



All Theses and Dissertations

---

2010-12-16

# Spiritually Strengthening Learning Environments in Higher Education

Seth A. Martinez

*Brigham Young University - Provo*

Follow this and additional works at: <https://scholarsarchive.byu.edu/etd>



Part of the [Educational Psychology Commons](#)

---

## BYU ScholarsArchive Citation

Martinez, Seth A., "Spiritually Strengthening Learning Environments in Higher Education" (2010). *All Theses and Dissertations*. 2409.  
<https://scholarsarchive.byu.edu/etd/2409>

This Thesis is brought to you for free and open access by BYU ScholarsArchive. It has been accepted for inclusion in All Theses and Dissertations by an authorized administrator of BYU ScholarsArchive. For more information, please contact [scholarsarchive@byu.edu](mailto:scholarsarchive@byu.edu), [ellen\\_amatangelo@byu.edu](mailto:ellen_amatangelo@byu.edu).

The Faith-Intellect Relationship In Higher Education:  
Spiritually Strengthening Learning Environments

Seth-Aaron Martinez

A thesis submitted to the faculty of  
Brigham Young University  
in partial fulfillment of the requirements for the degree of

Master of Science

Charles R. Graham, chair  
Stephen C. Yanchar  
Alan L. Wilkins

Department of Instructional Psychology & Technology

Brigham Young University

December 2010

Copyright © 2010 Seth-Aaron Martinez

All Rights Reserved

## ABSTRACT

### THE FAITH-INTELLECT RELATIONSHIP IN HIGHER EDUCATION: SPIRITUALLY STRENGTHENING LEARNING ENVIRONMENTS

Seth-Aaron Martinez

Department of Instructional Psychology & Technology

Master of Science

This qualitative thesis brings attention to a phenomenon that is largely neglected in the world of higher education: the faith-intellect relationship. The main purpose of this multiple-case study is to provide a rich description of what a highly spiritually strengthening learning environment in higher education looks and feels like to those participating. In essence, the researcher provides a vicarious experience for the reader. A learning environment that fosters spiritually strengthening experiences for the students is one in which the student-teacher interactions are of high quality and in which the attributes possessed by both the professor and students are manifest through those interactions. The researcher discusses the role the professor and students play, separately and together, in developing such an environment. These findings contribute to the small amount of research already done on the topic of spirituality in higher education. The researcher presents vignettes of four cases in which a spiritually strengthening experience was shared by its participants, offers suggestions about application in academic contexts that extend beyond the four studied, and concludes by proposing areas for potential research in the future. Regardless of subject discipline and religious affiliation, this thesis provokes thought and offers hope for all faculty and administrators concerned with the holistic development of the student.

Keywords: spirituality in higher education, learning environments, faith and intellect, spiritual development in education

## ACKNOWLEDGEMENTS

I extend a heartfelt thank you to my Master's thesis committee, Dr. Charles Graham, Dr. Stephen Yanchar, and Dr. Alan Wilkins for their patience and diligence in assisting and challenging me to produce the best work possible. I am especially thankful for Dr. Graham's steady guidance since before the first day of this project.

I am particularly indebted to the four professors and all of the students who participated in this study. Unfortunately, I cannot use their true names. They stood to gain nothing; however, through their willingness to participate and assist in this research, they helped shed light on a phenomenon that has not been studied in this way in higher education. In particular, I am grateful for the time and availability of the four professors. Their humility was inspiring.

To my close friends and loved ones who supported me when conditions became less than ideal during the writing process, when life threw an unpleasant curveball. I will forever be thankful for how you have spiritually strengthened me.

Last but not least, I am extremely grateful for my loving family. Margie, your example to me is one unmatched by anyone. Mom and Dad, thank you for making possible so many things that many do not have the opportunity to experience, for instilling in me the value of an education, for being a source of strength, and for the constant and relentless love regardless of the circumstances. This is as much for you as it is for me. I love you guys.

## TABLE OF CONTENTS

|   |     |
|---|-----|
| ABSTRACT.....   | ii  |
| ACKNOWLEDGEMENTS.....   | iii |
| TABLE OF CONTENTS.....  | iv  |
| CHAPTER 1: INTRODUCTION.....  | 1   |
| Statement of Problem.....   | 1   |
| Research Questions.....   | 3   |
| Definition of Terms.....  | 3   |
| CHAPTER 2: REVIEW OF LITERATURE.....  | 5   |
| Definition of Spirituality in Higher Education.....                         | 5   |
| Need and Prevalence of Spiritually Strengthening Learning Environments..... | 6   |
| Look and Feel of Spiritually Strengthening Learning Environments.....       | 8   |
| CHAPTER 3: DESIGN OF THE RESEARCH STUDY.....                                | 12  |
| Rationale.....  | 12  |
| Philosophical Overview of Methods.....                                      | 13  |
| Role of the Researcher.....   | 14  |
| Case Definition.....  | 14  |
| Individual Case Selection.....  | 15  |
| Data Collection.....  | 18  |
| Considerations.....   | 18  |
| Data Sources.....   | 19  |
| Data Analysis.....  | 22  |
| Reviewing the Observations, Interviews, Documents and Artifacts.....        | 23  |
| Naming the Categories.....  | 23  |
| Reporting.....  | 24  |
| Standards for Qualitative Inquiry For Trustworthiness.....                  | 25  |
| Credibility.....  | 25  |
| Transferability.....  | 26  |
| Dependability.....  | 27  |
| Confirmability.....   | 27  |
| CHAPTER 4: CASE VIGNETTES.....  | 28  |
| Case 1: Chemical Engineering.....   | 28  |
| Day 1.....  | 28  |
| Day 2.....  | 30  |
| Day 4.....  | 32  |
| Day 6.....  | 34  |
| Day 10.....   | 34  |
| Day 16.....   | 35  |
| Day 19.....   | 37  |
| Day 26.....   | 38  |
| Case 2: Statistics.....   | 39  |

|  |    |
|--|----|
| Day 1 .....  | 39 |
| Day 2 .....  | 42 |
| Day 6 (1-hour unit exam) .....   | 45 |
| Day 7 .....  | 47 |
| Day 9 .....  | 49 |
| Day 14 .....   | 49 |
| Day 16 .....   | 50 |
| Day 18 .....   | 50 |
| Day 20 .....   | 51 |
| Day 29 .....   | 53 |
| Day 33 .....   | 53 |
| Day 35 .....   | 56 |
| Final Day .....  | 57 |
| Case 3: Marriage, Family, and Human Development .....  | 57 |
| Day 1 .....  | 57 |
| Day 2 .....  | 59 |
| Day 3 .....  | 60 |
| Day 11 .....   | 62 |
| Day 16 .....   | 63 |
| Day 22 .....   | 65 |
| Final Day .....  | 66 |
| Case 4: Human Anatomy .....  | 67 |
| Day 1 .....  | 67 |
| Day 2 .....  | 69 |
| Day 6 .....  | 71 |
| Day 8 .....  | 72 |
| Day 18 .....   | 73 |
| CHAPTER 5: ANALYSIS AND INTERPRETATION OF DATA .....   | 75 |
| Research Question # 1: Look and Feel of Spiritually Strengthening Learning Environments .... | 76 |
| High quality professor-student interactions .....  | 76 |
| Care for students .....  | 76 |
| Patience and sacrifice of time .....   | 79 |
| Enthusiasm, energy, and humor .....  | 82 |
| Gospel integration .....   | 85 |
| Features unique to individual cases .....  | 89 |
| Student descriptions of the spiritual growth they experienced .....                          | 92 |
| Research Questions #2-3: Contributions of the Participants .....                             | 95 |
| Contribution of the professor .....  | 95 |
| Contribution of the student .....  | 96 |
| Research Question #4: Relationship Between Spiritual Strength And Academic Learning .....    | 95 |

|  |     |
|--|-----|
| CHAPTER 6: CONCLUSIONS AND SUGGESTIONS FOR FURTHER RESEARCH..... | 99  |
| Thematic Conclusions and Applications Across Cases.....          | 99  |
| Care for students .....  | 100 |
| Patience and sacrifice of time .....                             | 101 |
| Enthusiasm, energy, and humor .....                              | 101 |
| Gospel integration.....  | 103 |
| Spiritually strengthening learning outside of the classroom..... | 104 |
| Themes Unique to Individual Cases.....                           | 104 |
| Future research .....  | 106 |
| References .....   | 109 |
| APPENDIX A: Informed Consent Form, Professor .....               | 113 |
| APPENDIX B: Informed Consent Form, Student.....                  | 114 |
| APPENDIX C: Introductory Email.....                              | 116 |
| APPENDIX D: Observation Keys.....                                | 117 |
| APPENDIX E: Semi-Structured Interview Questions.....             | 118 |
| APPENDIX F: Tables of Characteristic Data .....                  | 119 |

## Chapter 1: Introduction

For some reason a pervading belief suggests that the concepts of faith and intellect, or the spiritual and the secular, are mutually exclusive. Although the two concepts have existed since the beginning of higher education, the individuals who have concerned themselves with uniting the two have generally been in the minority. Anciently, Plato, the founder of the first institution of higher education in the Western world, posed the general question, “How do we teach beyond politics?” He sought to focus on higher-order topics, like spirituality and godhood, for example. In more recent history, Stanley Hauerwas (*That State of the University: Academic Knowledges and the Knowledge of God*), Charles Taylor (*A Secular Age*), John Henry Newman (*The Idea of a University*), George Marsden (*The Secularization of the Academy*), and Jacques Maritain (*Education at the Crossroads*) have all written on the faith-intellect relationship as it pertains to the university. Certainly faith and intellect are not concepts that are diametrically opposed. The history of this dichotomy begs the following question: how is today’s university concerned with the marriage of faith and intellect? More specifically, what place does the spiritual have in today’s academic classroom?

### Statement of Problem

Presently religious universities share the aim of providing an educational experience that develops spirituality in its students. For example, Brigham Young University (2009, para. 1) “seeks to develop students of faith, intellect, and character.” The University of Notre Dame (2008, para. 6) explains in its mission statement that it “prides itself on being an environment of teaching and learning that fosters the development in its students” the habits of “mind, body, and spirit.” Georgetown University (2008, para. 3) declares that it is “a national University rooted in the Catholic faith and Jesuit tradition, committed to spiritual inquiry.” While seeking the education of the whole person, Loyola Marymount University (2008, para. 1) specifically aims to educate the “whole person...by fostering not only academic and professional development but also physical, social,

psychological, moral, cultural, and spiritual growth.” Finally, Baylor University (2008, para. 2) advocates a “religiously informed education” housed in “an environment that fosters spiritual maturity.” In addition, there are a large number of small Christian colleges scattered throughout the country that also espouse similar aims in their mission statements (i.e. Wheaton College, Bethel College, St. Mary’s, Judson University, Augsburg College, Roanoke College, Belmont University). Across American institutions of all denominations and affiliations, Chickering (2004) discussed the importance—and benefit to society as a whole it would be—of incorporating a spiritual focus in all of higher education; two years later, he (Chickering, 2006) highlights recent trends in the attention spirituality receives. Clearly the aim of developing or strengthening students spiritually is not unique to any single institution of higher education. It follows that research done on how universities achieve this aim would benefit any university seeking to foster, or “strengthen,” spirituality in its students.

When compared to its primary- and secondary-education siblings, relatively little research has been done on the spiritual dimension of learning environments in higher education (Fraser, 1998). As the following chapter will illustrate, this is precisely where the gap in the literature exists: qualitative research examining the nature of spiritually strengthening learning environments in higher education and the effects of such environments on learning. In order to better understand the nature of spiritually strengthening learning environments, a qualitative look at spiritually strengthening courses will increase understanding on this issue. Studying this phenomenon sheds light on the implications as far as learning achievement is concerned. Because Brigham Young University (2008, para. 3) emphasizes a “spiritually strengthening” learning experience in its educational aims, case study research occurring at BYU addressing this research gap proves insightful.

## Research Questions

One primary question served as the guide to all research activities: what do spiritually strengthening learning environments, across disciplines at Brigham Young University, look and feel like? There were three secondary questions that further guided the investigation:

- What do the professors in these courses say about the participants' contributions in fostering and experiencing a spiritually strengthening learning environment?
- What do the students in these courses say about the participants' contributions in fostering and experiencing a spiritually strengthening learning environment?
- What do these participants—professors and students—feel is the relationship between a spiritually strengthening environment and their academic learning?

## Definition of Terms

The following terms are the definitions the study uses for research purposes. I, as the lead researcher, arrived at these definitions as the result of relevant literature as well as feedback from this study's participants.

*Religious*: Pertaining directly to scriptural or doctrinal material, ideas, expressions, claims, etc.

*Spiritual*: An individual's sense of purpose, meaning, and sense of calling. Additionally, it refers to the inter-connectedness between the individual and something greater than self, to Deity for example (Jones, 2005). Therefore, a person can be highly religious, behaviorally compliant, and even possessing a great knowledge of doctrinal information, and not be highly spiritual if he or she has minimal sense of purpose, meaning or connection to truth and/or Deity.

*Strengthening*: When an individual is strengthened he or she is fortified, motivated, stimulated, and inspired (Jones, 2005). It is a confirmation of truth as well. Being strengthened tends to

lead a person to act. A change in behavior, character, attitude, and/or confidence occurs as a result of being strengthened.

*Gospel:* The gospel of Jesus Christ pertains to the doctrine and principles taught by the Savior and His Apostles.

*Online Student Ratings:* At the conclusion of each semester or term at BYU, students are invited to provide feedback on their educational experience with each course/professor for that given semester or term. Upon completion of grades, reports of the ratings are made available to BYU faculty and administrators. One of the areas BYU students are invited to provide feedback is the degree to which the course/professor meets the Aims of a BYU Education.

## Chapter 2: Review of Literature

To identify the current understanding of spirituality in higher education, an academic literature review must be performed. This review of literature will expose the research gap that will provide the foundation of relevance for this particular study. It is essential to review and consider the current definition of spirituality in higher education, the general need for spiritually strengthening learning environments in higher education, and the present understanding of the spiritually-strengthening-learning-environment experience. The following section develops from the review of these three topics.

### Definition of Spirituality in Higher Education

There are assorted understandings and definitions found in the literature for *spirituality* as it pertains to higher education. From those authors who have written extensively about the topic, several terms emerge. These common understandings of spirituality span cultures and religious affiliations. The literature defines the idea of spirituality encompassing a “beyond,” a “within” and an “experience” (Hay, 1982; Watson, 2000). First, the literature identifies the beyond as the following: something transcendent (Jones, 2005), as “something greater than the self” (Watson, 2000, p. 93), a connection to others through relationships (Hill, Pargament, Hood, McCullough, Swyers, Larson, and Zinnbauer, 2000), and a connection to Deity (Tisdell and Tolliver, 2006; Tisdell, 2008). It is important to note that the concept of transcendence is not unique to believers: a qualitative study in 2000 revealed that “The atheist and the agnostic...believed that everyone had the ability to grow spiritually, whether or not they believed in God” (Watson, 2000, p. 94).

As far as what spirituality means in higher education, the concept of within is found in the literature. The following descriptions are used when referencing the within: the soul of an individual (Hay & Hammond, 1992), the “inner self” (Thatcher, 1991, p. 25), the “more authentic self” (Tisdell, 2008), the brain as well as the Spirit (Watson, 2000, p. 95), an individual “deriving meaning,

purpose and direction in life” (Lindholm and Austin, 2008, p. 185), and a personal reverence for that which is sacred (Zinnbauer, Pargament, and Scott, 1999). These terms all indicate a dimension of spirituality internal to the individual. It is important to note that consistently within the literature exists the idea of identity. The authors who discuss the internal (or *within*) aspect of spirituality agree that an individual’s sense of identity is closely linked.

The third aspect of spirituality identified in the literature is that of experience (Astin, 2004; Tisdell, 2008). The type of experience described in the literature is that of the affective, or qualitative, and it deals with values, beliefs, and understandings (Lindholm and Astin, 2006). Truly, it is through the spiritual experience that an individual can grow in the *beyond* and *within* spheres of spirituality. Interview data of individuals across various cultures and religions revealed the following concerning the experiential nature of spirituality:

Experiences could be intense or weak, extraordinary or common place. They were usually characterized as necessarily positive experiences, but two interviewees described negative experiences...The spiritual experience could also be understood as a gradual enhancement of the quality of life through a growing closeness to God and/or of being at peace. (Watson, 2000, p. 95)

### **Need and Prevalence of Spiritually Strengthening Learning Environments**

The Higher Education Research Institute (2009) at UCLA recently completed a major research project that began in 2003 and draws data from over 112,000 students and 40,000 faculty at over 400 institutions of higher education. The purpose of the project was “to enhance our understanding of how college students conceive of spirituality, the role it plays in their lives, and how colleges and universities can be more effective in facilitating students’ spiritual development” (p. 2). Recall that spirituality in higher education, as defined in the literature, includes an individual’s sense of meaning and purpose. Results of the UCLA study indicate that 74% of college students

believe that higher education should play a major role in the development of the meaning and purpose in their lives. Furthermore, as Pingree (2009)—the Director of Vanderbilt’s Center for Teaching and Learning—observes,

Initiatives such as the Carnegie Foundation for the Advancement of Teaching Integrative Learning, Wellesley College’s Education for Transformation, the Ford Foundation’s Difficult Dialogues, and ventures supported by a range of other foundations (including Teagle, Templeton, and Fetzer Institute), are spurring colleges and universities to cultivate discussions about meaning, value, and purpose, and to develop practices that allow for the integration of mind, heart, and spirit in higher education. (p. 8)

Yet despite the apparent interest from the students, as well as the efforts of the third-party institutions Pingree mentions, 56% of the students in the UCLA project report that they never receive opportunities to discuss issues such as meaning and purpose in life, while 45% report college experiences that do not allow for spiritual reflection altogether. So, nearly 75% of college students wish for an experience in higher education where spiritual development is encouraged and fostered; however, only 50% of these same students report ever having the opportunity to do so. And it is important to keep in mind that these 50% do not necessarily claim that such opportunities are *quality* or *successful* at that. Despite the desires of the students, the evidence indicates that spiritually strengthening experiences are not being provided at an adequate level.

Furthermore, notwithstanding the discrepancy highlighted by the UCLA study between the desire-of-the-college-student and the meeting-of-those-desires, various authors argue that spiritually strengthening learning environments are essential for everyone, including the 25% of students who do not report desiring to be strengthened spiritually. Lindholm and Astin (2008) maintain that any neglect of the spiritual dimension of the learning environment is a hazardous one: “to ignore the role of spirituality in personal development and professional behavior is to overlook a potentially

powerful avenue through which people construct meaning and knowledge” (p. 186). Additionally, Duff (2003), Lee (1999), Lewis (2000), and Tatarkowski (2004) all agree that spirituality is an integral part of learning throughout the lifespan and assert that it should play a significant role in any teaching and learning process, especially in the classrooms of higher education. For example, Tatarkowski (2004) maintains that a focus on spiritual development also increases the development of autonomy and responsibility, as well as interpretation and evaluation skills. She argues that higher education is the ideal place for this to take place because of the age and maturity level of most college students, the support structures colleges offer, and the learning environment that is “ideally suited to encourage students to form their own beliefs and to decide whose values they want to adopt because they are taught skills of evaluation during this period” (Tatarkowski, 2004, p. 27).

### **Look and Feel of Spiritually Strengthening Learning Environments**

With regards to the spiritual dimension of learning environments in higher education, Fraser (1998) admits “Although some notable prior work has focused on the institutional-level or school-level environment in colleges and universities, surprisingly little work has been done in higher education classrooms which is parallel to the traditions of classroom environment research at the secondary and primary school levels” (p. 12). What is known within the literature is that the teacher has a critical role in the learning environment experienced by the students. Lindholm and Astin (2008) acknowledge the following role at the conclusion of the UCLA study:

As the primary adult agents of socialization in the college environment, faculty have the ability to impact student experiences and outcomes both positively and negatively. Beyond influencing students’ intellectual and career development, interacting with faculty has been shown to enhance students’ personal identity awareness and moral development (see, e.g., Bowen, 1977). (p. 199)

In addition, after devoting years to better understand the nature of spiritual dimensions of development, Vella (2000) describes the vital role the student-teacher relationship plays in spiritually strengthening learning: present in the relationship is the teacher's accountability for the student.

Levinson (1978) refers to this type of accountability as mentorship. Dirks (2001) describes the feedback students share when reflecting upon a spiritually strengthening learning experience:

Participants in the author's teaching-strategies course typically describe experiences in which there was a strong, positive, emotional, or affective dimension, such as a supportive climate, a caring teacher who listens to us as individuals, a teacher who respects us as persons, or a teacher who involves the whole person in the learning experience. (p. 67)

Aside from the relationship between the participants (teacher and student) in a spiritually strengthening learning environment, Tisdell (2008) describes four types of experiences a spiritually strengthening learning environment provides for its learners. The first type of experience deals with "the universality of human experience across culture" (Tisdell, 2008, p. 31). Examples include experiencing the birth or death of a loved one (or a personal near-death experience), which results in a new focus and purpose in one's life. In the classroom, this takes the form of a discussion or assignment that causes the learner to reflect significantly on a birth/death scenario. The second type of experience is classified as "nighttime dreams and daytime synchronicities" which offer "new learning about hope, healing, or direction in times of difficulty; brought elation and joy in times of celebration; facilitated or affirmed a life decision; or spoke to the interconnectedness of everything" (Tisdell, 2008, p. 31). Similar but not as specific to the first type of experience, the third type is that which occurs upon pondering or meditating in general. As a result of these particular experiences, individuals gain "a sense of learning" as well as affirmation (Tisdell, 2008, p. 31). Ultimately these experiences help individuals "learn to cultivate attention to the spiritual, to see the extraordinary in the in the ordinary" (Tisdell, 2008, p. 31); therefore, these experiences are often described as bliss.

The final type of experience is described as one that furthers or develops “some aspect of identity” (Tisdell, 2008, p. 31). As two authors maintain, the greater the development of identity, the greater the spiritual strength of the learning experience (Tisdell and Tolliver, 2006). Interestingly, these experiences prove spiritually strengthening when, as a result of them, individuals discover, or rediscover, aspects of the sacred within them. This “sacred within” can be an increased understanding in a particular doctrine, or to one’s relationship with Deity (via prayer, obedience to commandments/covenants, etc.). In summary, learning environments are described as spiritually strengthening when one or more of these four experiences are enjoyed.

The type of learning environment that best fosters these experiences is described by Tisdell and Tolliver (2006):

Creating an environment that invites multiple dimensions of learning includes attending to the cognitive, the affective, the relational, the imaginal, and the symbolic dimensions of learning. Courses in higher education always need to include readings that deal with ideas and theoretical issues relevant to the course content, but the affective and connective dimensions can be incorporated in papers and class discussions as well. One can engage the symbolic domain or the cultural imagination as well as these other domains of learning that some might map to as spiritual. An important element is setting up an environment that both invites people into their greater authenticity and draws on multiple forms of knowledge construction right from the beginning. (p. 41)

Accordingly, when these activities are taking place and this level of engagement is present, the participants are likely to gain greater spiritual strength.

The following statement captures the view of spirituality in education most succinctly: “Spirituality in education refers to no more—and no less—than a deep connection between student, teacher, and subject—a connection so honest, vital, and vibrant that it cannot help but be intensely

relevant” (Jones, 2005, p. 1). The questions follow: how is a “vibrant, vital, and vibrant” connection achieved? What does it look like in practice?

At this point, a gap in the literature emerges. Lindholm and Astin (2006) maintain the following:

The research on spirituality that has been conducted within higher education institutions has focused primarily on students, ignoring completely the experiences, attitudes, expectations, and behaviors of faculty. The result is a critical gap in our understanding of how we can create educational environments that maximize the personal and professional potential of students and faculty. (p. 67)

Another question arises: despite the theories and opinions found in the literature, what does a spiritually strengthening learning environment actually look like in higher education? Because they play such a pivotal role theoretically, what do teachers actually do to help create such an environment?

Notwithstanding the handful of studies identified in the literature for higher education conducted via survey and questionnaire, and despite the dozens of articles highlighting theoretical and opinion-based views on the nature of spiritually strengthening learning environments in higher education, no single study, whose data collection originated from a third-party, was identified in the literature for higher education in which students and professors were asked to describe the spiritually strengthening nature of the learning environment of their course, the nature of the student-teacher relationship in such an environment, or the spiritual growth or development that occurred for them as a product of that environment. As a result of this lack of descriptive data, the need for the following study arises.

### Chapter 3: Design of the Research Study

This chapter outlines the design of the research study. Explicitly, the rationale, the philosophical overview, the role of the researcher, the definition and selection of cases, the methodology utilized in data collection and analysis, and the standards used to maintain trustworthiness in this study will all be explained.

#### Rationale

Spirituality is an affective characteristic often described as a reality that is internal and subjective from one individual to another. As such, spirituality is difficult to quantify (Reed, 1992).

Concerning this difficulty Hodge (2001) explains,

Quantitative instruments presuppose a certain construction of reality and in the process leave little room for clients to negotiate a shared understanding of their individual experience. Potentially vital information can be lost as clients circumscribe their experiences to fit the limited options presented in a specific scale and its predetermined understanding of reality. (p. 204)

As the lead researcher I did not wish to lose any “potentially vital information,” nor did I wish to constrain or limit the breadth of potential data in any way. Rather, it was this “shared understanding” in particular that was sought through this study. Therefore, a qualitative approach to best understand the phenomenon of spirituality experienced by the student and professor participants was most appropriate.

Qualitative research as an overarching concept employs various forms of investigation. These more specific methods include: action research, discourse analysis, grounded theory, naturalistic inquiry, interpretive research, inductive research, hermeneutics, ethnography, and phenomenology (Stake, 2006). However, for the purposes of this study I settled on case study as the form of inquiry best suited to help understand the phenomenon of spiritually strengthening learning

environments. “A case study design is employed to gain an in-depth understanding of the situation and meaning for those involved. The interest is in process rather than outcomes, in context rather than a specific variable, in discovery rather than confirmation” (Merriam, 1998, p. 19). With gaining in-depth understanding, recognizing process, experiencing context, and reaching discovery as the main purposes for this research, I concluded that utilizing a case study approach was ideal because it afforded these advantages.

### **Philosophical Overview of Methods**

As a result of this study, I ultimately wanted to obtain a data set that lent itself to naturalistic generalizations and high transferability as described by Stake (1995). I sought to best achieve this by arriving at a joint-understanding: from the perspective of the professor/student participants coupled with my own experience as a participant-observer. To accomplish this I borrowed from Stake’s (1995 & 2006) multi-case approach because this general approach affords these results. However, the Stake multi-case study approach under-specifies the details involved in the data-gathering techniques required. Stake offers a good vision, but some of the details required for successfully arriving at a joint-understanding are missing. Therefore, to create a complete set of research of techniques for this project, I borrowed some traditional techniques from ethnography (observations) and descriptive phenomenology (interviews).

In regard to the observation part of the data, the concern-for-context is what distinguishes ethnography from other types of studies (Merriam, 2001). Therefore, the ethnographic approach to my observations was selected: I wanted more than just a collection of quotes from in-class participants; I wanted to gain an understanding of the entire context of the learning environment (class layout, participant facial expressions, tones of voice, gestures, etc.). I concluded that borrowing from ethnography for observations was ideal because direct, first-hand observation of the (in context) phenomenon under investigation is the staple data-gathering technique of ethnography.

With respect to the interviews, “The purpose of the interview is to have the participant describe in as faithful and detailed a manner an experience of a situation the investigator is seeking” (Giorgi & Giorgi, 2003, p. 251). The purpose of the interviews in my study was to acquire in-depth conversations with the participants about their experiences in the spiritually strengthening learning environment. Specifically I sought their descriptions of their experience in the learning environment. As far as the specific types of interviews was concerned, I wanted the structure of asking each participant several common baseline questions while preserving the flexibility to pursue novel areas unique to each individual’s responses. Therefore, the semi-structured interview, borrowed from Giorgi’s descriptive phenomenology, was the selected method. In sum, these techniques, which I will discuss in greater depth in the following sections, provided a rich, experiential data set that lends itself to the naturalistic generalization and transferability that qualitative inquiry calls for and, in particular, to what Stake calls for as a result of case study research.

### **Role of the Researcher**

There are several roles a research team must fill in case study research: teacher, advocate, evaluator, biographer, and interpreter (Stake, 1995). Because I served as the only researcher in this study, I assumed each of these roles throughout the investigative process. Furthermore, during data collection and analysis, I served as a participant observer: using myself as an instrument. For the four cases studied this meant participating as a student in group activities as much as possible. As a result of this participant observer role, observation data informed the interviews that took place. As you will see in the Data Interpretation and Conclusions sections, my observations and thoughts are included along with interview responses.

### **Case Definition**

The basic unit of analysis for this research was the course-professor pair. It is the professor who has the greatest influence on the classroom, on the students’ experiences within the classroom,

on preparation for the lab/lecture/activity material and the delivery of this material, who assesses the learning outcomes for the students, and who plays a major role in creating the overall environment experienced by the student. This unit of analysis served as the definition for “case” for the duration of the study. Therefore, all references to an “anatomy case” or “statistics case” will be referring to the “anatomy course-professor pair” or the “statistics course-professor pair,” respectively.

### **Individual Case Selection**

The Faculty Center at BYU previously conducted quantitative research using Online Student Ratings data from the university’s undergraduate and graduate students for the academic year 2007-2008. Specifically the Faculty Center queried the Online Student Ratings database to identify cases where two criteria were met: (1) the experience with the course-professor pair was highly spiritually-strengthening for the student (in the top 25%), and (2) high levels of learning were experienced by the responding student as well (also in the top 25%). In this way only positive outliers were used. From the more than twenty thousand sections from which to choose, the data revealed over five thousand instances where these two criteria were simultaneously met. Cases were selected from this pool of five thousand course sections.

As far as general case selection is concerned, the opportunity to learn is of primary importance. The multi-case approach requires that each individual case help understand the phenomenon under investigation in some unique manner. Each case is a complex entity located in its own situation or context; these contexts can be historical, cultural, social, political etc. in nature (Stake, 2006). For the purposes of this study I used an obvious difference between course-professor pairs as the basis for contextual uniqueness: subject discipline. I categorized each discipline based on shared similarities in content and teaching strategy. Only cases whose content was of a non-religious nature were included in this study to eliminate potential confusion. In this way it would be

easier to identify to role of Deity (i.e. God, the Holy Ghost) independent from the topics discussed daily in a religion course.

After establishing those initial constraints, I sorted the five thousand qualifying cases into these general areas: social science, physical science, the arts, and business/statistics/math. These four represented a general breadth of content and teaching strategy on the university campus.

Within this “contextual” criterion, the specific cases were further sorted based on three criteria:

- Online Student Ratings: the higher the rating of the professor, or the more the positive the outlier, the better.
- Class size: large classes were preferred over smaller.
- Course level: undergraduate-level courses over graduate.

At this point the positive outliers were distinguished as being those with a score on the three Online Student Ratings questions addressing the spiritually-strengthening phenomenon that was at least one standard deviation above the mean. Consequently, the field of potential candidates narrowed from five thousand to several hundred. It is here that I noticed many of the qualifying professors were actually repeats of the same individual who taught multiple sections of the same course and/or multiple courses altogether. I then used two additional criteria to continue narrowing the field of potential candidates:

- Recommendation: Researchers from the Faculty Center and the Center for Teaching and Learning familiar with the nature of this study and prior research suggested several names and courses that could potentially qualify.
- Availability: The research was conducted in the Fall of 2009. I could only select cases that were offered, and had students enrolled, during that particular Fall semester.

This left only dozens of cases remaining from which to choose. At the end of August 2009 an introductory email was sent to approximately fifteen professors who would be teaching a course in the Fall of 2009 that matched the selection criteria previously mentioned (See Appendix C).

All but one professor responded to the introductory email. From those willing to participate, a purposeful sample was drawn in which four course-professor pairs were selected to study for the next four months. Clearly the number four does not represent all of the potentially available cases that matched the criteria for selection. As the lead researcher I settled on the number four for these two reasons:

1. Time constraints. Each course required about three hours of in-class time per week from which to observe. Additionally, the total number of interviews required at the conclusion of the semester would exceed the time available if more cases were selected.
2. Repetition. Based on pilot data collected the previous three semesters, I determined that four cases to study would provide sufficient uniqueness for the purposes of the research questions without being repetitive.

Using these criteria, I selected four particular cases because of the variety of disciplines they represented: Statistics (Stat 332), Human Anatomy (PD Biology 220), Chemical Engineering (Chem Eng 170), and Human Development (SFL 210). An initial meeting was arranged with each professor and the purpose for the research, its nature, the duration, the methods involved, and the requirements for the professor and the students were explained in depth. All four professors agreed to participate (See Appendix A). Other professors who met the criteria and initially agreed to participate but were not selected to be in the final four originated from the schools of Business, Humanities, Physical & Mathematical Sciences, and Fine Arts & Communications.

## Data Collection

This section outlines the background and biases I might have, as lead researcher, which might have potentially impacted the study. The primary methods used in data collection of observation, interview, and document analysis will also be outlined.

**Considerations.** The following section includes information about my biases as the researcher as well as the ethics required by this study. It is important to understand these before proceeding to the sources of data collection.

**Researcher bias.** During the research proposal and development phase, I acknowledged personal experiences and biases that may impact the study. First, having served within the Church of Jesus Christ of Latter-day Saints for my entire lifetime, I was familiar with the norms and standards of the Church as far as the concept of spiritually strengthening environments, from an LDS perspective, was concerned. I had experienced a wide range of spiritually strengthening instruction levels. Next, having graduated from Brigham Young University-Idaho, I possessed initial beliefs regarding those instructors that provided spiritually strengthening experiences for me while an undergraduate. As lead researcher I brought these experiences and ideas with me. However, I understood that my assumptions were going to evolve. For example, the student ratings data indicated that there were many non-religious courses that successfully provide a spiritually strengthening experience for the students (recall: the initial pool of five thousand cases), something I initially doubted. I essentially used such memories as a starting point to frame the analysis. The challenge was to set the bias aside to discover as many characteristics of spiritually strengthening instruction as possible.

It is also important to communicate the overall approach I took to all data gathering techniques. This was not a study in “how are these learning environments *non*-spiritually strengthening.” I instead wanted to understand all I could about how these learning environments

were indeed spiritually strengthening. I wanted to understand what made these cases successfully work as spiritually strengthening learning environments. Therefore, if there are any errors in my observations, interviews, or analyses, I erred on the side of overly positive. There is minimal negative-case data. I did give the participants every opportunity to discuss negative-case examples. I also did not avoid the negative if it came up. However, I did not probe deeply into that realm of the learning environments. Consequently the breadth of data may suffer in this way. At the same time, as far as confirmability is concerned, what I do have is a collection of data that was confirmed as being accurate by the participants which answers the first research question in the positive-instance viewpoint: what makes these learning environments successfully spiritually strengthening.

***Ethics.*** Due to the sacred and personal nature of the topic under investigation, respect was given to all participants. The individual views, beliefs, feelings, and ideas from all participants were treated with the utmost care and respect. Furthermore, all honesty, humility, and concern were shown towards all participants as well. Obtaining prior IRB approval from the University and then consent from each individual was essential in maintaining respect and conducting this study in a manner appropriate for the topic at hand (See Appendix A).

**Data Sources.** Information about the role of spirituality in college-level courses was obtained from observations, interviews, and analysis of artifacts. The following three subheadings discuss these specific sources of data and the respective techniques utilized to collect the data from each.

***Observation.*** Spradley (1980) describes the ultimate goal of participant observation in ethnographic research: “the ethnographer wants to describe the cultural terrain” (p. 26). To best obtain this description, and for the immediate purposes of this research, a case study approach requires experiencing the activity in its context and in its particular situation (Stake, 2006).

Therefore, the physical setting, the participants, their activities and interactions, direct quotations to

which I was privy, all subtle characteristics discerned, and my own thoughts were all elements recorded while observing. Obviously “no one can observe everything” (Merriam, 2001, p. 45). There are infinite factors on which to focus, with only finite amounts of time and tools at my disposal. To overcome this potential obstacle I began observations using a pre-designed rubric to guide his efforts (see Appendix D). A constant comparison method of using previous observations and interview data to guide each subsequent observation and interview, respectively, was utilized as well.

Observation sessions were selected based on a basic set of criteria. I observed approximately 85% of all the class sessions for each case, ensuring that sessions occurring at the beginning, middle, and end of the semester were included. In so doing I observed a breadth of class sessions that helped inform the understanding of what a spiritually strengthening environment looks and feels like in each particular context. For each session I observed the entire class meeting. The notes from each observation session were stored on my personal computer. In addition, backup files of these digital notes were kept with the use of a portable hard drive.

***Interviews.*** Supplementary to observations, another equally important activity was that of interviewing. As Stake (2006) observes, the purpose of multi-case interviews is “to obtain the descriptions and interpretations of others. The case will not be seen the same by everyone” (p.64). My goal as the lead researcher was to understand the unique experiences of the participants of the cases, to understand their perspective. This allowed me to compare my observations with the experiences of other participants. I specifically sought first-person descriptions of classroom activity and atmosphere. Here the ultimate goal was to better understand spiritually strengthening learning environments and any effect on learning achieved. In order to best achieve this I incorporated a semi-structured format: I began each interview with a standard framework of questions, reserving

the right to deviate from this set framework and explore a particular topic or response in greater depth (See Appendix E).

Each case involved two types of interviews: formal and informal. First, before the semester began, I formally interviewed each professor, discussing his or her thoughts on the faith-intellect relationship and the specific spiritually-strengthening learning-environment concept. Throughout the semester I informally interviewed a small number (5-10) of students for a period of 2-5 minutes for each case. There was no order to the selection of those informally interviewed; I simply enjoyed casual, brief dialogue with any student I could engage. The purpose of these shorter conversations was to gather a general idea of the experiences of the students.

At the conclusion of the semester a group of 2-12 students were selected to then formally interview in-depth. I selected the number for each case because it represented multiple perspectives yet was still achievable within the time-frame available. (The number of students interviewed corresponded to the number of students enrolled in each course.) During the last week of class the four professors sent out an email with my contact information and the students were invited to reply via email to me if they were interested in being interviewed for their experiences. Interviewees were selected based on availability and willingness to participate (See Appendix A). It should be noted that the number of students available and willing to participate far exceeded the final number selected to actually formally interview. I did formally interview some of those students with whom I was able to engage in informal discussions during classroom observations.

The in-depth interviews did not last more than 35 minutes each for the students and no more than an hour for the professors. Recall that the professors were interviewed both at the beginning and at the conclusion of the semester. Stake (1995) asserts the following concerning the techniques of interviewing: "For many, the tape recorder is of little value unless ultimately an audio presentation is intended. Getting exact words of the respondent is usually not very important, it is

what they mean that is important” (p. 66). During the interview process I determined that using a tape recorder and then transcribing at a later time was not ideal. Therefore, I recorded all formal interviews with professors and students by taking handwritten notes; if a particular response was unclear, I repeated what was written to the interviewee to ensure what was recorded was indeed accurate. The record of these interviews was kept in my possession. No record was kept of the informal student interviews. However, general items learned as a result of these informal interviews were recorded in my observation notes.

***Document and artifacts.*** “In case study research, most physical trace measures are used to supplement data gathered through interviews and observations” (Merriman, 2001, p. 118). The “physical traces” available to analyze in this case study research included course material such as syllabi, textbooks, handouts, and PowerPoint slides. The analysis process for documents and artifacts is similar to that already accomplished through the other data collection methods already discussed: “Gathering data by studying documents follows the same line of thinking as observing or interviewing” (Stake, 1995, p. 68). Stake (1995) suggests that relevant documents were those that addressed the research questions. Indeed, some of the documents contributed to the spiritually strengthening learning environment and/or instruction. In addition, a record was kept that included a timetable of each activity performed with an accompanying entry of my personal reflections following each activity. This record, or audit trail, served as another data point from which to analyze when data collection was completed.

### **Data Analysis**

Both during and at the conclusion of all observations, interviews, and document collection, I analyzed the data to better understand the nature of spiritually strengthening learning environments. In analyzing case study data, the role of the researcher is to better understand a phenomenon, not arrive at a set of universal, causal factors. My job was to provide naturalistic

generalizations from which others may read and increase their understanding on the issue in comparison to the cases that they have experienced (Stake, 1995). By definition “Naturalistic generalizations are conclusions arrived at through personal engagement in life’s affairs or by personal experience so well constructed that the person feels as if it happened to themselves” (Stake, 1995, p. 85). I felt it was most appropriate to provide descriptions of the naturalistic generalizations I discovered using themes. Thematic analysis entails reviewing the data sources to identify particular themes, naming the themes, and deciding how to report the information.

**Reviewing the Observations, Interviews, Documents, and Artifacts.** Because each single case is a manifestation of the phenomenon under investigation (Stake, 2006), I started the data analysis by looking at the data for each case, one at a time. Combining notes from the interviews, observations, and documents, I discovered common themes within each case. I classified each example, interview quotation, personal observation, etc. under its appropriate theme. Once the individual within-case analyses were complete, I then proceeded to analyze the data across the four cases.

**Naming the Categories.** After classifying notes from the data sources I then named the categories. Merriam (2001, p. 182) maintains that category names originate from one of several sources: “the researcher, the participants, or sources outside the study such as the literature.” For this study I used only names originating from the individuals intimately connected to the four specific cases studied: from my thoughts, as lead researcher, and from the participants. Borrowing from Merriam (2001, p. 183-184) I used the following guidelines:

1. Reflect research purposes. The categories must answer the questions that guide the research.
2. Exhaustive. All data should fit into a category.
3. Sensitizing. The category name must accurately reflect, or give a clear sense of, the data it contains.

4. Conceptually congruent. All categories must be at the same level of abstraction. One category should not be able to fit into another as a sub-category.

I researcher used these as guides to name the categories that emerged through data collection and analysis.

**Reporting.** In case study reporting “much more often, it will be useful to tell a few stories or vignettes to illustrate what is going on” (Stake, 1995, p. 127). The specific reporting format used for this research was that of vignettes. I provide a vignette for each case illustrating the nature of my experiences observing and interviewing. Following the four vignettes I then provide a thematic analysis of my findings.

In case studies the analysis of data “is a way of giving meaning to first impressions as well as to final compilations” (Stake, 1995, p. 71). My role as lead researcher in data analysis is to separate and re-piece together the data, iteratively, to arrive at meaning. As Stake (1995) observes, this process of breaking down the data and putting it back together again is known as *interpretation* for case researchers. Speaking specifically of the interpretation involved, Stake (1995) declares,

What we describe happening in the classroom and what we assert do not have to be closely tied together. For assertions, we draw from understanding deep within us, understandings whose derivation may be some hidden mix of personal experience, scholarship, assertions of other researchers...By custom, researchers are privileged to assert what they find meaningful as a result of their inquiries. (p. 12)

Therefore, what the “Analysis and Interpretation” section contains are my assertions based on my interpretations of the data gathered for each individual case, from before the first day of class as I met with the four participating faculty members through beyond the end of the semester, as I was able to reflect on everything as a whole. I began with the individual within-case interpretations.

Following the within-case interpretations, I then considered the interpretations across the four cases.

The research questions provide the backbone for analysis and interpretation: What do spiritually strengthening learning environments in higher education look like? Secondly, what helps foster that environment; what serves as a catalyst for the feeling of spiritual strength? And what roles do the professors and students play? Accordingly, all data (observation notes, interview responses, available documents, etc.) were first analyzed according to the research question they answered. Next, I further divided the data into themes that assisted in ultimately drawing conclusions.

### **Standards for Qualitative Inquiry For Trustworthiness**

Lincoln and Guba (1985) offer four standards by which to ensure trustworthiness throughout the research process. They include credibility, transferability, dependability, and confirmability. I applied these four standards to this qualitative study accordingly.

**Credibility.** The credibility of this study was determined by my ability to make it “believable to critical readers and to be approved by the persons who provided the information gathered during the study” (Williams, 1999, para. 9). In order to increase this study’s degree of credibility, six particular methods recommended by Lincoln and Guba (1985) were implemented.

First, I employed a prolonged engagement of observation class sessions for the duration of one entire semester. By utilizing a more prolonged technique, I was able to establish relationships of trust as well as observe and experience most—if not all—of what the students did also.

Second, a system of triangulation to better verify sound findings was utilized. Specifically, I interviewed multiple professors, from multiple courses (the four cases); in each course he interviewed multiple students; the researcher observed multiple occasions in each course as well. The substance of each interview and observation built on the data collected from previous interviews and observations.

Third, due to the nature of qualitative research, it was imperative that I maintained a detailed record of research conducted. Therefore, I kept an audit trail of personal reflections or insights. This audit trail was kept in my possession on a personal computer and secured with a password.

Fourth, I utilized a form of peer debriefing to check against any potential loopholes or areas that are lacking in the research. Other professors, not on the research committee, were consulted and probed to identify any areas of the research that can be improved.

Fifth, I increased the credibility of this study by passing the data collected, and more importantly the interpretations of the data, through a system of member checks. In this manner, I verified that the data and the accompanying interpretations were indeed accurate through checks by the participants who have provided, both directly and indirectly, the data. Any misunderstandings or misinterpretations were clarified and resolved using this technique.

Sixth, throughout the duration of all data collection (observation, interview, document analysis, and appropriate reflection), I employed a progressive annotation system to archive my changing and evolving understandings. In essence, anytime an assumption, an expectation, or an understanding of the phenomenon under investigation (i.e. spiritually- strengthening learning environments) changes, I recorded this change. Obviously, the goal of all data collection will be to understand the perspective of all participants. Highlighting that which was discovered took place during and after each data collection episode in which an insight was gained.

**Transferability.** This qualitative standard refers to the “applicability of finding’s in one context (where the research is done) to the other contexts or settings (where the results might be transferred)” (Williams, 1997, para. 22). Because of this principle “transferability inferences cannot be made by an investigator who knows *only* the sending context” (Lincoln & Guba, 1985, p.297). Realizing that transferability is ultimately determined by the audience of the report, or those who are familiar with the “receiving” context as described by Lincoln and Guba (1985), I describe the

phenomenon under investigation in the most clear, vivid, and rich manner possible. In this way the more the reader understands and learns from this study, the more he or she will be able to apply, or “transfer,” findings to their particular context.

**Dependability.** This standard deals with the “stability or consistency of the inquiry processes used over time” (Williams, 1997, para. 16). The only way to discover the dependability of a study is to check for any errors made at any point in conducting research. Therefore, the single most important thing I did was maintain a clear, concise audit trail of the activities performed and the decisions reached throughout the research process. In this way if and when an audit is conducted to discover the activities (and in what order) conducted, there is alignment as well as order to all research performed.

**Confirmability.** This refers to the “quality of the results produced by an inquiry in terms of how well they are supported by informants (members) who are involved in the study and by events that are independent of the inquirer” (Williams, 1997, para. 17). A literature review confirmed the quality and relevance of the results of this study. This includes all relevant research previously completed and the results of these studies. In addition, I maintained confirmability by verifying with the interviewees the accuracy of my records of their responses.

## Chapter 4: Case Vignettes

This chapter includes four vignettes of the cases I studied as the lead researcher. Each vignette is written in first-person format, from my point of view as a participating observer in the course under investigation. The sources of the vignette descriptions are my observations, interviews of professors and students, and the analyses of documents. Pseudonyms are used to help maintain anonymity for all participants. I allowed the participating professors to review each vignette, so as to check for accuracy.

The class sessions that follow represent a breadth of class meetings throughout the semester occurring at the beginning, middle, and end of each case. It should be noted that although they do represent class sessions in which I determined something of significance and relevance to the research questions to have taken place, the class sessions that follow do not represent every episode of observation; nor do the class sessions that follow represent every instance of something significant or relevant occurring. The class sessions that are included in this chapter are those that represent a breadth and depth of observed data as they pertain to the research questions.

### Case 1: Chemical Engineering

**Day 1.** As I enter the classroom on the first day, I quickly realize that this is indeed a full class: there must be a good one hundred students in here, at least. I find a seat, not recognizing anyone in the room. My professor, Dr. Kent, offers a prayer. He is an older man, probably in his sixties. It is already apparent that he speaks in a soft, gentle manner. “Good Morning, my name is Dr. Kent. This is Chemical Engineering. I hope you are all in the correct room.” About a dozen people laugh. He displays a PowerPoint slide which reads: “BYU has a dream.” Dr. Kent opens day one discussing the role of Brigham Young University, its mission, and the purposes for which we choose to attend BYU. “I want you to be the master of your own learning.”

He then begins to discuss the specifics of the course, beginning with himself. "You can call me many things...just nothing too derogatory." We all laugh; I have never heard a Professor say that before, even in jest. "These are your TA's" he says, pointing to the side of the room where three students who sit facing the class, smile and wave. "These students are bright, capable students who want to help you." He explains the role the TA's will serve for the semester. Appropriately, almost on cue, the TA's begin distributing a packet to each of us. Dr. Kent explains the contents of the packet.

After several pages, he tells us that he wants the interactions to be two-way between him and us: "But, I also want to get to know *you*." It is for this reason that he has a questionnaire for us to complete and submit for day two of class. However, he realizes that he failed to include the necessary sheet. "Oops, then I will send you a word document to fill out and you can send back to me." Dr. Kent is definitely a calm man. It already seems as if he easily maintains an even temperament; based on my initial impression of him, it is hard to imagine him getting very upset or extremely excited for that matter.

(Dr. Kent admits privately that it is very important to him to "Really know who they are. That is why I have them fill out the personal information sheets...that is why I chat with one or two of them before each class, or while they walk up to turn in assignments. That is why I write 'see me' on an exam. And when I get these opportunities, I talk to them about a multitude of things, not just Chem. Engineering. I want to know the *stories* of my students.")

The topic shifts to the text manual we will be using this semester. "I wrote it. We try to keep it small, keep it cheap, keep it inexpensive." We discuss the manual and a few other logistical items for the next few minutes. This part of the discussion is not particularly interesting. Dr. Kent then discusses the topic on everyone's mind the last month or two: the H1N1 virus. "If you aren't feeling well, don't come to class. We can work something out if you miss homework because you

are sick. I am lenient when it comes to illness." That is nice to hear. I cannot recall a single semester of my academic life, dating back to junior high, where I did not miss some class time because of illness. I appreciate his upfront understanding. He also seems to trust that we are not going to take advantage of the situation by being dishonest with him. It is refreshing that he has an immediate trust in us.

"We've covered a lot today, do you have any questions?"

A guy in the front raises his hand. "How did you get involved in this field?"

"Good question. Thank you for bringing that up, I was so eager to learn about you that I skipped past me. I studied Chemistry at Cal-Berkeley as an undergraduate. But, a bachelor's in Chemistry doesn't pay much. So, I attended Grad School in Madison Wisconsin in bio-medical engineering. Man those are tough winters in Wisconsin! But, I met my wife there...we joined the Church there. I am forever grateful for my experience in Madison."

As the hour comes to an end, there seem to be no additional questions. Dr. Kent reminds us to be alert for an electronic copy of the missing questionnaire and to return it after filling it out. Day one is done!

**Day 2.** "Would anyone like to offer a prayer today?" Like the first day of class, day two begins with a prayer. One of the students to my side volunteers, to which Dr. Kent kindly says "Thank you John." Following the opening prayer, Dr. Kent offers a warning:

For those who are not taking a math or chemistry course...If you have AP credit, it's a little bit like having money in the bank: you want to spend it wisely. Some of you are choosing, by not taking a math or a chemistry course, to use it now at the beginning. Which is OK...but the program is so lock-step, I recommend taking one this first semester.

Interestingly, I had been wondering about this exact thing. I am sure many others have been as well.

Dr. Kent spends the next 10 minutes explaining some basic principles of chemical processing. These ten minutes are fairly straightforward: he displays some visuals on the overhead projection for several minutes, and then goes to the board to write for several more. "Now I want you to get into groups. Identify all the things in the room that are *not* a part of chemical processing. Talk, introduce yourselves, and get to know each other. I want to hear buzz." He allows us about fifteen minutes to accomplish this activity. After the fifteen minutes we review for another five minutes. During this review, Dr. Kent reveals the possible answers. Once that is finished, Dr. Kent begins discussing some common household products and reads their ingredients. Again, we can see that there is a great deal of chemical processing involved to produce each product.

Dr. Kent next introduces us to the phenomenon of the block diagram. It is something we will be using a lot for the rest of our chemical engineering lives. "I want you to get in teams and do a block diagram on a car engine and how it works." He spends several minutes explaining the block diagram principle with its purpose and advantages. During this explanation I happen to glance at the class; most students appear attentively listening to his words. Of the one hundred or so students, a couple students seem to be quietly distracted. After a few minutes he goes to the board and asks the class to collectively guide him through a proper block diagram of the car engine. In this way, with us shouting out instructions, the class collectively completes it with him.

We now shift to a more realistic practice problem. Dr. Kent asks us to complete it individually, drawing a block diagram. We dive in, attacking the problem individually. Just about everyone leans forward with their head down toward the desk during this exercise. After several minutes we reconvene and discuss the solution. Half-way through the explanation, he makes a mistake and a student points it out. "Thank you Devin, I didn't see that," Dr. Kent graciously acknowledges. Several students ask questions about the final block diagram. Dr. Kent calls on each

student by name and answers their respective questions. When all questions have been exhausted Dr. Kent turns off the overhead projection. He looks up at us and states the following:

Some of you have asked me how I your names. That's the wrong question, but I am going to answer *why* I have done this. What was the first thing Elohim said to Joseph in the Garden? 'He called Joseph by name.' Now, do you suppose Joseph was the only name he knew? If you are important enough for Elohim to know your names...aren't you important enough for me to know your names. John, you are important to Him...Sarah, you are important to him...Aaron, you are important to Him. Steve, do *you* know who you are? Elaine, do you know who *you* are? You are all important. *You* are important to Him. You are important to me.

The class is silent. Dr. Kent speaks in such a grandfatherly, caring way. Naturally, his tone alone invites a peaceful, calming feeling into the room. But when he said these words, he captured the full attention of the entire class.

(Regarding the memorization of the class' names, Dr. Kent later confesses that he "starts a couple weeks before the semester. I print out the class roster and chip away at it until I get all their names.")

He concludes the day: "We are going to have a good semester because of who *you* are. Have a good day." What an unexpected yet powerful way to end the hour. As we depart I could hear the side conversations that are whispered through the hall. Everyone was impressed by his knowledge of our names, without a doubt.

**Day 4.** Like before, we begin the day with prayer. Dr. Kent invites a volunteer to offer it. After the prayer, he warns the class "I've been lulling you into a false sense of security: we will be going *heavy* into math very soon." He explains the importance math will have in the course going

forward. Following the warning, he answers several minor, general questions and misunderstandings.

At this point, lecture commences. Dr. Kent reads three word problems. For each problem, we solve them together as a class, with students raising their hands to guide through each step in the solution process. Dr. Kent jokes with us throughout the word problem exercise. The class giggles several times throughout the three word problems. This word problem exercise takes us through the first half of class.

Midway through our allotted class time, Dr. Kent directs "Now, get into groups and discuss all the ways you can use food." Everyone seems to interact without hesitation. During the exercise, I can hear some students laughing, others discussing the task seriously, with some students speaking loudly while others whisper. Interacting with one another is easy now.

"OK, let's come back. Was that fun!?" Dr. Kent inquires.

"Yah!" we all exclaim.

"Chemical Engineers have fun...they get to work together to solve problems."

Dr. Kent finishes the lecture portion of class and then outlines the nature of the groups we will work in for future activities and projects for the remainder of the semester. Dr. Kent explains that the assigned groups are numbered according to geography. So, we all (group members) apparently live close together. He explains that he wants "to make it easier to get together. But, not all of your group-mates are in this section; some are in section two, so you won't meet all of your group today." I cannot recall ever being teamed up with people *not* in my class. "But to help fix that, I put this together with *all* of your emails--in both sections--on it. So you can at least email your group members." Wow. He actually searched where we each live and assigned teams accordingly. I wish other professors would do that! He then points out the numbers the TA's are

taping on the four walls of the room. "So, meet up under your assigned group number. Your assignment is to exchange names, get phone numbers, etc." We end the day doing exactly that.

**Day 6.** Following the opening prayer, we take a brief quiz to begin the hour. Ten minutes later we grade our own quiz. Dr. Kent explains the grading scale for the self-corrected quiz: "If you got it completely right, give yourself five points. If you got it mostly right--you decide what that means--give yourself 3 points. Less than half right, give yourself two points. And if you had absolutely no idea what you were doing, give yourself zero...but I know no one in here has that problem."

This grading system leads smoothly into a discussion on *trust*. "When we trust in something, someone, some principle that *is worthy* of our trust, we grow. What does this remind you of...trusting in something when you don't know what the future holds?" Several students raise their hand. Dr. Kent calls on each by name, listening intently to their responses. After several thought-provoking responses, he rhetorically asks "You ready to exercise a particle of faith?"

Dr. Kent lectures for the next twenty minutes or so. His lectures involve a careful explanation of the topic he wants to teach us. Sometimes he displays something from his computer monitor on the white screen, for all to see. Other times, he simply writes on the chalkboard. So far he never seems to lecture for an extended amount of time. After the lecture, he assigns us to work out a problem. We do so individually for about seven minutes. "OK, what I want you to do is turn to your neighbor and compare notes. Work it out: if you've had problems, work them out." We end class completing this paired-up review.

**Day 10.** Following the prayer Dr. Kent concedes the floor for an announcement from the Chemical Engineering club. When they finish he encourages us all to participate in the club and to attend the activities they have planned. "Alright, how is chapter five going for all of you?"

"Good!" we declare.

He asks a question about a particularly difficult problem in our assignment. “Everyone understand that? Everyone agree?” A few of us nod in affirmation. He continues to scan the room despite our nods. “Anyone fuzzy on that? Is it black magic to anyone, I don't want it to be black magic,” he asks with a smirk. Most of us laugh.

The bulk of lecture, approximately 35 minutes, is spent demonstrating how to accurately construct an equation on the board. It is fairly standard. With Dr. Kent explaining from the computer, we all follow along with minimal interruptions for questions or comments from the class. During this lecture time Dr. Kent explains what we should do at each step along the way: what we should be thinking, why we should be thinking it, and what to know before proceeding to the next step. In scanning the room it seems to me that most of the students are paying attention. With a class this size, occasionally someone turns to their neighbor to whisper a question. But no one disrupts or interrupts during the lecture, however. There is a general respect we, as a class, seem to have towards Dr. Kent. Of course there is the occasional joke-response from a student, or whispering amongst students, but disruptions do not seem to happen. The day ends rather smoothly: “Have a great weekend!”

**Day 16.** After the prayer Dr. Kent informs us that “There are some matters of business to attend to. Let’s begin with a discussion of the first exam. I have some fatherly advice, or counsel, for you.” He seems somewhat concerned in his tone and facial expression. Dr. Kent proceeds to coach us on how to work the system or “play the game” as he refers to it. “You have a tool to play the game...use the tool! Learn *how* to use it.” He continues his constructive advice for nearly ten minutes, offering his opinions and suggestions.

For the next ten minutes he explains moles in various formulas. While standing at the podium and using the computer, he guides us through the principles involved. He is able to use the

projector to project the image on his monitor to the board for all of us to see. At the end of those ten minutes, he inquires "OK, you understand it? You ready to try one?"

Collectively we respond with a slight hesitation "yessss." He reads the word problem that is now displayed on the overhead. Every few sentences, he stops to explain in depth what is occurring, providing context and clarification for the problem he is reading. It's a rather long one.

He tells us that we now "have several minutes to work out the problem individually." After several minutes, "ok, how many of you drew a picture?" Not one student raises their hand. "Why not? Was it too easy?" Clearly, he is not joking with us. The room is silent. Seldom does it get this silent; with a class this large, and predominantly freshman, pure silence like this is definitely rare.

"There is a story in the scriptures about Moses and the fiery serpent. Sometimes you may think it's too easy, but all it requires is a little faith. Sometimes all we need is just a little faith." It is obvious that he is taking this seriously. He speaks to us like a concerned parent: not angry, but almost a bit sad. He asserts, "Follow the procedure. What is the first step in the procedure? To draw a picture. Ok, now that you've tried it alone, get with a partner and work it out together. Share ideas...discuss what you did."

(Dr. Kent reveals in an interview that he does "not think every day about explicit Gospel content when preparing for a day's lecture." He says he senses "their mood, as I talk with them. I have several Gospel themes that I draw from, to share if I feel it is needed, but I don't have a predetermined Gospel topic for any particular lecture topic.")

After five minutes Dr. Kent brings the class together to work out the problem with him. We see our mistakes. The hour ends with this walk-through. It feels as if we let him down. The feeling stays with me as I depart.

**Day 19.** Immediately after prayer, Dr. Kent declares "before we begin I want to read you a story. But before I do, I have a question. Do you enjoy this class?"

Without reservation we declare "Yes!" I even hear a few "I *LOVE* this class."

"OK. Well this story deals with Brad Wilcox and his desire to quit. Then, his wife told him to read President Holland's talk on enduring-to-the-end. He did, and decided to stick it out. Now, can you imagine if he had simply quit when the going got tough?" He pauses to allow us to seriously consider the question. He scans the room, looking into our eyes while we ponder. After a short time, he continues. "Wherever you are, whatever your challenge, *do...not...quit*. Ok, with that...let's talk."

The daily "fatherly advice" (what he sometimes calls it) then shifts into a logistical discussion on the exam we took. "I know the testing center refused to allow some of you to use calculators. That is completely *wrong*. For that, I apologize. They had some new people who were in training. I am very sorry. *Very* sorry." He explains for several more minutes the procedures he will employ for those unlucky individuals who were denied the calculator. Although I was fortunate to have been allowed to use a calculator on the exam, I find his method for handling this situation very fair. It seems the entire class feels similarly.

"Ok, next: problem number three. Oooooooh problem number three." Some of us chuckle, while others moan. "This exact problem will be on the final exam. Please remember, there is *repentance* and *forgiveness*. Don't *ever* forget that." He continues talking about the solution to problem three, but my mind deviates and considers what he just said. The idea of repentance and forgiveness applying to school work is...new to me. It is interesting that with this exact problem being on the final exam, I have the potential to correct my mistake and get it completely correct at that time. Very interesting, I have never thought about it like that.

“Now some of you are not turning in your homework. And guess what, some of you didn’t do very well on the exam. And that shouldn’t be a surprise. If you’re in that category I want you to come see me.” I have honestly missed several homework assignments. But when he says this, I do not feel ashamed or scared or rebuked in any way. To the contrary, I feel like he cares about my unique situation and sincerely desires to help me to be a better student. I *love* that about Dr. Kent.

**Day 26.** Following the opening prayer, we work out a problem, individually, to warm-up. At the end, Dr. Kent instructs us "now get with your partner and argue about it, charitably. I want you to charitably argue about how you worked it out." We do so for about ten minutes.

Dr. Kent then discusses the logistics of the upcoming exam number two. After several items are discussed, he counsels us. "Remember the Pahoran verses. You can't win a war if everyone is starving to death." He references the passage of scripture where the leaders of the same cause are fighting amongst themselves because the people are not receiving ample nourishment and supplies (Alma 60-62). "We are all fighting a war in here," he says pointing to his heart. "Make no mistake who the enemy is. We cannot win a war, spiritually, if we are starving spiritually. Please, do not forget to feed yourselves the spiritual nourishment you need each day." The room is completely quiet. "This is Brother Kent's fatherly advice for the day." The rest of the hour is spent reviewing for the exam: we ask questions; he shares strategies and works us through each problem until we understand how to arrive at answers.

(Dr. Kent admits that his hope is that each student “feels cared for enough so if needed, they could talk to me. I hope they know I care enough about the Gospel that I could share it with them. I hope I encourage them when they need a boost—whether it be an academic or everyday-life boost.”)

## Case 2: Statistics

**Day 1.** The first day of class begins with a bang. “My name is Dr. Paul, but here is what I’d like you to call me: Coach. Here is why...” He seems to have this mini speech down. “Everything in life is in teams. First, it requires communication with others. Second, teamwork skills are very important. Third, technical competence is advanced or promoted in teams.”

(Privately, Dr. Paul describes this philosophy in an interview: “I don’t want to be a sage-on-the-stage; I want to be a guide-on-the-side. I want to help them. Calling me coach helps accomplish that. I want to help them be all that they can be...all of them, successful.” His eyes light up when inquired about his philosophy to teaching. Why this approach? “I studied team-based learning and I *loved* it!”)

Dr. Paul introduces the "Epiphany: I am an Engineer" sheet. Next, Dr. Paul organizes the class into teams of three for the lab portion of the course. We do not choose our teams; Dr. Paul tells us the threesomes. He asks for each team to acknowledge their teammates to assure that all are accounted for. “Great, if there are any problems, they are to be worked out with the TA's.” He seems very enthusiastic. “Everything you do in this course is in a team.” Immediately, Dr. Paul arranges the seating so that we are sitting near our teammates. He instructs us that this is how we are to sit, more or less, for the rest of the semester.

With the teams now organized, Dr. Paul continues to introduce the nature of the course. He displays a PowerPoint slide with several bullets. The nature of the slide seems to be his approach to teaching. “First, writing is the most important skill you can have or develop. Writing is learning, so write and write a lot. Second, statistics is all about honesty...all about telling the truth. Being a leader is all about being honest.” Dr. Paul seems to branch off from the scripted text on display as he walk closer to us and faces us directly, as if to elaborate on that particular bullet item.

This university is here for one purpose: He, the Lord, needs leaders. You are here to become a leader in the Kingdom of God. Brigham Young University is the Church's largest line item on its budget; so it must have a very important purpose as it relates to the Kingdom of God. About leadership, Coach Bronco Mendenhall says: 'It's not about football; football is the vehicle to build leaders.'

Dr. Paul resumes following the list of bullet items on the PowerPoint display. It is interesting how he paces back and forth: he is always speaking energetically; occasionally he inserts a joke and gets a quick laugh from the class. His style is definitely engaging. It does not seem boredom is possible with his lecture style. The next slide discusses the three most desired skills potential employers look for when hiring: "The number one marketplace skill is the ability to communicate. Number two: to work well with others on teams. And number three: to produce a quality product."

After the TA's distribute some CD's that we will use throughout the semester, Dr. Paul explains the contents of each and the nature of their use. He then shifts to a topic seemingly off-topic. "The three questions we should be asking ourselves daily are: am I better today than yesterday? What am I doing today so that I can be better tomorrow? (But don't compare yourself with who you are, compare yourself with who you *can* be.) And number three: am I becoming all that I can become?"

Dr. Paul distributes another handout, titled *Scientific Inquiry*. "You should memorize this" he exclaims. "When you are presented with a question or problem and do not know the answer, don't guess. Say 'I don't know. I will find out, and get back to you.'" He seems quite adamant about this.

The next part of class requires us to get into our designated teams. "I want you to tell me why people don't count the defects!" Various class members shout out answers.

Dr. Paul then distributes the "Process Improvement" sheet. As part of this handout, there is a problem to be solved. "OK, team assignment number one: solve the problem about the car not starting. I want you to come together and discuss solutions with the use of the cause-effect diagram. I want you to ask the five "why's"...like a child would." Upon initial viewing of the problem it appears that there are many possible explanations.

As Dr. Paul continues to explain how he wants us to proceed with this first team assignment, he interjects quotes of two highly successful coaches in football history. "Joe Paterno said, 'When a team outgrows individual performance and learns team confidence, excellence becomes a reality.' And Vince Lombardi said, 'The quality of a person's life is in direct proportion to their commitment to excellence, regardless of their chosen field of endeavor.'" Following these two quotes, he then gives us a pep talk on the importance of team success: the importance of working well with teams on specific tasks and the general importance of working well with others in life. It is clear to everyone that teamwork is extremely important to Dr. Paul and will play a major role in the learning achieved in this class.

The second assignment for us comes while still in groups. "OK, assignment number two while in groups: I want you to discuss how you will ensure that your team is successful." He allows us about seven minutes to discuss this in our teams. Dr. Paul seems to really value the success of teams. Accordingly, "all projects, lab work, and several exams are team-based activities."

As we finish recording our team response for assignment number two, Dr. Paul introduces the Learning Journal portion of the course. "The Learning Journal is the 'so-what?' It is a collection of the lessons learned...the 'Ah-Ha's!' It is your record of how to improve quality." He then proceeds to discuss how learning occurs: "through reflection, through repetition, through writing." These, according to Dr. Paul, "are the ultimate reasons for Learning Journals."

For the last five minutes of class Dr. Paul makes sure that everyone understands the day's topics and the standard operating procedures for the class. "I want to ensure that the teams have everything they need. Does anyone have any questions?" After responding to several logistical questions, Dr. Paul concludes the first day of class with an anecdote: "To keep the sports metaphor, in this class, learning will be the equivalent of winning; touchdowns will be achieving success on each task. The TA's and I, we are on your side. We are here to help you succeed." Cool! Doubly cool: my mind operates in sports analogies!

**Day 2.** "Let's talk about statistics today! Let's talk about quality! There is nothing I would rather talk about today!" Wow, Dr. Paul definitely does not lack for enthusiasm. After a few "Hey so-and-so, how ya doing!?" handshakes and greetings, Dr. Paul invites Jay to offer a prayer to begin class. Following the prayer, Dr. Paul shares an incident that occurred while in Australia years ago. "I have a story I want to share that deals with quality. I was in Australia. I go to a Burger King to obviously buy myself a burger. And the guy taking my order says to me 'We're out of burgers, mate. Would you like some chicken?'" Dr. Paul then shrugs his shoulders, squints, and looks at us as if to suggest that the Burger King employee was crazy. "No! This is *Burger King!*" The entire class bursts into laughter.

The first topic for the day is an explanation of the fundamental definitions we must understand. The top word on the list: performance. "Performance does *not* equal quality" Dr. Paul declares, strongly emphasizing the word *not*. "Performance is what something does; quality is that something does what it is expected to do. Don't start with the product...start with the customers. Give the customer what they want!"

He then shows us a short comedy on video about airplanes and the all-too-familiar pain of losing luggage. It has us all laughing. "You can get what you want in this world if you help enough people get what they want," he concludes. "Do the thing that's not your job." It seems he often

makes declarative statements regarding the manner in which we should conduct ourselves as people, not merely as students or engineers.

Two new overheads are now on display. They both focus on indicators of quality: or “that which the customer wants.” They appear straightforward, fairly obvious even. We are now looking at an enlarged Ivory Soap label. It advertises that the soap is 99% pure. “99% pure!? What does that mean?! 99% pure *what!*? Soap is not an element! Are they saying its 99% right, they got it 99% right!?” He argues with a sarcastic yet annoyed tone; regardless, we are all laughing. To further highlight the importance of achieving perfect quality, he quotes from the Holy Scriptures. “In the Doctrine and Covenants we read: ‘I the Lord cannot look upon sin with the least degree of allowance.’” Without elaborating, I think everyone understands what he is saying to us. Dr. Paul makes it perfectly clear that the minimum standard to shoot for is 100% when planning for and measuring for quality.

Continuing, he displays on the overhead screen some poignant illustrations of 99% success. “First, 99% success at O’Hare International Airport means 2 unsafe plane landings per day at O’Hare.” Wow, I wonder how many “close calls” that must translate into, or how many minor crash landings. And that is just one airport! As far as medicine is concerned, “99% success in the operating room means approximately 500 incorrect surgical operations per year.” Unbelievable! I immediately recall a companion during my missionary years telling me his father had a hip replacement surgery where an incorrect type of oil was used as a joint lubricant; and he had a type of automotive oil used instead. I remember him saying there was some multi-million dollar lawsuit for all the individuals who had that particular type of hip...and obviously his father had to have a second operation. 500 is a lot of medical mistakes!

After reciting a few more examples of what only 99% success means, Dr. Paul then says “OK, time for my daily rant.” He stands on the desk looking so excited and energetic. I smile with

my mouth open, somewhat in shock at this sight, eager to hear what he might say. "Removing lead paint in Chinese toys will result in higher prices here in U.S. at Walmart. However, small children will sometimes suck on their toys. Now, if you had a choice between poisonous food or non-poisonous which would you pick!? Does price matter!?"

While he gets down from his "daily rant," the TA's are already distributing another handout: "Quality is free" by Philip B. Crosby. Upon first glance, the premise to this handout is that the cost of doing something right the first time ultimately saves money. "The bitterness of low quality lasts longer than the sweetness of a low price. In fact, trying to save money will make the product worse. Next, cost minimizers make bad decisions." The theme of quality is constantly brought up. I really like that he uses a variety of sources when quoting or telling stories. So far, it seems that class can never be dull.

"Okay, now I want you to get in your teams. I want you to discuss what you wrote in your learning journal. Share what you learned with one another." We spend the next ten minutes sharing with our teammates some highlights from our learning journals. It allowed me to reflect upon what I wrote as well as gain some additional insights from my teammates John and Bryan.

Lecture resumes with more discussion of the appropriate approach to quality. Of the things Dr. Paul mentions, several stick out in my mind. First, while discussing how to ensure quality during the production process, he says "It doesn't matter what it costs, do the right thing." He also instructs us to "Ask 'how good can we make it?' Not 'how much can we save?'" Finally, he tells us to "Measure all the time." Dr. Paul is constantly giving us advice like this. In between each bullet of course material, he will insert counsel on the manner of student or future professional we should be. It is really valuable!

"Now think about your life, the product you are producing in your life. What are the expectations of the customer in your life?" It is an interesting question. The room is quiet; my

mind drifts into consideration. Looking at my life in this light, I am both the customer and the producer. God the Father, ultimately, is the customer. After several moments to allow for personal introspection, Dr. Paul continues: "The Scriptures say the Lord teaches us 'Be ye therefore perfect, even as I am perfect.' President Hinckley taught us to 'strive for the high ground...spiritually, physically. We are to be excellent.' Look, it's about the center, not the boundaries."

He then introduces the "14 Point of Quality" by Deming. We discuss each bullet briefly when, at the conclusion of the list, Dr. Paul interjects "I'm not going to make you memorize Deming's fourteen points; can you remember the Ten Commandments in order? I'm not going to make you remember fourteen things Deming said if you can't remember ten things God said." We all laugh in agreement. "But I want you to get in your groups and apply Deming to your group." Class ends in this manner: we spend the final ten to fifteen minutes discussing how we can apply the principles espoused by Deming's list to the team. Once the hour is over, Dr. Paul instructs us on the upcoming tasks for which to be prepared. Finally, "And I hope you all have a wonderful weekend."

**Day 6 (1-hour unit exam).** Dr. Paul enters the room shaking hands and asking "how are you today?" to several students. This seems to be a standard entrance for him. Following the opening prayer, Dr. Paul declares enthusiastically, "Whenever there is something you need, let me know what that is. Whenever you have a bug, run into a stumbling block, send me an email and let me know what that is, so we can work on it together. Contact me, and we can work on it together." He then reads a quote from ex-student: "Thank you Dr. Paul for preparing me for an interview with Gore. They were impressed with my statistics understanding and memory." He elaborates about that particular ex-student and the specifics that led to his hiring. Interesting: I would love it if something I learned in here directly led *me* to get a job.

It is now time for the Unit 1 exam. The TA asks for all "team representatives to please come to the front of the class." They receive a handout. Dr. Paul asks each team representative to

stand on either side of the two sides of the room so everyone can still see the projection of the horse carriage on the overhead. Clearly visible is the poem "The Wonderful One-Hoss Shay" by Oliver Wendell Holmes.

"OK, get out some paper...this is your test." It was at that moment that it occurs to me: Dr. Paul sounds like "the Fonz" from *Happy Days*: he is cool, nothing ever gets under his skin; he is excited to see us and interact with us; he views this topic of statistics as the greatest thing ever. He continues, "The leaders will take turns, alternating every two lines, reading the poem 'The Wonderful One-Hoss Shay.'" Once the oral recitation of the poem is completed, Dr. Paul posts two bullet points for us to complete in teams during the next hour.

- Pointing to the first bullet he says, "I want you to apply the principles learned in Unit One to analyze the poem and the one-hoss shay that is described in the poem."
- The second bullet indicates that this is a closed-notes exam: the teams of three must recall all information and course content from Unit 1.

We are given the next hour to complete the analysis of the poem as described.

With the exam over, Dr. Paul resumes lecturing. We discuss several slides on the work of Dr. Deming. "Deming says, basically, that you do not *have to* improve, survival is optional! Ok, got it? Now I want three volunteers to come forward." Dr. Paul asks the class to repeat the definition of "quality." We do so in unison with his guidance. "Now, what is the difference in quality from one customer to another? I want you to get into your teams to answer the question." After several minutes of deliberation, we come together as a class and discuss the answer to his question. Dr. Paul declares, "The answer to this problem is simple: just keep the eye on the target value."

Moving on, Dr. Paul introduces a new topic: probability. "OK, who wants to play craps? Darren, come up here. Now roll these dice against the wall." After taking several turns each

attempting to score a seven or eleven, Dr. Paul concludes that Darren is the winner. “Let’s give Darren a round of applause everyone” he proudly exclaims. “Now...slot machines. What if you get money that you didn’t win? Think about it.” After several seconds of silence and looking around the room, he responds: "you can't feel good about it, so you must put it back in." And then he turns and says in a sarcastic tone "But it’s the mob! OK, you can feel good about taking from the mob!" We all laugh hard at that quick jab.

"What is probability? Let’s do an exercise!" He offers with excitement. Dr. Paul then pulls out of his pocket a coin. He flips it in the air and catches it, “Tails.” Again, “Tails.” He does it four more time and each time “Tails.” With each successive landing of tails, the class laughs increasingly louder. “Now, there is a one in two, or fifty-fifty, chance it will land tails correct? Ok, now understand this, a ‘surprise’ occurs at a one out of twenty rate, or less; we say that's a ‘surprising’ event.”

Dr. Paul then describes the next slide: There are two circles displayed, labeled “A” and “B,” respectively. “This is A *and* B. This is A *or* B” he explains.

Donny asks a question: "Coach, so 'A or B' includes the intersection of the A and B circles?"

"Yes sir. You know, you come on down." Dr. Paul uses Donny to make a demonstration. He has Donny stand in two hula hoops while explaining his position and how it relates to the statements A-and-B and A-or-B. Following the demonstration with Donny as the example, Dr. Paul ends the day with what is coming up the next couple class meetings, lab-wise and lecture-wise. Finally, “And let’s give a round of applause for Donny who performed admirably for the demo.”

**Day 7.** The day begins with prayer. Dr. Paul’s first statement of the day: "My number one goal is for you to be successful. Let's strive for excellence. So if you need anything, please come and see me. Got it? Need anything: come and see me. Does that work Sunjeev?"

“Yes.”

Dr. Paul turns to ask another, “Does that work Eric?”

“Yes.”

He now faces the entire class, “We want to strive for excellence.”

(In an interview Dr. Paul admits that “I want to be very accessible to help them come see me. I try always to be student-driven or student-centered.”)

After drawing a graph on the whiteboard, a student asks a question. “Coach, can you explain again what the different tails mean on the graph?” Dr. Paul looks straight in his eye and responds in a direct one-on-one manner, “Absolutely, they refer to...” I love how he addresses us personally! There is no question that he cares about us as individuals.

Following the graph explanation, he presents the class with a team question. It is a two minute drill: “what's the probability that it will exactly land on point A?” For several minutes he gives us hints as to how to approach probability graphs as well as how to go about actually solving them. “First, you must draw them out. Pay attention to ‘and’ or ‘or.’ Finally, make sure to color in the *appropriate* areas.”

To test our understanding of these hints, he poses a question. John in the front row shouts out an answer. Dr. Paul restates his answer because it is correct. He then immediately follows it up with an additional scenario. This rapid-fire questioning continues for various scenarios. Finally Dr. Paul declares “Alright! Practice team problem: hurricanes in Florida. What is the probability there will be *at most one* hurricane this year? What is the probability of *exactly six* hurricanes occurring this year?”

After allowing several minutes for each team to solve the problems, Dr. Paul brings the class together to go over the correct solutions. Using a volunteer to make initial attempts at solving the problem, Dr. Paul walks us through the correct approach for each step.

Class ends with these words from Dr. Paul: “We must be honest with ourselves, that way we can be honest with other people. That is the real reason we are doing this: being honest with the data, so we can be honest with other people and support our claims. These methods will keep you from being dangerous, it will keep you honest.”

**Day 9.** After greeting several students with an enthusiastic “Hey, how are you today?” Dr. Paul asks Janna to offer the opening prayer; she willingly obliges. “Ok. Talk to me, write me, email me. I want to know how you are all doing and if there is anything I can help you with. And remember to write daily in your journals about what you are learning.”

“Coach, about lecture?” A student in the front shouts out.

“Lecture, homework, activities, the readings...everything. The journal is the 'so what?' of what we are doing.” We begin lecture by proceeding going through the PowerPoint slides. About ten minutes into the discussion Dr. Paul inserts a side note: “Let me emphasize this one more time: I want you to succeed...and be all that you can be.” His continuous declarations of wanting to help us are sincere.

“Ok, quiz time. Get some paper out.” After allowing a minute for all of us to ready ourselves for the quiz, “OK, you have one minute to write this down and get it into Jessie’s (the TA) hands: what is quality?” After seemingly no more than a moment, Dr. Paul barks out “Thirty seconds left.” Followed quickly by “Ten!” Shortly thereafter the buzzer sounds.

“Take a look at yourself. Ask yourself if you are personally applying the principles of ‘quality.’ What is quality in your life? In your service in the Church?” Dr. Paul allows for a few moments to pass for reflection. “If you can answer it in a few words, then you *know* what you are talking about.”

**Day 14.** After spending most of the class period taking the individual portion of the Unit 2 exam Dr. Paul ends the individual portion of the class with some light instruction. The TA’s

distribute large raisin cookies, one cookie per student. On the whiteboard Dr. Paul is writing two rows of numbers from about five through forty. “We are going to test frequencies using a cookie: how many raisins are in each?” We each count the number of visible raisins in our respective cookies. Dr. Paul then asks each of us to shout out how many raisins we counted. As each student declares his total, Dr. Paul marks a tally next to the designated number on the whiteboard. After round one of tallying each student’s raisin total, he announces, “I think we need a larger sample size.” So, the TA’s immediately begin distributing a second cookie to each student. We repeat the tallying of each student’s raisin total. “Alright, so now we have 55 cookies worth of data. Now break into your teams to finish the rest of the exam using the data we’ve tallied on the whiteboard to answer the questions. And please, eat your cookies!”

**Day 16.** After the daily prayer, Dr. Paul walks around the room helping us with some assignment problems that were difficult to complete. I notice that he walks us through each stage of the process, without giving any direct answers. “Ok, let me remind you again, we have no lab. So make a lab for yourself and come *see me*. Let me reiterate that my number one goal is to help you succeed. We want you to be masters of this material by the time we are done...and I want to help you in any way I can to do that. Ok.”

A student asks, “Coach, I don’t understand the 'why' behind something you said earlier.” Dr. Paul walks the student through the rationale; he explains the 'why' behind the concept. He does so in a way that a father does to a confused child coming for answers. It is so clear; I thought I knew the answer when the student initially asked the question, but after Dr. Paul’s explanation I now understand it perfectly.

**Day 18.** Class begins with prayer. “Let's begin with what's important: myself, Todd, and Cam have nothing else in mind than your success. If we are not doing enough to assist you in that objective, let us do. We want *you* to be excellent in all *you* do. That’s our number one goal.”

Dr. Paul asks us all to recite the Central Distribution Theorem. “Please stand. I’d like you to recite it in unison.” As instructed, we stand and recite the theorem nearly perfect. He seems quite pleased with the recitation as he proceeds to read a letter he is holding in his hand. “This is a letter from an ex-student of mine. It’s a ‘thank you’ for what he learned from me and how his boss paid him dinner anywhere he wanted because he was the only person in 20 years to do a puzzle (posed to him from the boss) right. And he was the least experienced guy at the firm!” The ex-student was extremely grateful for the lessons he learned in this class. In particular, he expressed appreciation for those things he learned which extended beyond the basics of the course. After reading the letter we continue with lecture.

During the next hour we stand and recite the Central Distribution Theorem two more times. Dr. Paul is adamant that we leave the course with a complete understanding of several definitions, of which the Central Distribution Theorem is one. Dr. Paul then instructs us to work together on our seemingly daily exercise of team-problems. After twenty-five minutes of working in teams, the lecture now shifts to the topic of *measurement*. During the discussion Dr. Paul bursts out “Manuel, when you come to the edge of a cliff, like the Grand Canyon, and you are looking way down, what's the first thing you do?” With slight reservation, the class laughs in anticipation of what is coming. “You SPIT! You want to measure it!...How far down it is!” We all erupt in laughter immediately.

**Day 20.** “How ya doing Sujay!?” After a brief conversation with Sujay, “Brian, could you pray for us please!” Once again, Dr. Paul enters the room and begins the hour with maximum enthusiasm. Following the opening prayer, Dr. Paul offers this anecdote: “OK, your mind learns as it reflects; your learning journal is an opportunity to reflect. We want your learning journal to allow for you to reflect. You know when you have a song in your head and you can't get rid of it...well we want to tell your mind that this is important so it cannot get rid of this stuff.” Following the

pep-talk, Dr. Paul distributes a quiz to be completed in groups. After forty-five minutes for quiz completion Dr. Paul asks the class to “please come together and let’s go over the solution.”

The day begins with the TA's addressing the class on assignment logistics. When all matters are clear, Dr. Paul begins: “Ok, it’s time for the Quality Thought-of-The-Day.” Dr. Paul then turns on the overhead projector. Displayed on the screen in large print we see a single line: "Excellence is not an act, it is a habit." After allowing us a moment to read and digest the quote on display, he offers his thoughts on the quote:

Excellence is not achieved through a mechanical process or a checklist to go through; it is achieved through the decisions and choices we make repeatedly, daily, habitually...not once, but *every* time. Excellence is a reflection of our values, which are demonstrated by our decisions, and is based on our attitudes about ourselves and about others. We, as followers of Christ, have the Gospel to form our attitudes, if we choose to follow, habitually. This applies to our professional lives as much as our personal lives. The question to ask ourselves is, ‘Do *I* have the habit of excellence in all that *I* do?’

Dr. Paul then goes to the head computer and clicks on a few things as if to transition to the next phase of class. “Ok, are there any questions about what we went over last time or on anything you are encountering in your assignments?” Several hands go up.

“Hey Coach, I am not quite clear how to best answer the second problem from the exercises.” Like he always does, Dr. Paul addresses each question by walking closely to the inquiring student and speaking sincerely and directly to him. It is a very personal address to each question. It is apparent that he enjoys dealing with individuals first, but still manages to instruct the rest of the class while addressing the individual.

After several student questions, we transition into a hula hoop exercise. Dr. Paul asks for a volunteer. “Okay, Steve...come up here with me Steve.” He motions for Steve to join him at the

front of the class. "I want you to toss the hula hoop across the room...times ten, trying to get it to land with a marker inside the ring. It's in the style of a game of horseshoes." While Steve struggles initially, Dr. Paul teases about his hand-eye coordination. All of us, including struggling Steve, laugh at his struggles.

With class over, I make my way to the front towards the door. He reaches out to shake my hand as I leave. "Hey Seth! How are you doing?" as he always does. He seems to always ask this (seemingly daily) in an excited manner. He is so genuinely helpful.

**Day 29.** Today begins with a review for the exam we are about to take. During the nearly 30 minutes of review, Dr. Paul answers everything. It is interesting that he truly speaks like we are his players and he is instructing us before a game as the coach. "Schedule a lab with me, and let's work on stuff that you want...as much as you need. Come in my office hours...or any other time that meets your convenience. That ok? Ok good."

When the pre-exam review is over, we then shift to the exam itself. I feel almost as if there is an actual competitive sporting event about to begin. Dr. Paul has created a feeling of sport and preparation with our use of "Coach" as a title for him, and the way he instructs us. "Get with your study buddy for the exam." Dr. Paul reads the problem to us. "Spread out! Spread out so you can work. It's open book, did I say that? Open book, open notes." With that last instruction, we take the exam in groups for the next 45 minutes. We are given about 10 minutes to complete each problem before momentarily convening to receive the next problem.

"Here are the rest of your exam problems...work on them from home. Are there any questions on any of these four scenarios? Ok, I want you to have a great weekend! Go Cougs!"

**Day 33.** Dr. Paul walks in discussing how the last few days look, schedule wise. "So we have six meetings left, to get all this done. Six days to get complete ownership. We need to get this stuff down, so you own it...not sort-of understand it, but *own* it." Dr. Paul reminds us of the end-of-the-

semester that nears. Following the prayer Dr. Paul asks “How can I help you?” For the first time it seems that we are all comfortable with the material we are learning: no one asks a question, not even hesitantly. “Let’s cultivate a reputation of excellence in everything we do. Does that sound familiar? It should, President Uchtdorf taught us that.”

Dr. Paul then transitions into what we all have been anticipating: the results of the exam. In particular, he suggests that instead of answering specific, individualized questions, we review each problem together. “Should we go through all four of them?” After several of us nod in affirmation he says, “OK, let's go through all of them.” Dr. Paul first singles out Christina to work through the first problem in front of the class on the white board.

“Remember, if you don't know, say you don't know! Don't guess. This educational system rewards you for guessing: in the form of partial credit. Tell the truth above all else! It’s more important to be trusted than to be loved? It’s true. So if you don’t know, say you don't know but you *will find out*.”

Christina goes through the statistical math on the chalkboard. He asks Christina questions as she goes through the problem. She explains her rationale throughout the process of solving the problem. When she finishes, Dr. Paul confirms the exact answer; we each correct ourselves.

“Ok number two...Ryan! Will you help us work it out?”

“Yah” he replies. As Brian explains his rationale for the approach to take, Dr. Paul prods his logic so that all are perfectly clear as to why he is doing it correctly. It seems that Dr. Paul chose Christina and Ryan intentionally. Through his question-and-answer approach to reviewing each problem, Dr. Paul allows us to see the reasons for which each step is the correct step in the solution process. In this way we each are left without any confusion. It is clear to all why the solution is the correct one, and, more importantly, how the process of solving the problem is the correct process. Dr. Paul repeats this method with two additional students for problems three and four.

With the exam problems solved, Dr. Paul again asks "Alright, now please stand and recite the Central Limit Theorem. But, I want Sharon to lead us. Would you please, Sharon?" At this point, we all know the Theorem. But it does seem that he picked a girl who seems quiet, or shy, to lead this time. When we finish reciting the Theorem, Dr. Paul gives Sharon some candy and thanks her for leading the class.

"OK, great. Now we are going to take a little quiz." While he says this, the TA's begin distributing an index card to each student. "I want you to compare/contrast the words *statistical significance* and *practical significance*. Provide an example. You have ten minutes. Again: *statistical significance* and *practical significance*." When the ten minutes are over we submit our cards. The next seven minutes are spent reviewing the correct definitions of the two terms.

Once that is finished, one of the students behind me asks, "Can we review the four types of T-tests we've been learning about?" Without hesitation, Dr. Paul goes directly to the board to highlight the four types. He literally draws four numbers (1-4) as he progresses through each type. He gives an example for instance. He also explains the specific conditions when each type would be used. After the lengthy explanation, the same student interjects "Sorry coach, but I still don't understand. Could you explain in which conditions we do the F-Test?"

"Sure." Again, he goes directly to the board, and explains the conditions in which the F-Test is used. It seems as if there is literally nothing he'd rather do than explain something so that we can ALL understand it...down to the very last student.

"What is a confidence interval, Katrina?"

"95% of the scores," she replies.

"No. Ok, let's say instead, what is a 95% confidence interval?" This time, Dr. Paul asks the student who performed the hula hoop exercise to explain it using the hula hoop as the metaphor. Then, "Katrina, what then, is a 95% confidence interval?"

She deliberates for a second or two, "A range..."

"Yes, it's a range..." She finishes the sentence but only gets the definition partially accurate. Dr. Paul then explains the correct definition of a confidence interval. At this point in the semester, it would be easy to be frustrated that the basic definition of a confidence interval is not understood. I, for one, thought she should have known the answer with ease by now. But Dr. Paul is never condescending; he always tries to help the individual understand. "The *confidence interval* is better said as *reasonable range*. Why? Because of one-tailed confidence intervals."

Following this explanation Dr. Paul then concludes class by reading from the projection now on the board: the "Alma's Experiment." While we follow along with the displayed directions, he reads for all to hear: "I want you to identify the Design of Experiments (DOE) vocabulary Alma uses in describing an experiment upon the Word of God (Alma 32:27-43). Note the verse where he uses each concept. If he does not use a word explicitly, identify how it is used implicitly or how it applies in Alma's experiment." This assignment seems like quite a challenge: applying our understandings of the Scriptures and of the Design of Experiments will surely test us.

**Day 35.** Dr. Paul enters the room greeting all the students in his path enthusiastically. We pray as a class. Dr. Paul then instructs us as to the things we should be working on, concurrently, at the moment. "There is a lot to do with little time remaining. I know, it's *that* time in the semester. But that's why we gotta master this: so we can be *good* at what we do. I don't want anyone in here leaving without getting this down. We have to get this down today. Leaving without knowing this is NOT an option."

We spend the entire day finalizing our understanding of the last few lectures. As usual, Dr. Paul attends to every hand raised. No question is left unanswered; no misunderstanding left unresolved. It is a fairly standard day as far as lecture is concerned.

**Final Day.** This last day is spent going over some final questions we have in preparation for the final exam. It is a low-key day; we all feel prepared. Dr. Paul distributes a sheet titled “Total Quality Management for Life.” It includes some one-line suggestions for living life, making choices, etc. His final words that stick with me before departing class for the semester: “We do the right thing...because it is the *right* thing.” What a good semester!

### **Case 3: Marriage, Family, and Human Development**

**Day 1.** My first impression: wow this class is huge! The auditorium is full (there are at least 200 seats) and there are still not enough seats for about 30 students. Day 1 begins with prayer from Dr. En: "I will not pray before every class, but to start a new semester I'd like to begin with a prayer." Following the prayer he introduces himself. He seems like an outgoing man by nature. He scans the room, looking at everyone in all directions while he talks and gives a brief history of his academic past. Rubbing his hands together as if to say “okay, let’s get down to business,” Dr. En seems enthusiastic about the day and the new opportunity it is to teach us. After he discusses his background, he belts out with excitement, "And this course is my baby!"

Before discussing the course, however, he pauses to introduce his own family. He shows us a picture of the family together with his wife and daughters, as well as a photo for each individual member, all while sharing the name and age of each. The pride he has in his young daughters is apparent: as he talks about them his voice changes slightly to one of care. Following the introduction of his family, Dr. En then introduces the class to his Teaching Assistants (T.A.’s). He asks each T.A. to speak and share his or her name, where they are from, what they are studying, etc. Although they seem somewhat shy, they each do as he asks without hesitation. One of the T.A.’s even mentions "Please come to us for help."

The instant the last T.A. introduces himself, Dr. En nearly cuts him off by exclaiming "Ok, let’s get to know each other!" He firsts asks us all to “raise your hand if you are freshman...now a

sophomore...a junior...a senior.” Each grade level takes turns raising their hands. He seems to want to get a glimpse of the demographics of this large class. “Ok, now how many are a nursing major? An education major? A psych major? How many are here because your spouse made you?” The class erupts in laughter as a several people actually raise their hands in confession. He continues asking for hands to be raised, “how many in here are married? Are already parents? Returned missionaries?” At this point of the fire-drill, students’ hands are going up and down constantly. “How many are from Utah? How many of you are from Pseudo-Utah...I mean Idaho? How many from California? The Midwest? You know you’re from the Midwest if you can stand on a can of tuna and see the east coast.” The class breaks out in laughter again. “How many are from the South? What is the plural of ‘y’all? Only those from the south know this answer: it’s *all y’alls*...only place where you can take a word that’s plural, and not a word, and make it into a word that’s even MORE plural!” After the laughter from this last teasing subsides, “Ok, last one: the Military? You’ll never hear people more proud of not having an identity.”

The class seems to thoroughly enjoy this; I, for one, laughed several times. He continues by telling us the following:

I know this may seem like an unimportant exercise, but it means *a lot* to me. Let me tell you why. When I was an undergrad, and took this same class and knew that I wanted to teach this exact course material. But while I studied here, I felt like everyone was kind of the same. Then when I was pursuing my doctorate degree at Maryland, I had a change of heart...I gained a newfound love for diversity. Then, I realized BYU students *are* diverse. This exercise highlights some of your uniqueness. Furthermore, there is an academic freedom here at BYU...and that makes it the best place to teach on earth.”

One of the more noticeable features to his style is that Dr. En often overly pronounces his words as well as uses his hands to add emphasis while he speaks.

We discuss a few items of business. "I could be the funniest guy in the world...but *you*, my brothers and sisters, will decide if this is a good class or not." We discuss the syllabus, and he begins by reading the "Introduction" section which incorporates the Book of Moses (1:39).

"I believe human development is *the* most important knowledge." This is one energetic man: he speaks with so much passion. Each word is pronounced crystal clear. "But, my ego is not so big to be a control freak. If someone is asleep I won't say anything. But, I will talk to you on the side if what you are doing infringes on others. This is your classroom, take advantage of it, make it what you want it to be." What energy when he speaks! I can see the vein in his neck when he talks, and I must be about fifteen rows away.

"I care soooo much about writing. We need to know how to write. Writing is the one thing that cuts across every discipline." This is his introduction to the required papers we will write this semester. When the survey of the syllabus is done, he declares "The only thing that will keep you from succeeding is your level of effort." It is funny to hear him say that: he absolutely does not lack for effort in his lecturing style.

**Day 2.** Dr. En begins by reading a satirical note: life should be lived in reverse. By the end, most of the class was giggling. Immediately following the reading of the note Dr. En proceeds with the day's lecture: Sigmund Freud. His lecture style is an upbeat one. He speaks in an eager, interested-in-the-topic way. Dr. En pronounces his words clearly, as if he wants to eliminate any confusion in what he is saying in such a large auditorium. He even paces slowly as he talks from one side of the room, to the middle, to the opposite side, and back to the middle again. As he paces to each section he walks up the aisle so as to address those sitting towards the back. Gratefully, everyone in the auditorium can hear his lecture clearly. (I know because I am sitting as far back as possible today). Throughout the discussion on Sigmund Freud and his contributions to the theories of development, Dr. En mingles funny stories into each bullet of PowerPoint. It seems to

be his way of poking fun at Freud's extreme, and apparently erroneous, stance on several developmental issues.

**Day 3.** Dr. En opens class with a story about the manner in which a hen raises a chick. It is a brief anecdote, but he has already grabbed everyone's attention. He uses this illustration to transition into the topic of raising and disciplining a child. He tells a counter-productive example of disciplining a child for misbehaving during Sunday church service: parents making a scene, quickly grabbing a child and virtually yanking them down the aisle while exiting. It is a scene we are all too familiar with. In contrast, he then offers some personal examples as alternative solutions for handling a similar situation.

He concedes that he knows this in not the perfect way, nor is he a perfect parent, but that it was a method that was effective for him and his wife while raising their three children. (This is a disclaimer that Dr. En would repeat many times over the course of the semester. Practically daily, before sharing his experiences as a parent, he would start with recognition that the ultimate source for proper parenting is God the Father; he acknowledges daily that he is just a man and imperfect one at that. He is very open, honest, and sincere with us as a class. Every time he mentions the disclaimer, it almost makes it easier to look for the truth in his examples and illustrations. As a result, it seems that there could be more to remember and apply later when it is my turn to be a parent.)

Dr. En shares how he would calmly take his child, whichever was acting-up that particular moment, outside of the main sacrament room into the foyer. Once outside the main room, he explains that he would "take his little child into his arms and hold them tightly, rocking side to side, and whisper to them." While whispering, sometimes he would say actual words, other times he would simply whisper "shhhhhhh." If the child were older, Dr. En says that once outside of the sacrament room, he would squat "so as to be at the same height of my child." He says he would

“talk to them eye-to-eye” and make sure that whatever he was saying or asking them to stop doing was done in a respectful tone. He says that “speaking down to the child or raising my voice was never an option.”

Following these illustrations that seem to grab and hold each student’s attention, he then compares parenting to the House of Israel as found in the scriptures. “First, following bondage, the Israelites have to be given the Law of Moses to help them.” However, this is in preparation for higher law, which is Christ's. “Christ’s law is not about murder,” Dr. En maintains, “in fact, we are instructed: don't even think of thy neighbor as a *fool!*” According to Dr. En, this higher law encompasses more than the lower, preparatory Law of Moses. In this way, Dr. En insists that we as parents (or future parents) “teach your children the higher law.”

Throughout the lecture, some students ask very specific questions. On two occasions, the student asks regarding a very detailed, situation-specific case concerning disciplining and teaching children. In both instances, Dr. En replies quickly “I can't even begin to speak to specific cases.” His tone is regretful, as if he wants to provide an answer but realizes he simply cannot address each student’s unique questions.

The lecture ends with several slides that discuss theories of learning and various relevant key words. Dr. En lectures in a very enthusiastic way. Even in the moments when he is not attempting to be funny, when he is simply lecturing from the PowerPoint slides, he pronounces his words so clearly and passionately. After only a few class meetings, it is clear that his lecture style does not invite daydreaming. Of the 200-something students in this auditorium, I can observe more than half of the laptops in front of me while I sit in the back; I can only see several that are opened up to some website or program that is not intended to be for note-taking purposes.

(Regarding the topics that this course covers, nearly every student interviewed described their experiences in this way:

I would leave lecture and ponder after nearly every class meeting. If not every day, at least once per week. I would think long about things discussed in lecture. I would think about how the Gospel fit into everything we were learning about. I would be eager to talk to my roommates about something, or call home and talk to my mom about something. I most definitely feel spiritually strengthened as a result of the pondering episodes outside of class.)

**Day 11.** Because we are in the section of the course discussing how studies are conducted in development, today we discussed the topic: correlation does not equal causation.

Following a brief explanation of the topic, Dr. En reads the satirical "Effects of Bread Use" to illustrate the point:

1. More than 98 percent of convicted felons are bread eaters.
2. Fully 50% of all children who grow up in bread-consuming households score below average on standardized tests.
3. In the 18<sup>th</sup> century, when virtually all bread was baked in the home, the average life expectancy was less than 50 years; infant mortality rates were unacceptably high; many women dies in childbirth; and diseases such as typhoid, yellow fever, and influenza ravaged whole nations.
4. Every piece of bread you eat brings you closer to death.
5. Bread is associated with all major diseases of the body. For example, nearly all sick people have eaten bread. The effects are obviously cumulative:
  - a. 99.9% of all people who die from cancer have eaten bread.
  - b. 100% of all soldiers have eaten bread.
  - c. 96.9% of all Communist sympathizers have eaten bread.
  - d. 99.7% of all the people involved in air and auto accidents ate bread within 6 months preceding the accident.

- e. 93.1% of juvenile delinquents came from homes where bread is eaten frequently.
- 6. Evidence points to the long-term effects of bread eating: Of all the people born in 1839 who later dined on bread, there has been a 100% mortality rate.
- 7. Bread is made from a substance called "dough." It has been proven that as little as one pound of dough can be used to suffocate a mouse. The average American eats more bread than that in one month!

The class bursts into increasingly louder laughter with each subsequent item on the list. Through this simple example, it is clear to all 200 plus students in the auditorium the principle of correlation not equaling causation. We understand the principle, and it was quite funny.

The next item of business on the PowerPoint presentation for the day appears to have been inserted to break-up the monotony of the lecture: class assignments. Dr. En explains what he was looking for in successfully completed assignments #1 and #2. For the next ten minutes or so he answers questions regarding the logistics of these two assignments. After several class periods, it is apparent that Dr. En is quite concerned with our understanding of everything discussed in class: the course material as well as assignments, projects, and tests. He routinely takes a moment to stop and ask "is this clear?" or "are there any questions about any of this?"

Continuing on, Dr. En resumes discussing the topic of research. He shares with us his graduate thesis as an example for the "Designs for Studying Development" PowerPoint slide. PowerPoint presentations with Dr. En are never boring. He gives examples for literally each bullet point. His enthusiasm is so contagious.

"Congratulations, you have made it through theories! And you have made it through research methods!"

**Day 16.** Today begins as any other day, with Dr. En greeting a few students at the front of the auditorium. During the five minutes preceding the start of class, he engages in small-talk with

several students while he brings up his PowerPoint on the computer, adjusts the microphone that attaches to his shirt collar, and then motions for several of the T.A.'s to begin distributing some sheet located on the podium to the class. As is almost always the case, it is during these final few minutes before class that dozens of students arrive and scramble for the few remaining open seats scattered throughout the auditorium. There seems to be a common dislike for the chairs lining the absolute back wall of the auditorium; even though these chairs sit no more than 10 feet behind the last row of auditorium seats. From observation so far this semester as well as personal experience, the cushion of an auditorium seat is too desirable to pass up for a class that meets for 90 minutes. In fact, rather than simply sit along the open back row of chairs, late-in-arriving individuals will climb over a group of seated students, in an almost reckless way, knocking knees with each seated person, in an attempt to secure one of the last available auditorium seats. This occurs about fifteen times, scattered throughout the auditorium, every class session from about 12:55-1:02. This class is always full, and today is no exception.

Dr. En begins the class by asking a few probing questions concerning our readings, assignments, and recent lectures. A couple of questions are asked by the students, but nothing out of the ordinary. Dr. En dives into the lecture, using PowerPoint like he always does. Today quickly becomes as average a day as any: Dr. En mingles research data, personal experience, and humor into each slide of the lecture. A quick scan of the room every ten minutes or so reveals that most of the 200 students are actively listening. It is clear that a small number of students, 15 or so, are distracted by Facebook or ESPN on their laptops, by quietly conversing with their neighbor, or by texting on their cellular phones. Throughout a lecture I glance through the congregation of students every ten minutes or so. During any particular scan of the room, students who I see visibly distracted are not necessarily the same ones from one glance of mine to the next; in short, at some point during the lecture, many students get distracted and zone out for a moment. With a class this

size, and based on my personal experience in large auditorium-like lecture halls, it does seem to be a low total of distracted students in the end.

**Day 22.** Because he missed some classes last week while in the Philippines, Dr. En starts the hour by greeting each student enthusiastically. Although we cannot hear what each student says in response, we are able to hear his pre-class discussions with students via the microphone attached to his shirt. “Hey! How are you?” “Hey, how’s it going?” He does this normally before beginning each lecture; however, because he was gone for both classes last week he seems to be spending even more time conversing with students before class. Normally he does this from about ten minutes before the hour until about two or three minutes before the hour. Today, he does this until about five minutes *into* the hour (for a total of about fifteen minutes of chatting with students). “Did you do anything fun this weekend? You went home...Oh really? And where exactly is home for you?” Wow, he seems especially eager to chat today!

He begins by sharing a little of his experiences in the Philippines and apologizes for being gone: “I am sorry I had to miss time last week but I assure you I am here for the rest of the semester.” He immediately dives into the lecture “Okay, there is a lot to get to.” Dr. En now tells the following story:

When I first came to BYU, I hated it: I thought everyone was the same, there were all these rules...The only reasons I came were because of friends and a scholarship I had. I spent my freshman year preparing for a mission; but during this time I didn’t keep the university honor code. So as my mission prep carried on, I began prepping for the taking-out of my endowments. It was during this preparation time that I had a realization: you can’t even keep the honor code and you are about to make temple covenants!?

It is interesting to hear him say that.

Suddenly, the next topic is already upon us. “Ok, question: emotions, are they cognitive or instinctive?” He pauses for a second, then “BAM!” Dr. En screams into the microphone. About half of the students in the auditorium jump. “Did you think about that, or did you just jump without thinking?” That was quite an effective illustration!

We continue. “Ok, another question: can we experience emotions without a physical body?” Dr. En paces silently, looking to see if anyone dare take a stand. “The response is yes, in the spirit world: ‘the sons of men shouted for joy.’”

“Ok, I’m back in my opinion corner! So this is just my opinion, not definitive doctrine.” Whenever he says this, our ears perk up in anticipation for what is about to come. “I do want you to think about the role of bodies. Do they matter so much that they are an integral part of our eternal destiny?! Do they matter so much that the Savior laid down His for us?!” He is abnormally passionate right now. “So, I don’t know. But I want you to start thinking about the role the body has in emotional development, for where we need to go. And we’ll do it on Thursday...”

**Final Day.** For the final day of class Dr. En wants to discuss the divine nature of the marriage relationship. But before he starts, we spend some time discussing the logistics of the final exam, the last paper, and several other items of business. Dr. En graciously answers everyone’s questions.

After ensuring that the entire class understands clearly how the final days of the semester were to proceed, he begins the last lecture of the semester with an analogy: “The relationship of a Presidency in the Church, like a Bishopric or a Stake Presidency, is like the relationship between the Savior, a man, and a woman in marriage.” He continues, “In a Presidency, you have the President, a 1st Counselor, and a 2nd counselor. When the President is gone, it is the 1st counselor’s job to make sure the job the President would have done gets done how he wants it.” At this point, he has

the entire auditorium captured. I notice everyone around me is listening attentively without distraction. Dr. En further explains the analogy,

The man and the woman are equal partners, equal in authority, just like first and second counselors. If a man starts with 'I'm the priesthood holder, therefore...' you know immediately its unrighteous dominion. The man's responsibility is to make sure all things done in the home are done exactly as the Savior would have it done. The Priesthood holder is only to put our head on the chopping block; men, we are NO better than the woman."

Following this exposition, he then continues to share his thoughts and feelings about the Gospel of Jesus Christ, the Holy Scriptures, the sanctity of the marriage/family relationship, and the relationship between Deity and man. All throughout, the room is silent and everyone is listening carefully. In the truest sense you could hear a pin drop, even in this massive room. Dr. En concludes by sharing his thoughts and feelings towards us. Although his actions the past four months have demonstrated the amount of concern he has for us, as he speaks right now I can feel how much he cares for us as student-learners and more importantly for us as individuals who are, or will soon, be married and raising children. He is not just saying words. "If you ever want to discuss anything in the future, questions about life, wedding announcements, or just want to throw some ideas off me to get my two cents, I'm always happy to talk. Ex-students of mine visit all the time for all kinds of reasons, and usually it's nothing to do with human development." I am not surprised: I already know I want to visit him about my dating situation and get his advice. He finishes by wishing us "best of luck in all you do."

#### **Case 4: Human Anatomy**

**Day 1.** This class is about what I expected: huge! I had heard that the Anatomy lectures are large; this one does not disappoint. The room is full with some students forced to stand or sit on the floor. Before any words are said, it appears the TA's (they look my age; and clearly the

instructor is at the podium) are distributing a packet to each student. While this long process is occurring, the woman at the podium walks to the front middle of the floor and begins: "Hello. My name is Dr. Ray...I absolutely LOVE teaching this course."

She introduces herself and shares a brief background. "Anatomy is tough! There are two options for you: hate it or love it. It's my goal to make you love it, if not be a fanatic about human anatomy." Dr. Ray introduces the TA's, the text book, and the lab manual. She asks us to hold up examples for those who have it with them today. We move into a discussion of the syllabus, including quizzes and exams. So far, everything seems straightforward, almost predictably so. But one thing is obvious: she is intensely passionate about this class. Her excitable tone and mannerisms make it clear to everyone.

About 20 minutes into the hour she begins page 1 of the lecture manual. This opening page is simply an overview for the subject of Human Anatomy.

For me, I began an anatomy course as undergrad. I had recently lost two close loved ones. It was a very difficult semester for me; I withdrew and received a *W*. Obviously, I had to retake the course. I was forced to work hard in the course the second time around, and as a result had an intense emotional and spiritual experience...working so closely with the cadavers. It changed my thoughts on the subject. That experience led me to change my major, even my whole career path. I think you will all have a similar experience, to some degree.

You could hear a pin drop while she shared that with us. It is not common for an instructor to share their particular path to their field, especially not one as personal as that. I find it refreshing that she could be so open with us so quickly.

We continue on to the next page of the lecture manual. Not surprisingly, we begin the course material quickly: page two is the beginning of section one, the Skeletal System. "Oh, and as

part of my responsibilities, *I* get to pick out the cadavers from the University of Utah...it's so exciting! I know, my family thinks it's creepy." The entire class laughs. After several basic slides, Day One comes to an end.

(In an interview Dr. Ray describes her pedagogical philosophy in this way: "my goal is to get people to go home excited and tell others. I want them excited at the store, when at Church, whenever." How does she accomplish this? "I am passionate about the human body! I tell them when it's 'beautiful' or 'incredible.' It allows them to reciprocate back. The Spirit requires one to be actively engaged, to ponder." For Dr. Ray, the things of Deity and the things of the human body are interrelated: "it is impossible to discuss the human body in reverence without the presence of the Holy Ghost.")

**Day 2.** The second day of class commences with review of the terms we learned on Day One. We review some anatomical terms as well as some directional vocabulary that we will use for the rest of the semester. To test us Dr. Ray shouts out questions; she wants us to yell the responses together as a class.

"If I were lying down, is this *supine* or *prone*?" Dr. Ray asks us as she pretends to lie down with her body, including palms, facing up.

"Supine!" We shout in close proximity of unison.

"Good. My *wrist* is (blank) to my *shoulder*?" Pointing as she asks.

"Distal!"

"That's right: the wrist is *distal to* the shoulder...it's *farther away from* the core or center of the body than the shoulder. Ok, my *head* is (blank) to my *neck*?"

"Superior!" We exclaim.

"Yes! Good. The head is *superior to* the neck...or it is *above* the neck." After rattling through several more terms, all in a machine-gun style, we begin lecture.

(As one student would later observe, “I don’t think I’ve ever had a teacher get class so riveted and excited as to what she was saying. I never *once* lost interest in what she was saying. Class knew what was expected” (J.N., personal communication, 2009).)

The slides in our lecture manual are identical to those she uses in the PowerPoint presentation, except for one minor difference: many of our lecture manual slides have intentional blank spaces that require us to write a key word in the blank.

So far, for the first few minutes of class at least, one thing is certain: Dr. Ray teaches with so much enthusiasm. I do not recall ever having a professor talk about PowerPoint slide material with this much excitement for what she (or he) is sharing. Wow! About nine minutes into this first full lecture, Dr. Ray declares: “Now turn to your partner and teach them the information on first couple slides we’ve discussed so far.”

After about a minute and a half we reconvene. Dr. Ray explains how to approach tests in the testing center: “Touch yourself, use your body, and ask yourself questions.” We continue with the PowerPoint lecture and after another ten minutes, again the command “OK. Again, turn to your partner and teach them the material from the last few slides since we last paired off.” After another two minutes or so, we reconvene. This time, upon coming together as a class, we then review first couple slides of the day, again using her shout-out, machine gun method.

We resume the lecture. Again, after another ten minutes or so she instructs, “OK, I want you to teach the last few slides to your partner.” This is nuts! Are we really going to do this each class period, all semester? I cannot imagine continuing at this pace for the duration of the semester. Either way, the repetition is nice to be able to understand the Anatomy material sooner than later.

(Dr. Ray admits in interview that the frequent use of the turn-and-teach-your-partner technique accomplishes several things: “while doing it, it’s easy to watch and see if they get it; I also

do it for their attention span, like a psychological break in the monotony; I also do it for the shy kids, to help force them to speak.”)

**Day 6.** The hour begins with a breakdown of the day's lecture. Dr. Ray spends the first few minutes answering questions regarding the upcoming exam, the nature of the testing center, as well as the overall approach to take for Anatomy exams. Once that is complete, Dr. Ray asks the entire class to “recite, in unison, the types of tissue found in the human body.” When we do, satisfactorily, Dr. Ray begins the day’s lecture slides.

After the very first slide, she asks us “Alright, now please review this slide’s information with a partner.” The second slide: “When I first took anatomy, this was one of the hardest things for me to understand. But if you remember what this means (she points to her head), then it will help you. I want you to practice using the help I just gave you.” We spend the next 2 minutes reviewing, in pairs, the day’s initial lecture slide. “Now, show me on your head where the (blank) suture is.” We all collectively point to different parts of our respective heads with each subsequent suture being asked. After several rounds of suture-asking, we continue with the lecture.

While we discuss the nature of certain connective tissue, including membranes, Dr. Ray leaps up onto the front desk. She takes several minutes to give a very detailed example of a membrane snapping while she was walking many years ago. She explains the nature of the injury, what it looked like to an outside observer, as well as the pain she felt when it snapped and the ensuing moments following the snapping. Although I am fine hearing such details, there are many in the class who are audibly moaning with each new detail. This pattern of breaking into a demonstration or sharing an example of a particular part of the human body in real-life action is one that continues through the semester. Almost daily do we hear either a personal horror story from Dr. Ray, one from an acquaintance of hers, or from something she researched personally.

Lecture resumes following the snapping-membrane example. After four lecture slides, “OK, teach your partner about last two slides.” We continue with lecture after a couple minutes of review. After several slides dealing specifically with the long bone, she adds: “Teach your partner about the parts of long bone.” We do. Following that simple partner review Dr. Ray now walks us the possible mechanisms involved in an ACL injury. Being a sports fan, I find it fascinating to hear exactly what each type of ACL injury involves.

The final portion of class now deals with *fulcrums*. Dr. Ray explains a mnemonic aid for learning the three types of fulcrums. “1-2-3...F-R-E.” She explains the meaning of the mnemonic...it seems simple enough. Once she verifies that we all understand, we end the hour reviewing the last group of slides. Dr. Ray asks fill-in type questions like she tends to do; we shout out the answers. She then increases the difficulty as she says “Let’s review all of the exam material.” In a similar fill-in-the-blank manner she now asks us questions dealing with all of the lecture material we have encountered so far in the semester. Again we shout out the correct one word/phrase responses. However, as each question requires the recall of information farther back in the memory, we take slightly longer shouting out the answers. Dr. Ray smiles as we struggle, always confirming and reinforcing the correct answers, and explaining in greater depth any misunderstanding we may have. Because of this struggle with the older material, we painfully realize how much studying is required in preparation for the upcoming exam.

**Day 8.** Class begins with a brief discussion of the exam. Dr. Ray shares the statistics of the scores. It was a challenging exam: one that required many hours of review, the memorization of many details. But overall it seems like the class did fairly well. The overall results were better than what I heard from friends who have taken the class before.

After no more than five minutes of exam discussion, Dr. Ray wastes no time diving into the lecture. After the first three slides of the day, "I want you to pair off and teach each other what we've discussed so far."

Following the more personal paired-off review, Dr. Ray brings us together for a class-wide review of bones. "Show me where the (blank) is." We each point to the respective location on our bodies. "Is it long, short, flat or irregular?" Again, we shout out the specific type of bone she requests. We repeat this line of questioning for several minutes, going through various bones throughout the body. At the end of the class, before resuming lecture, Dr. Ray shares a story she read in a medical journal concerning a snowboard accident where the snowboarder had the board embed into the shin. She shared *all* the details; it was quite graphic. The majority of the class reacted in some way: with an audible moan, some covered their mouths in shock...I made a face of painful disbelief. Dr. Ray does *not* hold back from us. She shares every last detail without reservation when she shares stories.

For the remainder of class we review in some form (whether it be in pairs or in the entire-class shout-outs) every three to five slides of lecture material. What seemed an ineffective method the first few days of lecture has surprisingly become the norm; we are constantly reviewing in this class. Dr. Ray clearly believes in repetition as a part of the lecture's effectiveness. Oddly, it is something I look forward to.

**Day 18.** Today we enjoy a discussion on the brain. She paces the front from one side to another as she lectures. Dr. Ray mentions the relationship between the human brain and the spirit within each of us. The brain "is the last frontier...there's not a lot known about the brain. Why?" According to Dr. Ray, it is "because the brain is *sø* related to the spirit."

Today's lecture brings us to the topic of cancer. Dr. Ray describes several examples of cancer as she describes each section. "With a brain tumor, surgery is with the patient awake so the

doctor knows that the patient has much of tumor removed but *still* has responsiveness. This way, he can monitor the potential quality of life.”

## Chapter 5: Analysis and Interpretation of Data

As previously stated in the Methods section, my purpose as the researcher was to obtain a data set that lent itself to naturalistic generalization and invited transferability. The previous section, Case Vignettes, described the gathered data in a manner derived mainly from my observations, with relevant interview data interwoven as I deemed appropriate. This section takes the reverse approach: it contains an analysis of the interview data from the participating professors and students, with some relevant personal observation notes added.

As mentioned earlier, I borrowed techniques from *descriptive phenomenology* for the interviews I conducted (Giorgi & Giorgi, 2003). Accordingly, I used this same position to approach the analysis of the interview data that I obtained. However, performing the six-step structured reading of each interview response, as outlined by Giorgi and Giorgi's descriptive phenomenology, was unnecessary in this study. Instead, I performed a variation of the analysis called for by descriptive phenomenology: I read each response as many times as needed in order to properly categorize the discernable meanings.

The analysis of the interview data follows a pattern outlined by Stake (2006) and echoed by Merriam (2001) as well as Miles and Huberman (1994): first, I looked within each individual case for meaning as the responses pertained to the research questions (within-case analysis); second, I looked across the four cases for both thematic similarities as well as differences (cross-case analysis; compare and contrast). I borrowed from Merriam's (2001, p. 180-182) thematic analysis methodology in doing the following: first, I read through the interview and observation data, recording my notes in the margins everything relevant to the research questions. Next, a reading of these new marginal notes was done to sort and group the notes that went together. Lastly, I sorted the interview and personally observed data by these groupings, or themes, and named each accordingly. (See the Methods chapter for the process of thematic naming). I analyzed within each

case according to the three participants: the professors, the students, and myself as the participant observer.

Due to the nature of the findings, the reporting of the analysis and interpretation of the data follows the following format: I describe my thematic interpretations across the four cases, highlighting the common and unique elements to each. I then discuss the themes that were unique to individual cases. The following section is organized by research question.

### **Research Question # 1: Look and Feel of Spiritually Strengthening Learning Environments**

The following section considers the primary research question: what does a spiritually strengthening learning environment, at Brigham Young University, look and feel like?

**High quality professor-student interactions.** The primary feature shared by all four cases was the high quality of the student-teacher interactions. All four professors and each student interviewed agreed that the interactions with the other party were first, very important to them, and second, of a high quality. The participants felt that the quality and types of interactions allowed for a deeper, more penetrating, spiritual connection to take place. Barriers that might normally prevent a deeper learning experience no longer existed. In these cases students felt spiritually strengthened. The quality and types of professor-student interactions were manifest in various ways. What follows are the various manifestations of high quality professor-student interactions that contributed to the students' spiritually strengthening experience in these courses.

**Care for students.** The first adjectives used to describe the feel for the learning environments was that of being warm and caring. First, in each case the professors declared early in the pre-semester interviews that each desired that their students *feel* sincerely cared for. Although each case revealed a slightly different manifestation of "caring," without question each case exemplified a learning environment of care and concern from the professor to the student. The thoughts of one student reflect the feelings of most students interviewed: "I feel like I could go in a

year to talk about life and he'd *still* be interested, because he *cares*" (A.T., personal communication, 2009). In addition, the concern and care the students felt from the four professors allowed the students to more easily latch onto the course material and buy into the pedagogical methods of the teacher. For example, one interviewed student summarized this principle best: "We knew that he cared...and it made me want to be better. I actually *wanted* to do the homework" (T.L., personal communication, 2010).

***Chemical Engineering case.*** Dr. Kent's demonstration of his care for the students actually began weeks before day 1 when he commenced the name memorization process. By the time day 1 arrived, one student recalled thinking, "He knew all our names the first day! I thought, 'this is our teacher!?' He *really* cares about me" (M.S., personal communication, 2009). Nearly each student interviewed agreed that Dr. Kent was "very loving and very caring" (J.P., personal communication, 2009) in his interactions with his pupils. As a participant observer I consistently noticed the repeated acts of thoughtfulness and kindness displayed by Dr. Kent. The facial expressions of the students, the way they would, in turn, respect him as he began to speak by quieting down, and the whispered comments in the hall as class ended and students dispersed, all verified throughout the semester to me that the students felt cared for.

The care Dr. Kent felt towards the students was manifest also in his moments of "fatherly advice." He shared the following in an interview: "I hope they feel cared for enough so that if they needed to, they would talk to me." (Dr. Kent, personal communication, 2009). Without question, each student appreciated the fatherly regard and concern Dr. Kent held for them. The students described feeling his care during these moments. Like a father, his concern even extended beyond the academic setting in which they interacted. In fact, one student remembered, "He invited us to come to his house for Thanksgiving if we were staying and had nowhere to go. I kind of wished I had stayed because it would have been cool to go" (R.H., personal communication, 2009). The fact

that Dr. Kent's care for the students extended beyond the classroom to that of their holiday travel plans was another manifestation of caring.

***Statistics case.*** In a direct attempt to foster an environment of caring, Dr. Paul stated many times throughout most lectures, throughout the semester that his number one desire was to help the students succeed. He repeated the phrase "I am here to help you" almost daily. He was eager to see this desire to fruition. He consistently solicited one-on-one meetings, emails, and phone calls from the students should they need any help whatsoever. He would ask for questions frequently throughout the course of a day's lecture. He initiated conversations before and after class with the students to find out how they were doing in areas of their lives that extended beyond the classroom. As one student reflected, "One of the things that I loved most about this class is that it felt like [he] cared most about learning and understanding, not covering material. The way [he] would encourage us when we were tired, and look us in the eyes when [he was] teaching brought a unique spirit to the classroom" (J.B., student final essay response, 2009). It was clear to the students as well as the researcher that Dr. Paul cared for the students.

***Human Development case.*** The principle attribute that students recognized in the environment embraced by Dr. En was that of caring. Although I never asked the students to rate the professors on any numerical scale, one student observed, "He cared for me as a student more than any of my other professors. He cared a ten out of ten!" (S.N., personal communication, 2009). This attribute was manifest in his willingness to meet and talk with students, to help them with anything (even with dating advice if necessary) at any time, and to listen to them.

This attribute was also manifest through the manner in which he consistently handled difficult topics. It began while introducing the particular topic: "With touchy subjects, he would say '*Please try to be open-minded.*' He would warn us" (M.A., personal communication, 2009). Then, during the discussion on the particular difficult topic, Dr. En showed care for those individuals to whom

the subject may have been particularly relevant. As one student recalled, “For example: anorexia. He was very respectful during the entire discussion about anorexia and didn’t single anyone out. He even stopped the lesson and gave a shout-out for those in the class suffering from anorexia: ‘*Please* come see me...or someone” (K.L., personal communication, 2009).

***Human Anatomy case.*** In a much more subtle way than the other cases studied, the learning environment for this case nonetheless was one in which caring was present. She admitted to thoroughly preparing for each lecture, so that her explanations would be maximally understandable for the students. She even admitted to negotiating into her contract a clause allowing her to avoid having to research, so that she could devote her time solely to lecturing and the necessary preparations that go into it (Dr. Ray, personal communication, 2009). In short, the care and concern for the students was manifest behind-the-scenes, so that the students received an optimal learning experience. Each student interviewed really appreciated the lecture style. In a class that required the memorization of so much information, each student expressed gratitude for the frequent mid-lecture reviews, the many mnemonics, and sharing of anecdotal stories and relevant research findings. It was obvious to the researcher as well as the students that the explanations in lecture were well prepared and ideally suited for that particular class.

***Patience and sacrifice of time.*** In each case the professors took the necessary time to review material that was misunderstood by the students. I did not observe any frustration or impatience with a request to review or clarify a principle from any of the four professors. In fact, each professor actually seemed eager to help when questions arose. On occasions when students felt more comfortable addressing an issue outside of class, each student described feeling as if the professors would give them as much time as necessary for one-on-one instruction. Often it was the students’ experience that this extended beyond the scheduled office-hour times. With this much

time sacrificed within and outside of class, it was clear that patience was a noteworthy feature for each of the four learning environments.

***Chemical Engineering case.*** Dr. Kent consistently demonstrated the attribute of patience in the classroom. He admitted in interviews to monitoring the students through conversations with them before class, after class, and during one-on-one meetings in his office so as to gauge their current mental and emotional state. Dr. Kent never rushed through a lecture or avoided an opportunity to teach a lesson “of life” (Dr. Kent, personal communication, 2009): he admitted that when the occasion required, he would pause from planned activities to carefully address the students. Furthermore, described as “very patient” (J.P., personal communication, 2009) by his students, Dr. Kent’s interactions produced an environment that fostered the development of patience in the others. One student described feeding off Dr. Kent’s example and wanting to be more patient with the members of his team: “Working in groups, I learned and developed patience, because I imagined that’s what Dr. Kent would do. He taught us principles of good teamwork, like patience” (R.H., personal communication, 2009).

***Statistics case.*** The attribute of patience was manifest in the learning environment in a simple manner: Dr. Paul would take the time necessary to answer a question or re-explain a statistical principle until each student fully understood. These occasions occurred both inside the classroom before, during, and after class, as well as outside the classroom during one-on-one time in his office. In essence, the fulfillment of “doing all” Dr. Paul “could to help them succeed” was the manifestation of time sacrifice and patience. For example,

I would say Dr. Fields was patient. I worked with him one on one few times when I didn't understand a concept. He would take time right after class got over to show me something on the board. He was patient with my performance in the class because I was generally one

of the slower students because Stats was totally new to me. He was patient by letting me try an assignment again if I didn't meet my own standard. (D.J., personal communication, 2010)

His devotion of time to ensure that his students understood the material and were optimally positioned for success positively contributed to the spiritually strengthening learning environment.

***Human Development case.*** With a classroom of over 200 students, there were numerous opportunities daily to lose patience in the Human Development case. However, I did not observe a single instance in which Dr. En seemed impatient. He explained his approach to handling distractions, interruptions, and individuals sleeping amongst the large class of students: “The only thing that bothered me was if it bothered *someone else*” (Dr. En, personal communication, 2009). This approach manifest itself consistently throughout the semester; in fact, only when classroom chatter among students reached a high enough decibel level to be distracting did Dr. En address it. Even then, his request to “quiet down” was done almost as a last resort, so as to give the talkative individuals time to quiet down on their own. I frequently observed the pattern of Dr. En saying “OK” as if to signal that it was time for the class to quiet down or reconvene, then looking at the class quietly for several seconds, and then finally saying “quiet down” only if it was necessary. I concluded that this pattern, demonstrated often over the course of the semester, was a demonstration of patience.

Another example of the time sacrifice in the professor-student interactions occurred when extra time was needed to meet with students. On these occasions, Dr. En did not hesitate to simply make more time available. As one student recalled, “He added office hours one week because a lot of people couldn’t make it (K.L., personal communication, 2009). Although this could be labeled as within the “caring” theme, I determined the time sacrifice of Dr. En to fall more appropriately under this theme.

***Human Anatomy case.*** Dr. Ray's time-sacrifice manifested itself through her *responsiveness*. On a daily basis, multiple questions concerning the material being covered during lecture would be asked from the students. The opportunity to rush through the questions in order to safely cover the day's lecture material and not get behind presented itself often. Instead of rushing Dr. Ray chose to respond directly to each student in a clear manner so that not only did the questioning student understand, but so also would the rest of the class listening. (Only one student interviewed supplied evidence to the contrary. In a personal communication the student shared an experience in which Dr. Ray demonstrated impatience during office hours. However, it must also be noted that this same student suggested that it was out of character for Dr. Ray and was most likely the result of a long series of questioning.) There existed a stark contrast between what she *could have done* (i.e. hurry with a response or delay responding altogether, which would have been understandable considering the quantity of information needed to discuss each day) and what she *actually did*. This patience and responsiveness present in the environment stuck out to me in my observations as well as to nearly all of the interviewed students.

**Enthusiasm, energy, and humor.** In each case, the professor possessed an energy and enthusiasm for the opportunity to teach, for the students, and for the subject itself that was nearly palpable for the students. Obviously, enthusiasm alone does not necessarily equal a spiritually strengthening experience. However, it does lend itself to the potential for feeling greater spiritual strength. As one student explains, "The enthusiasm for the subject was the number one draw for me. It gave me a starting point to mentally and emotionally connect with the professor...to have a chance to feel more later" (I.L., personal communication, 2010). Another student recognized the catalytic role the professor's enthusiasm played in fostering reflection that proved spiritually strengthening. Concerning the pondering he said, "Dr. Ray triggered this chain of thought with her enthusiasm" (J.N., personal communication, 2009). The contagious enthusiasm for the subject the

professors expressed fostered a feeling of warmth that encouraged students to open up, allowing for spiritual strength later. In short, while enthusiasm did not necessarily equal a spiritually strengthening experience, it served as a catalyst for it.

Next, although it did not emerge in a significant way in the interviews, an element that stood out in the observations was the humor that existed in each learning environment. While the professors all handled serious matters with utmost tact and appropriateness, they nevertheless were able to break-up the monotony of a standard lecture, to capture the students' attention, and to enliven the overall learning experience by adding humor to the lecture. I cannot recall a single day in a single case in which laughter was not a part of the learning environment. Humor was unquestionably a staple of the four cases studied.

***Chemical Engineering case.*** Of the four cases studied, the learning environment for this course exhibited the least amount of recognizable enthusiasm, on the surface. Dr. Kent was a gentle, patient, kind man who never observably exuded feelings that were particularly high or particularly low. However, after a semester's worth of observations, two rounds of interviews with Dr. Kent, and a series of interviews with the students, it was clear to me that Dr. Kent's enthusiasm manifested itself in unique ways. For example, it was his enthusiasm that caused him to speak sternly and directly to the students and instruct them to start utilizing certain problem-solving techniques that they were neglecting, or to stop falling into common mathematical traps to which they were victim. He was adamant the students adhere to his suggestions in order to increase the likelihood of achieving success.

Dr. Kent possessed a dry sense of humor. He joked and offered witty comments the least frequently of all the professors. However, when he did insert a dry remark or two it seemed to make the class break-out in laughter. It is important to note that the opportunities to add wit to the topics

discussed in chemical engineering were not obvious, nor plentiful; it was my observation that this fact helped the students appreciate Dr. Kent's humor all the more.

***Statistics case.*** Of the four cases, Dr. Paul consistently exuded the most enthusiasm. Dr. Paul's enthusiasm was so apparent that it could have been argued as being over-exaggerated. However, not one of the students expressed feeling this way. In fact, based on my observations, his enthusiasm was contagious, making the study of numbers and formulas quite interesting. While I recorded in my observation notes that he reminded me of "the Fonz" from Happy Days, the students appreciated his energy and reciprocated with active participation of their own. Additionally, Dr. Paul's sense of humor was one that manifested itself often. Daily, Dr. Paul would declare or ask something that seemed to make everyone laugh.

***Human Development case.*** The environment for this case was undeniably engaging from the opening day to the final class meeting. The reason for this: the students and I agreed that Dr. En possessed an ability to capture the attention of everyone in the room with his enthusiasm. As one student describes, "He didn't just stand behind the podium, he walked around and addressed each question. He made you feel like part of the class" (H.M., personal communication, 2009). Words such as *passion* and *energy* repeatedly were used by students describing the nature of the class environment. One student summarizes the views of everyone best: "He was great at drawing everyone in" (S.N., personal communication, 2009). Furthermore, considering it was such a large class (recall: over 200 students), it is even more noteworthy that the engagement was so high, for so many individuals. One student response reflects the opinions of most concerning the class size: "I thought he handled the class size extremely well" (K.L., personal communication, 2009). Between the energetic manner in which Dr. En spoke and interacted with the class, the thought-provoking scenarios and questions that forced the students into serious reflection, the jokes that were shared which usually induced laughter, the manner in which he paced through the room during a

discussion, and the way he dealt with topics of a serious nature, the environment for this case was overwhelmingly engaging.

***Human Anatomy case.*** The enthusiasm and love for the human body Dr. Ray possessed radiated to her students. In the words of one student: “I don’t think I’ve ever had a teacher get class so riveted and excited as to what she was saying. I never once lost interest in what she was saying. The class *knew* what was expected” (J.N., personal communication, 2009). Another student described the mere prospect of attending class with this type of learning environment: “I loved going into a room where Dr. Ray was” (J.T., personal communication, 2009).

An element of the learning environment that did not emerge in the interviews but did in the observations was the humor Dr. Ray interjected into daily lectures. Whether it was the sharing of a personal story that related to the topic at hand, or a story she encountered on the news, in a newspaper, or in a medical journal, Dr. Ray’s inclusion of interesting information to supplement lectures often caused laughter from the entire class. It should be mentioned that in the instances when a particular anecdote shared by Dr. Ray was not particularly humorous, it certainly invited an increase to the student engagement and interest in the learning environment.

**Gospel integration.** In different ways, the learning environment of each case exhibited an integration of Gospel related material. More specifically, present in each case was some type of link or connection from standard lecture material to Gospel topics. In all cases the professors incorporated both *intentional* and *spontaneous* integrations of the Gospel. All four professors admitted to sharing pre-determined scripture passages, stories, or personal thoughts at some times, while on other occasions simply sharing whatever spiritual anecdote seemed appropriate in a particular moment. Furthermore, present in each case were both *explicit* and *subtle* Gospel integrations. The *explicit* integration occurred in the following ways: in Chemical Engineering, Statistics, and Human Development, Dr. Kent, Dr. Paul, and Dr. En, respectively, often quoted scripture and talks from

religious leaders as well as shared condensed versions of scriptural stories; whereas in Human Anatomy, Dr. Ray made frequent reference to the relationship between the Spirit and the body. The instances of subtle Gospel integration occurred mainly in the Statistics and Human Anatomy cases. In Statistics, Dr. Paul would reference the superiority of achieving *quality* and *excellence* in life; these frequent references allowed the students themselves to make mental connections to the transcendent.

***Chemical Engineering case.*** Dr. Kent demonstrated throughout the semester a pattern of introducing spiritual topics into a discussion. One student stated, “A lot of times in class, he’d relate Chemical Engineering to the Gospel, like during the ‘Fatherly Advice’” (M.S., personal communication, 2009). Dr. Kent admitted in an interview that he would do this “sometimes intentionally while at other times it would be a spontaneous (mid-discussion) decision” (Dr. Kent, personal communication, 2009) to break from the topic at hand and shift to one of a spiritual nature. On some occasions Dr. Kent would introduce what he was about to say; other times, he would simply interject whatever came to mind without any warning. He quoted scripture on some occasions, while for others he would simply share his personal thoughts and feelings. In all instances, Dr. Kent caught the attention of and left a strengthening impact on the minds and the hearts of the students.

***Statistics case.*** Dr. Paul frequently made the students consider scriptural topics as they related to topics at hand, statistics-wise. These moments of marrying course material with things of the scriptures also helped foster an environment that proved spiritually strengthening for the students. One student recalled the powerful impact Dr. Paul’s comment of “In God we trust...all others must bring data!” had on him. Dr. Paul mentioned that he chose to do these spiritual and scriptural marriages with course material intentionally; in other words, they were previously prepared. In the end, they proved to contribute to the experience in a positive way.

In a much more subtle way, Dr. Paul also introduced spiritual connections via frequent discussions on topics such as *quality* and *honesty* in statistical reporting. It should be noted that Dr. Paul never explicitly asked the student to make these connections. The words of one student summarize the views of the researcher as well as interviewed students best: “I feel that Coach’s emphasis on honesty and quality and responsibility is the most important principle anyone could take from this course” (C.B., student final essay response, 2009). Many times throughout the semester he reminded the students of the high importance it was to maintain statistical honesty, to “do things the right way,” and to strive for “high quality in all you do.” The repetition of these encouragements from the coach seemed to subtly help the students connect to the transcendent. The researcher experienced this himself through the process of participating in class throughout the semester as well as hearing it in the pre- and post-semester interviews with the professor.

Furthermore, most students acknowledged the effect the discussions on *quality* and *honesty* had on them. For example, one student explains the increased understanding he achieved on the nature of God: “God is the same yesterday, today, and forever. He is the ideal of *quality* because there is no variation in Him this time and every time. As for me, that is what I will take away mostly from this class. That my job in this life is to reduce variation” (J. P., student final essay response, 2009). Similarly, a second student explained, “The main thing I will remember 30 years from now is the importance of quality and being ethical” (T.N., student final essay response, 2009). Another student responded that through these discussions he realized that “there is no trade off in spiritual and personal quality. By living high standards and righteously, we are happier, increase our freedoms as we are not restrained by the consequences of bad choices” (K.D., student final essay response, 2009). Finally, another student explained,

Above all, this class has taught me that in the quest for quality I need to start with myself. I am a better person now because this class has taught me what I need to do to become a

Quality person. To become a Quality Person I need to meet expectations this time and every time, and EXCEED EXPECTATIONS WHEN POSSIBLE. That is how you get A's, that is how you progress in the workforce, and how you build trust with those around you. Quality people are trustworthy people, people who do what they say they will do. This class has helped me on my way to becoming a Quality Person (C.W., student final essay response, 2009).

***Human Development case.*** Dr. En admits to intentionally modeling his teaching style to that of the Savior, in an attempt to provoke and promote critical thought. He maintains, “I consciously incorporate everything the Savior uses: stories, object lessons, direct doctrine, everything” (Dr. En, personal communication, 2009). Dr. En combined this pedagogical approach with a mixture of scriptural quotations, excerpts of talks from religious authorities, and daily references to Deity and Heavenly parenting to integrate spiritual connections with the course topics at hand. This overall style proved to be another source on which the students would ponder and ultimately grow from on their own.

***Human Anatomy case.*** Although more subtle than the other cases, Dr. Ray nonetheless served as a link between the discussions on the course subject and things of a spiritual nature. The reverence displayed toward the sacred nature of the human body by Dr. Ray allowed the students to more easily make a connection between the human body and its divine origin for themselves. Upon entering the course many students failed to view the human body as a creation in the image of a Divine Creator. Dr. Ray's approach to the subject of human anatomy in a reverent-like manner helped the students to alter their views. When discussing the sacred nature of the human body, Dr. Ray's tone of voice shifted to one slightly softer and more careful than her typical lecture tone. Her tone, combined with the explicit connection between the body and Deity made it possible for the students to make connections on their own. One student observed, “One day she said ‘you are

studying the body of God's.' That hit me hard, from that point forward. And how God's hand in it made the body that way...hit me hard" (J.N., personal communication, 2009). By approaching lectures, questions, and ensuing discussions on the human body in a reverent manner and by encouraging the students to do the same, Dr. Ray successfully acted as a link for the students to something the literature defines as the transcendent (Jones, 2005). In this way, the students were able to alter the views of their own bodies, as well as connect the human body to its divine origin. This linkage and increased awareness and understanding proved spiritually strengthening for the students.

**Features unique to individual cases.** Amidst the many commonalities between the four learning environments, the following subheadings describe features of the learning environments that were unique to each particular case.

***Chemical Engineering: peaceful and tranquil.*** Between the observations of the researcher and the responses of the students during the interviews, it was evident that the overall learning environment of this case was one in which the students felt completely comfortable, peaceful, and at ease. Conversely, feelings of nervousness or awkwardness in not knowing an answer were never expressed by the students. Whether it was to ask a question, share a response, approach Dr. Kent in a one-on-one manner (both after class and during office hours), or work together with other class members in a team, the students in this case each described feeling safe and calm while participating. When asked to describe the look and feel of the environment, one student's response reflects the feelings of all interviewed, including the thoughts of the researcher: "the feel was very welcoming, very comfortable" (M.S., personal communication, 2009). Finally, another student shared, "He made sure we worked well together as a team; there was never any contention" (M.S., personal communication, 2009). Whether it was listening to Dr. Kent during

lecture as individuals or working with peers in teams, the learning environment was clearly one of peace.

***Statistics: team-like atmosphere.*** From the initial moments of the semester, Dr. Paul made it clear that he was to be viewed as a peer to the students. His insistence that his students call him “coach” was evidence that he truly viewed himself as a guide, not a dictator. Each student expressed appreciation for this dynamic, particularly in the final exam essays. Additionally, Dr. Paul insisted that almost all work be done within teams. It was through this we-are-on-the-same-team approach that a spiritually strengthening learning experience could be achieved. It enabled the students to learn apprehension-free: in viewing the professor more as a coach, or brother, their minds were free to learn and seek for higher things. In fact, one student said of this learning environment, “The most important lessons I learned were those of a *spiritual* nature” (J.B., student final essay response, 2010). Expounding on the relationship between teamwork and spiritual strength, another student said: “Helping my partner helped me to become more Christ-like, which to me is the most significant change which happened to me from taking this class” (B.S., student final essay response, 2009).

***Human Development: thought-provoking atmosphere.*** The thought-provoking discussions were a unique aspect of this case. Some of these discussions occurred organically, resulting from a tangent in the lecture or a question posed by a curious student; others resulted from planning on Dr. En’s part. Some of the thought provoking moments resulted from simple on-the-fly questions or comments posed by Dr. En’s during the natural flow of lecture; others were hypothetical scenarios that required minutes to describe and set-up in the students’ minds. The cumulative result was that each student interviewed described a pondering experience that contributed greatly to the spiritual strength they experienced in the course. In short, the pondering

and reflection allowed for a spiritual confirmation and additional teaching that served to strengthen the students. For example, one student commented,

I would go home and think about what was talked about, every day. I'd think about how I'd want to be as a parent. These ponderings were definitely spiritually strengthening. The Spirit would confirm 'yes, this is how you need to be as a mother, as a person.' It even impacted my prayer, my relationship with Deity, because I would seek these confirmations (H.M., personal communication, 2009).

Another student describes the pondering experiences in this way: "I would go home and ponder a lot. A lot of my friends are in the class, and we'd talk about, like the different hypothetical scenarios he posed. I'm a blogger, and I blogged a tribute to fathers and my dad after reflecting" (A.T., personal communication, 2009). Finally, a student shared a unique experience brought on as a result of pondering,

I felt spiritually strengthened during my pondering episodes. I was pondering after class one day and got an impression to call a friend. So I did. It turns out her parents had just gotten a divorce an hour before...she was distraught and needed someone. So I was able to really help, and it resulted from my pondering. (A.J., personal communication, 2009)

Dr. En explains his approach to the specific items he selects to foster critical thinking when he said, Critical thinking is huge in my mind...having the students' beliefs match doctrine, research, etc. I don't think it ethical to challenge their minds for challenging sake. The model I follow is: I walk them slightly off the path to show them other views. But I do not think it's right to leave them off the path and having to find their own way back. I intentionally and purposefully give them things to chew on, accurate doctrine, but give them enough to bring them back...purposefully. I think, if they are lying in bed, thinking about what we discussed in class...I've succeeded. (Dr. En, personal communication, 2009)

Based on the researcher's experiences as well as the responses from the students, Dr. En indeed succeeded. In short, the thought-provoking nature of the learning environment served as a strong catalyst for student pondering and reflection. These pondering episodes consistently resulted in spiritual growth for the students.

***Human Anatomy: high intensity.*** After observing the first thirty minutes of class on the first Day, it was clear to me that the learning environment was a quick-paced, intense one. Dr. Ray lectured directly, asked questions directly, and responded directly to student questions. Even the slide-reviews-with-one's-partner occurred frequently and given just enough time to accomplish the task, not much more. The direct, intense, quick-paced learning environment was appreciated by all interviewed students, who recognized the value of such an environment in a subject where the understanding and comprehension of much information is required.

**Student descriptions of the spiritual growth they experienced.** The following section examines the individual cases for the claims made by the students for their spiritual growth as a result of a semester-long experience in the spiritually strengthening learning environment. Understanding how students perceived their spiritual growth sheds light on the learning environment from which the strength and growth originated.

***Chemical Engineering case.*** The students of Dr. Kent's Chemical Engineering course recognized improvements in their relationship with Deity and their fellow man, as well as increased strength to face the challenging topic of chemical engineering in the future. For example, one student reflected,

I gained a greater appreciation for Heavenly Father's care for each of His children. Also, I gained a greater sense of camaraderie and better view of my fellow man...because I saw how friendly with everyone he was...he was a good example. Also, because of his learning

everyone's names by the first day, I made a goal to learn one person's name per day...and it went well for three months! (R.H., personal communication, 2009)

Additionally, another student recognized that "I've always heard it's a tough major, but after this class I think 'maybe I *can* do this.' I think it's because he let us know—like after the first test—it's not the end of the world, you can always pick yourself up and keep going. It gave me strength, for sure" (M.S., personal communication, 2009).

***Statistics case.*** Students in Dr. Paul's statistics course describe improved understandings of several things. First, one student discovered "what really matters: helping other people" (J.B., student final essay response, 2010). He continued by expressing the gratitude he feels for now seeing "the true purpose of research: to bless and benefit others." A second student described her experience in this way:

The course enlightened my personal objective for coming to BYU. I realized that the null hypothesis system is actually parallel to the Plan of Salvation. It made such sense to me that the Lord would set up the experiment to see which of his children were able to become most like Him, and thus become different. In the end, our hearts and our actions will be evidence that we are different from the world and that we are willing to be so. I left class feeling a simple affirmation from the Spirit that I want the null hypothesis about me to be rejected with full force. I didn't want there to be any chance of the evidence being cloudy or of my commitment to the Lord being lost in the crowd. I felt a resolve to clarify the evidence by how I look, think, and therefore, what I am becoming. (D.J., personal communication, 2010)

Finally, another student expressed the opinions of all students interviewed, as well as the experiences of the researcher, by saying, "I am a better son of my Heavenly Father for taking this class, and I will

be a better example of Christ by doing my best to make the highest quality ‘life product’ I can” (B.A., student final essay response, 2009).

***Human Development case.*** Students recognized the relationship between Heavenly Parents and their own potential as parents or future parents. As one student observed, “During every lecture, there was something that gave me a lift spiritually. I loved how he always applied it to ‘You can be like *this*, because Heavenly Father did *this*, and you can follow His example.’ But he didn’t just say that, he gave personal examples” (S.N., personal communication, 2009). Another student expounded on this connection,

I know I learned about the family and parenthood and the Gospel. I understand better now the connection between me and my Heavenly Father. I understand both of my Heavenly parents better. Because of the spiritual strength I’ve gained from this experience, I have greater gratitude, more forgiveness for myself and my parents. (H.M., personal communication, 2010)

Students also described an increased desire to draw nearer to a higher power, to God. For example, “As a result of this class and Dr. En, now I want to follow all of the law, and obey *all* of the commandments” (K.L., personal communication, 2009). Another student stated, “I now feel closer to my Heavenly Father as a result. I now look at life with more loving and forgiving eyes. I have a greater desire now to be closer to Him. I yearn after His love, His friendship. I didn’t feel this strongly four months ago” (A.T., personal communication, 2009). Clearly the learning environment proved to be a highly spiritually strengthening one for the students.

***Human Anatomy case.*** Students recognized a greater understanding of and appreciation for the sacred nature of their bodies and the connection between the human body and that of body of Deity. As one student responded upon reflection,

I have a new appreciation for who we are, for my body, for the science of the body. Because of this class and Dr. Ray, I think God *has to be* a scientist. Also I think a conversion to the Gospel is indicated by the desire to share it; when I've been spiritually strengthened or edified in a class, I want to share it. My parents want to kill me because I want to talk at dinner about anatomy. In fact, I bore my testimony about the human body to my roommates! (J.N., personal communication, 2009)

Another student confessed the change in perspective that occurred for her as a result of the spiritual growth experienced through the learning experience in this case:

Body image changed for me. Things that used to be gross or strange don't faze me now because I recognize their function and purpose...and see them as amazing. I also had many interesting experiences dealing with death and cadavers that semester that really have had a lasting impact and given me a different perspective on life/death. (L.L., personal communication, 2010)

### **Research Questions #2-3: Contributions of the Participants**

The following section examines two secondary research questions to this study. First, I address the question, "What do the professors in these courses say about the participants' contributions in fostering and experiencing a spiritually strengthening learning environment?" Second, I address the research question, "What do the students say about fostering a spiritually strengthening learning environment?"

**Contribution of the professor.** Based on my observations as well as student feedback, the first two questions are highly related. When asked simply to describe the nature of the learning environment for their respective class, *every* student interviewed discussed the role of the professor. Without realizing, the students actually answered one of the secondary research questions (what do the students say about fostering a spiritually strengthening learning environment) as they responded

to the primary research question. The students of these four cases agreed that the professor played a crucial role in the development of the spiritually strengthening learning environment they experienced. When asked specifically for factors that contributed to the feel of the learning environment, one student declared, “It’s not the textbook, it’s him” (A.T., personal communication, 2009). Another student representing a different case maintained: “it’s not the assignments, it’s him” (B.C., personal communication, 2009). Finally, one student summarized the views of all best: “It has to come from the professors, to help start it, to ignite the fire...because it doesn’t start with the students” (J.N., personal communication, 2009).

During the pre-semester interviews with each professor, while discussing the list of things they considered, prepared, and hoped for during an upcoming semester for the class, it became clear to me that each professor shared the students’ belief that the instructor played a crucial role in the creation of the learning environment the students would soon experience. Weeks in advance the professors would spend hours preparing for each class; part of this preparation included time specifically devoted to activities that the professors felt would invite a spiritually strengthening element to the learning environment. Some of these activities included the following: memorizing student names and faces; preparing for lectures to supplement routine information with anecdotal stories or research data that could turn the mundane lecture into one that would be worthy of increased engagement; and, preparing specific Gospel integration discussions from which to draw when the appropriate opportunity presented itself during the semester. In summary, both the professors and students acknowledged the fundamental contributions the professor makes in developing and maintaining a spiritually strengthening learning environment.

**Contribution of the student.** When interviewed, the professors and students unanimously recognized the primary role of the professor in contributing to the experience of the spiritually strengthening learning environment. In a less explicit way, the students themselves also played a

part in the spiritually strengthening experience. In order for many of the analyzed themes to emerge to the degree they did, it is critical to recognize the three ways the student role impacted the learning environment.

First, the experienced learning environment required engagement, active participation (including listening), and an investment on the students' behalf. It could not have been possible to receive spiritual strength had the alternative been the case. There would have been nothing to experience had the students simply attended class and participated minimally. Experiencing the learning environment requires a certain level of engagement and participation on the students' behalf.

Second, many students shared examples of trying to implement certain behaviors as a result of what they saw and heard from the professor. For instance, the chemical engineering students communicated a desire to want to try implementing patience with their teammates and neighbors as a result of Dr. Kent's example. Or some of the human development students adopted certain parenting and friendship styles outside of class as a result of something that occurred inside of class. Often it was in these outside-of-class moments that the spiritual strength came.

Third, although it appeared strong in one of the four cases (Human Development), student pondering, reflection, and discussion outside of class was an essential precursor to fostering spiritual strength for students in each case/course. For example, the statistics students completed a semester-long reflection journal and an end-of-semester reflection essay, requiring them to consider the value of honesty and integrity in the work and life; human anatomy students related experiences in which they would often share with their non-classmate friends and family about what/how they felt about the human body and the material they were learning. Although the role of the professors received much of the attention, the role of the students in the development of the spiritually

strengthening learning environment and the maintenance of the spiritually strengthening experience may play a stronger role than I anticipated.

#### **Research Question #4: Relationship Between Spiritual Strength and Academic Learning**

This section discusses the interview data as it pertains to the fourth research question: what do these participants—professors and students—feel is the relationship between a spiritually strengthening environment and their academic learning? Each individual interviewed felt that the increase in spiritual strength they experienced directly resulted in an increase in learning achieved. Although they confessed to not having any empirical data to support such a claim, the professors nonetheless acknowledged a belief and a hope that increased spiritual strength would lend itself to increased academic learning for their students. Two student responses reflect the feelings and thoughts of each student interviewed. One student observed, “Through the increase in spiritual strength, I *was* able to learn more. I understand how the material fits into the BIG picture. I could also understand the specifics, the nuts and bolts, easier” (H.M., personal communication, 2009). Or from the point of view of another student, “I don’t think I could have done as well in the class had it not been for that spiritual strength I gained from Dr. Ray” (J.N., personal communication, 2009). All of the participants expressed a belief in a direct relationship existing between increased spiritual strength in a class and increased academic success. (See Appendix F for additional thematic evidence.)

## **Chapter 6: Conclusions and Suggestions for Further Research**

The faith-intellect relationship, with its many facets, is one that has not traditionally received much attention as far as research is concerned. In particular, the facet of spiritually strengthening learning environments has been studied minimally. A review of the academic literature reveals a lack of rich descriptions of spiritually strengthening learning environments (Lindholm and Astin, 2006). The following chapter discusses the conclusions and applications that are drawn relating to spiritually strengthening learning environments as a result of this study.

As you will see, the conclusions highlight patterns in the analysis and interpretation of data. It is important to recognize that the students described the spiritual strengthening they experienced in a similar manner. Specifically, the students expressed feeling increases in a sense of their own worth (i.e. the sacredness of their bodies, their divine origin as children of a Heavenly Father, as individuals with potential to do much good), their place in the world (i.e. their relationship with peers and family members, the importance of practicing quality and integrity in their work), and their relationship with God. However, it is important to recognize that in the four cases studied, there were four unique ways in which faculty fostered spiritually strengthening learning environments. As a result of the data collected and interpreted, the conclusion I reached concerning the nature—the look and feel—of spiritually strengthening learning environments is that there is not one prescribed manner in which to develop such an environment. Although there were many thematic similarities between the four cases, each was unique in the manner in which it arrived at the outcome of students feeling spiritually strengthened. It is the subtle nuance of each technique that I will highlight.

### **Thematic Conclusions and Applications Across Cases**

Certain conclusions and interpretations can be drawn from the thematic analysis of the data. In this section I discuss the four themes identified in this research that were related to the

professors' developing of a spiritual learning environment: (a) the professors' care for their students, (b) professors' patience and sacrifice of time, (c) their energy and use of humor, and (d) their integration of gospel material into their courses.

**Care for students.** The students in each learning environment described feeling cared for by the professors. Furthermore, as a participant observer, I felt like the four professors sincerely cared about me and the purposes for which I attended their respective classes. However, there were many different ways that the faculty demonstrated care and concern. For example, Dr. Kent memorized the students' names weeks before the first day of class. He also offered them "fatherly advice" if he felt like it could help. He even opened his home to those that were not returning home for Thanksgiving. In the Statistics case, Dr. Paul repeatedly stated that he was "here to help" and that his number one desire was for the students to succeed. He also encouraged the students during difficult statistical topics or problems. Dr. En handled difficult or "touchy" subjects with utmost tact and concern. In an auditorium full of students, he concerned himself with the one or two individuals that could potentially be sensitive to the topic at hand. He also expressed a desire to meet and talk with students on anything the students had a desire to discuss. His conversations with students were not limited to strictly course material; rather, he encouraged the students to talk to him about their lives, even dating. Finally, in Human Anatomy, Dr. Ray confessed to preparing for each lecture in such a way that would allow for maximum clarity and therefore, comprehension, for the students. The manifestation of her care was more subtle in this way. She also seemed to instruct in such a manner as to not allow a student to fail. In other words, the constant questioning by Dr. Ray and the companionship review that occurred every four or five lecture slides was her way of allowing the students to most-fully understand the material. Although care and concern for the students were displayed in each case, these attributes were also uniquely manifest in each course. The evidence suggests that there are many ways to demonstrate care for the students.

An important take-away from the research is that students in all of the study cases linked feeling cared for by the professor with the environment being a spiritually strengthening one. Instructors concerned with developing a spiritually strengthening environment may consider what approaches they feel comfortable with to most effectively demonstrate care for their students. In short, one can ask “What form does this ‘caring’ take for me with my students and in my particular context?” Or, “how might I show caring for my students in my context given my personality and sense of what is most important for them?”

**Patience and sacrifice of time.** The theme of patience and time-sacrifice was exhibited in each case. Once again, it is interesting that from the student perspectives patience *looked* different in each case. However, it is equally interesting that the *feel* of being interacted with in a patient manner was still felt in each instance. Dr. Kent and Dr. Paul would take the necessary time to re-teach a principle that was not understood. The three professors of large classes (Dr. Kent, Dr. En, and Dr. Ray) each displayed patience in moments of restlessness or loss of focus from the class. Any stern tone used by the professors seemed to me as an observer to be done as a last resort. All four professors extended office hours to ensure that each student was being met. Although there was more similarity in the approach to patience/time-sacrifice than in caring, there were, nonetheless, different ways in which the professors displayed patience and a willingness to sacrifice time. An instructor may ask himself or herself what this theme means to them. They can consider the manner in which this could be displayed in their context.

**Enthusiasm, energy, and humor.** While each case revealed an enthusiasm, energy, and humor, each professor showed a unique method of adding these elements to the learning environment. Dr. Kent’s humor was dry and infrequent in manifestation. He joked and teased in such a dry and infrequent manner in fact, that if you were not paying attention it would be easy to miss a joke entirely. There was minimal lead-in and warning to his witty remarks. As opposed to

other professors who sometimes would say things that you could tell were said to other sections or at other times in previous semesters, Dr. Kent seemed to say things that came to mind, in the moment. And it was that spontaneity combined with his dryness that made his sense of humor work so well.

Dr. Paul showed a high level of enthusiasm and energy while leading recitations of statistical definitions, in lecturing, when he would raise his voice and ask questions, and even while standing on the desk. He offered jokes the most often of all the professors studied as well. Dr. Paul would occasionally share prepared humorous messages. For example, he exposed the absurdity of his Burger King experience. He also shared a video highlighting the pain of losing luggage. However, the most frequent form of humor Dr. Paul used was that of spontaneous sarcasm. He used most interactions with students, in fact, to remove stress and add levity to the situation. When students were pondering an answer, Dr. Paul used the silent moments to insert a sarcastic comment to seemingly ease any tension. When students would volunteer to stand or come to the front of the class for a demonstration, Dr. Paul would always take the opportunity to insert humor in a completely spontaneous way. For instance, during the hula-hoop exercise, Dr. Paul teased the student about his struggles to successfully land the hula-hoop in the target. Dr. Paul's spontaneous insertions of sarcasm and teasing added humor to challenging statistical discussions.

In Human Development, Dr. En revealed a passion and energy that the participants, including myself, were quick to recognize. His manner of speaking, walking through the aisles and rows was fast-paced. Dr. En embodied the opposite of monotone: He enunciated so clearly, placed a great amount of emphasis on the individual syllables of his words, and used his hands to explain, to describe, and to ask. In fact, many times throughout the semester Dr. En would seemingly plead with the students while explaining certain principles. In using his hands, tone, and facial expressions, this seemed to be Dr. En's way of saying "Backed by science and experience, this really

*does work,*” or “Please do not make the mistake of behaving in this way.” This consistent communication style required energy and passion to maintain. Furthermore, Dr. En joked often as well. While some jokes were prepared, others were spontaneous and unplanned. For example, he devoted PowerPoint slides to the “correlation versus causation” satirical material on bread consumption. He sarcastically pointed out the extreme views of Sigmund Freud. And without bias, he teased everyone when we reviewed the home of each student the first day of class. As a result, the students in Dr. En’s class described feeling that they were in a highly energetic and engaging learning environment.

Dr. Ray radiated enthusiasm for the topic of human anatomy to her students. First, in her attempt to make it as likely as possible to understand the anatomical principles being discussed, Dr. Ray would fire-off review questions at the class repeatedly on a daily basis. Her lecture style was fast-paced, permitting minimal silent time from the beginning of class to the end of the period. Of the four professors, Dr. Ray spoke in the most direct manner to the students. This manner of speaking, almost like a mild drill sergeant, exuded an intensity and energy unlike any of the other four professors. Next, she often used the phrases “I love,” “I enjoy,” and “isn’t this interesting” to express her personal feelings regarding a topic she was introducing. Furthermore, her humor also manifest itself daily in the sharing of personal stories that related to the topic at hand, and stories she encountered on the news, in a newspaper, or in a medical journal. Between the four cases, the enthusiasm, energy, and humor felt by the students were manifest in different ways. Instructors must determine what implications this means for them in their classroom setting.

**Gospel integration.** Present in each case was an element of gospel integration. However, each professor was unique in the manner in which he or she integrated the gospel. As previously stated, the professors incorporated both intentional and spontaneous integrations of the gospel, as well as integrations that were both explicit and subtle. All four professors admitted to sharing pre-

determined scripture passages, stories, or personal thoughts on certain occasions, while at other moments simply sharing any spiritual anecdote that seemed appropriate. Dr. Kent shared passages of scripture that would come to mind if he felt it would benefit the students and the need presented itself. Dr. En shared experiential anecdotes being a husband and father. Additionally, in a much more subtle way, Dr. Paul referenced the importance of maintaining integrity and quality in all aspects of life, including academia. Dr. Ray often referenced the sacred nature of the human body as well as its divine origin. Like the previously mentioned themes, there were various techniques used to integrate the gospel in the four cases studied. Again, instructors determine what they are most comfortable with and works best for their classroom to most effectively integrate the gospel.

**Spiritually strengthening learning outside of the classroom.** The thought-provoking nature of the learning environments invited additional reflection outside of class. In fact, based on student responses some of the most powerful spiritual experiences related to the courses occurred beyond the allotted 50-minute class period and outside the confines of the classroom. As Dr. En's class illustrated, the thought-provoking nature of his lectures invited much pondering and discussion outside of class. It was in these moments that the students felt strengthened spiritually as they felt spiritual peace and confirmation over topics and principles that they had not fully previously considered. Additionally, Dr. Paul invited similar experiences for his students. Upon review of the Final Exam essays, Dr. Paul's students enjoyed similar experiences while reflecting on the class. Finally, some of Dr. Ray's students described the excitement in which they would discuss the human body with their family and friends after leaving a day's class. While Dr. Kent did provoke thought in the students, it was not as prevalent in his classroom. In short, the spiritually strengthening learning environment is not bound by the physical constraints of the classroom setting.

### Themes Unique to Individual Cases

Additional themes emerged which were unique to single cases. For example, the chemical engineering students talked about the peaceful, tranquil feel to the learning environment. On the other hand, the Human Development learning environment included a great deal of deep thought-provoking questions. The tone of the class, whether peaceful, thought-provoking, or energetic contributes to how spiritually strengthening the students perceive the environments to be. Furthermore, it may be that there are therefore different tones/approaches/ emphases that can all be spiritually strengthening. The instructor can consider what combination would work best in his or her immediate context.

Some professors not included in the study believe that beginning a course with prayer is essential to having a spiritually strengthening learning environment. While there is not sufficient data in this study to draw any generalizable conclusions, it is insightful to note that in the four cases studied two professors did pray and two did not pray to begin each class. The experiences of many students interviewed can be summarized by two quotations. As a student of Dr. En's observed in an interview: "No prayers! Weird, but it was one of my most spiritually strengthening classes ever." Or, as another student declared, "Some of my most spiritually strengthening learning experiences at BYU involved zero prayer before class. Sadly, some of my *least* have been religion courses that always started with prayer."

Some faculty may believe that integration of gospel material is not possible in some courses – particularly highly technical courses in math and science oriented fields. In this study gospel integration was part of each case, even though they were in very diverse content areas: human development, statistics, chemical engineering, and human anatomy. Regarding the integration of the gospel into courses, one student declared, "Students know, that even though it can be hard, the gospel *can* be introduced into any course...the Spirit *can* be felt. There are still applications to be

found. For example, God is a master physicist” (S.N., personal communication, 2009). Or as another student volunteered without being asked, “We need less intellectuals and more faithful people in science, to see the divine in the subject matter. If students leave without a love of science with faith, its failed” (J.N., personal communication, 2009). While all four professors agree that the faith-intellect relationship is not always an easy one to understand, they do agree that it is not only possible but essential to marry the two in some way. Dr. En declares, “I still have a strong belief in being an LDS scholar. I take both of those terms seriously. I don’t want the students just spiritually strengthened only. I want them to have a greater scientific understanding in what we’re talking about. I want to bathe the science in the gospel” (Dr. En, personal communication, 2009).

The data gathered in this study originated from only four cases from a single university. Yet within this small sample, the data illustrate that there are many ways in which a spiritually strengthening learning environment is fostered. Extending this further, the nature of naturalistic generalizations requires that the reader determine how to best transfer the various descriptions and techniques used by the professors of this study to their immediate purposes and contexts. My hope is that those who read this study will find in the rich description approaches and insights that they find useful and appropriate for their unique contexts and purposes.

### **Future research**

The conclusions of qualitative studies lend themselves to naturalistic generalizations and a transfer of findings from one context to another. The results of this study lead to four insights pertaining to spirituality in learning environments that deserve additional inspection. First, in the four cases studied the previously mentioned themes were connected in the minds and experiences of students and seemed to contribute to their learning and spiritual strength. Future research might consider the extent to which these elements are necessary and how often they come together in environments where students feel they are learning and being spiritually strengthened.

Second, additional case study research in other disciplines would lead to greater understanding of the nature of spiritually strengthening learning environments in higher education. How do these environments look in the performing arts? The visual arts? In a business school? In a physical education course? Although it would require the highest forms of approval as well as humility on the part of the participants, research looking into the opposite side, *negative outliers*, would also shed light on the phenomenon of spiritually strengthening learning environments. Next, as previously stated, the conclusions of this case study would be informed by looking at cases where the previously discussed attributes were present, but no gospel integration is made, or where some of the elements such as caring, patience, or humor were not present either. Future research in this area should further examine the relationship between the spiritually strengthening environment and the learning achieved by the students as well. Professors and students were asked to simply describe what they thought and felt the relationship was; additional research focusing on this question alone, more in-depth, would be enlightening.

Third, the themes that emerged in this study, with their respective nuances, invite questions regarding their definition and application. For instance, in one case the professor stood on a table and declared his passion for the subject and the students. In other case, the professor behaved in a much more calm, almost grandfatherly way. However, both created feelings for the students of being cared for. Therefore, future research on this particular theme would consider the following question, “What does caring or other faculty attributes look like in a spiritually strengthening environment?” and “Does caring look different in a spiritually strengthening environment from an environment that students don’t perceive as spiritually strengthening?”

Fourth, additional research needs to deal with how spiritually strengthening learning environments are developed by the efforts of both the professors and the students. This study focused primarily on what the faculty did to foster a spiritually strengthening environment. As

researcher, I felt that that there also seemed to be some responsibility on the part of the student for feeling spiritually strengthened. However, this study was not able to address that question adequately. Noddings (1992) refers to the dimension of caring known as “reciprocity.” She discusses caring as a dual-relationship, requiring the acknowledgement or reciprocation of the recipient of the caring. Future research might build on this idea to try and better understand the student side of feeling spiritually strengthened. Does feeling spiritually strengthened require effort on both the teacher and learner, or can it happen through the efforts of just one of the two? Can students feel spiritually strengthened in an environment without a caring relationship with a faculty member? As far as future research is concerned, while students in this study indicated that professors have certain attributes that are manifest in the class (i.e. care, patience), do the student attributes, if any, allow them to feel spiritually strengthened? For example, in a class where some students feel spiritually strengthened and some do not, what occurred that made some feel it and some not feel it? What was different about their experiences? Or, were certain attributes displayed by some students while others did not display these same attributes? Research looking further into what the students contribute to the learning environment would be beneficial.

## References

- Anderson, C. (1982). The search for school climate: A review of the research. *Review of Educational Research*, 52(3), 368-420. doi:10.2307/1170423
- Astin, A. (2004). Why spirituality deserves a central place in a liberal education. *Liberal Education*, 90(2), 34-41.
- Baylor University (2007). *Baylor University Mission Statement*. Retrieved from <http://www.baylor.edu/about/index.php?id=48040>
- Brigham Young University (2007). *Center for Teaching and Learning*. Retrieved from <http://ctl.byu.edu/>
- Chickering, A. (2004). Encouraging authenticity and spirituality in higher education. *Journal of College and Character*, 5(1). doi:10.2202/1940-1639.1373
- Chickering, A. (2006). Strengthening Spirituality and Civic Engagement in Higher Education. *Journal of College and Character*, 8(1), 1-5. doi:10.2202/1940-1639.1153
- Dirkx, J. (2001). The power of feelings: Emotion, imagination, and the construction of meaning in adult learning. In S. Merriam (ed.), *The New Update on Adult Learning Theory*. *New Directions for Adult and Continuing Education*, 2001(89). San Francisco: Jossey-Bass.
- Dirkx, J. (1997). Nurturing soul in adult learning. In P. Cranton (ed.), *Transformative Learning in Action*. *New Directions for Adult and Continuing Education*, 74(1). San Francisco: Jossey-Bass.
- Duff, L. (2003). Spiritual development and education: A contemplative view. *International Journal of Children's Spirituality*, 8(3), 227-237. doi:10.1080/1364436032000146502
- Brigham Young University (1997). *Educators as inquirers: Using qualitative inquiry*. Retrieved from <http://webpub.byu.net/ddw/qualitativebook/>

- Giorgi, A. & Giorgi, B. (2003). The descriptive phenomenological psychological method. In P.M. Camic, J.E. Rhodes, L. Yardley (Eds.), *Qualitative research in psychology* (pp. 243-273). Washington, DC: American Psychological Association.
- Hay, D. (1982). *Exploring inner space: Is God still possible in the twentieth century?* Harmondsworth, UK: Penguin Books.
- Hill, P., Pargament, K., Hood, R., McCullough, M., Swyers, J., Larson, D., & Zinnbauer, B. (2000). Conceptualizing religion and spirituality: points of commonality, points of departure. *Journal for the Theory of Social Behavior*, 30(1), 51-77.
- Hodge, D. (2001). Spiritual assessment: A review of major qualitative methods and a new framework for assessing spirituality. *Social Work*, 43(3), 203-214.
- Jones, L. (2005). What does spirituality in education mean? Stumbling toward wholeness. *Journal of College and Character*, 6(7).
- Lee, D. (1999). Reinventing the university: From institutions to communities of higher education. *Journal of Adult Development*, 6(3), 175-183.
- Lewis, J. (2000). Spiritual education as the cultivation of qualities of the heart and mind: A reply to Blake and Carr. *Oxford Review of Education*. 26(2), 263-283. doi:10.1080/713688528
- Lincoln, Y.S., and Guba, E.G. (1989). *Fourth generation evaluation*. Newbury Park, CA: Sage Publications.
- Lincoln, Y.S., and Guba, E.G. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage Publications, Inc.
- Lindholm, J., and Astin, H. (2008). Spirituality and pedagogy: Faculty's spirituality and use of student-centered approaches to undergraduate teaching. *The Review of Higher Education*, 31(2), 185-207.
- Lindholm, J., and Astin, H. (2006). Understanding the "interior" life of faculty: How important is spirituality? *Religion & Education*, 33(2).

- Loyola Marymount University (2008). *LMU mission statement*. Retrieved from <http://www.lmu.edu/Page109.aspx>
- Merriam, S. B. (2001). *Qualitative research and case study applications in education*. San Francisco: Jossey-Bass Publishers.
- Miles, M. & Huberman, A. (1994). *Qualitative Data Analysis*. Thousand Oaks: SAGE Publications, Inc.
- Postle, D. (1993). Putting heart back into learning. In D. Boud, R. Cohen, and D. Walker (eds.), *Using Experience for Learning*. Bristol, PA: Society for Research in Higher Education.
- Spradley, J. (1980). *Participant Observation*. New York: Holt, Rinehart and Winston.
- Stake, R. (2006). *Multiple Case Study Analysis*. New York: The Guilford Press.
- Stake, R. (1995). *The Art of Case Study Research*. Thousand Oaks: SAGE Publications, Inc.
- Tatarkowski, M. (2004). Should spirituality be taught in post-compulsory education? Justifications for its inclusion in further education curriculum. *Pastoral Care in Education*, 15(3), 23-29.
- Thatcher, A. (1991). A critique of inwardness in religious education. *British journal of Religious Education*, 14(1).
- Tisdell, E. (2008). Spirituality and adult learning. *New Directions for Adult and Continuing Education*, 2008(119), 27-36. Wiley Periodicals, Inc. doi:10.1002/ace.303
- Tisdell, E. & Tolliver, D. (2006). Engaging spirituality in the transformative higher education classroom. *New Directions for Adult and Continuing Education*, 2006(109), 37-47. Wiley Periodicals, Inc.
- UCLA (2008). The Spiritual Life of College Students. Retrieved from [www.spirituality.ucla.edu](http://www.spirituality.ucla.edu)
- University of Notre Dame (2007). *Mission statement*. Retrieved from <http://nd.edu/aboutnd/mission-statement/>

Watson, J. (2000). Whose model of spirituality should be used in the spiritual development of school children? *International Journal of Children's Spirituality*, 5(1), 91-101.

Zinnbauer, B., Pargament, K., and Scott, A. (1999). The emerging meanings of religiousness and spirituality: Problems and prospects. *Journal of Personality*, 67(6), 889-919. doi:10.1111/1467-6494.00077

*Appendix A: Informed Consent Form, Professor***Introduction**

This research study is being conducted by Seth Martinez, a graduate student at Brigham Young University, to understand spiritually strengthening learning environments in higher education.

**Procedures**

You will be asked to participate in 2 (possibly 3 for follow-up purposes) interviews which will take approximately one hour. Questions will investigate your experience with teaching in a spiritually strengthening learning environment. Interviews will be recorded and then transcribed. Classroom observations will take place and notes taken by the lead researcher in a journal.

**Risks/Discomforts**

There are minimal risks for participation in this study. There may be discomfort in sharing personal feelings. Also, the time required for interviews may be an inconvenience.

**Benefits**

There are no direct benefits to subjects. However, it is hoped that through your participation researchers will learn more about the nature of spiritually strengthening learning environments.

**Confidentiality**

All information provided will remain confidential using pseudonyms with no identifying information. All data, including responses and tapes/transcriptions from the interviews, will be kept in a password-protected computer and only the primary researcher will have access to them. Upon completion, the documents and tapes will be destroyed.

**Compensation**

None.

**Participation**

Participation in this study is voluntary. You have the right to withdraw at anytime or refuse to participate entirely without jeopardy to your standing with the university in any way.

**Questions about the Research**

If you have questions regarding this study, you may contact Seth Martinez at 801-400-4809, [seth.martinez@byu.edu](mailto:seth.martinez@byu.edu)

**Questions about your Rights as Research Participants**

If you have questions you do not feel comfortable asking the researcher, you may contact Dr. Chris Dromey, (801) 422-6461, 133 TLRB, [dromey@byu.edu](mailto:dromey@byu.edu).

I have read, understood, and received a copy of the above consent and desire of my own free will to participate in this study.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## *Appendix B: Informed Consent Form, Student*

### **Introduction**

This research study is being conducted by Seth Martinez, a graduate student at Brigham Young University, to understand spiritually strengthening learning environments in higher education. You have been invited to participate because this course qualifies in meeting the criteria of being a “spiritually strengthening” learning experience for its students. Your participation will help increase understanding concerning the nature of this particular type of learning environment.

### **Procedures**

You will be asked to participate in a 10-30 minute interview. You might be invited to participate in a more in depth follow-up interview. Questions will include details about your experiences in a spiritually strengthening learning environment. Researchers will contact you with more information regarding the time and place. Interviews will be recorded and then transcribed.

### **Risks/Discomforts**

There may be discomfort in sharing personal feelings: you will be asked to share your thoughts/feelings regarding the spiritual dimension of the learning environment you experience; you will be asked to give specific examples. Additionally, the time required for interviews may be an inconvenience. Overall, because this study focuses on positive outliers (positive spiritual experiences), the anticipated risks and discomforts are minimal.

### **Benefits**

There are no direct benefits to you. However, it is hoped that through your participation researchers will learn more the nature of spiritually strengthening learning environments.

### **Confidentiality**

All information you provide will remain confidential and will only be reported using pseudonyms with no identifying information. All data, including responses and tapes/transcriptions from the interviews, will be kept in a password-protected computer and only the primary researcher, Seth Martinez, will have access to them. After the research is completed, the questionnaires and tapes will be destroyed.

### **Compensation**

None.

### **Participation**

Your participation in this study is voluntary. You have the right to withdraw at anytime or refuse to participate entirely without jeopardy to your class status, grade or standing with the university.

### **Questions about the Research**

If you have questions regarding this study, you may contact Seth Martinez at 801-400-4809, [seth.martinez@byu.edu](mailto:seth.martinez@byu.edu).

### **Questions about your Rights as Research Participants**

If you have questions you do not feel comfortable asking the researcher, you may contact Dr. Chris Dromey, (801) 422-6461, 133 TLRB, [dromey@byu.edu](mailto:dromey@byu.edu).

I have read, understood, and received a copy of the above consent and desire of my own free will to participate in this study.

Signature \_\_\_\_\_ Date: \_\_\_\_\_ Name: \_\_\_\_\_

*Appendix C: Introductory Email*

Subject line: Researching {Name of specific course desired to be studied}

Dear Dr. \${LastName},

Hello, my name is Seth Martinez. I am a graduate student in the Instructional Psychology & Technology Department within the McKay School of Education. I also work in the Center for Teaching and Learning (CTL) as well as collaborate with the Faculty Center. At this time, there is much work being done in these two centers focusing on the faith-intellect relationship. I write with the support of Elder Osguthorpe here at the CTL and Dr. Alan Wilkins of the Faculty Center.

Your course has been identified as one that is highly “spiritually strengthening.” I am writing to see if it is possible to meet for, say, 15- 20 minutes this week to explain further the research being done and if you would be willing to participate. I appreciate your time and the opportunity to speak with you further. Thank you.

Sincerely,

Seth Martinez

IP&T Graduate Student & CTL Researcher

Brigham Young University

*Appendix D: Observation Keys*

## 1. Before class begins:

A. Teacher prep:

B. Teacher-student interaction:

## 2. During class:

A. Begins with **prayer** or **song** or **spiritual thought**. (circled)

B. Teacher handling/answering of questions:

C. Lecture style/tone:

D. Other teacher-student interaction:

*Appendix E: Semi-Structured Interview Questions*

\*\*The goal of the interviews is to get the interviewee to share experiences, to tell stories.

Professor & Student

1. Tell me about the class? About the “spiritually strengthening” environment?
2. Does explicit Gospel content (brought into class discussion or assignment) contribute? If so, how and why?
3. What role do your personality characteristics play in fostering a spiritually strengthening experience? How are these characteristics manifest in your (professor-student) interactions? What are the your (professor-student) interactions?
4. Describe how you feel the spiritual environment contributed to student learning?
5. Describe the out-of-class experiences with the students/professor? (i.e. Office hours, personal messages, phone conversations, etc.)

Student

1. Tell me about/describe why you selected this course/section.
2. Describe how you felt about the setting of the class.
  - # of students
  - layout (auditorium?)
3. Describe the atmosphere of the class. (vibe, typical class flow)
4. Describe the student-teacher interaction. (Give examples of experiences)
5. Describe how any assignments, papers, exams, and supplemental readings contributed to the spiritually strengthening aim. (Give examples of experiences)
6. How do you feel/know you were strengthened spiritually? What changes for you from the beginning of the semester to the end? Why is this so? (Give examples)

*Appendix F: Tables of Characteristic Data*

Table 1

*Thematic Categories: Chemical Engineering Case*

| Thematic category            | Characteristic Evidence   |
|------------------------------|---|
| Care for students            | <ol style="list-style-type: none"> <li>1. “He knew all our names the first day. I thought: ‘This is our teacher; he <i>really</i> cares about me.’”</li> <li>2. “I feel like he loved the students.”</li> <li>3. “He cared <i>a lot</i>, like an 8, 9, or 10 out of 10, about me as a student.”</li> <li>4. Researcher observation: “That was incredibly thoughtful of him to assign groups based on geography. Who knows how long that took him!”</li> </ol> |
| Sacrifice of time & patience | <ol style="list-style-type: none"> <li>1. “I learned patience because I imagined what Dr. Kent would do. He taught us principles of teamwork.”</li> <li>2. Researcher observation: “Kent is a very patient guy. He doesn’t seem to get flustered easy. Whatever the reason (his age?), he is even-keeled. I can’t imagine him getting too high or too low.”</li> </ol>  |
| Peaceful                     | <ol style="list-style-type: none"> <li>1. “He was very approachable. It (the environment) was a piece of cake. He was very friendly.”</li> <li>2. “It was a very welcoming, very comfortable environment.”</li> <li>3. Researcher observation: “Dr. Kent is a grandfatherly man. His tone, the overall way he speaks, the speed of his words, his lecture-pace...all grandfatherly. The result is a very calm feel to the class.”</li> </ol>                  |
| Gospel integration           | <ol style="list-style-type: none"> <li>1. “A lot of times in class, he’d relate Chemical Engineering to the Gospel, like during the ‘Fatherly Advice.’ I remember</li> </ol>  |

the last day: typical of Chemical Engineering, a problem arises, he can choose multiple ways to handle it; he chose to pray and do it the ethical way. I've never thought of it like that: praying for problems at work."

2. "His spiritual insights seemed to always apply to me, so I paid attention."
  3. Researcher observation: "Dr. K does a wonderful job blending scriptural insights into class. Each time, he captures the class' attention. This one: you could hear a pin drop. It's easy to tell his words penetrate the students."
-

Table 2

*Thematic Categories: Statistics Case*

| Thematic category            | Characteristic Evidence  |
|------------------------------|--|
| Care for students            | <ol style="list-style-type: none"> <li data-bbox="906 426 1435 835">1. “Thank you for getting to know each of us individually and for taking time to question us, involve us, and help us. One of the things that I loved most about this class is that it felt like you cared most about learning and understanding, not covering material. The way you would encourage us when we were tired, and look us in the eyes when you were teaching brought a unique spirit to the classroom.”</li> <li data-bbox="906 842 1435 1024">2. Researcher observation: “You can tell Dr. Paul wants each student to know that his entire aim is to help them. He is always reminding them of his number one desire: to help them succeed.”</li> </ol>   |
| Sacrifice of time & patience | <ol style="list-style-type: none"> <li data-bbox="906 1071 1435 1480">1. “I would say Dr. Paul was patient. I worked with him one-on-one a few times when I didn't understand a concept. He would take time right after class got over to show me something on the board. He was patient with my performance in the class because I was generally one of the slower students because Stats was totally new to me. He was patient by letting me try an assignment again if I didn't meet my own standard.”</li> <li data-bbox="906 1486 1435 1850">2. Researcher observation: “This man does not seem to let up. After several weeks now, it appears he really is going to do all he can, and take all the time he needs, to ensure that each student ‘gets it.’ He ALWAYS asks if he can clarify something, or insists that they come visit him or call him. Heck, he even approached me after class to see if there was anything he could do to help me in</li> </ol> |

## Team-like atmosphere

my data collection for the thesis!”

1. “I loved working together with other students, especially in study-buddies. When one person understands something and the other doesn’t, and explains it, they BOTH know more! You really understand it when you can simplify it and teach it to someone else. That’s a wonderful way to deepen your understanding.”
2. Researcher observation: “Dr. Paul is big on working in teams. The description on the first day of class of his views on teamwork paved the way for how each class period (and lab and homework assignments) is going to run. Just about everything is done with teams, or at the very least, in pairs.”

## Gospel integration

1. “I really appreciated the testimony (Dr. Paul) bore in class the last day about us being God’s children and before us we have two hypotheses—the ‘null hypothesis’ stating that *I am no different with the Gospel in my life than those without*, and the ‘alternative hypothesis’ stating that *I am different*. It is the same testimony that I share with the young men in of my stake: that we need to accumulate evidence and show that the Gospel of Jesus Christ makes us different, better. It is by proving there is a statistical difference that I can overcome the challenges presented in this life and truly be happy. It is by having/showing evidence that the Gospel makes me different/better that I can help others draw closer to Christ.”
  2. “Thank you for bringing in spiritually related material to our discussions and homework. The articles we read and reviewed about others’ views of our church, the impact of strict churches on its membership, and the tomb odds
-

paper helped me explore questions of a religious nature and strengthened my faith.”

3. “For me, the most important and life changing, seriously, was the Gospel context.”
-

Table 3

*Thematic Categories: Human Development Case*

| Thematic Category            | Characteristic Evidence   |
|------------------------------|---|
| Care for students            | <ol style="list-style-type: none"> <li>1. "He definitely does care a lot about us. He was quick to respond. He does want us to be successful. He was always respectful."</li> <li>2. "It was evident that he cared quite a bit."</li> <li>3. "He is <i>such</i> an approachable guy."</li> <li>4. "He really listened to what students said. He was considerate, never wanted to offend. He was sensitive to all of us."</li> <li>5. "He handles the touchy subjects really well. He did a good job of not offending anyone. He always brought it back to self-worth: 'You are always a child of God. If you have ____, you are not alone, and it is OK.'"</li> </ol> |
| Sacrifice of time & patience | <ol style="list-style-type: none"> <li>1. "He is one of the easiest professors, <i>ever</i>, to talk to. He makes himself readily available."</li> <li>2. Researcher observation: "He carefully/tactfully listens and responds to their questions...and there are many of them (questions). He never rushes through a response in order to return to the PowerPoint slides."</li> </ol>   |
| Engaging                     | <ol style="list-style-type: none"> <li>1. "He was really animated with the class."</li> <li>2. "He is so passionate about what he does...with his facial expressions."</li> <li>3. "It was through lecture that people <i>wanted</i> to come talk to him. He gave the topic so much interest, and applied it so personally, that we were all eager for more."</li> </ol>  |
| Thought-provoking atmosphere | <ol style="list-style-type: none"> <li>1. "Quite often I would think about class still afterword."</li> <li>2. "It's not what happened in class, it's the pondering that happened outside when I left. My perspective changed."</li> <li>3. "I would go home and ponder a lot."</li> </ol>  |
| Gospel integration           | <ol style="list-style-type: none"> <li>1. "I loved it. He stuck to the scriptures and to the brethren. There was never any speculation."</li> <li>2. Researcher observation: "He often relates parenting/disciplining/raising a child to the</li> </ol>   |

manner in which God (Heavenly Father) handles His children. Almost daily he makes an allusion or an explicit reference to scripture.”

---

Table 4

*Thematic Categories: Human Anatomy Case*

| Thematic category | Characteristic Evidence  |
|-------------------|--|
| Care for students | <ol style="list-style-type: none"> <li>1. “She is very welcoming.”</li> <li>2. Researcher observation: “She manifests her concern for the students in her lecture preparations. She supplements nearly EACH bullet-point with a story, an article, or some type of relevant anecdote.”</li> </ol>  |
| Responsiveness    | <ol style="list-style-type: none"> <li>1. “I always sit on the front row so I talked to Dr. Ray often and she is very helpful! Anytime I had a concern or question she answered whatever I asked, and then some.”</li> <li>2. Researcher observation: “She is extremely thorough in her explanations. The first time around, she excels at explaining the material better than the (four different) anatomy professors I’ve had. When a question is asked, she walks toward the student, looks directly at him/her and explains it EVEN MORE thoroughly. She is intense, but still does not compromise taking the time needed to clarify. And she does a great job at explaining so the one asking understands, but also <i>everyone else</i> in the room.”</li> </ol> |
| High intensity    | <ol style="list-style-type: none"> <li>1. On the constant repetition: “I loved it. Particularly when she just would review past material, rather than having us talk with a partner. The repetition in her lectures themselves was amazing and really helped my learning.”</li> <li>2. Researcher observation: “She is ALWAYS reviewing! The drill ‘n practice is non-stop.”</li> </ol>  |
| Enthusiasm        | <ol style="list-style-type: none"> <li>1. “It was a lot of fun. I always felt excited and eager to learn in that room for some reason. I loved Dr. Ray's stories. She was very</li> </ol>  |

animated, all things related to anatomy excited her, and her teaching really projected that.”

2. “You want to learn because she is so excited about it and she makes it accessible to you. She loves it; you love it because she loves it.”
  3. Researcher observation: “She brings a lot of energy and enthusiasm to the lecture. Her youth is an asset for this topic and a class this size...it’s hard to imagine an old person doing it this way.”
1. “When she said ‘*You are studying the body of God’s...*’ that hit me hard. From that point forward I thought a lot about that...and how God’s hand in its creation made it that way.”
  2. “Dr. Ray did a great job of reminding us that our body is a gift from God and that we are created in the image of our God. She sent us talks from apostles on the miracles of the human body and shared experiences and stories that really helped me to be thankful for the body that I have been given. I think too often we take things for granted and she reminded me to be grateful every day. In lecture as we studied reproduction and child birth, subjects that often times can be found uncomfortable or are turned into jokes, she made us realize how sacred and beautiful these things are.”

Gospel integration

---