to tell us about her family. It was just nice how she was so open but still professional. She was being professional, too.

Student of Professor Frost: On top of those things, he's very real with his students. I think some people could take that very offensive, almost, when he's said some things very outwardly. But I think it's hilarious. It makes me—like, he uses his own life examples, like, with his dad, he's, like, a hippie, beer-drinking fisherman. You're just like, "That's funny, and that's your life." I appreciate when teachers don't talk to us like, "You're stupid. You're five years old." He's just like, it's like we're there to learn. We're not there to be—I don't know, some teachers degrade—not degrade their students, but make you feel stupid sometimes. I like the way he teaches.

Each Professor also brings specific mannerisms and a robust personality into the classroom in order to generate excitement and passion about his or her subject. The students call out some of these behaviors as particularly engaging.

Student of Professor Clark: I most appreciate Professor Clark's down-to-earth enthusiasm. She is very friendly and open but in a professional manner. Her truthfulness about her standpoint makes the context of the class very reliable and brings out the best in my own personality.

Student of Professor Clark: Professor Clark uses her voice. She goes up and down with her voice. She gets louder at the end of her sentences or the beginning of them. It really wakes people up. It's like a roller coaster with her voice. [Laughter]

Student of Professor Frost: I like the class a lot, too, even though the professor's a kind of love him or hate him kind of guy. But I definitely love him, just because he's like—he's just so funny. Sometimes he'll make a joke and everybody will be laughing, and I'm laughing myself. He definitely makes the class more interesting, and like she said, time just kind of flies by. He definitely keeps it going.

Student of Professor Frost: He's enthusiastic. I remember one time in particular, he was walking around the class, saying something like, "We have some language that's just like—" What do you call it? Cultural norms or whatever? That you just say things without even expecting an answer. Like, "How are you?" He walked around the classroom and pointed to every single person. "How are you? How are you?" Stuff like that. Other professors would not do that. But definitely everyone's paying attention.

While passion and excitement are at the core of this teaching style, both professors also understand the importance of pedagogical theory and strive to implement the scholarship of teaching and learning in the classroom. Specifically, both professors strive to accommodate multiple learning styles by incorporating a variety of teaching methods and technologies into their class sessions.

Professor Clark: I'm looking for variety, because I know that different students are learning in a different fashion. So I'm trying to meet each students'—as much as possible, you're always going to miss somebody or a couple somebodies, but I'm trying to do the best I can to connect with the visual learner or the auditory learner or the person who really connects with videos, the person who really connects with reading, or writing. You might have been there a day that we did in-class writings. I want to make sure that we're covering our bases. And actually, even if that means one person is adhering more

to one particular style, we're bringing out some of the other styles and helping students maybe gain a style that can help them in other classes, where they don't get exposure to the different types, where they have to be more self-motivated to find what works for them. So trying to keep variety in my teaching style and what I'm doing in the classroom.

Student of Professor Clark: I think it's probably one of the best ones I've seen in a while, just the way it's structured, it's laid out. Everything from the book, we can follow along in the book and do some of the tests. So what she does in the lectures, she diversifies it, has video examples, has exercises and stuff like that.

Professor Frost: So the i>Clicker. Knowing to go question, question, then fact, fact, slide, question again. Pictures is huge. People are visual learners. A lot of slides have fancy borders but don't have any pictures. I don't care. My thing is going to be full of all sorts of outrageous things, good pictures that stimulate their thinking while they're looking at the topic. Very rarely do I have a slide that doesn't have color or doesn't have a picture. Video clips, even if it's 10 seconds or 10 minutes. Or taking the whole time to do a video and then taking half the next class period with 300 people, even, to do a discussion. Discussion is huge. That's how people process and retain things. They talk about it. If you're never talking about it, you're also not really fully getting out of it what you could get out of it from a psychological or physiological brain standpoint, which I know a little bit about.

Student of Professor Frost: Professor Frost has a very diverse style. He uses i>Clicker, discussion, videos, and slideshows to further our understanding of topics. He is also very engaging and wants students to share their opinions.

In addition to accommodating multiple learning styles, professors who use the interactive lecture style also try to get students to understand the relevance to the course material. They don't go as far as Professor Banner in connecting the material to students' personal ethics, but they do illustrate how the subject relates to events and situations the students are likely to encounter outside of academia.

Professor Clark: I think that's my job. And not in a conversion factor, not where I'm like, "Come join us." But in a way of, "This is what we do. This is how this matters to you. This is what I hope you take from the class."

Student of Professor Clark: Yeah, it was really interesting. I feel like she's so rounded with the class, not just all text material and that's it. She tries to bring it out in the open, implement present-day stuff with it.

Professor Frost: So my teaching style and philosophy in the classroom is a bit preacher, a bit entertainer. There's also a whole bunch of compassionate cultivator. I want you to

feel a certain way, I want to trigger some emotional responses in you so that we can get out of this head-in-the-computer-and-cell-phone kind of world and get back to this thing where we used to sit around and talk about why we love things or why they piss us off. In sociology, that's it. That's all there is. It's gay marriage this week, discrimination the next week, privilege the week after that, racism, it's environmental concerns. If you can't find a reason in sociology to tell your friends about something you learned in class—I always ask people, “How many people are sharing this stuff with their friends?” It's like 90% of the room.

Student of Professor Frost: I think more in this class, I go outside of class and when you're talking with friends, you'll be like, “Oh, my gosh, we watched this video in class today,” and we'll have a discussion about it. Even on Monday, when we started watching this movie, afterwards a couple of us went to lunch and we were talking about it all through lunch. It brought up other topics, and people were really interested about what we were learning about. I even had—this sounds corny, because we're such geeks—I had two of my friends, I'd been talking about it, and they were like, “Can we come in your class one day?” And last week they came in and sat with us, which I think is really cool to say that—I talk about it so much, the ideas behind it, that that happens.

In connecting the course content to situations outside the classroom these professors often relate stories that pertain to the material being covered. The professors relate both personal anecdotes and interesting current or historical events pertaining to the course material. This technique is intentional; both professors recognize the value of using stories in the classroom. These techniques also make the professors more human, exposing their vulnerabilities and making them more relatable to students (a technique shared with Professor Banner).

Professor Clark: I remember some feedback I got from one of my advisors who came to watch. He said, “You've got to tell more stories.” And that stuck with me, because I was like, “Yeah.” I was doing—actually, this was back when we just did black-and-white overheads, but that's all we had. We didn't do PowerPoints.

But I didn't have stories yet. This was my first year of graduate school and it was abnormal psych. I hadn't even worked with anybody who had depression yet. So I didn't have those stories. But now, I've got them, and I can tuck those away. And now I'm better at looking for stories. Like, to look in popular press articles that pop up daily and take it in the classroom and be like, “Did you see this? What do you think about this? Have you heard—?” So I'm better at sharing stories and looking for those stories, and I think that adds to what we started with, which is how to make it exciting.

Observations of Professor Clark: She asks, “How many of you have heard of Pavlov before?” and several students raise their hands. “What do you recall, the work that he

did?” A student answers and she continues with the lecture, telling an interesting story about how Pavlov discovered classical conditioning.

Professor Clark puts up a slide that is a diagram of influences on psychological disorders. She tells the class a story about a patient she saw who spoke with God. The story seems to spur more side conversations, although the students who are having side conversations are still taking notes and may be discussing class content.

Student of Professor Clark: Lively, dynamic, intriguing and entertaining. Professor Clark uses a lot of personal anecdotes, vocal inflections and expert “storytelling” narrative to make this class a pleasure to experience.

Professor Frost: So for me, it’s just stories about my family and when I was a kid and how that relates to maybe the big picture, which is an agent of socialization. But we can talk about agents of socialization and have way more fun by talking about examples. Making yourself—not always painting yourself as a hero in the stories that you tell or in a humorous or underachieving light is important. Again, because that intellectualism would make us think that our professors are infallible or at least believe that they are themselves. So stories and humorous anecdotes where I’m not the hero, because I don’t know the social rules or norms of the time or whatever that was when we were growing up.

While these professors do occasionally spark ‘negative’ emotions like pity or rage in their students, humor seems to be the primary means of emotionally engaging students in the interactive lecture. Both professors incorporate humor throughout the class session by way of anecdotes, observations, videos, or simply by making jokes that pertain to the course material.

Professor Frost: [It is important to] have fun. Humor. You can’t get a dialogue going with—even myself, I could go up there and be as serious in the world as I want to be because I feel passionately about it, too serious. People disengage. There’s a fine line between preaching and teaching and a fine line, like, all that is made better through humor. So using examples of humor that pertain to them, that are tongue in cheek students having pool parties, or me flailing when I was teaching my kids this, that, or the other, something like that. Relating it to my life helps them somehow.

Student of Professor Frost: Yeah. He’s not oblivious to what’s going on. This is kind of a weird example, but on Friday when it was 4/20, this kid sitting next to me just was totally stoned, I think. [Professor Frost] walks by and he goes, “How you feelin’, bud?” And the guy goes, “Why’d you put a test on us today?” And he goes, “I’m just trying to keep you focused. I knew you’d be super-focused today.” I don’t know, it was just hilarious, because he’s not oblivious to a lot of stuff like that that college students do. Or he’ll be like, on Monday he’s like, “How’s everyone’s weekend?” I just think it’s funny.

Observation of Professor Frost: He switches the topic to recess and asks the female students (only), “What games did you play during recess?” He follows up on their slew of answers by asking, “How many of you who identify as female played house?” Most of the women raise their hands. Professor Frost then tells a joke about a game where boys steal a kiss and girls kick them in the nuts and the students laugh hysterically. He then asks, “What do the boys play?” After a few answers he explains the game King of the Hill humorously and the students laugh. He then does the same with Smear the Queer, which brings on more chuckles.

Observation of Professor Clark: While giving examples of classical conditioning she states, “You don’t have to write this down.” When Professor Clark offers the example of getting food poisoning “or something else” inducing nausea at a friend’s house there is a slight chuckle from the class.

These professors base their lectures on a loose PowerPoint outline, but intersperse any textual slide with engaging images, activities, survey questions, and other means of engaging students’ attention. They also recognize the importance of changing topics or strategies frequently to keep students’ engaged.

Professor Frost: So real heavy on the questions and the discussion so that people don’t ride five slides in a row. We do a couple and then we blow that out of the water for half a class. We do some more. So some kind of organic approach that isn’t just, slide, slide. I think that all teachers have put together those things are passionate about what they do and they want to create good ones. That doesn’t mean that you ever see good ones or that you often see good ones, and it doesn’t mean that people don’t think, “Oh, OK, another technical presentation, another PowerPoint, so I’ll just check that out later.”

Probably throwing together a PowerPoint for me means having it be as dynamic as possible. The Bulls beat the Heat the other night with Derrick Rose having the poorest game of his career, and so my first four slides were Dwayne Wade looking like he was going to cry, Noah saying, “Oh, I’m sorry.” And then I got to the fourth slide and it was Derrick Rose, and I was like, “Oh, I guess we’d better get into this.”

Observation of Professor Frost: The current slide shows the results of Google image searches for “school boys” and “school girls.” The school girls are dressed in provocative clothing, while the school boys are dressed like prep school boys. Professor Frost makes joke about this discrepancy and the students laugh, seemingly still engaged.

A new slide with all text goes up and there is a change in the classroom atmosphere almost immediately. The students were fairly excited up until this point but are now starting to quiet down quickly once they see the new slide, which contains sobering statistics about boys and school. Professor Frost asks, how does this make those of you who identify as male feel? A couple male students respond.

Student of Professor Frost: I think just like, if this was, like, if we had a different teacher, I think the content would be pretty boring, but the way it's brought to us, a nice PowerPoint, just the quick main points that we need to know, it's easier for us to really enjoy it, I guess.

Technology is only one way in which these professors encourage an interactive classroom. They also directly ask students questions, use slides to pose queries, and use technologies like i>Clicker questions or videos as a springboard for all-class discussions.

Professor Clark: I think I lay that groundwork early in the semester. It's all about presentation and how you set the norms. And so for me, one of the most critical days of class in the whole entire semester is day one, when I'm coming in and saying, "Here's how this is going to look." And I tell them, "I invite your participation. I know it's a large class and I know that all of you have opinions, and I can't hear all of your opinions in one class. So there might be days where I have to say, 'OK, I've got to keep moving.' But that doesn't mean you can't raise your hand the next time."

Student of Professor Clark: She allows us to participate. I don't know how many students are in there, but she gets everyone involved with the i>Clicker thing. She puts up the four multiple choices and you click and you get to see what percentage of the class guessed what. Participation is really good, especially considering how many students she has.

Professor Frost wants students to engage in dialogue, even in a large classroom, but recognizes that doing so can be challenging, especially when discussing divisive issues. He uses i>Clickers to include everyone in the discussion and subtle strategies like asking students to raise their hands before calling on them to draw them into discussion on controversial topics.

Professor Frost: Full-contact sociology. [Laughs] I don't want to just tell you my opinions and not hear. It's bumper-sticker culture. "I hate Obama. I hate Bush." "Why? You never tell me why." In this class, yeah, I want—by full-contact, I want to throw those things out there and get your reaction to them... "Disagree with the author. Just because you're in college and these are intellectuals and I am paid to be an expert in a classroom, which I feel like I am, doesn't still mean that all my opinions are right." I want people to be engaged enough to think, "That's bullshit." Or "That's great; I'm going to pursue that further. That interests me."

Student of Professor Frost: I feel that another thing is that not only does he get those opinions from those i>clickers, but he also somehow manages to make those 200 or 300, I don't know how many people are in the class, it's a big number, he makes them, like,

want to raise their hands and say their opinions, and that's something that you don't see often in those classes of that size. The teacher doesn't have the time to ask for student input.

Student of Professor Frost: I remember this one time he tricked me into—it was something about—like, I'm an only child, so it was like, "Who thinks only children are spoiled?" and the whole class raises their hands, and then he's like, "OK, who thinks they're not?" And there was, like, four of us that raised our hands. And then he picked on me, and he was like, "Are you an only child?" And I was like, "Yeah." And he asked me why. He's done that the few times, because my friend got picked for something, too. That's a good way to do it, because I would never raise my hand and openly be like, "This is my opinion about a topic." I want to talk, I'm just too nervous.

Observation of Professor Frost: The first slide has pictures of a hamburger and a salad, accompanied by a first question, "Why might the family be considered the most important socializing agent?" and a second question, which Professor Frost asks aloud, "What did your family teach/socialize you about food?" He spends about five minutes in discussion with students about this question, during which the students appear reasonably engaged. A few are showing signs of boredom (such as leaning their heads on their hands) or restlessness, but most appear engaged. About halfway through the discussion Professor Frost picks up on something a student says and creates an ad-hoc i>Clicker question for the class about who cooks most in the family (mom, dad, or on your own).

Like Professor Banner, these professors have developed a method of facilitating discussions that encourages students to voice their opinions in class, without fear of being embarrassed or singled out. They encourage students to participate by validating their comments and giving them praise for contributing. They also encourage students to disagree with them, reinforcing their fallibility (and humanity) and differentiating them from the less engaging professors who do not encourage students to disagree.

Professor Clark: And then I think it's important how you respond. We've all had the experience that we've raised our hand and shared something we think is beautifully insightful and it didn't get the reaction that we wanted. I'm always—I have students maybe two to three times a day where they've made pretty ridiculous, flip comments, and even in those situations, while I'm setting a clear boundary, "Oh, that was weird, let's not do that again," I'm not shutting them down entirely. That freaks everybody else out. So trying to create a good learning open environment where students' comments and diversity of comments are welcomed.

Student of Professor Clark: I kind of enjoy it, like the i>Clicker questions she was talking about. There's no right or wrong answer. I mean, there is sometimes, but it's not

like she demoralizes anybody for getting the wrong answers. She has a sensibility like, “You know what? I didn’t go over that enough.” Or “Most of you guys got it, but this is where we need to be.” It’s just, she has a good flow with the class. She has a confidence about her that just works.

Student of Professor Frost: He always tells us, like, “It’s fine if you disagree with me. Just tell me and express your feelings and opinions.” I think that’s really good for people to be able to do.

Student of Professor Frost: He wants to hear different voices. He understands that there’s a majority, and he wants to listen to the minority and see what those people say, because that’s where you get to the interesting stuff. So I also feel like not only does he make you feel like you can say something, but if you say something and it might not be what he’s looking for, the right answer, I guess, there is no right answer. You can say something and he will tie it back into what you’re learning.

This ability to disagree with the Professor allows these professors to incorporate students’ comments and critiques back into the discussion and use them as learning opportunities that are already connected to issues that matter to students.

The professors who use the Interactive Lecture style understand the value of using several different teaching methods, and bringing their passion and excitement for their subject into the classroom. They want to make the material relevant to students and readily use their own life experiences, or those of students, to illustrate difficult concepts or lighten the mood in the class. Importantly, these professors have a personal commitment to this teaching style and to the philosophy that it is a teacher’s responsibility to engage students. Thus, when they bring their passion and commitment into the classroom, they are presenting the students with their authentic selves. Such a style would presumably suffer greatly if there was a disconnection between the teacher’s private teaching philosophy and the public persona presented in the classroom.

The Storytelling Lecture

Another engaging teaching style is the storytelling lecture. This teaching style relies primarily on lecture from PowerPoint, but is supplemented heavily by personal anecdotes and

stories relating to the material being discussed. Unlike the Directed Dialogue and Interactive Lecture styles, this style eschews class discussion in favor of a professor-centric classroom. Students do occasionally ask questions and the professors ask students questions as well, but there is not a focus on discussion like the previous styles. The professors who make use of this style also avoid interactive technology and videos, preferring to rely solely on PowerPoint to deliver information.

Like the two previous styles, the Storytelling Lecture style incorporates many personal anecdotes, as well as illustrative stories, to make the material relevant to students. This is done more in the fashion of the Interactive Lecture style (throughout class) than in the style of Professor Banner (hinted at throughout class, with the big life lesson revealed at the end). These professors both care about student engagement and strive to bring an authentic personality into the classroom. They relate well to students, although they are more subdued in their enthusiasm than the previous professors.

The professors who make use of this style engage students by weaving a narrative into each class session, thus making the material emotionally engaging and personally relevant to the students. They understand the power of storytelling and the power of making a personal connection with students.

Professor Allan: As far as the delivery of the material, I think it's really important that it be put into some context. I have a joint appointment in the English department, and I do science writing, and one of the things that I think I've adopted is to try and present stuff in story fashion, because we humans, for some reason, are much better at dealing with stuff inside of stories than just isolated bits of information. So when we talk about diseases, I try to put it in context. I try to put in personal experience when I can. I try to talk about the people who are affected, what our world economy has to do with it, what society has to do with it, all of that, rather than saying, "Here's some facts about a disease."

Observation of Professor Allan: After a brief joke about bacteria, he launches into a series of anecdotes related to a slide displaying only an image of donuts and donut holes.

He relates how mice born and bred without bacteria quickly die when exposed to any bacteria. He then points out that it is impossible to give birth to a human child naturally without exposing it to bacteria in the vaginal canal. Finally, Professor Allan relates the story of “Bubble Boy” – a boy born without exposure to bacteria who was forced to live in a plastic bubble – and it is clear by their body language that the students are engaged. They are leaning forward, their eyes focused on Professor Allan, with no side conversations I can pick up. The Professor concludes the donut slide by mentioning that asthma and allergies are correlated to cleaner homes during childhood.

Observations of Professor Danvers: During his lecture a student interrupts Professor Danvers to ask why the U.S. got involved in WWI. Professor Danvers says, “I’ll tell you but” we have to talk a bit more about the war. He starts focusing on the U.S. involvement, telling personal anecdote about his grandfather, a German-American who got into a bar fight over the war. I note that he says “kicking ass” twice. He ties the anecdote back into to why the U.S. stayed out of the war.

This storytelling is engaging for students, who make connections based on the examples used in class that aid in recall later. I observed that students were most engaged during these anecdotes, often sitting forward and paying attention to such stories even when they were otherwise disengaged with the class.

Observation of Professor Danvers: After two minutes of announcements Professor Danvers begins a brief lecture on Nazi propaganda. In the course of his lecture he compares Hitler to Saruman from *The Lord of the Rings*, pointing out that Hitler is not all-powerful like the fictional wizard. He walks around the stage, coming to lean against the front of the podium, speaking in a conversational tone, and gesturing frequently but not dramatically. Most students appear to be actively listening; I see only one student texting. Several students are looking through their books while he is speaking, presumably at images of Nazi propaganda.

Student of Professor Allan: I would say the material [is what makes me want to go to class]. I think he has a PowerPoint every time, so it’s lecture, but then he’ll show pictures and he’ll tell personal stories. He’s just so knowledgeable about the subject.

Student of Professor Allan: I think it’s easier because he always gives you an image as far as—there was something about bruising, and he told a personal story about his daughter, when he touched her and it immediately made a bruise. I think about that all the time. How do you explain that? What would I do? So when it came up on the test, I was just like, “Oh, I know, his daughter had this.” So it’s more connection points.

While both professors do lecture from PowerPoint, the slides serve as guideposts more than they do as a delivery system for the content. Often slides will be completely devoid of text,

displaying only an image, chart, map, or diagram. This keeps the professors from reading directly from the slides and allows for extemporaneous stories about the material.

Professor Allan: One of the things is that everybody gets thrown PowerPoints at them all the time. And I really try to think about trying to deal with what is essential in the PowerPoint. In a disease course, I just don't think there's any way I can get by without them, or I'd try it. And I don't ever stand up there and read what's on the slide. If I don't have something more to offer them than the slide has, then I could just show them the slides and I don't need to be there. I try to add to the information on the slides, put it in context in a way that's more engaging.

Professor Danvers: It's relaxed and informal, I think. I don't use notes. I try to, in part because of the time I spend outside of the university, where it's always mandatory when you go into a meeting that you've got to have a PowerPoint, I use that extensively. But PowerPoints are great, because you can integrate graphics and apps, pictures, things like that, YouTube videos, whatever. That provides a kind of outline for the students.

The storytelling format also has the effect of creating emotional connections for students, through humor, sympathy, or outright disgust. Stories provide an opportunity to connect with students on an emotional level in ways that simple lecture does not.

Observation of Professor Danvers: He wraps up the lecture and covers the expectations for the group project on the screen. He mentions that in addition to "that thing that goes on in Boulder tomorrow" [insinuating the marijuana-smoking "holiday" of 4-20] it is also Hitler's birthday.

Observation of Professor Allan: He offers another anecdote about the CDC noticing a spike in women dying this time of year due to Rely tampons – students seem more interested in this anecdote. They are not leaning forward, but their eyes are alert, their heads up. Professor Allan's description of how taking out the Rely tampon causes the vaginal wall to rip and blood to get infected with staph causes murmurs of disgust amongst the students as they experience an emotional response to the story.

Most of the limited interaction in these classes comes from brief question and answer sessions between the students and the professor. While neither professor makes discussion a focus of the class, these professors do intentionally incorporate questions into their lectures, asking students to think critically about the content to come up with the answer.

Observations of Professor Allan: Professor Allan asks why ground hamburger but not steak is often infected with harmful bacteria. He calls on students to offer explanations,

responding to one woman who is not quite right, “You’re absolutely right, but they don’t grind up the intestines,” so where does it come from? He follows with another joke to illustrate how prevalent bacteria are. “90% of the cells in this space are bacterial cells; I’m always worried about what they do to my credibility.”

Observations of Professor Danvers: Professor Danvers asks, “What do you do now?” when your offensive does not succeed. A student replies quietly, “Wait” and Professor Danvers laughs and jokes, “That could work.” He then offers another idea and asks, “So what else is there left to you? If you’re not going to stop the war, what are you going to do instead?” A student replies “overcome it” and Professor Danvers asks, “How? If the last big attack you made wasn’t quite successful, what should you do instead?” The student replies “make it bigger” and Professor Danvers exclaims, “Make it bigger!” He jokes about doubling the size of attacks indefinitely with no success.

Occasionally these question-and-answer sessions will provide an opportunity to highlight the relevance of the material to the students, and to illustrate larger concepts, including social issues like sexism.

Observation of Professor Allan: Professor Allan asks (rhetorically) why we spent billions of dollars mapping the human genome and then comments that he will come back to that question later. A short time later he makes a joke about someone having to have no life to do the work of pairing chromosomes and the students laugh. Two minutes later he comes back to the question, “What is it that genes do” that made it worth spending billions of dollars? A few students answer, and he confirms their answers are correct, but prompts the class for more. Right away a couple students get to the answer he was looking for. Before continuing he states, “I have a pet peeve I’m going to have to bring up right now.” He then talks about his pet peeve of how genes are idolized when they are actually inert; it is the enzymes that do all the work. He spins this into a broader social context, asking, “What does the female contribute to the zygote?” A student answers an egg, which he confirms and clarifies is a complete cell. He then asks, “What does the male contribute?” A student answers sperm, which he confirms and clarifies, “Which is basically 23 chromosomes and a little outboard motor.” He suggests that male geneticists did not want to admit that females had control over our genetics.

Both professors assert that they care about their students and care about teaching. This commitment is reflected in both their classroom behavior and their students’ comments. This commitment to students manifests as a concern for students as people, and for students’ success in the class. This seems to be a major strength of this teaching style and it is supported by the survey data, in which both professors rank very highly on the Personable scale (Professor Allan

= 4.11 and Professor Danvers = 4.06). Students don't talk about feeling obligated to be in class like they do with the previous professors, but they still appreciate that these professors are real people and bring their lives into the classroom.

Professor Allan: To me, the one thing that is impossible to overcome as a teacher is that you don't genuinely care about the students. You can spend a lot of time studying style and technique and other things, but if you don't really care, it's just never going to work. The students pick up on that very quickly. So one of the things I try to make apparent early on is that I have a genuine interest in what they think, what they're doing, and that they succeed in the course.

Student of Professor Allan: He really goes out of his way to help the students and facilitate their learning in a way that helps them understand. Sometimes he'll say things and I'm like, "I don't quite get it that way." He'll switch it around and just keep trying until it actually clicks and I can spend an hour on one thing, and he's always very helpful and very informative. He just relates a lot of things to his personal life, like with stories, things like that, that helps you remember it in a different way.

Professor Danvers: So really, teaching is all I'm about. And it doesn't pay enough that I live or die by it. I'm either comfortable doing it or I should just get out and find something else, because it's not that lucrative. I tell my students jokingly that I do part of it out of love of what I'm doing, love of the interaction with the kids, watching them grow and learn, love for the subject matter. All those things I would do for free, but they have to pay me to grade. [Laughs]

I had one student write me this amazing letter saying, "Gosh, it meant so much to me when I ran into you on campus and you stopped and chatted with me." Doesn't everybody do that? "You remembered my name." I try to work with that. I'm pretty good about remembering faces. I recognize the students. When I've read their book reviews, I can associate a name with a certain review. I can't always make the connection between that and a face. You'll see me asking students what their last name is when I give them back. But I also do that. I used to just hand out papers and let them pick up their papers. Now I want to control it more so that I can make that connection. "Oh, yeah, you're the one who wrote this, that was really cool." "You had some problems here, this is what they were." Next time, when I talk to them and see them in class, I can keep that connection going and hopefully I'll remember. There's no way I'll remember 123 names when every semester I've got another 123. But to the extent I can move in that direction, approach its limits, as they used to say in the sciences, I do that.

Oh, yeah, one of the things that's huge is, I've kept a public persona and a private persona. Now I'm not shy about walking into the classroom at the beginning of the lecture and saying, "Oh, you want to see a new picture of my granddaughters?" That kind of thing. Telling jokes. Making fun of myself. At the beginning of every class I talk about how I imagine things and say, "Be patient with me. I'm 66. I'm on Medicare. I don't

always remember things. Plus, you have to remember about me that I went to Stanford, I graduated in 1967, the summer of love. I have additional issues as a result of that.” I try to make myself approachable before classes and after classes, I really go out of my way, to the extent that I can, to make sure that I bring myself as a person into it and be informal.

The Storytelling Lecture style combines engaging lecture with compelling narratives (both personal anecdotes and illustrative stories) to engage students in a constant mix of learning and relevance. These professors bring themselves into the classroom, although not in a way that is overly enthusiastic or untrue to their more demure demeanors. This authenticity engages students and makes them respect the professor’s expertise and good intentions, and want to listen to the professor’s stories, expecting them to connect to the course material.

The Sage on the Stage

The sage on the stage style is primarily comprised of verbal lecture, with some discussion. This style is largely technology-free, eschewing even PowerPoint in favor of the more conventional white board. These professors don’t connect the material to students’ lives in any meaningful way and have some difficulty bringing their personalities into the classroom in an effective and engaging fashion.

Neither professor who fit this style has a well-defined teaching philosophy, nor did either receive any formal training. Most of this style is based on what the professors experienced as a student (lecture), and is not supplemented with any training or scholarship.

Professor Garrick: I don’t know, because I haven’t read studies, I’ve heard studies, but I think attention spans have gotten shorter, too, and I think a lot of it has to do with watching TV and of course playing video games. I know some professors that have been using i>Clicker and stuff. I really feel like one of these days I should go and observe how that is. I have not yet. In my smaller classes, I’ll call on people. Or I’ll ask questions—I can’t say that I’ve looked in a book at, “How do you ask questions that elicit a response?” You ask a question, and if it falls on deaf ears or you don’t get a response, you try rephrasing it another way, because sometimes they might not understand what you’re asking them.

Like the Storytelling Lecture style, lecture is the primary method of delivering information to the students. These Professors do not use PowerPoint slides as guideposts, however, and aside from occasional documentaries, there are no visual aids or attempts to accommodate different learning styles.

Student of Professor Garrick: I like the material, and I think she does know what she's talking about, but I feel like her teaching style is a little bit outdated. There's a lot of things she could use to integrate different sensory modalities, I guess, because it's very auditory, she just talks a lot about the information and then writes it on the board. I think she could really do a lot with video clips or visuals of the people, the economic systems we're talking about. I feel like when it's just auditory I mix all of the information together. I don't know if this was talking about this country or that country.

Professor Etienne: I guess I put a fairly high emphasis on delivering information, and I know that can be a problem, so I do try to build opportunities into the class for students to participate, because I know that they need to engage the material, and just listening to it isn't enough. And it could be that I don't do this enough. We have used, maybe about once a week, a short in-class exercise, and they seem to do it fairly seriously. We collect a written answer and they get points, one or two extra credit points. So there is that very strong emphasis on information.

Note that the delivery of information is paramount to these professors. While both professors do use occasional in-class activities, students are expected to find the relevance or engage with the information on their own. So long as these professors have given the students the information, it is up to the students to succeed or fail in the course.

As expected, this delivery-focused style causes students to disengage quickly, after an initial flurry of note-taking. Both professors do change topics regularly, but only the information being presented differs; the style and method of delivery remain the same. Unlike the professors who employ the Storytelling Lecture style, neither professor stops to ask for questions or clarifications from the students, offering at best a cursory "any questions?" before immediately continuing with the lecture.

Observations of Professor Etienne: She checks her watch and begins the class by saying, "Good morning everyone." She explains that the day will consist of some lecture

followed by the exam review. She then launches into her lecture, which consists of writing a topic on the white board, then verbally explaining that concept to the class. She paces around the stage as she speaks, with her notes and dry erase marker in hand. Her tone is fairly even when she speaks, with very few pauses, even between sentences.

The lecture takes about 10 minutes, which is significantly longer than any of the previous topics, each of which took about 1-2 minutes to complete. Note-taking seems to have tapered off, with only a quarter of students now taking notes. About 20 percent are actively disengaged, and most of the rest are passively disengaged. A couple students are actively listening but not taking notes.

Observations of Professor Garrick: Professor Garrick begins her lecture. Most students still seem passively disengaged, with perhaps 1 in 10 taking notes and another 1 in 10 actively listening but not taking notes. She lectures on the information she has written on the white board. She walks around the stage, occasionally looking to the white board or her notes, spread out on the table, which is placed center stage. Her voice projects well, and although there is not a great deal of inflection in her speaking; her tone is conversational.

Professor Garrick switches topics. A student comes in late. Both passive and active disengagement are increasing – I now see several students slouching or yawning, one student asleep. The number of students on phones or laptops has approximately doubled. She continues to lecture. She asks if there are questions about this topic, and slides the white board over. She lectures a bit more on the same topic without really waiting for questions.

Lecture is supplemented by notes written on a white board, sometimes before class begins, and sometimes supplied during the class, while the professor is speaking. Students seem to believe that the text on the white board indicates that the content is important enough to copy down, often ignoring what is being said in lecture. The professors seem to lose track of the class when writing on the white board, placing a great deal of importance on the medium.

Observations of Professor Etienne: A student asks what happens if a CEO doesn't do what the stockholders want. After answering the question, Professor Etienne adds, "That's a good question." She asks if there are, "More questions or I'm going to go on." She then continues writing up types of markets, still explaining each term verbally while walking around the stage. I hear a male student talking in the back of the room briefly.

After asking if there are any questions (there are none), she turns off the doc cam, goes to the white board, and writes up notes about monopolies. Most of the students are taking notes as she writes new information on the white board, but not while she is speaking. Her voice remains very calming, almost monotone. She does not use much inflection or

gesturing, although she does pace around the stage some, mostly between the white board and the front of the stage.

Student of Professor Garrick: I think it's really interesting. I think all the stuff that she teaches is necessary if you're really going to be a part of business in the future. But I do think that she is really boring as a teacher. I do like that she puts the notes on the board at the beginning of the class, because I just write them down and play with my iPod for the rest of the class.

Student of Professor Garrick: ...I feel like the time of her writing on the board, I start getting disengaged. "OK, this is going to take a while." So I get into my Sudoku or whatever. And then I get too into it that I don't want to pay attention to what's on the board, so I just start writing what's on the board and I'm like, "All right, I have all the information, now it's Sudoku time." What I'm used to in a teaching style is—because I do like when a professor writes notes on the board, but I like it when they talk and write at the same time, so that way you're on the same pace as the professor, as well as, they can engage you more because you have to keep on listening and integrating.

As the student above points out, this method makes learning difficult, restricting the students' ability to follow along with the Professor and integrate the disparate concepts being both written and spoken to the class. This impairs students' ability to find the relevance in the information, even if they were inclined to search for it on their own.

Both professors talk about wanting to introduce some class discussion into their lectures, with mixed results. Professor Etienne uses extra credit to incentivize students to speak in class and Professor Garrick talks vaguely about eliciting questions from the students.

Professor Garrick: I do ask questions. I'm glad that I actually get responses instead of stony dead silence. So eliciting questions. Also with the current events in the beginning, I'll talk about some things and then I stop and see if people have questions about this current event? If they don't, we'll go on to the next one. I always ask, "Is there anything else in the news that anyone wants to talk about?"

Professor Etienne: I like to have a good deal of class discussion, and this class, they're pretty good at asking questions. Of course, they get a reward for it, but I think they are a group, at least those who are still attending, who are interested to a reasonable degree. And some of them are very interested.

Galen: Is there any way you encourage students to comment even though they might be timid?

Professor Etienne: Not directly. Indirectly, I try to occasionally say, “That was a really good question. I’m glad you asked it.” That’s indirect. Or sometimes if someone’s very earnest and they’ve asked a question, I might say, “Gee, I look at it a bit differently, but I’m glad you asked that question.” I don’t call on people. I know some do. I don’t feel real comfortable with that. And then they’ve got the incentive to get extra credit points by participating.

Both professors seem to want more discussion in class, but there seems to be a disconnection between the sort of discussion the professors want to encourage in the classroom and what actually happens. Neither professor seems proficient in eliciting answers from students, nor in managing a class discussion in a manner that encourages students to contribute to the discussion.

Observations of Professor Etienne: At one point in her lecture Professor Etienne says, “I don’t necessarily expect you to agree with me…” but think about what I said. She does not ask students what they think or if they agree with her assertions. She simply moves on to the next topic.

She asks, “Can anyone tell me what rationing is?” She waits five seconds and then offers her definition when no one responds, using the Great Depression as an example of a rationing.

Student of Professor Garrick: First, with questions, she does ask questions and stir up discussion, but I feel like she doesn’t really wait long enough for a response to come before she’ll express her opinion. Like, maybe if she just waited, like, eight seconds, then someone else could get their point in before she expressed [hers].

Student of Professor Garrick: I think it’s both, because she could control it. She could ask that gentleman to stop being so forceful with his comments. He does influence the demeanor of the class. But also it really is my classmates, because the people surrounding me that I sit by, even though I’m not friends with them, they are just really like opinionated about people who make comments a lot. They view it as almost a negative thing, where from my experience in past classes, it’s a positive thing to be involved. I don’t want the disapproval of my peers, so I just wait until after class.

Student of Professor Garrick: And also I feel like sometimes when the Professor expresses her opinion so boldly, other students feel intimidated to express their own opinions if it contradicts the opinions of the teacher, just because they don’t want to be that black sheep in the class that everyone looks down upon. I feel like that probably affects the dynamic of the classroom as well.

As suggested by the student’s comment above, even when class discussions go well (in terms of generating a lot of class participation), the classroom environment can be a barrier to student

participation. I noticed both professors struggling with classroom management, both during discussion and while lecturing.

Observation of Professor Garrick: After a couple minutes Professor Garrick asks, “What did you think of the film?” Students answer with their thoughts as she expounds on some of them; the discussion lasts almost 20 minutes. I notice that twice a student interrupts a fellow student and Professor Garrick does not prohibit the interruption, but instead affirms the interruption by agreeing with the student who interrupted.

Student of Professor Garrick: So I feel like I can’t ever talk in class, because a lot of the people who sit up front look around and make fun of the people who talk in the class and then it’s like, you don’t want to say anything because you don’t want to sound stupid, and it’s hard, too, sometimes, because she knows what she’s talking about, so she thinks everybody else is going to know. So I wouldn’t want to ask a question during class and then when I ask questions after class, I get really, really long responses that aren’t always answers to my questions.

Observations of Professor Etienne: She begins a discussion with the students: “When you look around you today do you see evidence of inflation or deflation or neither?” No one answers, so she asks, “Can you make a pretty clear distinction between private and public industries today?” A few students answer yes. “And how would you describe that?” A student volunteers an answer and she affirms and expands upon the answer. “But is that the only way we can classify industries now?” Another student answers (he is very loud). Lots of students start having side conversations when the loud student starts talking. Professor Etienne affirms his answers and offers a summary of his argument and examples supporting his argument.

Another student leaves. Most students are still taking notes, especially when Professor Etienne writes on the white board. There are several students talking in the class now, which is very distracting, but she does not stop lecturing. I notice a student in the back sleeping.

Both professors make modest attempts to relate the course material to real-life scenarios, bringing in some degree of relevance for the students. Professor Garrick is intentional about this, using a discussion of current events as an opening to the class, while Professor Etienne incorporates stories and examples into her lectures. Both methods are met with mixed results. Professor Etienne’s stories are largely ignored while Professor Garrick does not actually tie the current events into the course material.

Observation of Professor Etienne: Professor Etienne stops lecturing to ask, “Comments or questions so far about a description of imperfect competition?” There are none, so she writes on the white board, outlining the important points from what she has been saying, then continues lecturing. Shortly thereafter she comes out from behind the table for the first time. I see students fidgeting, yawning, and texting. A pair of students in the back of the room is looking at a textbook, although I am not sure if it is for this class or another. A short time later those students leave.

She then tells a funny story about an out-of-touch CEO’s first encounter with a commonplace technology. Side conversation flares up briefly. She continues to write on the white board while lecturing, always using “he” when referring to a CEO. More students slip into active disengagement as the class progresses. When Professor Etienne relates stories about different CEO’s experiences being fired, engagement seems to increase, but only briefly.

Observation of Professor Garrick: Professor Garrick comments on the news event the student described, then calls on another student who offers a current event. This goes on for about ten minutes, with various students offering stories and Professor Garrick commenting on each. Her own opinions come through several times (she admits that they are her “own personal bias”) as she comments, “Oh, that’s so sad” in response to one story and stresses that profit is not an excuse for exploitation in response to another. The students also address each other directly at one point, over the salary raise for the student government president and vice-president.

During the sharing of news stories, very few students appear to be actively listening to the discussion; primarily only those who are speaking. I see several students leaning back or to the side, their heads resting on their hands, or staring off into space. A few students are actively disengaged, looking at cell phones or laptops, but most appear passively disengaged.

Student of Professor Garrick: The teacher wastes a lot of time, goes off topic a lot, and isn’t too engaging.

Student of Professor Garrick: She does go off on tangents that have nothing to do with business, and that really bugs me. I think she’s dysfunctional and unprofessional.

As evidenced by the student comments above, even discussing current events is not effective in creating a REaL experience for the students, because they are never connected back to the course content in a meaningful way. Students begin to expect this disconnection and tune out when the professors begin sharing personal stories or related anecdotes.

Professor Etienne makes no effort to bring her personality into the classroom. Professor Garrick does, but students are not receptive to her jokes and demeanor. Professor Garrick presents herself as an authority on subject and does not permit students to disagree with her (and when they do, she reasserts her authority by contradicting their opinions).

Professor Garrick: The more I learn, the more I realize I don't know. But I feel comfortable speaking in front of other people. I've loosened up. I let a lot more of my own personality show through, for both good and for bad. I try to keep my personal biases, my own political beliefs, unless students ask me point-blank, and then I'll say, "This is strictly my own personal opinion." Definitely I've loosened up. I joke around, which is just part of my personality. I make jokes and try to personalize things so that the politics seems like something that is accessible.

Student of Professor Garrick: You can definitely tell she's trying to be personable. Her trying to make those funny comments to make everyone laugh, she is trying to make a personable approach. But I don't know, I'm just really turned off by her demeanor, I guess in a way, just how she—I don't know, I don't even know how to explain it, just how she presents herself in a way, just like, "I'm the teacher up here. My opinion's right," kind of thing. Even though she does give other students the opportunity—other students the opportunity to actually speak about their opinion, I just still feel like she doesn't really take it into account to her own opinion.

When it comes to engaging students in the classroom, it seems clear that these professors either don't particularly care about engaging students, find students to be disinterested in their subject, or are well-intentioned but unable to successfully engage students in the classroom, despite their good intentions.

Researcher: The study is focused on engagement. Is there anything you do to intentionally engage students in the classroom, to make sure that they're alert, active, paying attention?

Professor Etienne: No. And they aren't. They've got cell phones out. It used to be newspapers, now it's cell phones or computers. Other than to try to ask questions to draw them in, no.

Oh, it's tremendously different from class to class. There are some classes where I swear they're just not going to pay any attention to you, and then there are other classes, and this one, we started out on a very positive note. It had pretty good attendance for a while, and then they started falling off. They were very unhappy about their second midterm, so things have gotten even worse after that. And the only thing I really know to do is to try

to engage them and to say, “I understand what you’re saying, but I see it differently, and this is why I do this.” But it didn’t work particularly well.

I don’t think students have changed a great deal. The diversions are different. I’ve been teaching a long time. On a subject where they’re really not interested, they tend to do other things, homework for another class, maybe it’s Angry Birds, who knows?

Professor Garrick: OK, I certainly don’t want to make the subject boring, and I feel pretty passionately about the subjects that I teach, so hopefully I’m not boring. But I don’t feel like it’s my job to be an entertainer, but on the other hand, I do want to figure out a way where the students feel like it’s relevant. The subject matter is interesting to me, so I try to figure out a way to make it interesting to them. Obviously you’re not going to be able to engage everyone.

Like I said, things have changed over the last 15 years, and I think I’ve had to change too. I think that’s why I feel like I have had to make it more personalized, because you are part entertainer, to a certain degree. You’re up there, and if you want to hold their attention for 50 minutes or even tougher, the hour and 15 minutes, which is what I teach, you need to figure out a way to engage them.

Student of Professor Garrick: I think it’s really hard not to play Angry Birds on my cell phone in this class. She’s just incredibly boring. She presents a very dry style of teaching.

As with the professors who use more engaging styles, students pick up on the professors’ attitudes toward the subject and the students, and respond in kind. When the Professor does not care about engaging students and sees them as unengaged and un-engageable, this becomes a self-fulfilling prophecy. The students tune out and disengage, perceiving the Professor as disinterested and responding in kind.

Overall, students seem to find this teaching style ineffective at holding their attention, helping them learn the material, and connecting the material to real-world relevance. The learning that does take place is more of a struggle than a joy.

Student of Professor Garrick: In all honestly, I really don’t like her teaching style at all. I just feel she does waste a lot of time writing all the notes on the board. It takes, like, 15 or 20 minutes. And we actually discuss the topic for another additional 20 minutes, and she likes to go off on tangents and whatnot. In all honesty, I felt like at the beginning of the semester, when she started the class, she made a lot of inappropriate comments which I emailed her about and was like, “You shouldn’t—” Her response was, “I use these comments to try to stir up discussion in class.” But there’s a difference between having

these comments to stir up discussion and being inappropriate and rude to the people in the classroom. That kind of put me off to this whole class, not really wanting to be so engaged as I would like to.

Student of Professor Garrick: It is possible to take a lot of info from this class, but it is a lot more work than normal.

This final comment is illustrative of one of the primary differences between REaL teaching and traditional teaching. When students are engaged in meaningful exploration of new concepts while being shown the relevance of what they are learning, learning is easy; participating in class is a joy. When professors teach in the traditional Sage on the Stage style students *can* extract the meaning and relevance of the material, but doing so is a chore and many would rather tune out than suffer through the process.

Students seem to disengage when the professor is merely lecturing on the stage, reengaging only enough to write down the notes scrawled on the white board at the front of the classroom. Even stories and discussion have minimal effect on student engagement, at times even turning students off and causing them to become actively disengaged, when they begin to expect these stories to be unrelated to the course. These professors seem to care most about delivering the course content in that way that they perceive as most efficient, and in doing so they neglect the relevance of the very content they are delivering, causing students to disengage.

Self-Directed Learning

The self-directed learning style is the least engaging teaching style I observed. Employed by Professor Hall (whose mean REaL score was also the lowest of all the professors studied at 2.62), this teaching style relies on students being self-motivated learners. The professor provides the students with the information they need to complete the homework and exams, and little else. The professor wants students to be able to learn the material without him. There is very little interaction between the Professor and the students. The Professor does not reveal any of his

personal life in the classroom, nor does he connect the material to the world outside the classroom.

Professor Hall strongly believes in helping students to become what he terms self-learners. He argues that students should bring their own motivation to learn into the classroom, and that engagement is primarily the responsibility of the student.

Professor Hall: The teacher provides a discipline, a structure, a framework, maybe parameters of what the range of topics are for the learning, and then some motivation, some interest, some excitement about the topic, about the course.

At some point, the information that I'm bringing in lecture is other places. It's in the textbook. You can look it up on the Internet. You can get your little two-page guide to the fundamentals of physics. So dumping information, that doesn't seem like teaching to me. There's no engagement there. Although it seems that's what students like at times. But I think really what I try to do, want to do, is get beyond that and get them to become a self-learner.

It's another idea, that if you're willing to be engaged, even a mediocre teacher you're going to find engaging, because you're motivated. It doesn't mean you shouldn't work hard to try to engage students, to try to draw them in. I hope this isn't a bad teacher attitude, but some students are incorrigible [laughs] on engagement. They don't want to be here. Somebody's making them take this course. I resort to, "You want to get your money's worth, though." [Laughs] Something terrible like that.

Again, I'm going to turn it around. [Laughs] The student has to be engageable. [Laughs] The student has to be motivated to be there. A lot of that is intrinsic, internal. Why are you there? Why are you in college? Why are you in this program of study? Why is this course important enough to be in your course of study?

You can't just say, "I know what's good for you." You have to figure out what's good for yourself at some point and then do that yourself. Do what makes it effective for you.

Despite Professor Hall's intentions – that students become self-motivated learners – students don't seem to find this style motivating.

Student of Professor Hall: Overall it is pretty easy. I like that we have many ways to learn the material – lecture, [the online homework program], the textbook. But at the same time, it's not very motivating. My textbook is still in the shrink wrap.

Professor Hall suggests that it is his role to help students learn without him, that he should ultimately become extraneous to their learning.

Professor Hall: But there's also—part of engagement is, I have to figure out what works for me and how this—why I need this, why I love this. You can't always just say, "Do what I say, do what I say," because that doesn't create learner-motivated, learner-based learning. You become—I like to say, another jingle, one of my jobs as a teacher is to teach them how to learn without me. [Laughs]

Some students do become "self-learners," resulting in a complete disengagement from what is happening in the classroom, even as they are engaged with the material online and in the textbook.

Student of Professor Hall: For me, it's just been a physics class. Because at the beginning he was talking about how, like, you don't have to come to lecture because you can do [the online homework program] and the textbook and stuff, and so it's like, he gave us so many different options. And what I've ended up doing is, like, I go to the lectures all the time but I just sit on my computer and do [the online homework program]. So, like, everything that I learned in physics is essentially through [the online homework program]. At the beginning I did pay attention, I took really good notes and stuff, but, like, he posted his notes online, too, so it's really easy to get the information.

Student of Professor Hall: At least for me, most of my learning is coming from [the online homework program], because how it's structured is, you have to know how to do the problem to continue on to the next problem. And that's how it's really kind of clicked for me, even though it takes me so long. As far as the lectures, I pick up equations here and there and various little things, but I learn mostly from [the online homework program], not from the lecture, for sure.

Ultimately, some students may simply give up on the class altogether, taking the self-learner role to the extreme. Professor Hall suggests to his students that his lectures are unnecessary for the students to learn the material, so many simply abandon the course entirely.

Professor Hall: I have a very lax attendance policy, as you can see. I have a lot more students on my test days that on my non-test days. [Laughs] And part of that is, I record the lectures, make them available, make the notes available. If they can get the material without coming to class, I usually say, more power to you. If you can get the material without reading the textbook, the textbook and I say more or less the same thing. And the particular textbook we're using is not a high-level book. There's not a lot more in there than what my summaries are.

Student of Professor Hall: I don't know how I feel about a teacher saying [you don't need to come to class], though. I feel like if a teacher were to tell me that on the first day of class, I'd feel—I don't know, there's just something off about it. It just makes me feel like, "This lecture is a waste of my time." Whereas if you actually go, even if you're doing everything else, it will help out a little bit. And I feel like he's discouraging people to come to class almost when on the first day of class he tells you, "You don't need to come if you do everything else." Most people will say, "I'm not going to go to the lecture," and also not do anything else. That's what happens.

Professor Hall does use different teaching methods in class, including working through problems on the doc cam, lecturing from PowerPoint, and even the occasional in-class demonstration or video. Despite his outward adherence to the idea of accommodating multiple learning styles, however, he insists that such accommodation may actually be doing the students more harm than good, in terms of preparing them to be self-learners or successful scholars.

Professor Hall: I think there is a community expectation in the sciences. It has its own culture. You have to be there, you have to be there regardless of your group or your background or your culture. You have to figure out how to succeed in that world. I don't want to say that in a mean-spirited, you've got to figure it out or you're going to drown kind of way, but part of teaching is getting people to understand that community, that culture that the physical sciences are and how to write like a physical scientist, how to think like a physical scientist, how to read graphs like a physical scientist. That may not be your best learning style, but if you're going to succeed in that world, you need to figure that kind of stuff out. And there's some bridging that goes on there. Eventually you've got to get people to be able to pass their oral exams for their Ph.D. [laughs] If they say, "Well, it's just not my learning style," [laughs] I don't think the committee's going to go for that.

His various teaching techniques and technologies, such as lecturing from PowerPoint and then working through equations on the doc cam, seem to do little to (re)engage students. Students are either completely disengaged by the barrage of information or frustrated with their inability to record all of the information they are receiving in rapid succession.

Observation of Professor Hall: Professor Hall asks, "At what velocity is the ball traveling at 28 meters?" The question seems rhetorical; he talks through how to arrive at the answer. Afterward he asks, "Any questions about this example?" He waits 5-10 seconds before saying "OK" and moving back to the PowerPoint presentation, from the doc cam. The slide shows a figure of tables below illustrations. He explains to the class what the slide is showing, coming out from behind the podium to look at the slide for the

first time since he began using the doc cam, and points up at the screen as he explains. His speaking style when explaining is somewhat animated; he is using inflection and some gesturing. There does not seem to be any noticeable effect on students' (dis)engagement. No one takes notes on his explanation.

Student of Professor Hall: For me, what I don't like is how often he switches between the document cam and the notes, because for me, I like to look at the notes and listen to what he's saying, write down the equations and stuff, but then it's like, it always is just like, as soon as I, like, have only, like, a couple more words to type, he switches to the other thing, and I'm like, "No!" And by the time he finishes the problem, I'm not focused on that anymore and I forgot what I was doing.

Despite these various techniques, lecture from PowerPoint makes up the bulk of each class session. Professor Hall reads from the slides, but adds a great deal of detail, often illustrating complex equations on the doc cam in real time. While there is some variety in what is presented, the material is presented in a vacuum, rarely in relation to its application in the wider world.

Student of Professor Hall: He sticks really closely to his PowerPoints. I'd say that that's his teaching style. He has these really detailed notes. He goes over them in really, really a lot of detail. He does the thing where he'll give us the notes and then he switches over to the document cam and does a problem and works it out.

Student of Professor Hall: Yeah, I think that's really helpful, him going through the problems like that. But I don't know, his PowerPoints, I just have a problem with how teachers do PowerPoints in general, like reading off of them, especially when you post them online. I just think it's an ineffective use of time.

The self-directed learning style makes extensive use of technology in the classroom, primarily PowerPoint and the doc cam, with the occasional video. Professor Hall expresses an aversion to i>Clickers, however, in keeping with his philosophy that class attendance and lecture should be supplementary to the students' own self learning.

Professor Hall: Maybe drawing in different media elements, the PowerPoint, the doc cam. Sometimes I do videos, since I can't do demos as much as I'd like, I can find a demo on YouTube or find something that's done that illustrates the point and show that clip, draw that in. I don't do clickers. I like the idea of clickers, but I don't do them because I don't have a very strict attendance policy. I think those two are kind of at odds with each other. If you're going to do clickers, you need to be there to have that

engagement, that participation. You really don't have a lax attendance policy. And even if you don't count them, that clicker-style engagement is a part of that. The student is listening to the podcast, and choosing not to be there doesn't—and maybe I'm misjudging that, I could do clickers and still let people not come if they find it not to be very effective.

Professor Hall also attempts to engage the students with videos and flashy demonstrations, but even these seem to fall flat with the students when he fails to connect these events with the content of the course.

Student of Professor Hall: Some of the videos are really—like, he showed us this ____, which was just, like, a total joke. It had nothing to do with physics. It has some relation to it, but it didn't make any sense. And also he showed us a bunch of explosions, which, I mean, it's cool. It kind of puts physics in context, which makes it more interesting, but as far as helping us on tests, it wouldn't help me at all.

Student of Professor Hall: I feel like his videos that he's showed are more like an entertaining thing that are useful in getting the class to, like, pay attention in the beginning and maybe make you curious about what he's teaching, but they're not helpful at all for any material in the class.

Whereas the “entertainment” of the Interactive Style is actually interactive engagement with the students, the attempts that Professor Hall makes at entertaining the students are simply diversions, distracting students from learning the material and in no way helping them to connect the content to their individual or shared experiences.

While there is some attempt on the part of Professor Hall to engage his students in the classroom, the majority of this teaching style is characterized by a lack of interaction between the Professor and the students. Professor Hall acknowledges this, citing the size of the class as a primary barrier to interaction.

Professor Hall: Because I think that doing some things to engage—I stop every once in a while and say, “Does that make sense? Do you have any questions?” Rarely do I get questions out of a big crowd, even if I push for them. [Laughs] So I tend not to push for them. It just doesn't seem like they're forthcoming. A class of 40 could be a lot different in that regard. You get to 70 and the difference between 70 and 200 doesn't feel much different.

Students seem to pick up on this expectation and refrain from interacting, even when prompted by the professor. I observed a dozen examples of this happening, but provide the example below as an illustrative case.

Observation of Professor Hall: Professor Hall asks, “How do we know what the total pressure is? In this experiment?” He seems to want an answer, as he waits 5-10 seconds for a response from the class. A student hazards a guess and Professor Hall responds, “Ok, but we don’t know all the pressures. How do we measure the pressure?” Another student responds and Professor Hall quibbles with the student without directly saying that he is wrong. He follows up by asking, “How do we measure pressure in general?” and then answers himself when no students reply.

Student of Professor Hall: About the engagement in class, he does ask the class, “What’s the answer to this question?” But no one responds, and it’s like, I know the answer, and I’m sure a bunch of other people know the answer, but there’s some weird disconnect. I’m sure that that’s different if it’s in a smaller setting, because people are actually willing to speak up. He tries us, but we just don’t engage.

As with the Sage on the Stage, the professor’s lack of engagement with the students sets up a lack of engagement by the students. The students can’t quite explain what is happening, but they understand that there is no benefit to engaging with the professor. Ultimately, it seems as though Professor Hall is largely doing his own thing on the stage, unaware of what is happening in the classroom.

Observation of Professor Hall: He is still doing equations on the doc cam for the class. He sort of talks himself through what he is doing on the doc cam. Occasionally he explains the significance of what he is doing on the screen to the class. Two students are talking quietly with each other while typing on their phones; four students are reading.

Students are also discouraged from asking questions of the professor, either because they are simply not acknowledged or, when they are acknowledged, because they meet with resistance from the professor.

Observation of Professor Hall: He places a sheet of notebook paper on the doc cam, to show an example of something related to identifying atomic structures. He asks, “What’s the last electron going to be?” No one answers. He answers his own question, and then offers a further explanation. It seems as though he is working out the problems himself at the front of the class.

Five minutes later a student in the front of the room has her hand half-raised. He is totally engrossed in the equation he is performing on the doc cam, so he does not see her hand raised... Two minutes later he finishes his examples but still does not see the woman in the front row with her hand raised.

Student of Professor Hall: Well, I don't feel like it's engaging at all. The times I have felt like I've wanted to ask questions, he'll either notice my hand's up and just kind of like ignore it because he's trying to rush through material, or if I do ask a question and he answers it, it's kind of like, I don't know, he says it in a condescending way, almost, where it's just like kind of a silly question, and he's really quick about it.

The absence of any sort of connection between the students and the professor manifested most visibly toward the end of class. Having no relationship with the professor or investment in the class, students would often stand up and leave early, while the professor was still lecturing. This happened in all three of the class sessions I observed, including the class observation transcribed below.

Observation of Professor Hall: Students are beginning to shift around, getting ready to go. There is no indication that Professor Hall will be finished soon; in fact, he is still explaining the current slide. Thirty seconds later students actually start standing up and leaving *en masse* while he is still explaining the problems on the slide. Half a minute later he finally finishes and officially ends the class. It seems as if the mass exodus has forced him to end class early, on the student's terms. The students file out very quickly, very few of them lingering around to converse.

It seems as though Professor Hall is trying to be a good teacher, is trying to help his students learn, but he somehow falls short. The students seem to sense this and rather than resenting him, have a sense of sympathy toward him.

Student of Professor Hall: I kind of felt bad for him the other day, where all the technology was going wrong, he was doing the wrong thing. You felt bad for him. He isn't one of those teachers where you're just like—[student is interrupted]

Student of Professor Hall: And when his voice kept cracking, that was cute. Anyways. [Laughs] That's beside the point.

Student of Professor Hall: And I feel like that's discouraging for him, like, he tries. Even with his voice cracking, you can tell he gets embarrassed really easily.

The Self-Directed Learning style encourages students to learn on their own, at the expense of their engagement in class. Even students who choose to attend class are disengaged, finding no reason to care about the material that is being presented to them. The few attempts at making the material relevant come off as distractions rather than connections and the professor is not able to command the respect of the students in the classroom. The only emotion the students feel in class is sympathy for the professor, which does little to motivate them to engage with him.

CONCLUSION

Different teaching styles are more or less effective at engaging students in the classroom. When examining the commonalities between the more and less engaging teaching styles, several patterns emerge. The more engaged the professor is with the course and the students, the more likely the students are to respond in kind. The more personable the professor is with her or his students, the more the students want to engage with the professor. The more relevant the Professor can make the material to the students the more they will engage with the content, finding it personally valuable to them. While professors seeking to engage their students may not be capable of completely changing their teaching style, modeling engagement, presenting an authentic personality in the classroom, and making the material relevant to the students are all positive steps toward increasing student engagement.

Perhaps the most insightful finding in this chapter is how Professor Banner is able to engage his students so thoroughly for the entire class and the whole semester. By modeling for students what he expects of them – coming to class prepared, being engaged in the discussion, and committing to the process – Professor Banner inspires a sort of loyalty in students. They want to come to class and they want to be prepared; they feel responsible to him. Professor Banner reinforces this loyalty by sharing parts of his personal life with students, making him

relatable and accessible to them. Having established this rapport and trust with students, Professor Banner is able to lead them through a discovery of the course content which asks the students to do much of the work. Professor Banner gives them insights and clarifications but asks students to reach the important conclusions on their own, with his guidance. And perhaps most importantly, he asks them to find the relevance in what they are learning, how it can be applied to their own lives to make them better people. Finally, at the end of each class he makes sure that students understand the relevance of what they have been learning if they have not yet realized it for themselves. Students always leave class understanding both the content itself and the relevance of the content to their society, their lives, and the core of their self-identity.

While Professor Banner was the most engaging professor I studied, many of the behaviors he uses in class were also used by the other engaging professors. All of the five engaging professors demonstrated a profound respect for their students, including a willingness to share their personalities and some of their personal lives with students. All of the engaging professors asked questions of students directly, and all of them shared stories with students. Finally, all of the engaging professors made the material emotionally impactful for students and all of them connected the material to students' lived experiences, emphasizing its relevance to their lives.

CHAPTER 6: CONCLUSION

In Chapter 3, I outlined the two major research questions guiding this study: 1) What teacher behaviors work best to engage students in the classroom, and 2) How does student engagement affect student learning outcomes? In Chapters 4 and 5, I attempted to answer these questions using statistical analysis of survey responses and qualitative analysis of field observations, focus groups, and personal interviews. In this chapter, I will review my results as they relate to my research questions and highlight some of the interesting findings not directly tied to these questions.

WHAT IS ENGAGEMENT?

This dissertation supports two major findings regarding engagement. First, engagement is an interactive process. Second, engagement is a *mental* process. Engagement does not necessarily entail active participation in the class, in the traditional sense of a student contributing to class discussions or actively engaging in class activities. The poor fit of survey questions measuring active participation in class with other measures of engagement suggests that verbal participation in the class is not a defining element of engagement; rather, the survey items that factor together seem to measure engagement as a mental process. A student can be actively, *mentally* engaged with the material in the class without ever contributing to a class discussion, completing an in-class activity, or participating in a group project.

While not conclusive, this finding has profound implications for professors who rely on class discussions, directed dialogue, or other methods of verbally engaging students in the classroom. Many teachers may instinctively encourage as many students as possible to participate in a class discussion or engage in a directed dialogue, but this instinct may be counterproductive. Providing space for any student who *wants* to participate in class is

important, however, asking all students to participate does not increase engagement. Allowing students to decline participation is a perfectly acceptable teaching strategy and may even be pedagogically desirable if doing so allows students to continue their mental engagement unimpeded by requests for active participation. This finding also suggests that a teaching style that is predominantly lecture-based (e.g., Professor Allan) can be just as effective at engaging students as one that incorporates a great deal of active learning strategies (e.g., Professor Clark).

Although it is an internal process, engagement is interactive. When professors establish a pattern of presenting the students with relevant, engaging lectures and anecdotes in the classroom, students begin to look for the relevance in classroom activities, and trust the professor. Students are engaged because they expect the discussion or lecture to be relevant and engaging, creating a self-fulfilling prophecy, as with Professor Banner's student who observes, "And it's really nice, because he's telling a story and you know that he's going to tie it in and you can almost see that he's tying it in." Likewise, professors who do not attempt to engage students or provide relevant anecdotes run the risk of students becoming disengaged in class, based on the *expectation* that the class will not be relevant to their lives, as established by the professor's prior conduct. For example, Professor Etienne's students begin to tune out when she relates anecdotes, even though they are sometimes related to the subject, because she also uses anecdotes that are not relevant to the students' lives.

WHAT TEACHER BEHAVIORS BEST ENGAGE STUDENTS?

The best teachers are engaging not because of the specific techniques they use in the classroom (e.g., in-class writing, leading discussion, lecture), but because of *how* they teach each class. Engaging professors incorporate emotion, real-world relevance, illustrative examples, personal anecdotes, and a search for meaning into their classes, whether through lecture, in-class

activities, discussion, or another teaching strategy. It is not enough simply to ‘go through the motions’ of walking around the classroom, asking i>Clicker questions, and assigning writing exercises; these activities must be used intentionally to keep students engaged. There is no “silver bullet” that can be used to slay the hydra of student (dis)engagement in the classroom. This is good news for professors, who can (and should) retain the style of teaching with which they are most comfortable, in order to maintain an authentic personality in the classroom. The results of this study suggest some specific actions that teachers can take to help improve student engagement in the classroom, regardless of teaching style.

Making the material relevant to students’ lives (Relevance), bringing an authentic, caring self into the classroom (Personable), and helping students make emotional connections with the material (Emotion) show up as the strongest predictors of student engagement in the statistical analysis and in my observations and interviews with students. Creswell (2008) suggests that although qualitative researchers usually are reluctant to generalize their results to other cases, multiple cases do allow for the researchers to make modest claims of generalizable results when they “...identify findings that are common to all cases using cross-case analysis” (p. 490). In my research, I found that these three variables tended to predict engagement across every professor I studied. Importantly, these variables help facilitate the *process* of engagement, as discussed above. They do not create, in themselves, engagement as a *product*.

Incorporating real-world and cultural relevance into a class session is the single greatest predictor of engagement I observed in the classroom and in the results of the quantitative analysis, and it is one-third of the REaL model of engagement discussed in Chapter 4. Incorporating real-world relevance into a class session does not require a specific behavior or teaching method; the relevance of course material can be discussed in a class dialogue, included

in the framing of an in-class writing assignment, incorporated into a lecture, or demonstrated with an appropriate film clip. Professor Frost, for example, engages students in discussions about games from their childhood, connecting the material to something with which they are intimately familiar (and to which they have emotional attachments):

Observation of Professor Frost: At 10:13 AM he switches the topic to recess, although the slide remains the same. He asks, “What games did you play during recess?” of the female students, following their slew of answers with, “How many of you who identify as female played house?” He tells a joke about a game where boys steal a kiss and girls kick them in the nuts and the students laugh hysterically. He then asks, “What do the boys play?” After a few answers he explains the game “king of the hill” humorously and the students laugh. He then does the same with Smear the Queer, which brings on more chuckles.

Relating stories about how the material impacts real people can also help to reinforce the relevance of the material for students. Professor Allan uses many such stories when lecturing about human diseases, and the students resonate with the trials and tribulations of others, connecting the course material to the impact of these diseases on the lives of their fellow humans.

Observation of Professor Allan: Finally, Professor Allan relates the story of “Bubble Boy” – a boy born without exposure to bacteria who was forced to live in a plastic bubble – and it is clear by their body language that the students are engaged. They are leaning forward, their eyes focused on Professor Allan, with no side conversations I can pick up.

The most engaging professor I observed, Professor Banner, uses relatively few different teaching methods, relying primarily on class dialogue and writing assignments, yet this professor still has the highest mean REaL score among the professors observed. I believe this is because Professor Banner does something that no other teacher in the study does (or at least not as obviously as Professor Banner): Professor Banner makes the material relevant to the students’ core self-identities. This core self-identity encompasses a wide range of attributes not covered by simple relevance to career or mundane life. Professor Banner gives students lessons that speak to

personal morality, integrity, and spirituality. This depth of relevance is especially important to students' engagement in the class. The deeper the professor can make the relevance of the information, the more engaged students will be. When talking about the relevance of the course, students cite more than just mundane applications of the material.

Student of Professor Banner: I think there are concepts we can take home and discuss. They're not necessarily something where you're just in class and then you write it down and then take a test and it's gone. They're sort of day-to-day applications, and you have to think about, "Am I being moral? Am I representing what I want to represent? Am I representing our youth, our culture in the way it should be represented?" Things you're constantly thinking of instead of just in and out.

Professor Banner makes students think about the relevance of the course readings and topics to their daily lives, not only in terms of being a knowledgeable citizen, but in terms of being a decent human being. The lesson for teachers wanting to incorporate relevance into their teaching is to look beyond the simple connection between the material and current events and reach into the heart of what matters to students – how the course material can inform their own lives and provide them with the tools to become a better person or create a better world.

Connected to making the course material relevant to students is making the material emotionally impactful for students. Whether by relating personal anecdotes in which the professor is embarrassed (resulting in laughter) or showing a touching film clip in which the effects of oppression are made manifest (resulting in sadness or even anger), generating an emotional response from students is sure to increase engagement in the classroom. As discussed in Chapter 1, emotion also aids in information recall, contributing to increased learning (LaBar and Cabeza 2006). While generating an emotional response from students may appear to be anathema to disciplines such as math or chemistry, Professor Allan (who taught a course in immunology and pathology) was often able to bring emotional examples into the classroom.

Likewise, a chemistry professor might give an example about the effects of chemical warfare to emotionally engage her students in the subject.

Presenting an authentic self in the classroom and including an authentic ethic of caring about students and being passionate about teaching as part of that persona is the third component of engaging students in the classroom. Students want to learn from engaged, authentic professors who are committed to being present in the classroom. For professors who are committed to and passionate about teaching, this is relatively easy to accomplish. As suggested above, such professors not only can, but *should* employ the teaching methods and style with which they are most comfortable and successful, in order to present their most authentic self. A professor who is reserved and thoughtful would have difficulty adopting the Interactive Lecture style of Professors C or F, but may have just as much success engaging students with a simple PowerPoint lecture sprinkled with anecdotes (like Professor Allan), so long as she presents her authentic self in the classroom (and incorporates emotion and relevance into her lectures).

To illustrate this idea that teaching methods are less important than pedagogical intent, it is useful to briefly compare the teaching styles of Professor Banner (the most engaging professor I studied) and Professor Hall (the least engaging professor I studied). Both professors lecture for about half the class period, interspersing lecture with other activities. It is not because Professor Hall uses PowerPoint to present his lectures that he is less engaging (Professors Allan, Clark and Frost all use PowerPoint as well and are very engaging). It is not because Professor Banner uses the method of dialoguing with the class that he is more engaging (Professor Etienne and Garrick both dialogue with students and they are not very engaging). It is the way in which the material is presented and discussed that engages students or not – Professor Banner asks students to connect the readings to life lesson, while Professors Etienne and Garrick simply engage in a

question-and-answer about the material. Even the subject being taught appears to be irrelevant to students' level of engagement, as engaging professors come from disciplines as varied as communications and immunology.

Professor Banner's teaching pedagogy also illustrates another conclusion of this research, that the most engaging teaching styles employ a toolkit of strategies to engage students. When Professor Banner presents the course material in a way that makes students critically reflect on their own lives, he doesn't just make the material relevant to students, he also creates an emotional connection with the material and relates tales of his own vulnerability and humanity in the classroom, allowing students to connect with his experiences. When used in combination, these strategies create a synergy between the material, the professor, and the students that keeps the students interested in what is happening in the classroom.

HOW DOES STUDENT ENGAGEMENT AFFECT LEARNING?

While I had originally hypothesized that student engagement directly affected student learning *outcomes*, what I found instead was that the process of learning, combined with an understanding of the relevance of that new material to students' lives, actually creates the *process* of engagement. This supports the interactionist theory of learning in which students create meaning and learning in collaboration with the teacher. While the interactionist learning theories focus on the relationship between a person and the person's psychological environment (Bigge 1999), my results suggest that it is primarily the interaction between learning and relevance to the student that creates engagement. While the professor's persona and class interaction can help engage students, much of the process of engagement happens when students connect the relevance of the material to their own lives, internally.

Student of Professor Banner: Like, we were talking about sex the other day in a movie. He talks about things people don't want to say but we all know are there. It gets your mind going and makes you think about everything that you do.

While not conclusive, my results also suggest that creating a REaL experience may help facilitate transformational learning. As transformational learning theory seeks to help students to become more self-reflective (Mezirow 2000), challenging students to connect the relevance of course material to their own lives is likely to accomplish this goal. The factoring of several survey questions measuring transformative learning goals with relevance and engagement also suggest that this is what is happening in the classroom when students' connect relevance and learning. As the same student of Professor Banner concludes:

Student of Professor Banner: I have a different outlook than I did at the beginning of the class just on my life in general and the way that everyone interacts with everyone.

THE REAL FACTOR

REaL is more than a catchy acronym – it accurately describes the experience of engaged students. Professor Clark describes what she does in the classroom as entertainment, but this could not be further from the truth. The flashy demonstrations and funny film clips shown by Professor Hall are *entertaining*; they provide students a pleasant diversion from the monotony of what is usually happening in the classroom. Professor Clark's film which shows how OCD affects a real woman, along with her i>Clicker question asking students how they would react if a stranger who approached them asked to have sex are *engaging*; they connect the material that the students are learning in class to the human experience and make it relevant to the students' lives.

Engagement, unlike entertainment, is not always agreeable but it is always *real*; students in Professor Banner's course were very uncomfortable when he used the word "fag" in class, but they were engaged, sitting on the edge of their seats waiting to see where Professor Banner

would take the discussion next. Homophobia is a *real* issue that all students must deal with – and some students must directly confront – on a daily basis. Students do not want to be entertained; they want to be engaged. They are not interested in irrelevant stories about professors’ lives or discussions of current events that do not connect to the course material. They are interested in making a *real* connection between what they are learning in class and what they are experiencing outside the classroom.

When what students are learning in class is REaL – when it is made concrete and not simply theoretical – they are willing to engage with the Professor and with the material. Students want to know more about the people, theories, and ideas about which they are learning because they are connected to them, and because knowing more about the course material improves their own lives. The engagement that students experience, when learning and relevance are combined, comes from the knowledge that mastery of the material they are learning has *real* bearing on the outcome not just of their success in the course, but of their success in life.

When the professor is *real* in class – bringing her or his life into the classroom in a way that connects with the students and the material – it sets up the REaL experience for the students. Engagement is a virtuous cycle in which students who are engaged in class, because the material is relevant and the learning is meaningful, look forward to going to class, work harder to understand the relevance of the material, and want to learn; these behaviors all contribute to students’ continued engagement in the class.

Likewise, professors who are clearly disengaged with the class encourage the same disengagement in students. Students expect what they learn from these professors to be boring and irrelevant and so resist being engaged even when the Professor attempts to create a REaL experience. I hypothesize that students’ disengagement feeds professors’ disengagement;

professors see their students as disengaged and therefore unengageable and thus resign themselves to class sessions in which they are as bored and disengaged as their students.

If this hypothesis is true, then convincing less engaging professors to adopt the REaL model would not only improve the quality of students' learning and engagement, it would improve the quality of professors' lives. Instead of simply performing the rote task of teaching that has become so stifling to her or his creative spirit, the professor who adopts the REaL model from the beginning of class will necessarily foster engagement in her or his students, engagement that will break the cycle of disengaging teaching based on disengaged students.

ENGAGEMENT AND DISENGAGEMENT

Engagement and disengagement are not simply opposites, as posited by authors such as Marks (2000). Students who are in the process of being engaged display very different outward signs than students who are in the process of disengaging. Furthermore, while some students disengage passively, others disengage actively. Students who passively disengage begin by slouching or staring off into space, before finally simply zoning out completely or even falling asleep. Conversely, students who are actively disengaged are not even attempting to pay attention; rather they are texting, surfing the Internet, reading a newspaper or novel, or having a personal conversation with a friend.

Likewise, students who engage in class may be actively engaged – the image of the student with her hand raised, ready with an answer – or passively engaged. Actively engaged students are taking notes, asking or answering questions, or even having private conversations about the course with other students. Passively engaged students, in contrast, are paying attention, perhaps doodling, and visually tracking the professor or fellow students who are talking.

Table 6.1: Examples of Active and Passive Engagement and Disengagement

	Active	Passive
Engagement	Taking notes Asking or answering a question Having a conversation about class	Paying attention Doodling Visually following the teacher around the classroom
Disengagement	Texting Reading (not for class) Having a private conversation	Slouching Staring into space Sleeping

Actively disengaged students are usually disengaged from the beginning of class (although some do begin texting or reading throughout the class period). Active disengagement is usually disruptive of class and can be addressed using traditional classroom management techniques. Professors should also be aware, however, of passive student disengagement, and watch for the signs of where students are in the process of becoming passively disengaged.

Engaging professors can re-engage students who are in the process of becoming passively engaged by changing topics, reintroducing relevance, inserting an emotional anecdote, or switching to a video or discussion from lecture:

Observation of Professor D: The lecture is more like a story the way he tells it, describes the smells of the front, which will not be on the exam, but provide very interesting, engaging detail. One student is still sleeping, 3-4 more are still texting, but a couple have re-engaged somewhat. I notice one student doodling.

Observation of Professor F: A new slide shows two pictures of a dog and one of a cat. Professor F asks, “Which one of these animals is going to get you a beer? A, B, or C?” he immediately starts talking about the Super Bowl commercial with the dog who fetches beer (Wego), then makes a joke about a roommate being a fantastic animal who fetches beer for you. This gets a good laugh. He ties the dog into the sociological theory being presented. The students are now re-engaging somewhat. Some are smiling and there are fewer with their heads in their hands.

Less engaging professors are unable or unwilling to address this passive engagement, allowing it to spiral into a class-wide epidemic.

Observation of Professor H: He sums up what they should be able to do and moves to a new slide, showing a table at 11:18 AM. While he briefly explains the chart I notice another student sleeping, and several others students appear to be fading. Professor H

asks a question related to the slide with no response. He answers his own question and then clarifies the answer he wants to see on the test. I now see at least 6 students sleeping and another 6 on the edge.

By 11:25 AM no one is taking notes anymore – once he stops writing, they stop taking notes, even though he is still explaining things on the doc cam. When he starts writing again about 1/10 students takes notes. As the class wears on I begin to notice more and more students becoming disengaged, culminating in 15 students sleeping and several others texting. The majority of the rest are simply zoning out, staring off into space or looking at the screen with a sort of malaise.

Again, the specific teaching style is less important to re-engaging students, than the observation that students are becoming disengaged. Once the professor recognizes that the process of passive disengagement has begun, she can work to curb it.

RECOMMENDATIONS FOR FUTURE RESEARCH AND PRACTICE

In this section, I will summarize a few recommendations for future research and conclude with recommendations for practice. First, the very definition of engagement needs to be reexamined in future studies. Engagement is a difficult idea to define and no agreement yet exists on its conceptualization and operationalization (Steele and Fullagar 2009). A study focused exclusively on properly conceptualizing student engagement in the classroom would help fill this gap in the literature. As the findings of this research suggest, actual student engagement may look very different than the image of the eager student emphatically raising her hand to speak; the quiet, reserved student in the corner may be just as engaged as her more outspoken classmate. More research is needed to help properly understand the spectrum of engagement. Second, future studies on engagement should focus exclusively on students' own engagement; questions addressing the perceived engagement of other students in the class do not seem to capture engagement very well, nor can they be used to correlate a particular student's engagement in a course with that student's other survey responses. Third, while I hypothesize that some students may be capable of discovering the relevance of a course for themselves, this hypothesis can and

should be empirically tested. If found to be significant, this ability should be included as a control variable in future studies on engagement. Finally, more research is needed to fully understand the differences in engagement among dominant and subordinated student groups. A study in which students from different demographic backgrounds are tracked through several classes would help to develop an understanding of how different teaching styles and behaviors affect those same students' engagement in different classes.

To conclude, I will propose a few practical recommendations for implementing the findings of this study in the college or university classroom. First, professors should continue to teach using the style and methods best suited to their talents and personality. Far more important than any method of presenting information to the students is the manner in which the material is connected to the students' lives and emotions. Teachers should consider how best to present the material in a way that makes connections to students' lives, their sense of self, and their core values. The depth of the relevance of the material to students' is more important than how the material is presented. Because presenting an authentic (albeit idealized and professional) self in the classroom is so important to engagement, adopting a teaching style that does not reflect the professor's genuine personality would not increase engagement.

Second, although class discussion can be an effective means of engaging students, class discussions need not include every student in the class. As I have explained above, students do not need to actively participate in class activities to remain engaged with what is happening in the classroom. If the class discussion focuses on how the material is relevant to students' lives, or helps them to make an emotional connection with the material, even those students actively listening to the discussion will remain engaged.

Finally, any professor wanting to engage students in the classroom must be truly committed to student success and believe that he or she plays a role in that success. Students are most certainly responsible, at least in part, for their own success – they must put in the time, effort, and energy to do well in a course – but teachers also play a role in facilitating students’ desire to succeed. Professors can make a subject interesting, motivating students to learn the material. They can make emotional connections for students, reinforcing their attention and recall. Professors can even give students the motivation to do well by modeling what an engaged, passionate scholar looks like in the classroom. Truly caring about student success and demonstrating that passionate, caring persona is vital to student engagement. In other words, students will only be as engaged and present in class as the professor is. Students’ motivation to be engaged in class may be important, but professors’ motivation to engage their students is vital. The old ideology that students are responsible for their own success in the classroom is a myth. An engaged classroom doesn’t begin with engaged students; it begins with an engaged professor.

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APPENDIX A: SURVEY RECRUITMENT SCRIPT

[Hand out the survey cover letters the class session prior to administering the survey]

Hi.

My name is Galen Ciscell and I am a Ph.D. student in the sociology department here at CSU. I am conducting some research on student engagement in the classroom and would love to get your input.

You should have received a cover letter regarding your participation in the survey earlier this week. If you did not receive a cover letter, I have extras up here and will bring you one.

You will be receiving a survey and a bubble sheet shortly. Please read the instructions to the survey carefully. If you are willing to participate, please mark your answer to each survey question on the bubble sheet. If you would not like to participate, you can simply sit quietly while your classmates finish the survey.

Once you have finished the survey, please bring both the survey and the bubble sheet to the front of the class, after which you are free to go.

If you have any questions, I will be available to answer them.

Thank you!

APPENDIX B: PROFESSOR RECRUITMENT SCRIPT

E-mail script for recruiting professors for interviews and observations

Subject: Study on Student Engagement

Dear Professor [Last Name],

My name is Galen Ciscell and I am doctoral candidate in the Department of Sociology. Under the guidance of my advisor, Dr. Jennifer Cross, we are conducting a study on student engagement. As an instructor for a large section of an AUUC course, you have been identified as a potential participant in this study. The title of my study is "Effect of Teacher Behaviors on Student Engagement;" the Principal Investigator is Jennifer Cross, and I am the Co-Principal Investigator.

The study will include one personal interview with you and 3-5 classroom observations of your section of [Name of Class]. If you agree to participate, I will also be administering a survey to your students and recruiting a dozen students for a focus group interview.

The study will take place during spring semester 2012. Your participation would consist of a one-hour interview and the aforementioned classroom observations, which will not require any additional time. I would also ask for a few minutes of time in your class to recruit students for the focus group interview, as well as approximately 30 minutes of class time in April to administer the survey.

I would love to have the opportunity to speak with you further about the possibility of your involvement in this study. I would be happy to meet with you in person, to set up a time to speak on the phone, or to continue a conversation via e-mail, at your convenience.

You may contact me on my cellular phone at 503-999-1543, in my office at 970-491-7347, or simply reply to this e-mail. Thank you in advance for your consideration.

Sincerely,

Galen Ciscell
PH.D. Candidate
Sociology
Galen.ciscell@colostate.edu

Jennifer Cross, Ph.D.
Assistant Professor
Sociology
970-491-0483
Jeni.cross@colostate.edu

APPENDIX C: FOCUS GROUP RECRUITMENT SCRIPTS

Verbal Script

Hello, my name is Galen Ciscell and I am a doctoral candidate conducting research on student engagement and teacher behaviors in the classroom under the guidance of my advisor Dr. Jennifer Cross. I would like your opinions on this topic and would like to invite you to participate in a small group discussion on [DATE] that will last about an hour. I will be audiotaping the discussion to accurately record the comments made, but will not be collecting any names, so your comments will never be associated with you. I need about a dozen volunteers so if you are interested, please see me after class. Also, as an extra incentive, I will be providing pizza and soda to all volunteers. Thanks!

E-mail Script [To be sent out by the professor, if necessary]

Subject: Student Engagement Focus Group

Hello!

My name is Galen Ciscell and I spoke in your class on [DATE]. I am still looking for a few volunteers to join our small group discussion on [DATE]. If you are interested, please contact me at Galen.Ciscell@colostate.edu – pizza and soda will be provided!

Thank You,
Galen Ciscell

APPENDIX D: FOCUS GROUP RECRUITMENT SCRIPTS WITH \$10 INCENTIVE

Verbal Script

Hello, my name is Galen Ciscell and I am a doctoral candidate conducting research on student engagement and teacher behaviors in the classroom under the guidance of my advisor Dr. Jennifer Cross. I would like your opinions on this topic and would like to invite you to participate in a small group discussion on [DATE] that will last about an hour. I will be audiotaping the discussion to accurately record the comments made, but will not be collecting any names, so your comments will never be associated with you. I need about a dozen volunteers so if you are interested, please see me after class. Also, as an extra incentive, I will be providing \$10 in cash to all volunteers. Thanks!

E-mail Script [To be sent out by the professor, if necessary]

Subject: Student Engagement Focus Group

Hello!

My name is Galen Ciscell and I spoke in your class on [DATE]. I am still looking for a few volunteers to join our small group discussion on [DATE]. If you are interested, please contact me at Galen.Ciscell@colostate.edu – all volunteers will receive \$10 in cash!

Thank You,
Galen Ciscell

APPENDIX E: SURVEY COVER LETTER

Request to Participate in Survey on Student Engagement

Galen Ciscell, Ph.D. Candidate, Department of Sociology, is conducting a study of student engagement in higher education. The study is called “Effect of Teacher Behaviors on Student Engagement.”

The researcher will be administering a survey in your class later this week. There is no direct benefit to you for participating in this research; however, your participation in this survey may help the researchers better understand student engagement in college classrooms.

Your participation in this research is voluntary. If you decide to participate in the study you may withdraw your consent and stop participating at any time without penalty or loss of benefits to which you are otherwise entitled.

Your participation in this study will be anonymous; no records will be kept regarding which students chose to participate and which did not. The survey will take you approximately 30 minutes to complete. Participation in this research will have no impact on your grade or status in this class.

You do not face any serious risks for participating. It is not possible to identify all potential risks in research procedures, but the researchers have taken reasonable safeguards to minimize any known and potential, but unknown, risks.

If you have any questions about your rights as a volunteer in this research, contact Janell Barker, Human Research Administrator, at 970-491-1655.

If you have questions regarding this focus group, feel free to contact Galen Ciscell, galen.ciscell@colostate.edu, 970-491-7347 or my advisor, Jennifer Cross, jeni.cross@colostate.edu, 970-491-689.

Sincerely,

Galen Ciscell
Doctoral Candidate
Department of Sociology

Jennifer Cross, Ph.D.
Assistant Professor
Department of Sociology

APPENDIX F: FOCUS GROUP COVER LETTER

Request to Participate in Focus Group

Galen Ciscell, Ph.D. Candidate, Department of Sociology, is conducting a study of student engagement in higher education. The study is called “Effect of Teacher Behaviors on Student Engagement.”

A focus group is a group interview in which participants are asked their opinions about a particular topic. Typically participants first complete a short written survey about their opinions and then the researchers lead a discussion based on those same questions. The written survey will take 5-10 minutes and then discussion will last for 30-45 minutes after that.

In this focus group you will be discussing your opinions about the course content and the way in which the material is presented by the professor. There may be no direct benefit to you, but we hope the research will help make college courses more engaging for future students. There are no right or wrong answers; we are truly interested in your honest opinion about these materials. You will not be asked any questions about your own behaviors, only your opinions of the course material and the professor’s behaviors.

Your participation in this research is voluntary. If you decide to participate in the study you may withdraw your consent and stop participating at any time without penalty or loss of benefits to which you are otherwise entitled.

Participation will be anonymous; no records will be kept regarding which students chose to participate and which did not. As a reminder, we will be audio recording this session so that we can have an accurate record of the opinions expressed during the discussion. Responses will be anonymous; we will not have any records of who made which comments (either in written form or in discussion). Please do NOT write your name on the written questionnaire. Participation will have no impact on your course grade or status.

As a token of my appreciation for your participation, we are providing participants with pizza and sodas.

All participants are asked to keep this discussion confidential, but the researcher can not guarantee that other participants will maintain the confidentiality of your comments. You do not face any other risks for participating. It is not possible to identify all potential risks in research procedures, but the researcher has taken reasonable safeguards to minimize any known and potential, but unknown, risks.

If you have any questions about your rights as a volunteer in this research, contact Janell Barker, Human Research Administrator, at 970-491-1655.

If you have questions regarding this focus group, feel free to contact Galen Ciscell, galen.ciscell@colostate.edu, 970-491-7347 or my advisor, Jennifer Cross, jeni.cross@colostate.edu, 970-491-689.

Sincerely,

Galen Ciscell
Doctoral Candidate
Department of Sociology

Jennifer Cross, Ph.D.
Assistant Professor
Department of Sociology

APPENDIX G: OBSERVATION COVER LETTER

Request to Participate in Classroom Observations

Galen Ciscell, Ph.D. Candidate, Department of Sociology, is conducting a study of student engagement in higher education. The study is called “Effect of Teacher Behaviors on Student Engagement.”

The researcher will be observing your behaviors in the classroom on up to five separate occasions. The researcher will arrive at each class session five minutes early and stay until the class session ends. The researcher will arrange to attend one class session identified by you. You will not otherwise have prior knowledge of which sessions the researcher will be attending.

Your participation in this research is voluntary. If you decide to participate in the study you may withdraw your consent and stop participating at any time without penalty or loss of benefits to which you are otherwise entitled.

Your participation in this study will be anonymous; no records will be kept regarding which professors chose to participate and which did not.

You do not face any serious risks for participating. It is not possible to identify all potential risks in research procedures, but the researchers have taken reasonable safeguards to minimize any known and potential, but unknown, risks.

If you have any questions about your rights as a volunteer in this research, contact Janell Barker, Human Research Administrator, at 970-491-1655.

If you have questions regarding this focus group, feel free to contact Galen Ciscell, galen.ciscell@colostate.edu, 970-491-7347 or Jennifer Cross, jeni.cross@colostate.edu, 970-491-689.

Sincerely,

Galen Ciscell

APPENDIX H: INTERVIEW COVER LETTER

Request to Participate in an Interview

Galen Ciscell, Ph.D. Candidate, Department of Sociology, is conducting a study of student engagement in higher education. The study is called “Effect of Teacher Behaviors on Student Engagement.”

In this interview you will be discussing teaching and student engagement with the researcher. There are no right or wrong answers and we are truly interested in your honest opinion about these subjects. The interview should last no more than one hour.

Your participation in this research is voluntary. If you decide to participate in the study you may withdraw your consent and stop participating at any time without penalty or loss of benefits to which you are otherwise entitled.

Your participation in this study will be anonymous; no records will be kept regarding which professors chose to participate and which did not. With your permission we will be tape recording this session so that the researcher can have an accurate record of the opinions expressed during the discussion.

You do not face any serious risks for participating. It is not possible to identify all potential risks in research procedures, but the researchers have taken reasonable safeguards to minimize any known and potential, but unknown, risks.

If you have any questions about your rights as a volunteer in this research, contact Janell Barker, Human Research Administrator, at 970-491-1655.

If you have questions regarding this focus group, feel free to contact Galen Ciscell, galen.ciscell@colostate.edu, 970-491-7347 or Jennifer Cross, jeni.cross@colostate.edu, 970-491-689.

Sincerely,

Galen Ciscell

APPENDIX I: INTERVIEW CONSENT FORM

Consent to Participate in a Research Study Colorado State University

TITLE OF STUDY: *Effect of Teacher Behaviors on Student Engagement*

PRINCIPAL INVESTIGATOR: *Jennifer Cross, Ph.D., Department of Sociology, (970) 491-0483; jeni.cross@colostate.edu.*

CO-PRINCIPAL INVESTIGATOR: *Galen Ciscell, Department of Sociology, doctoral candidate, (503) 999-1543; Galen.Ciscell@colostate.edu.*

WHY AM I BEING INVITED TO TAKE PART IN THIS RESEARCH? You are the professor in a section of an AUCC course with at least 90 students enrolled.

WHO IS DOING THE STUDY? *The research will be conducted by the Co-PI, Galen Ciscell, under the guidance of his advisor, Jennifer Cross.*

WHAT IS THE PURPOSE OF THIS STUDY? *The purpose of this research is to evaluate the effect of teacher behaviors on student engagement.*

WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST? *The study will take place during the Spring 2012 semester. You are invited to participate in a 60-minute one-on-one interview to be conducted at a location that is convenient for you.*

WHAT WILL I BE ASKED TO DO? *If you accept our invitation to participate in this study, you will be asked to: Participate in a one-on-one 60-minute interview that will be audiotaped with your permission. Allow the researcher to observe 3-5 classroom sessions Allow the researcher to give your students the opportunity to take a 30-minute survey during class time Allow the researcher to recruit up to 12 students from your class to participate in a focus group (to take place outside of the classroom setting).*

ARE THERE REASONS WHY I SHOULD NOT TAKE PART IN THIS STUDY? *You should not participate in this study if the maximum enrollment for your AUCC course is fewer than 90 students.*

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS? There are no known risks to participating in this research. It is not possible to identify all potential risks in research procedures, but the researcher(s) have taken reasonable safeguards to minimize any known and potential, but unknown, risks.

ARE THERE ANY BENEFITS FROM TAKING PART IN THIS STUDY? While there may be no direct benefit to you for participating in this study, the researchers hope that the research will benefit future students, especially racial minorities and first generation students.

DO I HAVE TO TAKE PART IN THE STUDY? Your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop participating at any time without penalty or loss of benefits to which you are otherwise entitled.

WHO WILL SEE THE INFORMATION THAT I GIVE? We will keep private all research records that identify you, to the extent allowed by law.

Your information will be combined with information from other people taking part in the study. When we write about the study to share it with other researchers, we will write about the combined information we have gathered. You will not be identified in these written materials. We may publish the results of this study; however, we will keep your name and other identifying information private.

We will make every effort to prevent anyone who is not on the research team from knowing that you gave us information, or what that information is. A linked list linking your name to a letter (e.g., John Johnson = Professor Allan) will be kept separate from the data we collect, and both the list and the data will be stored in different places under lock and key. The linked list will be destroyed after the research is concluded.

WHAT HAPPENS IF I AM INJURED BECAUSE OF THE RESEARCH? The Colorado Governmental Immunity Act determines and may limit Colorado State University's legal responsibility if an injury happens because of this study. Claims against the University must be filed within 180 days of the injury.

WHAT IF I HAVE QUESTIONS?

Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions about the study, you can contact the investigator, Galen Ciscell at 503-999-1543. If you have any questions about your rights as a volunteer in this research, contact Janell Barker, Human Research Administrator at 970-491-1655. We will give you a copy of this consent form to take with you.

This consent form was approved by the CSU Institutional Review Board for the protection of human subjects in research on January 12, 2012.

WHAT ELSE DO I NEED TO KNOW? *The researcher would like to audiotape your interview to be certain that your comments are accurately recorded. You will only be identified by a pseudonym; your name will never be connected with the audiotape or transcript. Do you give the researcher permission to audio tape the interview?*

Yes, I give my permission for the interview to be audiotaped. _____

OR

No, please do not audiotape my interview _____

Thank you for your participation in this study.

Galen Ciscell
PH.D. Candidate
Dept. of Sociology
Galen.ciscell@colostate.edu

Jennifer Cross, Ph.D.
Assistant Professor
Dept. of Sociology
jeni.cross@colostate.edu

APPENDIX J: FOCUS GROUP SURVEY

Focus Group Survey

How would you describe your overall experience in this class?

How would you describe how engaged you are with what happens in the classroom?

How would you describe the level of effort this class requires?

How would you describe the professor's teaching style?

What are some specific behaviors you have noticed the professors performing in class?

What other comments would you like to share?

APPENDIX K: FOCUS GROUP PROTOCOL

The Effect of Teacher Behaviors on Student Engagement

Focus Group Guide

- The purpose of this focus group is to gather your input on your level of engagement in your class with Professor [Last Name] as well as to learn how you perceive Professor [Last Name's] teaching style.
- Whatever you say here will remain confidential. That means that the comments you share with me will only be shared with other members of the research team. We want to remind all the participants that you also should consider what is shared in this room confidential and should not share other participants' opinions outside this room.
- I would like to tape the interview to ensure my own accuracy in reporting your comments. This is standard procedure for researchers doing interviews and focus groups.
- Your names are not being recorded and will never be associated with your comments in any written reports.
- Your participation is voluntary. If at any point during the focus group you decide you no longer want to participate you are welcome to refrain from comment or to leave the discussion.
- We are going to start by asking you all to think about your experiences in Professor [Las Name]'s classroom and fill out the written comment sheet we are passing around. After everyone has had time to write down their responses we will talk with you about your responses.

Questions

	QUESTION	<i>Discussion Probes</i>
1	<i>How would you describe your overall experience in this class?</i>	Do you have any specific examples to share?
2	How would you describe how engaged you are with what happens in the classroom?	Are you engaged with the material? Is the material relevant to your life? Why or why not? Are you engaged with the professor? With other students?
3	How would you describe the level of effort this class requires?	Does the class require a lot of outside work? Does class time require you to put forth effort?
4	<i>How would you describe the professor's teaching style?</i>	Does the teaching style work for you?
5	<i>What are some specific behaviors you have noticed the professors performing in class?</i>	Do you like these behaviors? Are they consistent?
6	<i>What other comments would you like to share?</i>	

APPENDIX L: INTERVIEW SCHEDULE

Interview Schedule

[To be read to interviewees]

Please note that participation is completely voluntary and your answers will remain anonymous. The purpose of this interview is to understand how you teach and why you have adopted your own particular style and philosophy. I hope to be able to use the results of this study to help improve teaching in the future. Your participation is greatly appreciated. Do you understand that participation is voluntary and you can withdraw from this study at any time?

1. How would you describe your teaching philosophy?
2. How would you describe your teaching style?
3. What is the most important aspect of teaching, to you?
4. What training have you had on how to teach?
5. How have you refined your teaching over the years?
6. What are some specific teaching techniques you use in the classroom?
7. How do you intentionally engage students in the classroom?
8. What are your thoughts on student engagement in the classroom?
9. Is there anything else you would like to share with me?

APPENDIX M: SURVEY

In this section, please answer the following questions by indicating how **frequently** each behavior occurs. In answering these questions, please think about **this course** only.

	Very Often	Often	Sometimes	Rarely	Very Rarely
1. I find myself watching the clock during class.	A	B	C	D	E
2. The professor uses humor in class.	A	B	C	D	E
3. I pay attention during class.	A	B	C	D	E
4. The professor leads all-class discussions.	A	B	C	D	E
5. I am praised for my effort (speaking in class, doing the reading).	A	B	C	D	E
6. I work with other students to discuss ideas or solve problems in class.	A	B	C	D	E
7. The professor walks around the classroom while talking.	A	B	C	D	E
8. We apply ideas in class to real world situations.	A	B	C	D	E
9. I have an emotional reaction to class discussion or lecture.	A	B	C	D	E
10. We are given in-class writing exercises.	A	B	C	D	E
11. The professor shares personal stories about herself or himself.	A	B	C	D	E
12. Other students text or read the paper in class.	A	B	C	D	E
13. The professor lectures for most of the class period.	A	B	C	D	E
14. I use a computer or other technology to help me learn in this class.	A	B	C	D	E
15. I have the opportunity to explore new ideas in class.	A	B	C	D	E
16. The Professor assigns in-class group exercises.	A	B	C	D	E
17. I lose track of time in this class.	A	B	C	D	E
18. Students in this class interact with each other and respond to each others' comments.	A	B	C	D	E
19. The professor uses examples to illustrate difficult concepts.	A	B	C	D	E
20. I spend time studying for this class outside of the classroom.	A	B	C	D	E

21. I engage in projects and lessons that require technology in this class.	A	B	C	D	E
22. I use concepts from class in discussions outside of class.	A	B	C	D	E

PLEASE TURN OVER – SURVEY CONTINUES ON OTHER SIDE

Please answer the following questions by indicating your level of **agreement** with each statement. In answering these questions, please think about **this course** only.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
23. I participate actively in class learning experiences.	A	B	C	D	E
24. This class has changed how I think.	A	B	C	D	E
25. The Professor encourages me to make use of personal experiences to learn the content.	A	B	C	D	E
26. The Professor challenges me emotionally.	A	B	C	D	E
27. I spend time thinking deeply about a number of course topics.	A	B	C	D	E
28. I practice active <u>listening</u> during class discussions.	A	B	C	D	E
29. I find the ideas presented in class interesting.	A	B	C	D	E
30. The professor knows my name.	A	B	C	D	E
31. The Professor finds ways to make course material relevant to my life.	A	B	C	D	E
32. The professor seems like an authentic person.	A	B	C	D	E
33. The content of this class is engaging.	A	B	C	D	E
34. I have gained a better understanding of myself as a person because of this class.	A	B	C	D	E
35. The Professor expresses genuine emotion in class.	A	B	C	D	E

36. The professor uses a variety of media (videos, pictures, music) in class.	A	B	C	D	E
37. I could explain the content of this course to a friend.	A	B	C	D	E
38. The professor is personable.	A	B	C	D	E
39. The audio and video setup helps me feel connected to each class session.	A	B	C	D	E
40. I am engaged in this class.	A	B	C	D	E
41. This class has changed how I view the course content.	A	B	C	D	E
42. The professor is supportive of my learning needs.	A	B	C	D	E
43. I have gained new knowledge from this class.	A	B	C	D	E
44. I am an active participant in class discussions.	A	B	C	D	E
45. The Professor cares about me as a person.	A	B	C	D	E
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
46. I will be able to apply what I have learned in this class out in the real world.	A	B	C	D	E
47. Class discussion and activities require a lot of mental effort.	A	B	C	D	E
48. I have the skills and abilities to do well in class discussions and activities.	A	B	C	D	E
49. The professor uses a variety of teaching strategies (i.e. group work, in-class writing, discussion, lecture)	A	B	C	D	E
50. I have acquired new skills in this class.	A	B	C	D	E
51. The professor's teaching style matches my learning style.	A	B	C	D	E
52. My performance in this class is directly related to how the professor teaches.	A	B	C	D	E
53. The professor is approachable.	A	B	C	D	E

54. The professor uses appropriate technology tools to effectively communicate the content.	A	B	C	D	E
55. The professor uses visual aids in class.	A	B	C	D	E
56. The Professor expects me to succeed.	A	B	C	D	E
57. I am learning a lot.	A	B	C	D	E
58. The professor is engaging.	A	B	C	D	E
59. My parents are supportive of me getting a college education.	A	B	C	D	E

60. How often have you met with the professor outside of class this semester?

- a. Never
- b. Once
- c. Twice
- d. Three times
- e. Four or more times

61. What is your current classification in college?

- a. Freshman/first year
- b. Sophomore
- c. Junior
- d. Senior
- e. Unclassified/Other

62. What grade do you expect to receive in this class?

- a. A
- b. B
- c. C
- d. D or lower
- e. Don't know

PLEASE TURN OVER – SURVEY CONTINUES ON OTHER SIDE

63. What was your overall GPA in high school?

- a. 3.5-4.0
- b. 3.0-3.49
- c. 2.5-2.99
- d. Lower than 2.5
- e. Don't know

64. How many advanced placement (AP) courses did you take in high school?

- a. None
- b. 1
- c. 2
- d. 3
- e. 4+

- 65. What is your overall GPA at Colorado State?**
- a. 3.5-4.0
 - b. 3.0-3.49
 - c. 2.5-2.99
 - d. Lower than 2.5
 - e. Don't know/no GPA yet
- 66. How many other courses have you taken in the subject area of this course (including high school courses)?**
- a. None
 - b. 1
 - c. 2
 - d. 3+
 - e. Don't Know
- 67. How many hours do you work per week?**
- a. I do not work
 - b. 1-10 hours
 - c. 11-20 hours
 - d. 21-40 hours
 - e. 41+ hours
- 68. How do you identify? (Mark only one.)**
- a. Male
 - b. Female
 - c. Transsexual/Intersexed/Other
- 69. How do you identify? (Mark only one.)**
- a. White
 - b. African-American or Black
 - c. Latino or Hispanic
 - d. Asian or Pacific Islander
 - e. Other
- 70. Did either of your parents earn a 4-year college degree?**
- a. Yes
 - b. No
- 71. Have you ever been eligible to receive a Federal Pell Grant (a grant given to students from low-income families)?**
- a. Yes
 - b. No

END OF SURVEY – THANK YOU FOR YOUR TIME!!!

APPENDIX N: LIST OF VARIABLE NAMES MATCHED TO SURVEY QUESTIONS

Variable Name	Survey Question
WatchClock	1. I find myself watching the clock during class.
UseHumor	2. The professor uses humor in class.
PayAttention	3. I pay attention during class.
ProfLeadsDiscuss	4. The professor leads all-class discussions.
PraisedForEffort	5. I am praised for my effort (speaking in class, doing the reading).
WorkWithOthers	6. I work with other students to discuss ideas or solve problems in class.
WalkAround	7. The professor walks around the classroom while talking.
ApplyToWorld	8. We apply ideas in class to real world situations.
EmotionalReaction	9. I have an emotional reaction to class discussion or lecture.
InClassWriting	10. We are given in-class writing exercises.
PersonalStories	11. The professor shares personal stories about herself or himself.
TextReadPaper	12. Other students text or read the paper in class.
ProfLectures	13. The professor lectures for most of the class period.
IUseComputer	14. I use a computer or other technology to help me learn in this class.
ExploreNewIdeas	15. I have the opportunity to explore new ideas in class.
GroupExercises	16. The Professor assigns in-class group exercises.
LoseTrackTime	17. I lose track of time in this class.
StudentsInteract	18. Students in this class interact with each other and respond to each others' comments.
UsesExamples	19. The professor uses examples to illustrate difficult concepts.
StudyForClass	20. I spend time studying for this class outside of the classroom.
ProjectsRequireTech	21. I engage in projects and lessons that require technology in this class.
DiscussOutsideClass	22. I use concepts from class in discussions outside of class.
ActiveParticipant	23. I participate actively in class learning experiences.
ChangeMyThinking	24. This class has changed how I think.
PersonalExp	25. The Professor encourages me to make use of personal experiences to learn the content.
EmotionallyChallenging	26. The Professor challenges me emotionally.
ThinkDeeply	27. I spend time thinking deeply about a number of course topics.
ActiveListening	28. I practice active listening during class discussions.
IdeasInteresting	29. I find the ideas presented in class interesting.
KnowsMyName	30. The professor knows my name.
RelevantToMyLife	31. The Professor finds ways to make course material relevant to my life.
AuthenticPerson	32. The professor seems like an authentic person.
ContentEngaging	33. The content of this class is engaging.

BetterUnderstandSelf	34. I have gained a better understanding of myself as a person because of this class.
ProfExpressEmotion	35. The Professor expresses genuine emotion in class.
ProfUsesMedia	36. The professor uses a variety of media (videos, pictures, music) in class.
ExplainContentToFriend	37. I could explain the content of this course to a friend.
ProfIsPersonable	38. The professor is personable.
AudioVisualFeelConnected	39. The audio and video setup helps me feel connected to each class session.
IAmEngaged	40. I am engaged in this class.
ChangedViewOfContent	41. This class has changed how I view the course content.
ProfSupportive	42. The professor is supportive of my learning needs.
GainedNewKnowledge	43. I have gained new knowledge from this class.
ActiveParticipantDiscuss	44. I am an active participant in class discussions.
ProfCares	45. The Professor cares about me as a person.
ApplyLessonsInReal	46. I will be able to apply what I have learned in this class out in the real world.
ClassRequiresEffort	47. Class discussion and activities require a lot of mental effort.
SkillsToDoWell	48. I have the skills and abilities to do well in class discussions and activities.
VarietyTeachingStrategies	49. The professor uses a variety of teaching strategies (i.e. group work, in-class writing, discussion, lecture)
AcquiredNewSkills	50. I have acquired new skills in this class.
TeachingStyleMatches	51. The professor's teaching style matches my learning style.
GradeBasedOnTeaching	52. My performance in this class is directly related to how the professor teaches.
ProfApproachable	53. The professor is approachable.
ProfUsesTech	54. The professor uses appropriate technology tools to effectively communicate the content.
ProfUsesVisualAids	55. The professor uses visual aids in class.
ProfExpectsSuccess	56. The Professor expects me to succeed.
IAmLearningALot	57. I am learning a lot.
ProfIsEngaging	58. The professor is engaging.