

DISSERTATION

DIFFERENTIAL ANALYSIS OF STUDENT AND
TEACHER INSTRUCTIONAL EXPECTATIONS

Submitted by

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In partial fulfillment of the requirements

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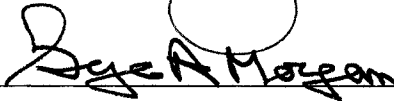
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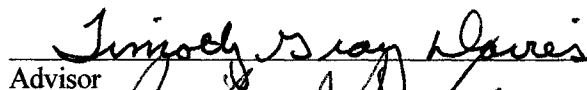
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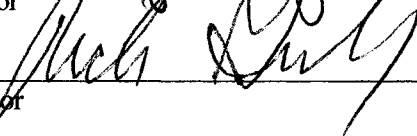








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ABSTRACT OF DISSERTATION

DIFFERENTIAL ANALYSIS OF STUDENT AND TEACHER INSTRUCTIONAL EXPECTATIONS

The purpose of this study was to determine if students and teachers differed in their expectations of classroom instruction. Professional experience and empirical evidence indicate that there may be significant classroom instruction expectation differences held by higher education students and faculty. Differences in the rate and amount of work expectations are only two of the more obvious variables. The central problem of unrecognized expectation differences between the two parties is that frustration is increased and learning is impeded.

Numerous problems can arise from classroom miscommunication. The several players each have their own expectations of higher education classroom instruction. The exact expectation differences between students and faculty have not been elucidated. The present study was intended to address the possibility of such group differences and, subsequently, to improve post-secondary instruction.

In order to get a structured and comparable response to student and faculty expectations, a questionnaire was developed and tested over a period of several years. The instrument was designed to measure response to the following factors: (a) Knowledge transmission; (b) Classroom entertainment; (c) Intellectual challenge; (d) Psychological support; (e) Achievement responsibility, and (f) Formatting the class to the textbook.

Eighty-six students and 85 teachers from northern Colorado Front Range community colleges completed the 12-item questionnaire. Forty-three male faculty, 41 female faculty, 43 female students and 43 male students served as subjects. The data were analyzed by correlation

for reliability estimates, by ANOVA techniques to assess mean group score differences and by mean score and standard deviation estimate for effect size.

The significant group expectation results showed that students expect information to be more formally structured for “knowledge transmission,” more “entertainment and media,” less “intellectual challenge” and for classes to be formatted “to the textbook.” There were no statistical student-faculty differences in regard to “psychological support” or “responsibility for student achievement”. Further, there were no significant sex differences between the data pooled by student and faculty categories and there were no significant interactions between faculty-student status and male-female sex categories.

The 150 unit visual analog scale for each item, from agree to disagree, allowed a degree of estimate gradation. Though there were significant differences, both entertainment and challenge factors had relatively high ratings for both students and faculty. There were no differences between students and faculty regarding physiological support, but those ratings were relatively high. Effect size, using the d family index, was computed for each factor. The d values for the two factors that were not statistically significant were low and the values for moderate to high for other factors. The highest effect size value was for the knowledge transmission factor. Awareness and discussion of the differences in faculty and student expectations could be the basis of interventions for raising student achievement, facilitating sophistication of cognitive development and reducing institutional dropout rates. A simple instrument, such as the one used in this study, could serve as the basis of faculty-student expectations discussion early in the course.

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CHAPTER I

INTRODUCTION

Overview

This chapter is a presentation of the background for the study. Some empirical and anecdotal evidences are reviewed to justify the project. The organizational format includes: (a) background; (b) differential expectations; (c) sources of expectations; (d) problems caused by differential expectations; (e) anecdotal observations; (f) the expectation congruency problem; (g) purpose of the study; (h) problem statement; (i) research questions; (j) significance; (k) definition of terms; (l) limitations; (m) delimitations, (n) assumptions, and (o) perspective.

Background

Professional experience and empirical evidence indicate that there are significant classroom expectation differences held by students and faculty. Differences in the rate and amount of work expectations are only two of the more obvious variables. Other differences are far more subtle and potentially divisive.

The distinguished American playwright David Mamet (1992) depicts a classic teacher and student misunderstanding in his powerful play, *Oleana*. It is mid-semester and the student is in panic. During a faculty member office conference the young female student implores, "I'm doing what I'm told. I bought your book, I read your book...it's difficult for me." She assumes that college is like high school, but with faster and more difficult fact memorization. The middle-aged male professor, preoccupied with family problems and the professional problems of promotion and tenure, responds to her anxious confusion with a barrage of abstractions and metaphoric concept constructions. The professor sympathetically tries a parallel example of his own educational struggle, compounded with self-doubt when peers called him "stupid" for not

comprehending concepts. However, the distraught student misses the instructor's sympathetic experiential parallel construction and concludes that he has just then called her "stupid." With considerable failure anxiety and concrete object cognitive stage intellectual operation, the student understands little and misunderstands much of the professor's symbolic rhetoric. Then, in the classic form of literary tragedy, the story progresses from portrayal of complete teacher-power over the humiliated, anxious and confused student, to reversal of power in the hands of an evolved manipulative and militant feminist. Later, in a clumsy reconciliation attempt, the student mis-perceives the professor's intended fatherly behaviors as sexual advance. The collegiate communication tragedy ends with a faculty hearing on sexual harassment charges, the victim being a bewildered and destroyed professor.

Oleana can be analyzed for meaning from numerous reference frames. The author intended the work to portray the tenuous nature of power, for it is billed as a "power play" in theaters. However, the initial dialogue also clearly portrays two individuals operating at different cognitive levels and with different expectations of collegiate instruction. An alternative thematic analysis could be made on the basis of differential cognitive stage functioning. Meta-cognition analysis shows that the faculty member and the student have a differential expectation of classroom instruction because the student is at the dualist, fact memorization level and the instructor is at the symbolic structure relativist level.

Differential Expectations

Individuals approach new experiences tacitly assuming that the near future will be much like the past. There is an intuitive extrapolation of past trend lines that are projected into the future. Thus, there is an expectation that anticipated future experiences, in a similar context, will be congruent with the past. Even if some surprises are expected, the new experience would still be anticipated to fit within the parameters of her or his historical personal paradigm.

In his classic qualitative study of college student ethical and cognitive development, Perry (1970) and his associates interviewed freshmen, sophomores, juniors, and seniors at

Harvard University to see whether their thought processes changed step-wise with progress through the university years. Inductive analysis of the interviews by contracted independent raters clearly showed a stage progression trend, called "positions," of cognitive development. Analysis of the student interviews indicated changes in thought processes, in content of their thinking, and in expectations of instruction. Faculty, having progressed on through graduate school, would qualitatively think differently from undergraduates. The qualitative differences are in both epistemology sources and for numbers of simultaneously considered elements of a topic.

Sources of Expectation Differences

There are a number of sources of expectation differences between students and teachers. Without even considering intellectual ability, gender, cultural, and racial differences, there are other significant sources of student and teacher differences.

Bronfenbrenner (1977) chose to characterize the human being from an ecological perspective, with emphasis on the social context. His assumptions were based on an ecological perspective, in which the maturing person is observed to change in relation to the changing social, physical and psychological environment. However, there is also a tendency for persons to stop cognitive development or to be continually tied to a highly salient time referenced environmental experience. For example, a student attending high school in the U.S.A.'s Midwest in the 1960s experienced a powerful set of influences in that ecological time envelope that was characterized by rock music, beehive hair styles for women, duck-tail hair styles for men, and a pervasive fear of nuclear war. Bronfenbenner's time envelope can be used to characterize the variously named generations: Boomers, Generation X, Generation Y (or Millennial Generation) and the Cyberpunks. It should be obvious that salient ecological events would establish perceptual frames of reference that are different between cultures and between individuals with different maturation rates within a culture.

Post-secondary teachers traditionally identify with a salient academic discipline (i.e., biology, history or computer science), with the degree of professional competency being measured by the degree of subject matter mastery. These subject discipline frames of reference for curriculum is what has been officially articulated by professional associations or what is included in a standard textbook. Thus, both the rate and the content of instruction, in an academic discipline, are defined by agents external to both the classroom and the teacher (Cooper, 1983). Students with high need for Sanford's (1966) comfort factor may feel alienated from the collegiate experience that does not address their perceived needs, and the discomforted students' reprisal is facilitated by student course evaluations.

Every normal human has the neural capacity to learn to think rationally, to act congruently with values and to think divergently. The billions of neurons in the central nervous system have an almost infinite capacity to encode and decode external and internal experiences. Remarkably, neurons also can be self-formatted to focus on a perceptual set and to selectively process information in a particular cognitive form and structure. Memorization establishes different neural networks than does problem solving and divergent thinking.

Selective perception and information processing style begin with early informal experiences, are modified by the ambient culture, and are ultimately subject to voluntary controls by the individual. The process was termed "social learning" by Miller and Dollard (1941) in their landmark work on human development. They particularly referenced the link between a behavior and the effect of the socializing event to establish, reinforce, or extinguish a response pattern. Though various cultural influences and environmental experiences play developmental roles, the effect of individual actions in life's scenario should not be underestimated. One of the most powerful motivating principles is that people tend to do what gets rewarded. If fact memorization gets rewarded, those types of neural pathways are strengthened and the system is formatted to accept and process in a passive mode.

Cross-cultural comparison of child development can also elucidate differential effects from early neural formatting. For example, comparing Japanese and American educational/cultural influences helps to explain how individuals from the two cultures have their genetic capacity differently formatted. In Japan, education is a major family and cultural focus (Finkelstein, Imamura & Tobin, 1991, pp. 116-117). The seventy or more students in a large Japanese classroom perform unison exercise, rote drill to the directions of one teacher and choral recitation to the teacher's questions. "Rote" is just the repetition of answers, like an academic catechism. By definition, large classes emphasize conformity, memorization, and group responses; such classes deny the American tradition of innovation and individual attention. Japanese student conformity, derived from the cultural home education and reinforced at school, results in a nation of harmony and conformity. It should be noted that Japan's intellectual development, focused on memorization and conformity, has resulted in only four scientific Nobel prizes as compared to over 133 for the battered and bashed American educational system that enhances individual effort and creativity. Similarly, Cai's (2001) cross-national study of mathematics learning in China and the U.S.A. revealed the effects of neural formatting of "systems." Chinese students were superior in computation and simple word problems, but U.S.A. students were better in process-open complex problems.

Even in the United States there is considerable diversity in the quantitative level and qualitative type of cognitive development attained. Theoretically, education experiences, especially of the liberal arts type, foster qualitative cognitive development. The development trend seems to be facilitated through undergraduate and graduate school. However, some individuals miss the key educational experience that would facilitate their reaching full intellectual capacity. The Hart and Risley (1995) study of the home effect clearly revealed the language effect of socio-economic status. By kindergarten, children of professional parents had three times the vocabulary experience as welfare children and a third more than blue collar family children.

The diversity of university students, presently enrolling, means that many do not experience the college preparatory high school classes in humanities and rhetoric. The newest type of higher education student comes from the lower third of high school graduating classes (Jehlen, 2001). These students, mainly white, are vocationally oriented concrete learners, with little interest in or comprehension of theory and abstractions. In cognitive stage development they are dualistic and they want clear-cut facts with little more than the answers to course exams.

Levine and Cureton (1998) compared two decades of student course expectations. Compared to college students twenty years prior, students now see college as a "job." They see themselves as better academically and emotionally prepared than they really are, and they have less class preparation time because of increased employment. When combined with the emerging trend of focus on "student as customer," instructors face a daunting task of maintaining high expectations for college work. Too many students expect the instructor to do all the work, to thoroughly detail "what will be on the test" and then get upset when they do not get a good grade just for attendance.

Problems Caused by Differential Expectations

Numerous problems can arise from miscommunication in the classroom. There are so many players, with individual expectations. Obviously, the students expect to be successful. The instructor expects observable learning performance. Politicians expect both a zero dropout rate and high scores on standardized test. Employers expect productivity on a short learning curve and employers expect the present generation to think like their generation of 40-50 years past. Society expects college graduates to be able to think critically, solve complex problems, act in a principled manner, write and speak effectively (Gardiner, 1998). Yet, most students hold epistemological assumptions that prevent them from independent thinking and problem solving.

Perry (1970) identified differences in form and structure of student cognitive and ethical development, both of which relate to classroom expectations. Cognitive development stage is a defining characteristic of how students interpret their experiences. His verbal caricature of three

students interpreting the standard experience of a single lecture illustrates one problem of differential expectations that is derived from differing cognitive development. He states as follows:

Let us suppose that a lecturer announces that today he will consider three theories explanatory of--(whatever his topic may be). Student A has always taken it for granted that knowledge consists of correct answers, that there is one right answer per problem, and that teachers explain those answers for students to learn. He, therefore, listens for the lecturer to state which theory he is to learn.

Student B makes the same general assumptions but with an elaboration to the effect that teachers sometimes present problems and procedures, rather than answers, "so that we can learn to find the right answer on our own". He, therefore, perceives the lecture as a kind of guessing game in which he is to "figure out" which theory is correct, a game that is fair enough if the lecturer does not carry it so far as to hide things too obscurely.

Student C assumes that an answer can be called "right" only in the light of its context, and that contexts or "frames of reference" differ. He assumes that several interpretations of a poem, explanations of a historical development, or even theories of a class of events in physics may be legitimate "depending on how you look at it". Though he feels a little uneasy in such a kaleidoscopic world, he nonetheless, supposes that the lecturer may be about to present three legitimate theories which can be examined for their internal coherence, their scope, their fit with various data, their predictive power, etc.

Whatever the lecturer then proceeds to do (in terms of his own assumptions and intent), these three students will make meaning of the experience in different ways which will involve different assessments of their own choices and responsibilities. (pp. 1-2).

These students, representing positions one, three, and five on the Perry scale of cognitive development, each brings a unique set of assumptions to the lecture. Thus, students interpret the theoretical presentation in three different ways. Student A, representing cognitive dualism, expects to be presented with facts that can be recorded and memorized. Presentation of three theories about an event, such as what caused the Japanese-U.S.A. conflicts in the Second World War, is unsettling to Student A. How can the instructor even pretend to be competent when she or he cannot even find the correct answer to tell students? Further, how can one ask good true-false or fill-in-the-blank test questions? The student assumes that, "Truth must be absolute, or it is not real truth; anyone who does not believe that is foolish." Student A pays tuition and expects correct and complete answers in a straightforward manner.

Student B, representing the multiplistic thinking of position three, enjoys the heady mind-games of college. She or he has moved, from the cognitive dualism of position one, to a

sophomoric appreciation of diverse ideas. The multiplistic thinking of Student B is actually pseudo-intellectualism because, even though there is conceptual diversity in the three theories, the student assumes that there can be only one correct answer. Thus, multiplicity is only multiple-choice presentation and is, thus, linked to multiple-choice testing because there is underlying belief that "Everything is either A or not A." During the lecture, Student B listens to the three theories but will be disappointed if the two false straw men are not knocked down to reveal the simple truth. Cognitive dissonance from the mind games must reach cognitive consonance for the multiplistic stage students.

However, Student C has come to realize that valid interpretation of many things depends upon the frame of reference of the interpreter. Since there is expectancy congruence between the thought processes of the theoretical lecturer and Student C, both the message content and legitimacy of the messenger can be accepted. Cognitive dissonance can, for these individuals, be cognitive consonance. Thus, both the teacher and the sophisticated student can suspend judgment, while weighing relative position merits or assumption and evidence congruencies/incongruencies.

Perry (1970) interpreted the lecturer and student relationships succinctly in terms of congruency of expectations. His explanation, as follows, fits both the *Oleana* drama and his own classroom caricature.

Student B's assumptions are of a form which includes the form of A's; and C's assumptions included, in a different and broader form, the forms of both A's and B's. This is evident in the different predicament of each student in the event that what the lecturer proceeds to do conforms to the expectations of one of the other students. For instance, student C, faced with the lecture expected by either A or B, would have little difficulty in interpreting the experience accurately without revising his basic assumptions about the nature of knowledge. His assumptions logically extend to the possibility that a given lecturer might "have the point of view that" there was but one correct answer. Student A, however, faced with the kind of lecture expected by B or by C, must either revise his basic assumptions or interpret the experience in some such way as, "The lecturer is talking all over the place" or "This just doesn't have anything to do with the course." (p.2).

Students adapt to the prevailing instructional demands. If the course objective is passive "transmission of knowledge," and not "problem solving" or "divergent thinking," students at a lower level cognitive stage function will get what they expect, but higher developmental stage functioning individuals will be frustrated. The following quotation from a class feedback illustrates this point (Johnson, 1997).

I feel that I am right around 4 on the Perry Scale. I strive to not just understand the material, but to understand the how and the why. However, I cannot completely be at this level, because 90 percent of my classes give multiple choice exams; which send you back to playing mind games. On the other hand, this has been the first class that I have taken that has given essay questions. It has challenged me to try to problem solve and think critically, rather than taking multiple choice questions where you just guess if you don't know or where you can be tricked by an answer that appears to be similar to what you know. (p. 1).

Anecdotal Observations

Impetus for this research project has come from continuing observations of problem solving oriented college classes wherein students question why the lectures do not methodically follow the textbook. Obviously, and incredibly, some high schools are still having students outline textbooks as a method of learning. These students define education as "memorizing information" or "transmission of information." Having little other basis of expectation, these students anticipate that college will be much like high school, memorization only more complex and faster. Students well practiced in memorization can only "think inside their epistemological catechism box" and never "outside the box."

Memorization oriented students, like *Oleana*, voice extreme psychological discomfort when the correct answers are not dispensed in classes or when the college lecture does not closely follow the textbook. Their perception of good teaching is the systematic dispensing of "truth," the telling of correct answers for every test question. Whenever the instructor uses critical thinking or problem solving teaching techniques, these cognitive dualism students become very upset when clear answers are not given for the test.

Focus on short answer correct answers has been intensified by the various attacks on public education beginning with Gardner's (1983) report, *Nation at Risk*, and continuing with international comparisons to Asian and European student test scores. Pressure to align all U.S.A. teaching with short answer achievement test scores has had the main effect of increasing test scores, but there has been a negative side effect of formatting student neural networks to think only in terms of memorizing correct answers. Similarly, Kohn (2001), Ohanion (2001) and Eisner (2001) presented thoughtful reviews of the effects of high stakes testing policies.

A collection of student reflections about their own class expectations and subsequent metacognition experiences that changed their viewpoints is included as follows (Johnson, 1997):

Just knowing the Perry Scale has made me more aware of positions 4 and 5. I really did not know what it was. I used to be a very quiet person in some of my other classes. Questions were asked that I had a problem answering. I could not see what the instructor wanted. Now, I think differently and see more to the question than "yes" or "no," or "a, b, c." The epistemology study of information validity has helped me in my CO 150 class, where we are searching for credible sources of information for our arguing essay.

It was hard for me to see motor ability tasks from different perspectives because I had come into class believing that motor ability was straightforward. Now, I am able to recognize that there are many components such as personality type, motivation, coaching, access, and genetics that are integral parts of one's abilities. In order to completely study someone's abilities, it is imperative to look through the "eyes" of each of the components.

The class aspect that helped me the most in other classes is the Perry Scale of cognitive function. Even though I am only at the level of student B, I feel that I am beginning to understand how to come up with the solution of a problem by looking at the context in which it is placed. I feel confident that I have the tools to answer when the teacher only states the question. In my Gross Anatomy class, I am feeling more confident when the professor states a problem.

The class aspect that helped me was our discussion of Hepatitis B and how to locate the fast food establishment that was responsible for infections. This helped me to understand the need for a strategy and the direction in which to develop one. Right now, I feel that I am at a level between Perry's student B and C. I noticed that the other day in EX 260, I was feeling a little lost with the lecture. Then, when I started to correlate one aspect to the other, that tied the whole picture together. I realized that I had been looking for the right answer instead of the concepts behind the answer. Then, I began to view the information from a different perspective to make it clear. (pp. 2-3).

These statements indicate that even a brief study of cognitive development, presented in a personalized manner, is sufficient to enable self-analysis regarding the relative cognitive positions

and to enable some basic evaluation of traditional educational processes. Students realizing that they are operating at the relativistic position but that they have to “dumb-down” their thought processes to take multiple-choice tests is a credit to their potential sophistication.

The Expectation Congruency Problem

There is a special implication of student and teacher expectations for the instructor. Faculty members who do not teach congruent with student expectations may have a serious communication problem and not understand the source of the miscommunication conflicts. Students "evaluating" courses for which they are enrolled is a phenomenon that has become widely practiced in higher education. Generally, the student-as-customer course survey format is a Likert-type disagreement-agreement degree response to a root statement about the classroom experience. Results are usually returned to the department and instructor, though some school student governments publish a summary for students. Unfortunately, in higher education student course surveys are frequently the sole supervisory activity for faculty performance. Faculty who do not teach in the manner expected by students will get low ratings.

Supervision, by definition, is action taken by a manager to improve the product or service. Student surveys of a specific learning experience should be of interest to the institution and instructor, but these surveys cannot be substituted for professional formative and summative performance evaluation. Any course survey should be professionally structured to be congruent with higher education order cognitive objectives of the university. Surface learning by memorization should be weighted low and critical thinking/problem solving should be weighted high. However, most course surveys are not so designed to assess teaching for higher order thinking skills or "deep learning." To surface learners, the concept of "intellectual challenges" simply means having to memorize more information and at a faster rate.

Administrators seldom visit classrooms to observe and analyze instruction. By avoiding professional formative and summative supervisory activity, administrators are clearly admitting they have no internalized standards of teaching effectiveness. Students course surveys provide the

anonymous information the administrators have neither the training nor the method to get firsthand. Shockingly, many of these student course surveys are used as bonified singular faculty performance information for resident instruction as well as distance education and alternative delivery modes, without the standard requisite measurement statistics on objectivity, reliability, and validity. These are poor data for salary exercises and faculty tenure. The problem of student and faculty expectation differentials is, thus, a pernicious source of conflict.

Undergraduate and graduate classes, laboratory and lecture classes and field experiences are often assessed by the same student course survey. Students evaluate from their developmental frame of reference, not from a transcended and dispassionate perspective. The reality problem inherent in cognitive development reference frame is the subjectivity of all perceptions. Student course surveys are not adjusted on the basis of the degree of student cognitive development. Individuals operating at the "fact memorization level" simply cannot appreciate process-oriented instruction; they cannot evaluate something that is presented at a higher cognitive developmental position.

Study of cognitive development (Perry, 1981) provokes the real questions of "the what" and "the how" of higher education. Much of what passes for higher education is just passive learning by memorization. In this memorization model, emphasis is placed on "transferring a body of researched knowledge to a new generation." The body of knowledge, transferred as facts to be memorized, leads to sterile conformity when the information product is divorced from the process by and for which it was generated. In this information transference process, students are simplistically focused on remembering the "right answers" that are dispensed by "good authorities" in a well-structured environment. Lectures presenting a carefully sequenced factual subsets of an academic discipline are reinforced and perpetuated by simplistic instructional evaluations that neither require nor allow higher order cognitive operations. These simplistic true/false, multiple choice or fill-in-the-blank test questions format student reward expectations for memorization. Meticulous lectures are also a continuation of the historic academic tradition; a

dialectic tradition originally necessitated by the lack of textbooks in early higher education classes.

Simplistic student course evaluation surveys have several dangers, aside from their lack of objectivity, reliability and validity. First, these surveys only reinforce teaching at the lowest dualistic intellectual level that has been found to characterize entering college students (Perry, 1970). Repeated use of these student course surveys have convinced students that real collegiate education is memorization and that they are somehow qualified to evaluate classroom content and process. By highly valuing the dualistic cognitive state and its memorization process, students perpetuate the demand cycle for such low level intellectual operations. Another caveat relates to faculty professionalism. University faculty are generally characterized as functioning intellectually at the Perry relativistic stage or above, wherein there is a pure joy of learning and a constant search for new processes. However, compelling the reduction of the faculty's intellectual level to that of the average freshman and sophomore expectation level, in order to satisfy the student demand for psychological consonance (comfort), is capitulation. Thus, the direct influence of the student surveys upon faculty is subtle and pernicious because annual performance is evaluated, in part, on the basis of satisfying what students expect in the classroom.

The first criterion for measurement is objectivity and objectivity demands dispassionate performance assessment, clearly meaning that those individuals involved in either the process of teaching or the process of learning are not in a transcended position for objectivity. Student subjectivity, multiplied by the class N, can never be considered "objective."

The exposition to this point is intended to portray a problem with implication to students, faculty and institutions. There seems to be a major problem of communication when teacher and student expectations are incongruent. The congruency problem has implication for student achievement, faculty reward, and institutional public relations.

Purpose of the Study

The purpose of this research is to examine the expectations of classroom instruction held respectively by students and faculty. Obviously, with the heterogeneity of both groups there is much variation. However, as Perry (1970) reported in his extensive qualitative research on student cognitive transitions, there are group tendencies characteristic of the various freshman, sophomore, junior, and senior achievement classifications.

The post-secondary instructional experience includes content, context, nature of the learners, and instructor characteristics. It is the purpose of this study to focus on the cognitive-affective dimensions of the instructional experience, and the perceptions of the educational process differentially held by students and instructors.

Problem Statement

The task of this study is to determine whether there are expectation differences held by students and teachers relative to their common experience of classroom instruction. Within multi-dimensional context of community college instruction, the possibility of difference in scoring patterns for selected factors will be assessed. "Expectations of classroom instruction" are operationally defined as "response to the interview survey form."

Research Questions

Because the spectrum of post-secondary experience is quite broad, these research questions are defined with specificity. The research questions for this study are listed as follows.

1. Are the expectations of students and faculty significantly different in regard to orientation toward the *transmission of knowledge objective*?
2. Are the expectations of students and faculty significantly different in regard to *classroom entertainment*?
3. Are the expectations of students and faculty significantly different in regard to *intellectual challenge*?

4. Are the expectations of students and faculty significantly different in regard to *affective and cognitive support*?
5. Are the expectations of students and faculty significantly different in regard to *who is responsible for student achievement*?
6. Are the expectations of students and faculty significantly different in regard to *formatting the class to the textbook*?

Significance

Typically, students enter college anticipating that the experience will provide them with answers, with the basis for a fulfilled life and with career skills. They have little basis for anticipating that they will be changed in their fundamental mode of thinking. Type of cognitive function is not an item of conscious awareness; it is an unconsciously held paradigm. Most students have not metacognitively thought about either their own thinking process changes or the formative processes that formatted their qualitative cognitive style.

Colleges vary greatly in regard to mission and delivery from the instructional factory model of large research institutions to the student development oriented liberal arts schools. However, there are some key indicator terms. Institutional mission statements trumpeting "transfer of knowledge" would have a different educational delivery from the individualized student development schools. Small community colleges and liberal arts schools do not conduct extensive research programs and the corollary graduate programs that require support funding from huge undergraduate lecture classes.

The major focus of a recent article in *The Chronicle of Higher Education* supports the significance of this study, particularly in regard to expectations expressed on student course evaluations. Wilson (1998) indicated that new research casts doubt on the value of student evaluations of professors. Further, it was revealed that faculty members consciously dumb down material and tests to inflate grades to get in sync with student expectations and to get good student reviews. Consequences of alignment and non-alignment of congruence between

student and teacher expectations are illustrated by the following *Chronicle* quotations.

As the numbers of studies supporting the value of student evaluations has grown, so has their use. Only about 30 percent of colleges and universities asked students to evaluate professors in 1973, but it is hard to find an institution that doesn't today. And student ratings carry more and more weight, especially on campuses where the focus is on teaching. Such evaluations are now the most important, and sometimes the sole measure of an instructor's teaching ability.

...Giving high grades isn't the only way to boost evaluations. Dr. Ceci had taught developmental psychology at Cornell for nearly 20 years and was drawing mediocre reviews. Administrators had even asked him to attend a workshop with a "media consultant" to try to spice up his lectures.

To Dr. Ceci, the situation became an opportunity for research: what if he could improve his rating simply by being a more enthusiastic lecturer, as the media consultant had advised? What would that say about the value of student ratings?

During a recent spring semester...the professor taught developmental psychology covering the same material as in the previous semester, and using the same textbook he had used for years. But he added more hand gestures to his teaching style, varied the pitch of his voice, and generally tried to be more exuberant. The outcome was astounding: Students' ratings of Dr. Ceci soared. They even gave higher marks to the textbook, a factor that shouldn't have been affected by differences in his teaching style. Despite the higher ratings, however, Dr. Ceci found no real improvement in students' performance on exams in the spring compared to those in the fall. (p. A13).

Faculty, have their own individuality and normative characteristics. Because they love learning, find enjoyment from sophisticated theory development, conduct research for empirical evidence, and are comfortable with symbolic intellectual activity, faculty members are generally operating at the relativity cognitive position. They comfortably deal with both multiplicity and cognitive dissonance, and they thrive in the flexible lifestyle of the academy. However, teaching undergraduate classes provides a context for much expectation dissonance: the problem solving and abstractive professors have to downgrade cognitively to effectively deal with pragmatic dualistic undergraduate students who simplistically want to be told the facts of the subject area for test verbal regurgitation.

The particular significance of this research project is that it directly deals with assessing possible perceived differences of students and faculty expectations for classroom instruction. Anecdotal evidence indicates that there are problems associated with these differential expectations. Identification of differences and specific factor elucidation could help improve

instructional communication between students and faculty. If there was a known barrier to effective classroom communication, i.e. ethnicity or language difference, attention would be directed to insure communication between student and faculty. Yet, with students and faculty operating at remarkably different cognitive stages, even with a common language, there is great potential for misunderstanding. The present study was intended to address the possibility of such differences, with the overall intention of improving post-secondary instruction.

Definition of Terms

The following terms appear in the study and could be misconstrued. To place key terms in context with this study of classroom dynamics, the following definitions are made.

Student expectations - Those outcome and process items anticipated by the student.

Teacher expectations - Those outcome and process items tacitly expected of students.

Visual analog scale - A paper-and-pencil assessment device allowing gradation. Make a vertical mark along a zero to maximum of 150 mm continuum.

Classroom instruction - The set of behaviors typical of a teacher in trying to enhance student cognitive, affective, or psychomotor attributes.

Cognitive development - A change in the type of thinking from a simplistic or concrete style to relativity style for handling abstract constructs.

Transfer of knowledge - One of the post-secondary school objectives, whereby information of a culture is transmitted to a neophyte generation.

Limitations

In regard to the internal and external validity of research, where internal validity is the precise control of subjects, measurements and treatment and external validity is the research project generalizability. Thus, this project was quite limited in the ability to manage the volunteer subjects. Subject background, motivation, age, cognitive development stage, etc., were beyond the control scope of the study.

Delimitations

The population for this study was restricted to students and teachers in northern Colorado community colleges. The sampling was from students and faculty of participating institutions. Incomplete response forms were discarded.

The electronic databases surveyed showed a number of distinctly different responses to the key words "instructional expectations," "student expectations," and "teacher expectations." From these key words, the computer searches produced responses including (a) achievement level expectations, (b) race based expectations, (c) expectations and feedback, (d) perceptions of high school preparation for college, (e) teacher expectations of student locus of control, (f) predictors of student susceptibility to teacher expectations, (g) expectations of student achievement, (h) self-fulfilling prophecies, (i) student perceptions of teacher expectations, (j) influence of student achievement on teacher perceptions, (k) interaction of student and teacher expectations on student reading achievement, (l) predictive error in over-identification, (m) non-verbal teacher expectations communicated to students, (n) perceptual biases and (o) expectations and standards.

The key term "teacher expectations" produced 341 published works. Few citations related to student and teacher expectations of classroom instruction, and none of the citations was directly related to the topic of this research study. For the purposes of this study, the topic of student and teacher expectations of classroom were delimited to the following items:

1. Simultaneously measured student and teacher expectations, which is assessment by the same instrument.
2. Case study of a particular teacher or a particular student is excluded.
3. Nuances of feedback related to self-fulfilling prophecy are excluded.
4. Perceptions of curriculum or facilities are excluded.
5. The primary focus, herein, is restricted to the processes involved within classroom instructional dynamics.

Assumptions

The underlying assumptions made for this study are:

1. The data obtained from student questionnaires reflect thoughtful and honest perceptions of each individual respondent.
2. The data obtained from teacher questionnaires reflect thoughtful and honest perceptions of each individual respondent.
3. Incomplete or otherwise unusable questionnaires can be discarded without risk to the study integrity.
4. Use of a construct validity based visual analog scale questionnaire is an appropriate method for assessing student and teacher perceptions.

Perspective

This research project has been done from the perspective of support for public education, including the K12 systems, community colleges and universities. There is recognition that state and national education related public policies have been strongly influenced by partisan political philosophy and that public education has been demeaned in order to further the partisan goal of privatization, beginning with the (1983) *Nation at Risk* report. Biases inherent in the problem formulation and data interpretation are from the position of advocacy for public education, for effective and honest institutional leadership, for fiduciary accountability and for state and federal policies that respect the efforts of educators in promoting the common good. There is also a bias against the use of public education as a pawn for partisan politics. However, it is hoped that the data collection and data analyses represent the highest standards of professionalism.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

This chapter presents the background for interpreting any similarities or differences between student and teacher expectations of community college classroom instruction with emphasis on cultural factors and cognitive development factors. Since the questionnaire was constructed specifically for this research project, background on the test construction is also included. Only literature specifically related to student and teacher expectations of classroom instruction in the secondary and post-secondary school is included in the literature review. The chapter starts with the search process and is followed by this organizational format: (a) Teacher expectations and student expectations, (b) Personal development factors, (c) Cultural factors, (d) Educational processes, and (e) Assessment strategy.

Search Process

In order to establish the framework for this study a literature search was done. Colorado State University subscribes to a number of databases, some of which overlap. The primary computerized search was through PsychINFO because it covers virtually all of the subfields, i.e. personality and educational psychology topics relevant to student and teacher classroom expectations. Currently, approximately 1300 national and international journals are reviewed and indexed in PsychINFO. To be included in their database, journals must be (a) peer reviewed, (b) have regular publication, (c) have a designated archive for print copies, and (d) have an association with an organization or institution.

Depending upon the key words, there was a large variation in citation retrieval. For example, in the PsychINFO database there were 341 citation entries, from the key descriptor

"teacher expectations." However, the citations were not specific matches to the restricted focus of this study. Citations under "teacher expectations" included (a) goals and outcomes, (b) expected feedback, (c) self-fulfilling prophecy dynamics of teacher and student, (d) non-verbal communication, (e) teacher expectations of student achievement, (f) predictive over-identification, (g) teacher ratings of instructional settings, (h) cross-cultural expectations, (i) student readiness, and (j) teacher expectations about standards. The primary questions for this study relate to whether teachers and students agree on elements of classroom instruction. No direct match of this project was made for any educational level; however, there seems to be more interest in teacher and student dynamics research at the elementary school level. Some research on changing student characteristics was found. Only citations dealing with secondary school and college levels are included for review herein.

Teacher and Student Expectations

Research on teacher expectations covers a wide spectrum of dependent variables or variables related to measurement of expectations. The citation array included assessment of teacher expectations of student performance and appropriate curricular goals, as well as teacher communication modes and teacher self-perceptions.

Outcomes

As would be expected, high school and post-secondary teachers are more oriented toward subject matter disciplines, as opposed to the student oriented primary teachers. The Shumba and Glass (1994) study of coordinators of college freshman chemistry classes illustrates the collegiate subject discipline orientation. Their study of 123 coordinators in United States land grant colleges and universities surveyed perceptions and performance expectations of high school science education students who would be feeding into various post-secondary schools. Although the collegiate coordinators were generally positive about many high school science education curricular goals, they did not value outcomes related to societal issues. No differences among coordinators were seen when results were analyzed by demographic subgroups such as age and

teaching experience. College coordinators generally perceived high school graduates to possess inadequate chemistry skills. Even though most high school chemistry texts are written by college professors, the coordinators suggested collaboration between precollege and college faculty as a method for improving precollegiate science education.

In a comprehensive study of secondary teacher expectations and standards, Kerr and Zigmond (1986) surveyed 220 regular educators and 24 special educators serving grades 9-12. The Walker-Rankin 5BS Inventory of Teacher Social Behavior Standards and Expectations was given to all teachers. The results indicate that both teacher groups shared allocating the highest-ranking priority to behaviors reflecting good academic performance, study habits, and classroom social behavior. Both teacher groups ranked student interpersonal skills and student problems at a lower priority. Regular educators were more rigorous than special educators in their espoused standards. These results support the general thesis that secondary teachers are like post-secondary teachers in their orientation toward achievement in their professional subject discipline.

In a comparative study of regular and vocational classroom settings, Evers and Barsuck (1993) surveyed 81 teachers in academic and vocational classes. Results were mixed and not significantly different for regular and vocational teacher groups, in terms of textbook use and preference for lecture methods. It could be concluded that the two groups held similar expectations of behaviors necessary for student achievement. However, there were significant differences found in demands for physical setting (with vocational teachers more likely to teach in workshop settings), method of instruction (with vocational teachers assigning more independent work), class requirements (with vocational teachers assigning more in-class work) and allowed accommodations (with vocational teachers making fewer adjustments to students).

Communication Mode

There is considerable interest in the subtle interaction of teacher behaviors, intentional or unintentional, on an array of student variables from self-efficacy to academic achievement. The topic of self-fulfilling prophecy has been widely reported and is included herein.

Cooper (1983) moved from the experiential of everyday classroom instruction level to theory building and field-testing of the teacher self-fulfilling expectancy theory. Reflection on teacher expectation effects led to development of an expectation communication model, which posits that both context and expectations influence teacher expectations of control, which, in turn, influence climate and feedback contingencies of the classroom. Feedback contingencies, then, affect student seeking-out behavior, which influences self-efficacy beliefs, and student self-efficacy beliefs, then, influence student achievement. A field test of the model, and its supportive achievement attribution theory provided support and identified needs for confirmation details, particularly in regard to within-class and between-class differences.

Verbal and non-verbal communications from teacher to student were studied by Babad (1990). Student perceptions of teacher's differential behaviors toward low and high achiever groups were compared to the teacher's own perceptions. Both students and teachers agreed that the low achiever group received more learning support and less pressure than the high achievers. However, students perceived that high achievers received more emotional support, whereas teachers actually thought they gave more emotional support to low achievers. An experimental intervention was introduced in a follow-up study in which teachers were given feedback about the gaps in their perceptions. Although small changes were noted in a three-month follow-up assessment, the differential between student and teacher emotional support perceptions persisted for high and low achiever groups. Thus, both student's and teacher's perceptions persisted with congruency to their pre-existing cognitive schemas.

In a study of students, as judges of teacher's verbal and nonverbal behavior, Babad, Bernieri, and Rosenthal (1991) studied 109 students and 42 teachers. All subjects viewed videotaped samples of teacher behavior when talking about and talking to students for which the teacher held differentially high and low academic expectations. Student and teacher judgments of the videotaped teacher characteristics and the unseen characterized students were collected. The results showed that when teachers were describing their high expectancy students, raters judged

the unseen student more positively than when the videotaped teachers were involved with their low expectancy students. The rater perceptions were facilitated independently by teacher verbal and nonverbal behaviors. Similar teacher behaviors have been shown to be transparent across language and cultural boundaries (Babad & Taylor, 1992).

Witty and DeBaryshe (1994) studied student and teacher perceptions of teacher's communication of performance expectations in the classroom. Their protocol was similar to the previous studies except they studied only males and added the race factor. They studied the extent to which 60 male students and 14 teachers perceived instructional delivery differences in the teachers' student-directed behaviors as affected by student race and academic achievement level. While differential treatment was perceived, teachers and students disagreed as to where the differences occur. Teachers reported giving less encouragement to low achieving students. The male students perceived that teachers showed more praise and less negative behavior toward high achieving students and more positive personal regard toward both average achievers and African-American students categorically.

Performance Expectations

The study by Haynes and Johnson (1983) of self and teacher expectancy effects presented interesting, but explainable, results. Their 172 female and male African-American freshmen were enrolled in an academic reinforcement program. Due to weak high school academic performance records and low test scores, the subjects had been conditionally admitted to the university. In the experiment, teacher expectations for the students were manipulated by providing lists purporting to identify potential late developers. The self-expectation condition was established by sending letters to the identified students informing them that they would likely do well despite their earlier performance. Results indicate that the identified late developers had significantly higher grade point averages than the unidentified students in liberal arts courses. There was also a significant student self-expectancy and teacher expectancy interaction as measured by grade point averages. However, comparing teacher expectancy for the randomly identified and the control group

students, there were no significant differences. Independence of these teachers from differential expectations could be explained by the total commitment of the liberal arts teachers to remediation of all students. Whereas, had science discipline oriented faculty been comparatively included there would, predictably, have been a teacher expectancy difference effect.

Personal Development Factors

Many personal development factors and ecological dynamic processes have been studied that are specific to the collegiate experience. Student development programs are particularly active in designing and implementing interventions and in conducting assessment of change. The study of personal factors is a major area of psychology; thus, only a segment of the area is reviewed herein.

Human changes in cognitive processing have been variously attributed to maturation and type of experience. These cognitive changes may relate to personal philosophy, to strategies employed to solve problems, or to cultural social group orientation. Any radical acceleration of change, such as is now being experienced in American culture where information and technology are causing changes in both the individual and the social order serves to modify the way people think. Watching television is passive cognitive processing, and it formats the brain differently from reading or from problem solving.

One popular approach to explaining changes in human cognitive processing is the use of the developmental stage model. The assumption implicit in the stage model is that developmental tends to be sequential and hierarchical for all individuals, though they stop and regress. Rate of movement through the stages and the time spent at a specific stage appear to be unimportant. A specific position on the developmental stage hierarchy is thought to determine global philosophy, or how the individual sees himself or herself and the world. These are qualitative changes in thinking style sophistication rather than just quantitative changes in timed proficiency or amount of information memorized (Johnson, 1995).

Stages and Personal Development

Using the stage model to interpret cognitive development is a popular and useful tool. The term "stage" was derived from the Latin term "stare," which means "to stand." The original term was transliterated through Old French to the term "stage," which could be variously translated as "position," "place," or "habitation" (Gove, 1986). The place where actors stand is a "stage." However, Perry (1970) used the term "position" as the preferred synonym.

Stage theory typically postulates the necessity of step-wise progression addressing each position in the hierarchy. Maslow (1954) insisted that the respective motivation levels within his vertical hierarchical needs model must each be satisfied in order to prevent abnormal compulsive behavior. Luria (1976) supported the qualitative effects of early childhood experience on developmental capacity with his data on Russian peasant cognition. His observations support the role of environmental social history in cognitive development. In a classic and comprehensive qualitative study he compared peasants who had no formal schooling with peasants who had a few years of formal education. Individuals with no formal education had major problems in abstract reasoning. For example, one of the logic problems presented to all groups was as follows: "Cotton grows in hot arid climates. England is a cool climate. Will cotton grow in England?" The peasants with no formal schooling could not abstract conclusive generalizations from the data presented. They would reply, "I don't know. I would have to go to England to see if cotton would grow there." Peasants with even elementary formal schooling could use logic to solve the problem correctly. Thus, the thesis that qualitative cognitive is a function of the cultural context was supported.

Stage progression has been conceptualized in various horizontal and vertical models. However, stage development models all hypothesize a step, stage, or position on which the individual can, at least briefly, stand to see her or his world from a new perspective. The stages indicate qualitative cognitive changes where the qualitative type of thinking emerges as different from preceding characteristic stage behavior.

It is difficult to cleanly extirpate cognitive development from the complicating dynamics of individual personality and culture, and to do so is to risk an over-simplistic generalization. The works of Gilligan (1982), Kohlberg (1969), and Riegel (1975) clearly show the complexities of movement across the indistinct lines of cognition, personality, and ethical development.

Psychologists dealing with human psychodynamics attend to the motivations, the polarities, and the tensions within the individual, as the patient weaves a tapestry of conscious and unconscious thought and dreams. Present and future choices are interpreted by the therapist through the patient's filter of remembered experiences and adaptations during critical stages of childhood. Thus, stage development theory is a key component of psychodynamic psychology.

Piaget (1950) was primarily interested in the process of knowing and its end result: knowledge. An interest in epistemology led him to systematically study children's answers to problems postulating that wrong answers could provide clues to the nature of their thinking. Eventually, wrong and right answer patterns to progressively more difficult questions led him to conclude that there were sequential stages in development. His two essential postulates are that: (a) stages emerge in a constant order of succession, and (b) neither nature nor nurture can independently explain the development of mental processes.

Perry (1970) used a qualitative research interview method to assess the thought processes of college students. In an effort to ensure objectivity and reliability of data analysis, third party raters analyzed developmental themes of the previously recorded interviews. It was concluded that entering level college students could be differentiated from upperclassmen by the qualitative type of thought process being employed. Perry and associates structured a continuum of discrete positions in which the qualitative style of cognitive/ethical "logic," or thinking processes, could be type-classified. A summary of the first five positions is as follows:

Position One: *Basic duality*. We-versus-others and right-versus-wrong. All problems are solved by conformity.

Position Two: *Pre-legitimate multiplicity*. Multiplicity is perceived, but only as alien or unreal information.

Position Three: *Sub-ordinate multiplicity*. Some implications of multiplicity may be perceived, but authorities have most of the right answers.

Position Four: *Subordinate relativism*. Absolutes may be doubted, but objective strategies cannot be applied to human affairs.

Position Five: *Relativism*. Relativism is accepted as a way of perceiving. Evidence can be accepted as supporting a particular viewpoint.

Perry's basic research data were derived from exit interviews of Harvard and Radcliffe students (Moore, 1982). The interviews provided insight into the process that students used to cognitively derive meaning from their sequential four years of collegiate experiences. Through analysis of the interviews, the researchers realized that the students were transcending "content" to address "forms" and "structures" of thinking. Interaction of chronological maturation and the collegiate experience seemed to affect cognitive operation level development.

Much of the Perry model deals with epistemology, or the sources from which one gets important information. Dualism relates to deriving information, the *right answers*, from persons of position and recognized expertise, rather than from empirically supportable data. Multiplicity position is one in which several alternatives are generated and an elementary system for information evaluation is used. However, in multiplicity, the mind-game is to find the one real answer. The two upper end positions above level five are versions of existential relativism; where there is (a) an affirmation of identity, (b) considered awareness of one's alternatives, and (c) experience of doubt. One graduate student wrote a personal history of development through the Perry model format as follows (Johnson, 1996).

With healthy skepticism, encouraged by my parents, the dogma of dualism, with its positional orthodoxy, was not a lingering stage phase. However, I distinctly remember an exhilarating breakthrough in reality perception in my first years of graduate school. I think this would have happened earlier had I lived away from home (dorm) as an undergraduate, and from this experience I have insisted that all our children attend

college out-of-town. It has been a long time since high school and early undergraduate days and I may have forgotten, or repressed, the dualism and sophomoric multiplicity cognitive positions. However, I remember some of the graduate school psychology department professors joking about going into the rat labs and manufacturing some "new truth." I think they were wrestling with positions four and five. The 1960s was a difficult time itself for both transitioning and freestyle idea wrestling.

Having one foot on the old paradigm and one foot on the new paradigm lends psyche stability from perspective, but dissonance with trying to extirpate meaning from increasing chaos. Perry's positions of 6-9 deal with: (1) affirmation of who I am (2) awareness and synthesis from legitimate alternatives and, (3) experience of doubt.

Affirmation of "who I am" is easier now because I can identify, as adults generally do, with my employment and family. However, my identity is not a unidimensional role. I enjoy the multiple roles of teacher, writer, husband, student, parent, coach, politician, civic volunteer, athlete and religious leader. Obviously, either a juggling of roles and priorities or a synthesis of common denominator throughout the several involvements is necessary. My subjective estimate votes "synthesis."

"Awareness of legitimate alternatives" is an interesting concept. The ability to suspend judgment in order to generate multiple alternatives and related supportive data is a virtue of positions 6-9. My intuitive personality factor (typology) sometimes combines with my pragmatism and I want to get on with an action plan. I do have an appreciation for alternatives and I try not to become "a pre-mature true believer" on any issue.

Legitimizing the "experience of doubt" is a major contribution of existentialism. Faith, in whatever, is the obverse of doubt; and it is difficult to comprehend faith divorced from both experience and reflective doubt. Doubt obviously is a logical extension of considering and weighing multiple alternatives that may have begun in positions 3-5. However, the ultimate criterion for intellectual development is "commitment within relativism." I observe many of the "Yuppie" and the "Generation X", who are educated dilettantes, cognitively aware of ethics, realities and alternatives, but too consumed with "being cool" to make a commitment. (pp. 2-3).

The Perry model has generated much research interest, especially in the student affairs sector of universities. However, the model should also be considered as a tool for instructional improvement. Rodgers (1990) makes a strong case for combining student characteristics/factors with traditional academic subject discipline delivery into a campus ecology approach; a position that would be facilitated by this study. Attempting to educate students by the traditional subject discipline approach is both inhumane and ineffective for career problem-solving tasks.

Lynch and Kordis (1988) also used a developmental model to classify stereotypical behaviors into hierarchy stages. Their organization of subjects by individual orientation or group orientation within the developmental hierarchy was based on discrete increments of thought and behavior patterns.

Support and Challenge

Students come to the college classroom with considerable variation on the two continuums of "support" and "challenge" (Sanford, 1966 & 1967). The two factors are readily observed in all college classes. The student in the drama *Oleana* (Mamet, 1992) was cognitively and emotionally overwhelmed with the collegiate challenge, and she manifested a strong need for psychological support for survival, which was operationally defined as "Being helped to get a good class grade." In his metaphors about his own academic struggles the professor was faintly responding to the student's support need with his reminiscence about being called "stupid" when he had similarly struggled to understand course content. But, the student and the instructor were at different cognitive positions and his support attempts were misinterpreted as demeaning. Support must be on the operational level of the student to be effective.

Though the instructional delivery for the traditional lecture class is set for pace and content at slightly higher than the average ability student, college classes are quite heterogeneous in many dimensions, including academic preparation, world experience and confidence level. In regard to challenge, the upper ability group may be ready to surge forward. Academically and psychologically they are well prepared intellectual mountain climbers eager to take on new tasks. The fact that students leave home and move to an unfamiliar environment is testimony to some interest in challenge.

However, there are mediating personal factors that trade-off the support and challenge variables. An individual high in trait anxiety, who desires to attend a professional graduate school, will want more psychological support than intellectual challenge; the grade point average must be protected even if less challenging courses are used to get the requisite number of credits to graduate. It is interesting to note the current types and numbers of student affairs programs that are offered by higher education institutions, in order to insure that the student support needs are addressed. These support programs vary from ethnic student offices to academic tutoring.

However, seldom are the support and challenge factors raised to the conscious level regarding classroom instruction.

Cultural Factors

Intellectual development occurs as an interaction with the surrounding social-cultural forces. Emperor Frederick II (1194-1250), one of the leading scientists of his time, had a sample of infants separated from their mothers to see what language was native to the human being. He wanted to see what language would be spoken by youths who had never been exposed to culture and language. The infants were fed, but there was to be no caregiver interaction and no words spoken. The project was terminated when all the neglected infants died (*World Book Encyclopedia*, 1981). Without a supportive social context, the human infant does not develop.

Cultural Context

Luria (1976) was in an interesting place to investigate the role of culture on cognitive development. He was a scholar during the Soviet Union's most radical social restructuring in the 1931-1932 period. The Marxist-Leninist thesis, "that all fundamental cognitive development takes shape in a matrix of social history," was also embraced by Vygotsky (1962). This Marxist-Leninist hypothesis justified the radical restructuring of the economy, the rapid elimination of illiteracy, and the removal of any Moslem counter-influence to achieve an expansion in world-view and a genuine revolution in cognitive activity of the proletariat. In his work with isolated rural villages of differing educational access, Luria discovered that cognitive development characteristics of people and underlying psychological structures must be interpreted together with important features of their social life. Rapid and fundamental changes in the social context should precipitate changes in the form and structures of cognitive processes if anything other than compliant adaptation to cultural change is to result.

Though not orchestrated from centralized planning, cultural thought patterns in the United States have been affected by international social and economic events. With Europe and

Asia both in ruins after World War II, American industrial productivity boomed, leading the citizens to believe that their prosperity was both deserved and inevitable. Samuelson (1992) commented about the effect of social and economic forces on a society's thought processes as follows:

If you grew up in the 1950s, you were constantly treated to the marvels of the time. At school, you were vaccinated against polio, until then a dread disease. At home, you watched television. Every so often, you looked up into the sky and saw the white vapor trails of a new jet. You stared until the plane vanished. There was an endless array of new gadgets and machines. No problem seemed beyond solution. Good times and the power of American technology: These were not lessons learned, they were experience absorbed. You took prosperity for granted, and so, increasingly, did other Americans. Thus quietly began the Age of Entitlement. We came to believe that prosperity was inevitable--and that it would automatically create the Good Society. On these two pillars of faith rested our national identity and hopes for the future.

Every age has its illusions. Ours has been this fervent belief in the power of prosperity. Our pillars of faith are now crashing about us. We are discovering that we cannot, as we had once supposed, create prosperity at will. We still remain prey to the economy's euphoric expansions and dispiriting declines. Worse, we are learning that even great amounts of prosperity won't solve all our social problems. Our Good Society is disfigured by huge blemishes: entrenched poverty, persistent racial tension, the breakdown of the family and staggering budget deficits. We are being rudely disabused of our vision of the future. The result is a deep crisis of spirit that fuels Americans' growing self-doubts, cynicism with politics and confusion about our global role. Our crisis of faith has been building since the late 1960s, when the automatic advance of prosperity became less automatic. (p. 32).

Modernism and Post-Modernism

Some observers comment that teachers are operating from a modern socio-cultural philosophic position, and students are hearing and seeing the presentations through post-modern sensory/perceptual filters. Kugler (1988), Cooper (1989), and Rosenau (1992) presented discussion of the two philosophical perspectives. Modernism assumes a positivistic possibility of truth as derived from thorough study of variables. Hence, objective truth is possible and there is a valid process for objective analysis. The present generation of collegiate faculty is largely of the philosophic modern generation.

Conversely, post-modernism offers a revolutionary counter-culture approach to the study of society; in questioning the validity of modern science and the idea of objective knowledge, this

movement discards history, rejects humanism, and resists any type of truth claims. Post-modernism's often incomprehensible jargon, such as, "social science is a theory of theory," and "terrorism of truth which is new time that is drifting in space," reduces modernism to basic assumptions of universal subjectivity and attempts to demolish all positivism. It is a movement against the validity of collective memory and against the collective and analyzed memory of the past. Thus, the real topic of discussion between the two perspectives is "epistemology."

The objective "they" of triangulated modernism research is replaced by the all-encompassing and subjective egocentric "I" of post-modernism. Byrne (1995) commented on the objectivity-subjectivity theme in regard to therapy applications. Modernist therapists have generally espoused the curing of symptoms via insight, adaptation, or the building up of self. However, post-modern therapists emphasize the therapist-client process of becoming co-creators of meaningfulness and healing.

As with the simultaneous occurrence of various phenomena, occurrence of postmodernism and student consumerism (faculty acquiescence to student demands, grades as biasing teaching evaluations and grade obsession) has resulted in interesting attributions. Delucci and Smith (1997) tie post-modernism and student consumerism while counseling faculty to both adapt to student expectations and to maintain the role of the academy as guardian of knowledge. Regardless of the causative attribution validity, the various deconstructions of modernist analysis of history, definition of art and confidence in scientific processes have changed the characteristics and expectations of contemporary higher education students. The egocentric "I" is congruent with the presumptive posit of students, regarding their own expertise in evaluating classroom instruction.

Postmodernism is a major influence on the college age student because of the various visual media and youth culture icons. Postmodernism is a cluster of postulates most often associated with several 20th century philosophers including Jacques Lacan, Jacques Derrida, Michal Foucault, and Jean Baudrillard (Sarup, 1993). It focuses four attacks on western modern

philosophy: (1) critique of the human subject; (2) critique of history; (3) critique of meaning; and (4) critique of philosophy. It is oriented to the relativism of knowledge, of the meaning that can be drawn from the analysis of history and even questions about the real and the simulated. Certainly, however, there is emphasis on the breakdown between culture and society, the emphasis on style over substance and confusion, over objective chronologic time and space. Deprecation of traditional status cues, rejection of the authority of history and an over-concern with interpersonal relationships, in the present tense, were similarly reported by Berdie (1999).

The post-modern amorphous thought, where philosophical dualities like realism/social constructionism, cybernetic/post-cybernetic, and systematic/narrative co-exist in the absurd double logic of alternative explanandums, may not catch on to be the dominant world view. However, modernist instructors are already being confronted by post-modernism's epistemology questions of the conscious, logical and coherent order that leads to applications of central planning, organizations hierarchy, and objective science. Constructionism is one aspect of post-modernism, where there is a cooperative construction of reality from interaction of the participants. The teacher and the student interact to construct an expression of reality.

Generational Differences

Every generation has its own identifying characteristics. For example, a son commented to his mother in the film, *Steel Magnolias*, "Your beehive hairdo looks like a brown football helmet!" The mother had gone to high school in the American South during the 1960s and had continued the same bouffant high school hairstyle into her adulthood. The point, herein, is that important cultural forces, occurring during formative years, persist in a "time envelope" throughout the lifespan. The events themselves create a thought paradigm that subconsciously becomes "The Paradigm." Generational consideration is consistent with the work of Bronfenbrenner (1977), in his attempt to broaden the study of human development into an ecological perspective of the context and the person.

A number of older university faculty members were born during the Great Depression of the 1930s. Because of unsurity and a privation context, these depression era faculty have the subconscious agenda of saving money, storing food, recycling objects until they are totally unusable, and a mistrust of banks. The depression era children had children of their own in the Baby Boom years and those children grew up in an abundant U.S.A. sharing few of the hard-learned values of their parents. Baby Boomers, thus, see the world in a entirely different perspective from their elders.

Williams, Coupland, Folwell and Sparks (1997) conducted a qualitative study of the media constructed stereotype called "Generation X." They audiotape interviewed 26 volunteers aged 19-23 years in six focus group discussions. An inductive discourse analysis enabled the exploration of how Generation X young people worked together to negotiate their generational identity, and their position in the history *vis-à-vis* other generational groups. Though the Generation X respondents rejected the conventional negative media stereotypes, they revealed that the media may, indeed, be one of the defining characteristics of their generational identity. Indeed, the medium has become the message for this generation.

Similarly, Manolis, Levin, and Dahlstrom (1997) developed a scale to be used as the basis of measuring attitudes associated with the generation of people currently in their mid-20s. The Generation X Scale (GXS) measures both young and old people's attitudes toward parents, yuppies, jobs, and shopping. The respondents were 258 persons born between 1964 and 1980 (Generation Xers), and 187 persons who were born between 1946 and 1962 (Baby Boomers). As predicted, the Generation Xers reported more negative affect regarding jobs, parents, and yuppies than did the older group, but they were not more negatively predisposed toward shopping than the Baby Boomers.

Since Generation X students have had far more exposure to very sophisticated television programming, they may not readily appreciate sophisticated deep concepts that are only presented by dialogue and chalkboard illustration. Two of the Generation X defining characteristics are

sight and sound orientations. They attend to rapid television generated sight input and high volume sound. This intense sight and sound shaping of viewer mentality can be observed daily on MTV and in very high production quality music videos sold over-the-counter. The significance of reviewing generational characteristics is that they may account for student and teacher expectation differences in classroom instruction. The combination of education with entertainment has been termed "edutainment." Students' expectation of Power Point presentation with integrated video-clips, is an example of student edutainment trend.

Educational Processes

The educational process itself is a source of possible student and teacher expectation difference. Because of re-structuring of elementary through high school curricula in "educational reforms," students have been formatted to expect facts and short answer testing to compete in the numerous and well-intended international test score comparisons. Students do not expect to be required to think and problem solve. Higher-level cognition for problem solving is fundamentally different from the popular "transfer of knowledge" strategies now being used in high schools and colleges. There are resultant problems, however, with focus on memorization.

Residual Effects of Passive Learning

Charles Wales and Nardi (1984) observed that his engineering school upper-class students characteristically had difficulty attacking their senior problem. The problems were usually field projects similar to actual job problems of professional engineers. Though these students had been thoroughly schooled in math, physics, chemistry, and computer applications, they struggled in the critical thinking necessary for the independent senior problem solving. The departmental solution was to develop systematic instruction in problem solving. With success of the "Guided Design" instructional strategies for senior students the question was posed as to its efficacy with beginning engineering undergraduates. "Guided Design" subsequently was found to aid underclass students in both engineering and general studies courses. The students learned to think early in their college careers, and it particularly helped their GPAs in general studies classes.

It is surprising to realize how little time is devoted to teaching students how to learn and about levels of cognitive function. Without specific instruction, individuals may "get stuck" at a lower level of cognitive operation. Glaser (1984), a strong advocate for specific metacognitive instruction, comments as follows:

With deepening study of cognition, current research and development is increasing the likelihood that we can move to a new level of application at which a wide spectrum of thinking skills is sharpened in the course of education and training. Few other educational possibilities beckon us to apply our energies and exploratory talents as much as this one. Teaching thinking has been a long-term aspiration, and now progress has occurred that brings it into reach. The cognitive skills developed by people in a society are profoundly influenced by the ways knowledge and literacy are taught and used. The task is to produce a changed environment for learning--an environment in which there is a new relationship between students and their subject matter, in which knowledge and skill become objects of interrogation, or inquiry and extrapolation. (pp. 102-103).

Abstract concepts may mean very little to the "concrete operations" level thinker.

Vicarious experiences may also have little impact on the dualistic person, for she or he is perceptually blind to metaphors of good literature or cinema. Real life or simulation experience that (a) involve the learner, and (b) forces analysis and action and (c) includes processing follow-up is a productive tool for cognitive development (Wales, Nardi, & Stager, 1986). Thus, the foundation of the cognitive-developmental approach is the assumption that individuals learn from their experience by creating their own interpretations and explanations (King, 1992, p. 82). "Guided Design" is one example that provides an overall framework for the stimulus experience and for processing the experience into meaning.

Liberal Education Assumptions

Liberal education dominated higher education until the turn of the century. Liberal education's idea of a university was to cultivate the mind for nothing more than intellectual excellence, because education is thought to enlarge, in imagination, the scope and panorama of human experience.

Liberal education, thus conceived, used great books, history and science to free and enlarge the mind. Comprehension and understanding was achieved by reasoning and testing

ideas in dialogue. Because the nature of human beings is assumed to have remained much the same through time, the ancient Greco-Roman curriculum formed the core of liberal education. The seven liberal arts grouping is called the "trivium" (grammar, logic, rhetoric), and the "quadrivium" (arithmetic, geometry, astronomy, and music). This curriculum was intended to dually educate for morality and for intellectual power (Brubacher, 1977). Though there is some difference of opinion in classical liberal education, both virtue and rationality have been projected as end products. However, virtue and rationality may only be the passive concomitants, or incidental side-effects, of studying the Greco-Roman liberal arts.

Developmental Education Strategies

Effectiveness of the various educational programs is a function of the curriculum and the delivery. However, both liberal arts and "Guided Design" are potentially flawed, because they are not individual learner prescriptive. If an individual is at a Perry Position One or is at a Lynch and Kordis (1988) System Three, they will probably get the same "education treatment" as those in Position Five and System Six. Educational interventions are seldom prescriptive. Groups of students get the same educational experiences as if they were a homogeneous sample. The traditional educational classroom and seminar delivery is mass treatment.

It is plausible that specific developmental tasks, including information and experiences, are requisite to transition from stage-to-stage on the developmental hierarchy. Individualizing for specificity would certainly improve educational efficiency for cognitive/ethical development. Brain Technologies Corporation (Lynch, 1989; Lynch, 1991) "*The Brain Map*" and especially "*Mind Maker 6*" are excellent instruments for self-assessing cognitive function level to provide the basis for individualized treatment.

Traditional education with classes of 30 to 600 students is instructor-paced and individual-insensitive. A particular lecture may be delivered with the faculty member operating at Perry Position Five or above. However, student understanding, acceptance, or frustration is dependent upon stage congruency of the student and instructor cognitive/ethical position. Perry

(1970) gave an example of the congruency problem, where some students expect details to memorize and others appreciate explanation of possible multi-factor causation. In his example, a lecturer gives three theories to explain a phenomena. Students A, B, and C each leave the class with personally different impressions of their common experience. Student A, at Perry Position One, is frustrated because there are few details to memorize for a test. Student B, at Perry Position Three sees the exercise as a guessing game between faculty and students. Student C, who is operating at Perry Position Five, appreciates the lecture because multiple perspectives have been focused on a single problem.

The student's development could be, with benign neglect, left to chance occurrence; it could be presumed as concomitant learning to traditional instruction; or specific transitioning cognitive development programs could be deliberately designed. Considering the alternatives, Knefelkamp (1974) introduced a comprehensive program for intellectual growth based on the Perry positions that would enable students to (a) learn the knowledge transfer concepts, (b) be satisfied with the learning experience, (c) be able to relate content with critical identity issues, and (d) increase qualitative cognitive operation level to a more sophisticated stage. Unfortunately, her pedagogical ideas were completely inundated by President Reagan's "educational reforms" that were designed to reconfigure public education for high stakes international test competitions.

Assessment

The dependent variable for the study is a custom developed visual analog scale for twelve questionnaire items. The visual analog scale used in this study is a linear questionnaire in which respondents are asked to indicate the level of support they have for each specific item. A 150-millimeter continuum is used to scale the response to each item. Thus, each respondent indicates the degree with which she/he concurs with the direction of the root item.

The questionnaire items are structured to include the following content factors:

1. *Knowledge transmission* - How important is information memorization?
2. *Entertainment* - Should the course be entertaining?

3. *Challenge* - How much intellectual challenge should be included in the course?
4. *Support* - How much psychological support should be offered by the instructor?
5. *Achievement responsibility* - Is the teacher or the student responsible?
6. *Course structure* - Should the course follow the textbook outline?

The triune test criteria are important to address: objectivity, reliability, and validity (Head & Johnson, 1991). Objectivity is the concept of possible bias in test administration and in interpreting respondent data. The visual analog scale developed for this project satisfies the objectivity criterion because the paper-and-pencil questionnaire is self-administered, with the subject independently responding to each item by marking a vertical line on a ten-point continuum. Thus, the degree of objectivity should not be an issue.

Test Reliability

Reliability is the degree to which the questionnaire consistently produces the same results, eliminating chance and other extraneous factors. Perfect test reliability would produce the identical results every time a subject was tested. However, this is seldom observed in questionnaires because respondents continue to develop and otherwise change their psychological perceptions. For this study, the test items are written simply and the visual analog scale response is boxed into each test item. Thus, the college students should be able to understand the questions and how to respond to the questionnaire items. Instrument reliability will be inferred as the degree to which the subjects understood and honestly responded to each questionnaire item exactly at the time the test was administered. To increase reliability, two items were written pertaining to each variable. A pilot administration of the final questionnaire, with oral feedback from subjects to insure test item understanding, was done before official data is collected for the study.

Test Validity

Validity is basically the degree to which a test measures what it is purported to assess. Since the dependent variable is expectations of classroom instruction, the questionnaire is valid if

it successfully assesses the expectations of the two groups of subjects, students and teachers, at the time the testing is done. Two types of validity are relevant to this study: (a) construct validity and (b) content validity. Construct validity, established as a sufficient form of test validity by Loevinger (1994), relates to whether a test makes sense when related to underlying assumptions and theory. Thus, the questionnaire results of this study should make psychological sense relative to what might be the expectations of students and faculty in the several dimensions identified for comparison.

Content validity relates to the structure of the test itself. If the test pertained to a physics class, questions relevant to physics and to the representative proportions of subtopic emphasis of the class would validate the content of the assessment tool. In this study, the subtopics of expectations, i.e. support, challenge, career relativeness, and source of course content, constitute the content of the questionnaire. Questionnaire validity is established by including the factors that are perceived to be important expectations of students and teachers.

References to the use of visual analog scale assessments were reported in recent Ovid literature database research. Interestingly, it is frequently used as a quantifying mechanism in medical clinical trials. The following entries are typical recent visual analog scale assessment applications. Miller, Barr and Young (1994) were interested in perceived pain response to an oral medication, as compared to a neutral substance. Outcome measures were pain threshold, tolerance time and a visual analog scale of sensation intensity. In a medical and psychological study Sundblom, Haikonen, Niemi-Pynttaeri, and Tigerstedt (2000) used interviews, standardized psychometric tests and a visual analog scale as dependent variables regarding treatment of clinical symptoms. Walsh, Pollak, Scharf, Schweitzer, and Vogel (2000) used both standard psychometry and a visual analog scale to assess the after effects of medical sedation. Deisenhammer, Whitworth, Geretsegger, Kurzthaler, Gritsch, Miller, Fleischhacker, and Stuppaeck (2000) used psychological instruments, an adjective checklist and a visual analog scale as dependent variables to assess the independent variable effect of an antidepressant, in double-

blind and double-dummy phase clinical trial. Cheng, Rubin, Powe, Mellon, Francis, and Niparko (2000) compared direct medical cost and psychological rating scales to visual analog scale data, finding substantial agreement between the dependent variable measures. Hill and Zacny (2000) used physiological, psychological and visual analog scale dependent variable assessments in a psychopharmacology clinical trial. They found step-wise dose-dependent agreement between the assessment methods. Lenert, Ziegler, Lee, Sommi, and Mahmoud (2000) used a visual analog scale as a primary measure of desirability ratings made by health care professionals (HCPs) family and patients. Differential results indicated the importance of including more than HCPs in clinical decisions and policy guidelines.

The previously cited applications in psychology and medicine indicate the broad use of visual analog scales as assessment methods. These scales allow custom adaptation to a wide variety of applications, while providing precise interval scale measurements. Interval scales have defined beginning and ending points; they also have equal units between the polarities.

Summary

Dynamics of the play *Oleana* portray communication problems between students and teachers. Students and faculty have different life problems; they operate from different cognitive developmental stages; and their formative cultural contexts are different. Interacting with these differences is the problem of perceptual objectivity: "We do not see things as they are, we see things as we are." In generalizing his own sophisticated relativistic developmental stage to the naïve dualistic stage student the professor of *Oleana* learned of these problems the hard way by losing his much labored-for career. Perhaps a desirable result of this research study will be to raise the awareness of expectational differences between students and teachers.

The purpose of this study is to investigate possible differences about classroom instruction as separately perceived by students and instructors. Survey of student perception citations indicate a strong interest in dynamics and outcomes of the education process, as reported from the consumer side. Articles included questionnaire research about student

expectations of achievement, performance feedback, and subtle nuances of teacher behavior directed toward low and high academic achievement expectancy groups.

The teacher corollary to the student perception of achievement group treatment relates to teacher self-fulfilling prophecy dynamics. A decade of research has clearly demonstrated that teachers, and students, are susceptible to treating randomly identified students in a manner that causes change in both self-efficacy and achievement. The independent variable treatment differences are both verbal and non-verbal, and they are so subtle that even reflective teachers cannot discern their own differential behavior directed toward the students.

However, there is a transcended view above the respective subjective perceptions of teachers and students. Scholars looking at trends and characteristics have identified person factors, cultural factors, and experiential factors that can influence classroom perceptions. These factor categories have been reviewed to focus them on the classroom perception problem.

Finally, the dependent variables have been determined, and they are supported with both research evidence and professional practice. Without a universally accepted assessment instrument for measuring student and faculty perceptions of classroom instruction, it was necessary to adapt an existing model to the study. Thus, the Classroom Instruction Expectation Scale (CIES) was developed over a several year period. One major advantage of a questionnaire is that it straightforwardly asks the questions most pertinent to the study. The visual analog scale questionnaire has a long history of use in these types of survey studies.

CHAPTER III
METHODOLOGY

Introduction

The purpose of this study is to determine if there are expectational differences between students and teachers about classroom instruction. Assessment of potential differences was made with a multifactored visual analog scale questionnaire, termed the Classroom Instruction Expectation Scale (CIES).

Additionally, the study examined the various factors around which the questionnaire was structured. Knowledge of student and teacher expectations could help insure that classes are designed in a manner that optimizes student learning. Awareness of any significant differences could also aid school administrators to design appropriate faculty in-service training for improved student learning. The content of this chapter is grouped into the following areas: (a) Population identification, (b) Location and setting, (c) Sampling method, (d) Research instrumentation, (e) Collection of data, (f) Threats to validity and (g) Statistical analyses.

Location and Setting

The setting for this study is the state of Colorado, defined as a western state and located near the vertical center of the United States. Because of quality of life and technical electronics product design and production, the state is growing rapidly in population. Most of the state population increase is from educated adult influx. The state has one of the highest citizen education levels, with the ranking as 47th in the percent of population with a high school diploma. Yet, the support from central state revenues for post-secondary education is below the mean for all states.

The 15 community/junior colleges are spread around the state. However, most of the population resides within fifty miles either side of Interstate 25, which runs south to north along the eastern mountain front range, from New Mexico to Wyoming. The change in population from rural to urban, because of industry-related immigration, is being reflected in the legislature demographics. The emerging electronics industry has also increased the demand for all levels of technology competency training.

Research Design

The study of student and teacher expectations of classroom instruction is a descriptive research design type. A questionnaire instrument was used to characterize the respective participant categories, student v. teacher, in regard to several factors. Data were disaggregated by gender for each of the two participant categories. The number participants approved by the CSU Human Research Committee agreement was 175. In order to have equal numbers of cells for statistical analysis, 43 subjects per cell, 172 response sheets were used for analysis.

From a master list of campus chief executive officers, the respective community colleges were contacted to determine whether they were interested in participating in the study. Those who indicated interest were contacted by telephone to arrange the data collection details. Within each participating school, questionnaire interviews were done for each subject. Where possible, care was taken to balance the number of students, teachers, females and males from each school site.

The sampling design is termed a "convenience sample" because a randomly selected campus might be unwilling to participate. However, the "non-specified" selection of individuals in the participant schools should reduce the potential validity problem of not having a random sample selection. No subject was pre-selected by the researcher for participation. At one site the administrator assisted in locating students and faculty for participation. At two other sites an administrator acted as an assistant researcher to administer the CIES forms. At all other sites the researcher solicited volunteers from faculty and students traveling between classes.

The CSU Human Research Committee required a letter of participation cooperation from the respective community colleges. Further, each participant voluntarily agreed to complete the respective questionnaires. A cover letter inviting participation was printed on the front side of the questionnaire. Completion of the questionnaire was considered to be agreement to participate. The cover letter is included as Appendix E.

There are 15 community colleges in the state of Colorado. The number of community colleges and the size of the institutions have seen rapid growth. Community colleges enroll over half of the state's high school graduates who are attending public post-secondary schools. With the advent of technical job growth in the state, more nontraditional students are enrolled in higher education. Community colleges enroll a higher percentage of nontraditional aged students and minority students than do the four-year public colleges.

Permission was received to complete the research study within both the participating community college campuses and from the Colorado State University Office of Regulatory Compliance and its Human Research Committee. All approvals were secured before any data were collected; see Appendices A, B, C, D, E, F, and G.

Research Instrument

The instrument used in this study is a custom designed questionnaire containing six factors. The factors were chosen from research on student development and cultural-social influences. A prototype, the Classroom Instruction Expectation Scale (CIES) was developed, with Colorado State University Human Research Committee approvals, over a several year time frame. Given the casual attention rendered to surveys by college students, the decision was made to conduct personal interviews to get questionnaire responses whenever possible. Samples of the CIES questionnaires for faculty and students are shown as Appendices F and G.

The questionnaire contains 12 items that use a 0 to 150-millimeter visual analog scale response intensity gradient. Zero would indicate a total absence of valuing the expectation described in the item. One hundred and fifty millimeters on the scale would indicate placement of

a very high expectation value on the particular item. The instrument is designed to measure the following factors:

1. *Knowledge transmission* - How important is information memorization?
2. *Entertainment* - Should the course be entertaining?
3. *Challenge* - How much intellectual challenge should be included in the course?
4. *Support* - How much psychological support should be offered by the instructor?
5. *Achievement responsibility* - Is the teacher or the student responsible?
6. *Course structure* - Should the course follow the textbook outline?

The questionnaire items represent purposefully slight restatements of the factors being studied. A total composite score would be irrelevant to the focus of this study because the intent was to compare differences in response to independent factors. Comparison was made between students and teachers only on the basis of each individual factor. There seems to be a critical length variable to get sufficient respondent attention for valid answers, against a trade-off in questionnaire length. Thus, only two questions were posed that were related to each variable, i.e., "support." Since student questionnaires are routinely given for class evaluation and other purposes, respondents tend to superficially speed through multi-page questionnaires. All information requested and instrument questions are included on one page. The front side of each questionnaire was the subject cover letter approved by the Colorado State University Human Research Committee. It was assumed that "implied consent to participate" was given when each subject completed her or his questionnaire.

With the permission of the Human Research Committee, a pilot study was done. Items were written and administered to undergraduate students to assess clarity. Feedback from the student surveys was used in subsequent re-writing of factor items. Feedback about cognitive development experiences was also collected.

Collection of Data

Each participating school was asked to allow the researcher to conduct face-to-face interviews with each participant for the purpose of allowing each teacher or student to complete the questionnaire. However, at Morgan Community College the president elected to administer the questionnaires. At the Fort Collins Front Range site a senior administrator assisted in the collection of some questionnaire forms from students and faculty.

A brief heading was included on each questionnaire to identify (a) respondent gender, (b) type of major, (c) age category, and (d) to provide instructions for completing the questionnaire. Separate forms were preprinted to identify by faculty or student status. Responses from students and faculty were confidential and only group data were reported.

The maximum number of participants approved by the Human Research Committee was 175. Thus, to keep statistical analysis cells equal, it was decided that 86 would be female, 86 would be male. One half of each sex group would be students and one half would be faculty. Thus, the 2 x 2 factorial design for students, faculty males and females would contain 43 participants in each cell.

Using a standard introduction, the researcher or assistant researcher identified himself to each prospective participant. The cover letter/questionnaire was handed to the prospective participant and, if they agreed to be a research subject, they turned the cover letter over to the questionnaire instrument. The top portion of the questionnaire requested some descriptive data. After completing the descriptive data section, each participant completed the questionnaire items. Incomplete response forms were discarded.

Threats to Validity

A number of potential threats to the internal and external validity of the study were considered. These validity threats are addressed in the following categories.

Internal Validity of the Study

Internal validity of a research study is the set of research related circumstances that affect the degree to which the study can be reproduced. Reproducibility is a high criterion of science and is affected by measurement precision and control of the several variables that could affect a particular outcome. Threats to internal validity of the study could be such uncontrolled variables as respondent motivation to thoughtfully respond to the questionnaire items and possession of sufficient experiential background to understand the items. Two statement items were made for each factor in an attempt to improve response consistency.

Since the instrument was an objective-type questionnaire, the problem of objectivity is was not a significant threat. Respondents read each questionnaire item and drew a vertical line on the visual analog scale continuum. Scoring each response sheet was similarly objective, as each item score was recorded as the numerical value point where the vertical line crossed the horizontal line. However, reliability could be an issue with the instrument. But, since the participants simply responded to high school level language questions on a low-to-high scale, the research subjects were basically responding to a structured opinion interview. Allowing response to two similar items and averaging the scores should have produced a more reliable response than using the typical single item questionnaire. Once marked, each questionnaire item was precisely measured by applying an acetate overlay millimeter scale. Any mark between a millimeter scale interval was read as the lower value, since the mark did not achieve the rank of the succeeding value. Reliability is also affected by the care taken by respondents in reading each item and thoughtfully marking their scores. While it can only be assumed that subjects so responded, incomplete forms were discarded.

External Validity of the Study

External validity is defined in terms of applicability to the larger societal context. Does the study have generalizability to the larger appropriate population? Threats to the external

validity of this study relate to its generalizability to community colleges in other locales and to other categories of higher education.

Obviously, generalizability is a highly desirable scientific objective. However, impediments for any study include the sample size and population representativeness. Adequate sample size and type/geographic academy representativeness necessary for a confidently generalizable sample were well beyond the resources of this project. Additionally, the community college student is characteristically more vocationally oriented than the typical university underclass person making it improper to bridge over from community college to four-year schools, from the data collected herein. Thus, it would only be proper to generalize to the population from which the sample was taken.

Statistical Analyses

Descriptive statistics were produced for the student and teacher groups, including means and standard deviations for each of the comparison factors. Further, the data were disaggregated by sex within each comparison group and descriptive statistics calculated for each factor.

In order to determine the relationship between the two items of each factor, correlation analyses were done using the SAS CORR Procedure. The Cronbach Coefficient Alpha provides a measure of reliability that is adjusted for the number of items in the scale. The Cronbach Coefficient and the Pearson Correlation Coefficient are processes for item analysis.

In order to determine whether significant differences between comparison groups, and by sex, factorial analysis of variance (ANOVA) was computed. The factorial ANOVA significance level was set at .05 for a two-tailed test. The SAS General Linear Model (GLM) Procedure was used to analyze the data by status (faculty v. students), gender (female v. male) and for interaction (status v. gender).

In order to assess the effect size the d of each questionnaire item was computed. The d index, which is the strength of the relationship between the independent variable and the dependent variable, "is expressed in standard deviation units and computed by finding the

difference between the means of the two groups of interest to the researcher and then dividing by some estimate of the standard deviation of the study” (Gliner, Vaske, & Morgan, 2001, p. 291). The *d* values for each of the questionnaire items are shown with mean scores and standard deviations in Table 40.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

Introduction

In his sweeping treatise on, *Where Colleges Fail*, Sanford (1967) prophetically posited that higher education fails when the narrow view is getting an education by memorizing units of information measured by hours spent in classrooms or surface level concept testing. His aim was to position the student as the central focus, with humanistic experiences designed for developing independent thinking, social responsibility, and resourcefulness. However, two decades later, the educational reform movement within the Federal and State governments has reversed the field away from humanistic student development orientation in higher education to coping with the effects of high stakes testing in preparatory schools.

This study was designed to assess some of the contemporary student and faculty interaction dynamics. Professional literature and anecdotal experiences have been indicating that there may be differences in teacher and student expectations of classroom instruction. If elementary through high school neural formatting of the brain for surface learning memorization has occurred from "educational reforms," there would be, at the collegiate level, an expectation that instructors should structure class experiences and lectures in a sequential textbook-style manner. To optimal memorization and time efficiency, faculty would, thus, be expected to provide only the concise answers to life's problems. Lectures ought to, then, teach to the test and there should be sample tests available at the campus Copy Rite test file office. The format for this chapter is as follows: (a) Description of sample, (b) Correlation analyses of data and (c) Analysis of variance procedures for data.

However, if these and other expectations are not mutually held by students and faculty,

problems may result. The situation is potentially exacerbated by differences in generation culture, and type of cognitive function between the two parties. Thus, in consideration of the possibility of differential student and teacher classroom instruction expectations, six research questions were posed for this study:

1. Are the expectations of students and faculty significantly different in regard to orientation toward the transmission of knowledge objective?
2. Are the expectations of students and faculty significantly different in regard to classroom entertainment?
3. Are the expectations of students and faculty significantly different in regard to intellectual challenge?
4. Are the expectations of students and faculty significantly different in regard to affective and cognitive support?
5. Are the expectations of students and faculty significantly different in regard to who is responsible for student achievement?
6. Are the expectations of students and faculty significantly different in regard to formatting the class to the textbook?

Description of Sample

Since the research problem relates to expectations of instruction by students and faculty, a very wide range of samples and locations would be possible; including educational grade level, school mission type and geographic location. However, the study was delimited by educational level to community colleges and by geographic area to the Colorado Front Range. The schools that agreed to participate in this study included the following: Aims Community College, Greeley, CO; Front Range Community College, Ft. Collins, CO; Front Range Community College, Westminster, CO; Morgan Community College, Ft. Morgan, CO, and Northeastern Junior College, Sterling, CO.

The subjects of this study were instructors or students at the previously identified schools. Aims Community College, Morgan Community College and Northeastern Junior College could be classified as serving rural areas; whereas, Front Range Community College-Ft. Collins and Front Range Community College-Westminster could be classified as serving urban areas. Thus, both urban and rural areas were sampled and various ethnic groups were represented. Table I shows the number of subjects interviewed from each of the college sites. It should be noted that only 171 forms were used in the statistical analyses because of the researcher's error, even though 172 questionnaires were completed.

Table 1

Students and Faculty Subjects from Sample Sites

| School Sites | Student Participants | Faculty Participants |
|---|----------------------|----------------------|
| Aims Community College | | |
| Women | 9 | 0 |
| Men | 9 | 5 |
| Front Range Community College-Fort Collins | | |
| Women | 9 | 25 |
| Men | 7 | 23 |
| Front Range Community College – Westminster | | |
| Women | 7 | 0 |
| Men | 8 | 1 |
| Morgan Community College | | |
| Women | 10 | 7 |
| Men | 9 | 4 |
| Northeastern Junior College | | |
| Women | 8 | 11 |
| Men | 9 | 10 |
| Total Women | 43 | 43 |
| Total Men | 42 | 43 |
| Sample Totals | 85 | 86 |

The research questions were developed from the bases of anecdotal experience and literature search. However, the questions were focused only on a few of the universe of student and teacher expectation dynamics. It should be noted that the realities of cooperation and availability created a situation where the percentage of faculty and student respondents were not equal in all the institutions. However, by asking both students and teachers the same questions at the same institutions, comparisons could be made for the specific factors being assessed.

The .05 level of significance was set for rejecting the null hypothesis of statistical differences. Within the various statistical analyses, the term “status” refers to comparison of teachers and students, “gender” refers to a pooling of female students and teachers for comparison with male students and teachers and “status*gender” refers to data assessment for possible interaction.

Reliability of Data

Item correlation is an important statistical exercise, for it indicates the degree of response consistency for the two items of each factor. Each of the six factors had two response items written, as re-statements of the factor’s meaning. Re-framing the factor meaning could have produced an identical response, or a perfect correlation. Yet, some nuances of factor core meaning could have been missing from just a synonymous re-statement; and one of the items should be discarded as redundant.

The item comparison yields an estimate of response consistency or reliability. Here, the reliability estimate is adjusted primarily for the number of questions. A low correlation coefficient would be interpreted as response-confusion from the respondents. A low correlation between two items of a factor, also, could be interpreted as item independence; where the respondents perceive that the items are unrelated. The Cronbach Coefficient Alpha and the Pearson Correlation Coefficient procedures are forms of item analysis. In the Cronbach procedure, each of the separate items are in a factor (or assessing a construct) correlated with each of the other items and then adjusted for the number of items. In Table 2 reliability

correlations for each of the sub-samples are presented, along with the Pearson Correlation Coefficients and Cronbach's Alphas for the total sample. This data set is grouped by factor pairs and presented under the respective factor labels. Correlations for transmission of knowledge and course structure were moderately high for all subject groups. Achievement responsibility correlations were relatively low, indicating that the items were not perceived as restatements of the root factor.

Table 2

Reliability Correlations for Each Sub-Sample, and the Pearson Correlation Coefficients and the Cronbach Alphas for the Total Sample

| Research Factors | Faculty <i>n</i> =86 | Student <i>n</i> =85 | Females <i>n</i> =85 | Males <i>n</i> =86 | Total <i>n</i> =171 | Alphas <i>n</i> =171 |
|--|-------------------------|-------------------------|-------------------------|-----------------------|------------------------|-------------------------|
| Transmission of Knowledge Items 1 and 2 | .50 | .42 | .62 | .64 | .63 | .77 |
| Classroom Entertainment Items 3 and 4 | .48 | .41 | .64 | .48 | .46 | .63 |
| Intellectual Challenge Items 5 and 6 | .46 | .64 | .65 | .51 | .60 | .74 |
| Psychological Support Items 7 and 8 | .56 | .51 | .47 | .58 | .54 | .69 |
| Achievement Responsibility Items 9 and 10 | .30 | .29 | .20 | .34 | .27 | .43 |
| Course Structure Items 11 and 12 | .70 | .62 | .70 | .66 | .68 | .81 |

The descriptive statistics and correlation data for the 171 subjects and the 12 items are presented in three forms. First, each of the pairs of items in the respective factors are presented for faculty v. student comparisons. Second, each pair of items in the respective factors is presented for females and males. Third, each of the pairs of items in the respective factors is

presented as combined for status, students and faculty, and female and males. A SAS System was used to calculate descriptive statistics and correlation coefficients.

Comparison of Faculty and Students by Item Pairs

Tables 3 and 4 display the descriptive statistics and correlations for Item 1 and Item 2 for faculty and student data. The parent factor is “Orientation to the transmission of knowledge.” The factor intent is to tease out simple memorization or “surface learning” from the “understanding-type” of learning. Item 1 is “Lectures should primarily be focused on preparing the students for test questions.” Item 2 is “Lectures should be organized in easy to follow outline form for memorization of knowledge.” The statistics are as follows:

Table 3

Descriptive Statistics and Correlations for Items 1 and 2 For Faculty

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|-------|-----------|---------------------------------|----------------------------|
| Item 1 | 86 | 40.98 | 33.32 | .50 | .67 |
| Item 2 | 86 | 52.83 | 35.57 | | |

Tables 3 and 4 show moderate to strong correlations between Items 1 and 2 for both faculty and students. The Cronbach Coefficient Alpha indicates adequate reliability for the questionnaire factor given that there are only two items in the factor. Lower correlations for the student sample are to be expected, in this case, because they are less settled in their perceptions.

Table 4

Descriptive Statistics and Correlations for Items 1 and 2 for Students

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|--------|-----------|---------------------------------|----------------------------|
| Item 1 | 85 | 87.20 | 37.13 | .42 | .59 |
| Item 2 | 85 | 101.96 | 34.75 | | |

Note that the mean score difference between the faculty and student groups is approximately 50 points for both Items 1 and 2. The magnitude of the response between the student and faculty subsamples indicates both an understanding of the questionnaire items and a consistent pattern of responses for individuals in the respective groups.

Tables 5 and 6 show the descriptive statistics and correlations for Items 3 and 4 for faculty and student data. The parent factor is “Classroom Entertainment.” The factor is intended to assess differential student and expectations for the classroom to be entertaining, i.e. power point presentations and the inclusion of video clips. Item 3 is “Learning experiences designed by the teacher should be fun and enjoyable.” Item 4 is “Entertaining videos and other media should be part of classes.” While both faculty and students expressed the perception that classroom instruction should be an enjoyable experience, students clearly had the higher mean scores on each item. Correlations between the two items were moderately strong and statistically significant beyond the criterion level. Thus, the subjects were responding in a consistent manner. The descriptive statistics are as follows:

Table 5

Descriptive Statistics and Correlations for Items 3 and 4 For Faculty

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|--------|-----------|---------------------------------|----------------------------|
| Item 3 | 86 | 106.67 | 30.67 | .48 | .65 |
| Item 4 | 86 | 83.00 | 31.41 | | |

Table 6

Descriptive Statistics and Correlations for Items 3 and 4 For Students

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|--------|-----------|---------------------------------|----------------------------|
| Item 3 | 85 | 119.43 | 27.65 | .41 | .57 |
| Item 4 | 85 | 96.38 | 36.48 | | |

Tables 7 and 8 display descriptive statistics and correlations for Items 5 and 6 for faculty and student data. The parent factor is intended to assess expectation of “deep learning,” where exploration of multiple perspectives as in the relativity of Perry Position Five and higher. Item 5 is “Course standards should reflect an expectation of a high degree of scholarship and achievement.” Item 6 is “Analytical and critical thinking experiences should be a part of each course.”

Students showed a strong acceptance of academic expectations, with mean scores in the high rang for both items. Faculty scores were higher than student scores; thus, indicating even greater academic expectations. The faculty standard deviation statistic was lower, indicating a consistent response pattern. Since the item correlations were statistically significant, the items within the factor appear to be reliably measuring expectations.

Table 7

Descriptive Statistics and Correlations for Items 5 and 6 For Faculty

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|--------|-----------|---------------------------------|----------------------------|
| Item 5 | 86 | 122.96 | 22.34 | .46 | .63 |
| Item 6 | 86 | 127.61 | 24.83 | | |

Table 8

Descriptive Statistics and Correlations for Items 5 and 6 for Students

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|--------|-----------|---------------------------------|----------------------------|
| Item 5 | 85 | 110.07 | 27.76 | .64 | .78 |
| Item 6 | 85 | 109.95 | 30.24 | | |

Tables 9 and 10 show descriptive statistics and correlations for Item 7 and Item 8 for faculty and student data. The parent factor is intended to assess the “Need for psychological

support” in the higher education context. Item 7 is “The personal and emotional feelings of the student should be considered by the instructor.” Similarly, Item 8 states “Instructors should be supportive and very concerned about the students needs.”

Correlations for both items and both groups were moderately strong, indicating adequate response reliability. Both student and faculty standard deviations were quite high for Item 7 possibly indicating either a divergence in the respondents or problems in determining the meaning of the item. The question pertained to emotional support and there was a wide range of emotion-related responses. However, both student and faculty mean scores were in the high range for both items. It could be inferred that students are entering higher education institutions with the expectation that they will be given sufficient psychological support to successfully complete their personal and career goals. With the characteristic dropout rate of higher education, attending to student psychological support expectations could be a retention strategy.

Table 9

Descriptive Statistics and Correlations for Items 7 and 8 for Faculty

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|--------|-----------|---------------------------------|----------------------------|
| Item 7 | 86 | 98.02 | 36.62 | .57 | .69 |
| Item 8 | 86 | 113.52 | 24.67 | | |

Table 10

Descriptive Statistics and Correlations for Items 7 and 8 for Students

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|--------|-----------|---------------------------------|----------------------------|
| Item 7 | 85 | 89.95 | 40.90 | .51 | .67 |
| Item 8 | 85 | 103.68 | 33.63 | | |

Tables 11 and 12 illustrate descriptive statistics and correlations for Items 9 and 10 for faculty and student data. The parent factor relates to perceptions of “Who is responsible for the student’s achievement?” A current directive to teachers is “that all students can learn,” which implies that teachers are the primary factor in the learning equation. Item 9 states “Teachers are responsible for students achievement.” Item 10 is “If teachers are very good professionals, all students will learn.”

Surprisingly, the mean scores for both faculty and students were in the low range. Responses to Item 9 about teaching for achievement were quite similar for faculty and student groups. However, Item 10 placing the primary responsibility for student success on the teacher evoked a 20-point mean difference with students having the higher score. The correlation between items indicated minimally adequate response reliability, which is a statistical estimate of the consistency of subject responses to the respective questionnaire items. The relatively low scores for both groups could be interpreted as a low level of buy-in to the current governmental rhetoric regarding teacher responsibility for school performance.

Table 11

Descriptive Statistics and Correlations for Items 9 and 10 for Faculty

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|-------|-----------|---------------------------------|----------------------------|
| Item 9 | 86 | 61.31 | 31.67 | .30 | .46 |
| Item 10 | 86 | 43.13 | 36.25 | | |

Table 12

Descriptive Statistics and Correlations for Items 9 and 10 for Students

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|-------|-----------|---------------------------------|----------------------------|
| Item 9 | 85 | 57.40 | 40.89 | .30 | .46 |
| Item 10 | 85 | 63.76 | 45.99 | | |

Table 13 and 14 show the descriptive statistics and correlations for Item 11 and Item 12 for teacher and student data. The parent factor is “The formatting of class content to the textbook. With the advent of “educational reform” directed toward raising high stakes test scores, there may be a corollary trend away from exploratory learning and toward memorizing defined sets of information. Item 11 is “Teachers should design the course around the textbook chapters” and Item 12 is “The content of teacher lectures should closely follow the textbook.”

Items 11 and 12 with faculty and student data produced some of the highest correlations in the entire data set. The Cronbach’s Alpha indicated a reliable response pattern for both faculty and students. However, the mean scores of the groups differed remarkably. Students clearly wanted the course content to be formatted to the textbook, more than the faculty. Dependence on the textbook for authoritative information on a particular subject is congruent with the current high stakes testing trend, as a public policy for school reform. It is a form of formatting course content to the high stakes test, when the text is aligned to the test.

Table 13

Descriptive Statistics and Correlations for Items 11 and 12 for Faculty

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|-------|-----------|---------------------------------|----------------------------|
| Item 11 | 86 | 64.98 | 35.72 | .70 | .82 |
| Item 12 | 86 | 62.69 | 31.79 | | |

Table 14

Descriptive Statistics and Correlations for Items 11 and 12 for Students

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|-------|-----------|---------------------------------|----------------------------|
| Item 11 | 85 | 81.70 | 37.62 | .62 | .77 |
| Item 12 | 85 | 79.71 | 36.82 | | |

In summary, for the data set comparing faculty and student reliability correlations by factors item pairs, there is an adequate correlation between the item pairs for faculty and student data. For the lower-than-anticipated correlations between some item pairs, perhaps the respondents were not settled on the issue or the questions were confusing. Or, it could be reasonably interpreted that the separate items of each pair were measuring somewhat different nuances of the factor. However, the Item 9 and 10 pair present a problem. Perhaps the wording of the item that included the phrase, “all students will learn if the teacher is a good professional,” served to confuse the issue. Obviously something in one or both questions caused confusion, as neither faculty nor students seem to be settled on the question of achievement responsibility. The fact that both students and faculty demonstrated such low response consistency to Items 9 and 10 is problematic though the root concept of “achievement responsibility” is an issue of contemporary interest.

Comparison of Males and Females by Item Pairs

The second item pair correlation exercise was done by pooling data from student and faculty females and student and faculty males. This was done to assess the relative response consistency by gender. As shown in the following tables, the gender comparisons results are quite mixed. Generally, there was agreement with comparable correlation coefficients for each item pair between the sexes. The correlation between item pairs by gender was adequate to moderate with the exception of the responsibility for achievement factor items.

Tables 15 and 16 show the descriptive statistics and correlations for Items 1 and 2 for male and female data. The parent factor is “Orientation to the transmission of knowledge objective.” When disaggregated by gender, the coefficients are greater than paired items by faculty and students status when compared to the statistics shown previously in Table 2. The objective “transfer of knowledge” is commonly found in higher education mission statements. It pertains to the transmission of information that has been acquired by the culture throughout recorded history. Since the written record of most subjects is voluminous, textbooks and

instructors are expected to present a distillation of important information into principles.

Transmission of knowledge can be done in a variety of way in formal education: through lectures, experiential learning, guided design or through electronic classes. However, the most common method is to passive learning by lectures from the instructor.

Table 15

Descriptive Statistics and Correlations for Items 1 and 2 for Females

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|-------|-----------|---------------------------------|----------------------------|
| Item 1 | 86 | 66.06 | 41.56 | .62 | .77 |
| Item 2 | 86 | 74.23 | 41.47 | | |

Table 16

Descriptive Statistics and Correlations for Items 1 and 2 for Males

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|-------|-----------|---------------------------------|----------------------------|
| Item 1 | 85 | 61.82 | 42.80 | .64 | .78 |
| Item 2 | 85 | 80.31 | 44.24 | | |

Tables 17 and 18 show descriptive statistics and correlations for items 3 and 4 for female and male data. The parent factor is “classroom entertainment.” Visual inspection of status and gender comparisons showed that both genders responded with higher reliability coefficients when the data were disaggregated by gender. Both females and males perceived that the items were related to the factor as indicated by the strength of the correlation. Expectation of classroom entertainment could be rooted in the popular culture orientation to mass media, an orientation to “sight and sound” supremacy over logic and rhetoric. Perhaps, the number of professional quality educational and entertainment videos has raised expectation for similar classroom productions.

Mean gender-based group scores showed a remarkably different response pattern. Males appear much more oriented toward entertainment in the classroom with a doubled mean score for Item 3. The combined faculty and student male data showed more internal response agreement, as their standard deviation scores were lower on each of the items.

Table 17

Descriptive Statistics and Correlations for Items 3 and 4 for Females

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|-------|-----------|---------------------------------|----------------------------|
| Item 3 | 86 | 61.82 | 42.80 | .64 | .78 |
| Item 4 | 86 | 80.31 | 44.24 | | |

Table 18

Descriptive Statistics and Correlations for Items 3 and 4 for Males

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|--------|-----------|---------------------------------|----------------------------|
| Item 3 | 85 | 117.21 | 27.08 | .48 | .63 |
| Item 4 | 85 | 93.25 | 34.58 | | |

Tables 19 and 20 display descriptive statistics and correlations for Items 5 and 6 for female and male data. The parent factor pertains to “classroom intellectual challenge.” Visual inspection of the status and gender comparisons show a greater reliability estimate for females with both perceiving that the items were related each other. Reliability estimates showed moderately strong correlations for both females and males. Intellectual challenge is a term often used in student course ratings, and it is broad umbrella of possibilities ranging from rote memory to problem solving. Thus, intellectual challenge could occur at any of the Perry (1970) positions of cognitive development.

Mean score comparisons showed almost identical values for females and males for each item. The mean scores were high for both groups and for both items, beyond two-thirds of the points on the 150-unit scale continuum. The standard deviation values were also quite similar for both gender groups for both items, and the low values indicate considerable response consistency.

Table 19

Descriptive Statistics and Correlations for Items 5 and 6 for Females

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|--------|-----------|---------------------------------|----------------------------|
| Item 5 | 86 | 115.56 | 27.96 | .66 | .79 |
| Item 6 | 86 | 117.98 | 32.02 | | |

Table 20

Descriptive Statistics and Correlations for Items 5 and 6 for Males

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|--------|-----------|---------------------------------|----------------------------|
| Item 5 | 85 | 117.55 | 23.82 | .52 | .68 |
| Item 6 | 85 | 117.98 | 32.02 | | |

Tables 21 and 22 show descriptive statistics and correlations for Item 7 and Item 8, when data are disaggregated by gender. The parent factor pertains to the “perceived need for psychological support in the classroom.” Visual inspection of reliability correlation coefficients from gender disaggregated data computation were comparable and moderately strong. It could be inferred that both females and males perceived that the two items in the same manner.

Mean gender group scores were less than ten points apart and the scores were two-thirds towards the maximum score. Though females are stereotypically portrayed as more oriented toward needing and providing psychological support, the mean scores for these samples show considerable congruency. For Item 7 the women’s score 90.33 and the men’s mean score was

97.72. For Item 8 the women's mean score was 105.26 and the men's score was 112.03. These scores, out of a possible 150 units, are quite comparable, though the mean scores for the male sub-sample are slightly higher than for the female group.

Table 21

Descriptive Statistics and Correlations for Items 7 and 8 for Females

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|--------|-----------|---------------------------------|----------------------------|
| Item 7 | 85 | 90.33 | 36.74 | .47 | .63 |
| Item 8 | 86 | 105.26 | 28.27 | | |

Table 22

Descriptive Statistics and Correlations for Items 7 and 8 for Males

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|--------|-----------|---------------------------------|----------------------------|
| Item 7 | 85 | 97.72 | 40.85 | .59 | .72 |
| Item 8 | 85 | 112.03 | 31.05 | | |

Tables 23 and 24 display descriptive statistics and correlations for Items 9 and 10. The parent factor relates to “assignment of responsibility for student achievement.” Visual inspection of reliability correlations for status and gender show that the sets of statistics are comparable, though these correlations are weaker than any other factor sets. The Cronbach Coefficient Alphas of .32 for females and .51 for males are problematic and indicate some inconsistency in interpreting the meaning of the questionnaire items. Given the considerable amount of publicity, public comment and public policy enactments in the past two decades, a much higher response consistency might have been expected.

Interestingly, the moderately low mean scores of each gender category indicate agreement that teachers are not perceived to bear total responsibility for student achievement. The

female mean score for Item 9 was 58.68 and the male score was 60.05. For Item 10, the female score was 53.91 and the male mean score was 52.85. The standard deviations were comparable for the groups and comparable to the values for other items.

Table 23

Descriptive Statistics and Correlations for Items 9 and 10 for Females

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|-------|-----------|---------------------------------|----------------------------|
| Item 9 | 86 | 58.68 | 33.31 | .20 | .32 |
| Item 8 | 86 | 53.91 | 43.89 | | |

Table 24

Descriptive Statistics and Correlations for Items 9 and 10 for Males

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|-------|-----------|---------------------------------|----------------------------|
| Item 9 | 85 | 60.05 | 39.63 | .35 | .52 |
| Item 10 | 85 | 52.85 | 41.37 | | |

Tables 25 and 26 show descriptive statistics and correlations for Items 11 and 12. The parent factor relates to the “practice of formatting class contents to the textbook.” Visual inspection of reliability estimates from status and gender computation shows correlations that are moderately strong and comparable. The Cronbach Coefficient Alpha of .83 for females and .79 for males indicate considerable response consistency.

Visual inspection of the gender grouped mean scores shows very little difference for both questionnaire items. For the females, the mean scores for Items 11 and 12 were less than one point different (69.23 v. 70.00). For the male sample, the mean scores were similar (77.41 v. 72.32). The magnitude of the respective responses is less than half of the possible 150 unit score, well within the moderate or neutral response range. The standard deviation score values are

comparable between the genders and to the values of other factor items. Given this observation that the scores of both gender sub-groups are quite close in mean scoring, the finding of gender differences would be predictable.

Table 25

Descriptive Statistics and Correlations for Items 11 and 12 for Females

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|-------|-----------|---------------------------------|----------------------------|
| Item 11 | 86 | 69.23 | 35.65 | .70 | .83 |
| Item 12 | 86 | 70.00 | 35.80 | | |

Table 26

Descriptive Statistics and Correlations for Items 11 and 12 for Males

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|-------|-----------|---------------------------------|----------------------------|
| Item 11 | 85 | 77.41 | 39.10 | .66 | .79 |
| Item 12 | 85 | 72.32 | 35.01 | | |

In summary, for the data set comparing females and males by factor item pairs, the reliability coefficients range from minimally acceptable to moderately strong reliability. Standard deviations generally were in the 30-40 point range. However, Items 9 and 10 appeared to be problematic in regard to response consistency between the two items. A similar observation was made for Items 9 and 10 with the faculty and student data analyses.

Comparison by Items Pairs for Pooled Data

A third type of item-pair data analysis was made from aggregating all data sets for status and gender. The pooled data mean scores are of interest in this section because they are the respective mean scores for the whole sample. The Cronbach Coefficient Alpha yields a value that can be interpreted as response stability. Since the number of respondents is doubled and the

subject pool heterogeneity is increased, when the data is aggregated, it could be expected that reliability coefficients (r) would increase.

Both the Cronbach Coefficient Alpha and the Pearson Correlation Coefficient procedures are useful to estimate the degree to which items relate to the parent factor. Increasing both the respondent number and heterogeneity should positively affect item analysis coefficients. For brevity, only comparisons of faculty and aggregated data will be reported, and aggregated data sets are displayed in the following tables.

Table 27 is a display of the descriptive statistics and correlations for the aggregated data of Items 1 and 2. The parent factor addresses the practice of “orienting classes to surface learning memorization or transmission of knowledge.” Visual inspection of faculty and student aggregated data statistics show that reliability estimates were increased. The Cronbach Coefficient Alpha of faculty for Items 1 and 2 was .66, as was show in Table 3, and the aggregated data Alpha for Items 1 and 2 was .77.

Table 27

Descriptive Statistics and Correlations for Items 1 and 2 for Aggregated Data

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|-------|-----------|---------------------------------|----------------------------|
| Item 1 | 171 | 63.95 | 42.11 | .63 | .77 |
| Item 2 | 171 | 77.25 | 42.85 | | |

Table 28 shows the descriptive statistics and correlations for Items 3 and 4. The parent factor is the “degree of expected classroom entertainment.” Visual inspection of the reliability coefficients surprisingly showed only a little improvement with the increase in the respondent pool. The Cronbach Alpha for the aggregated data was .63, as compared to the faculty value of .65, as shown in Table 5. The item pair showed more intra-factor independence than was intended. The standard deviation values of the two data analyses were comparable.

Table 28

Descriptive Statistics and Correlations For Items 3 and 4 for Aggregated Data

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|--------|-----------|------------------------------------|-------------------------------|
| Item 3 | 171 | 113.01 | 29.82 | .46 | .63 |
| Item 4 | 171 | 89.65 | 34.58 | | |

Table 29 shows the descriptive statistics and correlations for Items 5 and 6 when all respondent data were aggregated. The parent factor relates to the “degree of intellectual challenge expected in classes.” Visual inspection of the faculty and aggregated data statistics shows a positive differentiation, for reliability and item analysis in the two sets of statistics. In this case, adding additional numbers of subjects and heterogeneity had the expected effect of improving the response consistency. The Cronbach Alpha value for the aggregated data was .75, as compared to the faculty data value of .63 previously shown in Table 7.

Visual inspection of the aggregated data standard deviations showed comparable values, as did the mean scores. The mean scores were quite high indicating that both teachers and students had relatively high achievement expectations.

Table 29

Descriptive Statistics and Correlations for Items 5 and 6 for Aggregated Data

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|--------|-----------|------------------------------------|-------------------------------|
| Item 5 | 171 | 116.55 | 25.93 | .60 | .75 |
| Item 6 | 171 | 118.83 | 28.96 | | |

Table 30 is a display of the descriptive statistics and correlations for Items 7 and 8, when all respondent data are aggregated. The parent factor is “psychological support expected in classes.” Visual inspection of aggregated data statistics shows virtually no differences between

faculty and aggregated data Alpha values with both at .69. Similarly, the two aggregated data mean scores were very comparable and relatively high. The mean scores for these two items indicate that considerable psychological support is expected in the classroom.

Table 30

Descriptive Statistics and Correlations for Items 7 and 8 for Aggregated Data

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|--------|-----------|---------------------------------|----------------------------|
| Item 7 | 171 | 94.01 | 38.90 | .54 | .69 |
| Item 8 | 171 | 108.63 | 29.79 | | |

Table 31 is a display of the descriptive statistics and correlations for Items 9 and 10, when all respondent data are aggregated. The parent factor addresses the question of “responsibility for student achievement.” Visual inspection of the faculty and aggregated data statistics shows very comparable Cronbach Coefficient Alpha values. The Alpha value for faculty was .46 and the aggregated data value was .43. The items written for this factor produced the lowest response consistency of all pairs of items. Though response consistency was low there seemed to be considerable agreement from faculty data, student data and aggregated data that faculty was only partially responsible for student achievement.

Table 31

Descriptive Statistics and Correlations for Items 9 and 10 for Aggregated Data

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|-------|-----------|---------------------------------|----------------------------|
| Item 9 | 171 | 59.36 | 36.49 | .28 | .43 |
| Item 10 | 171 | 53.39 | 42.53 | | |

Table 32 is a display of descriptive statistics and correlations for Items 11 and 12 when all respondent data are aggregated. The parent factor relates to “the common practice of

formatting class content to the textbook.” Visual inspection of the faculty and aggregated data statistics shows very comparable correlations for reliability estimates, with Cronbach Alphas of .80 for the faculty data and .81 for the aggregated data. The mid-range composite mean scores may be problematic for introducing critical thinking and problem solving. The aggregated data mean scores (73.30 for Item 11 and 71.16 for Item 12) may be interpreted as showing expectation by both students and faculty that class content be aligned with the textbook.

Table 32

Descriptive Statistics and Correlations for Items 11 and 12 for Aggregated Data

| Variable | <i>N</i> | Mean | <i>SD</i> | Pearson Correlation Coefficient | Cronbach Coefficient Alpha |
|----------|----------|-------|-----------|---------------------------------|----------------------------|
| Item 11 | 171 | 73.29 | 37.52 | .68 | .81 |
| Item 12 | 171 | 71.15 | 35.33 | | |

Research Questions

The research questions were posed in such a manner as to enable testing for significant mean score group differences. Individual respondent data were scored and grouped according to categories: Female Faculty, Male Faculty, Female Students, and Male Students. The scored response sheets were analyzed using the SAS General Linear Model (GLM) procedure at the Colorado State University Statistical Laboratory under the supervision of the director, Dr. James zumBrennen.

The GLM procedure produced a number of separate results, including analysis for the paired items of each of the research questions and analysis for all of the 12 questionnaire items separately. The analyses of interest, herein, are the computations for each of the six factors. Analysis for each of the twelve items is included as APPENDIX H. The six factors analyses (by faculty-student status, by female-male gender and for status and gender interaction) are presented and briefly discussed in the following section. Each of the six research questions or factors is

referenced. The GLM procedure statistics of mean comparisons for faculty and students for each of the six factors are displayed in Table 33.

Table 33

The GLM Procedure for Least Square Means Comparing Faculty and Students

| Source | LS Mean | SD | Std. Error |
|----------|---------|------|------------|
| Factor 1 | | | |
| Faculty | 46.91 | 34.4 | 3.25 |
| Student | 94.58 | 36.0 | 3.27 |
| Factor 2 | | | |
| Faculty | 94.83 | 31.0 | 2.87 |
| Student | 107.93 | 32.0 | 2.89 |
| Factor 3 | | | |
| Faculty | 125.29 | 23.5 | 2.53 |
| Student | 110.04 | 29.0 | 2.54 |
| Factor 4 | | | |
| Faculty | 105.77 | 30.6 | 3.21 |
| Student | 96.83 | 37.6 | 3.23 |
| Factor 5 | | | |
| Faculty | 52.22 | 33.9 | 3.38 |
| Student | 60.54 | 43.4 | 3.40 |
| Factor 6 | | | |
| Faculty | 64.98 | 33.7 | 3.94 |
| Student | 81.73 | 37.2 | 3.97 |

Considerable space and effort has been devoted herein to exposition of the factors and item pairs by status, by gender and by aggregation. The purpose for using correlation analysis was to explore items and factors for possible differences from permutations of the respondent groups. Indeed, the purpose of using two item sets for each factor was to facilitate response consistency by deriving an arithmetic mean, instead of relying on only one questionnaire item. However, the central purpose for the study was to compare faculty and student expectations of classroom instruction. Whether the items were paired with the data pooled, or whether the individual items were used for differential analyses, the purpose of the study was to compare

faculty and student perceptions. The pooled factor pair data analyses are presented as follows and the individual item data analysis is in Appendix H.

Research Question 1: Are the Expectations of Students and Faculty Significantly Different in Regard to Orientation Toward the “Transmission of Knowledge” Objective?

Table 34 shows the ANOVA statistics for faculty and student expectations regarding “transmission of knowledge.” As was shown in Table 33, the faculty mean was 46.91 and the student mean was 94.58. These mean differences were significant at the .0001 level of confidence. Table 33 also shows analyses by gender and by status and gender interaction. Neither the gender analysis or the interaction analysis showed significant differences. The R-Square value was computed to be 0.38.

Table 34

The GLM Procedure for Research Question 1, When Comparing Faculty and Students

| Source | <i>df</i> | Type III SS | Mean Square | <i>f</i> | <i>p</i> |
|---------------|-----------|-------------|-------------|----------|----------|
| Status | 1 | 97164.97 | 97164.97 | 106.32 | <0.01 |
| Gender | 1 | 61.58 | 61.58 | 0.07 | 0.79 |
| Status*Gender | 1 | 0.22 | 0.22 | 0.00 | 0.98 |

The data clearly show that faculty and students have different expectations about the transmission of knowledge in the classroom. Students expect to be given the direct information distilled from the ages and faculty seems to expect a different type of teaching/learning to occur in the classroom. The transmission of knowledge factor is seen in...classes that emphasize passive learning, lectures that transmit low-level information, and assessments that frequently demand only the recall of memorized material or low-level comprehension of concepts.”

Research Question 2: Are the Expectations of Students and Faculty Significantly Different in Regard to “Classroom Entertainment?”

Table 35 shows the ANOVA statistics for faculty and student expectations regarding “classroom entertainment.” As was shown in Table 33, the faculty mean was 94.83 and the student mean was 107.93. The mean score differences were significant at the .001 level of confidence. Table 35 also shows analyses by gender and by gender and status interaction. Neither the gender nor the interaction statistics showed significant differences. The R-Square value was computed to be 0.08.

The data clearly show that faculty and students have different expectations about entertainment in classrooms. Students expect more entertainment interjected into the class delivery and faculty see their role as less entertaining. The statistics are shown in Table 35.

Table 35

The GLM Procedure for Research Question 2, When Comparing Faculty and Students

| Source | <i>df</i> | Type III SS | Mean Square | <i>f</i> | <i>p</i> |
|---------------|-----------|-------------|-------------|----------|----------|
| Status | 1 | 7330.23 | 7330.23 | 10.32 | <0.01 |
| Gender | 1 | 2603.66 | 2603.66 | 3.66 | 0.06 |
| Status*Gender | 1 | 786.13 | 786.13 | 1.11 | 0.29 |

Research Question 3: Are the Expectations of Students and Faculty Significantly Different in Regard to “Intellectual Challenge?”

Table 36 is a display of the ANOVA statistics for faculty and student expectations regarding “intellectual challenge.” As was shown in Table 33, the mean faculty score was 125.29 and the student mean score was 110.04. The faculty and student mean scores were shown to be significantly different at the .001 level of confidence. Table 35 also shows the results of analyses by gender and gender and status interaction. Neither the analysis by gender nor the interaction by gender and status was significantly different. The R-Square value was computed to be 0.10.

The data clearly show that faculty and students have different expectations about intellectual challenge in classrooms. The data indicate that faculty members may expect to

interject more challenge in course content and students expect less challenge. Whether the concept of “challenge” was interpreted to be longer and more complex memorization or relativistic analytical exercise was not elucidated herein. The statistics are shown in Table 36.

Table 36

The GLM Procedure for Research Question 3, When Comparing Faculty and Students

| Source | <i>df</i> | Type III SS | Mean Square | <i>f</i> | <i>p</i> |
|---------------|-----------|-------------|-------------|----------|----------|
| Status | 1 | 9940.65 | 9940.65 | 18.01 | <0.01 |
| Gender | 1 | 134.45 | 134.45 | 0.24 | 0.62 |
| Status*Gender | 1 | 435.56 | 435.56 | 0.79 | 0.37 |

Research Question 4: Are the Expectations of Students and Faculty Significantly Different in Regard to “Affective and Cognitive Support?”

Table 37 shows the AVOVA statistics for faculty and student expectations regarding “psychological support.” As was shown in Table 33, the faculty mean score was 105.77 and the student mean score was 96.83. Analyses by gender and by gender and status interaction did not show significant differences. The R-Square value was computed to be 0.04.

The data analysis for faculty and student scores showed statistically significant difference at the .05 significance level. However, it should be noted that both students and faculty had strong support for sensitivity to student psychological needs.

Table 37

The GLM Procedure for Research Question 4, When Comparing Faculty and Students

| Source | <i>df</i> | Type III SS | Mean Square | <i>f</i> | <i>p</i> |
|---------------|-----------|-------------|-------------|----------|----------|
| Status | 1 | 3417.69 | 3417.69 | 3.84 | 0.05 |
| Gender | 1 | 2094.61 | 2094.61 | 2.35 | 0.12 |
| Status*Gender | 1 | 920.05 | 920.05 | 1.03 | 0.31 |

Research Question 5: Are the Expectations of Students and Faculty Significantly Different in Regard to “Who is Responsible for Student Achievement?”

Table 38 shows the ANOVA statistics for faculty and student expectations pertaining to achievement attribution. As shown in Table 33, the faculty mean was 52.22 and the student mean score was 60.54. These represent some of the lowest group scores observed in the data set. Analyses by gender and by gender and status interaction did not show significant differences. Then R-Square value was computed to be 0.02.

The data analysis for student-faculty status did not show statistically significant differences. However, separate analysis of Items 9 and 10, as displayed in Appendix H, indicates that Item 9 “Teachers are responsible for student achievement” showed no significant faculty-student opinion differences. Yet, the comparable Item 10 “If teachers are very good professionals, all students will learn” showed significance at the .05 level with students attributing achievement responsibility to the teacher. The factor statistics are shown in Table 38.

Table 38

The GLM Procedure for Research Question 5, When Comparing Faculty and Students

| Source | <i>df</i> | Type III SS | Mean Square | <i>f</i> | <i>p</i> |
|---------------|-----------|-------------|-------------|----------|----------|
| Status | 1 | 2956.32 | 2956.32 | 2.99 | 0.08 |
| Gender | 1 | 1.16 | 1.16 | 0.00 | 0.97 |
| Status*Gender | 1 | 2003.67 | 2003.67 | 2.03 | 0.15 |

Research Question 6: Are the Expectations of Students and Faculty Significantly Different in Regard to “Formatting the Class to the Textbook?”

Table 39 shows the ANOVA statistics for faculty and students expectations related to “class and textbook alignment.” As was shown in Table 33, the faculty mean was 64.98 and the student mean score was 81.73. Analyses by gender and by gender and status interaction showed no significant differences. The R-Square value was computed to be 0.06.

The data analysis for faculty-student status clearly showed opinion differences with students significantly preferring that class content be aligned with the textbook. This finding seems to be congruent with the finding of Factor 1, where students significantly preferred well-structured course content, the Factor 6 statistics are shown in Table 39.

Table 39

The GLM Procedure for Research Question 6, When Comparing Faculty and Students

| Source | <i>df</i> | Type III SS | Mean Square | <i>f</i> | <i>p</i> |
|---------------|-----------|-------------|-------------|----------|----------|
| Status | 1 | 11984.87 | 11984.87 | 8.94 | <0.01 |
| Gender | 1 | 2913.66 | 2013.66 | 2.17 | 0.14 |
| Status*Gender | 1 | 577.03 | 577.03 | 0.43 | 0.51 |

In summary of the data analyses, four of the six sets of data from research question pairs showed that there were significantly differing opinions held by faculty and students. Data from the research question pair of items dealing with student achievement responsibility did not differentiate between the faculty and student status groups. However, Item 10 did successfully differentiate between the status groups of faculty and students at the 0.001 level of significance, see Appendix H.

Table 40 provides a summary of the descriptive statistics for each questionnaire item. The mean scores (*M*) for faculty, the student mean scores and the standard deviation values (*SD*). The aggregated mean scores are presented with the respective standard deviation (*SD*) values. Column *d* is a listing of the effect size values for the student-faculty difference for each of the questionnaire items. Effect size is an indicator of the strength of the relationship between the independent variable and the dependent variable.

Table 40 is a display of statistics by the individual items, including effect size (*d*), means (*M*), and standard deviation (*SD*). Considering the 0-150 unit scale that was rated from agree to disagree, a mean core of 40 would be in the low range signifying agreement with the root item

statement. A mean score in the 70 range is halfway to disagree and could be interpreted as neutral and a 125 scale could be interpreted as strongly disagreeing.

Regarding effect size (d), which is an indicator of the relative strength of the importance of the effect, the d family of effect size measures are computed by subtracting the mean of the second group from the mean of the first group and dividing by the pooled standard deviation of both groups. Thus, whether the d value is positive or negative is irrelevant and the size of the dividend is the important factor: .20 is small, .50 is medium, .80 is large, and 1.00 or higher is very large. Both items related to transmission of knowledge produced large effect sizes and both questions related to psychological support produced small effect sizes.

Table 40

Faculty and Student Means and Standard Deviations for the Questionnaire Items

| Questionnaire Items | d | Faculty | | Student | | Total | |
|---------------------------------------|------|---------|------|---------|------|-------|------|
| | | M | SD | M | SD | M | SD |
| Transmission of Knowledge | | | | | | | |
| 1. Lectures prepare for tests | -1.3 | 41.0 | 33.3 | 87.2 | 37.1 | 63.9 | 35.2 |
| 2. Lectures should follow outline | -1.4 | 52.8 | 35.6 | 102.0 | 34.8 | 77.2 | 35.2 |
| Classroom Entertainment | | | | | | | |
| 3. Learning should be fun | -.43 | 106.7 | 30.7 | 119.4 | 27.6 | 113.0 | 29.2 |
| 4. Include entertaining videos | -.40 | 83.0 | 31.4 | 96.4 | 36.5 | 89.6 | 33.9 |
| Intellectual Challenge | | | | | | | |
| 5. Expect high achievement | .49 | 122.9 | 22.3 | 110.0 | 27.7 | 116.5 | 25.9 |
| 6. Analytical and critical thinking | .61 | 127.6 | 24.8 | 109.9 | 30.2 | 118.8 | 28.9 |
| Psychological Support | | | | | | | |
| 7. Consider emotions | .21 | 98.0 | 36.6 | 89.9 | 40.9 | 94.0 | 38.9 |
| 8. Concern about student needs | .33 | 113.5 | 24.6 | 103.6 | 33.6 | 108.6 | 29.7 |
| Responsibility for Achievement | | | | | | | |
| 9. Teachers are responsible | .11 | 61.3 | 31.6 | 57.4 | 40.8 | 59.3 | 36.2 |
| 10. Good teachers help all | -.50 | 43.1 | 36.2 | 63.7 | 45.9 | 53.3 | 41.0 |
| Formatting Class to Textbook | | | | | | | |
| 11. Design the course to textbook | -.46 | 64.9 | 35.7 | 81.7 | 37.6 | 73.2 | 36.7 |
| 12. Lectures follow the textbook | -.50 | 62.6 | 31.7 | 79.7 | 36.8 | 71.1 | 34.3 |

CHAPTER V
CONCLUSIONS, DISCUSSIONS, AND RECOMMENDATIONS

Introduction

The purpose of this study was to determine whether there are differences in expectations held by students and teachers for classroom instruction. Sensitivity to the possibility thereof could improve connectivity between teacher and student. Berdie (1999) supported higher education efforts to elucidate the relationship between the institution and contemporary students. Many decisions facing institutions are related to attempts by students to influence decisions that affect them. Particularly important in the conflict is that today's students are being influenced by post-modernism to reject the authority of history, reject traditional status cues and are preoccupied with dynamics of interpersonal relationships (Sarup, 1993). The format for this chapter is as follows: (a) Introduction; (b) Review of the Problem, (c) Summary of the study; (d) Findings; (e) Discussion, and (f) Recommendations.

Review of the Problem

It is interesting to note who does not yet perceive student and faculty expectation differential as a potential problem. In their book on *Learning to Improve Learning*, Myran, Zeiss, and Howdysshell (1995) mentioned the changing student demographics but devote the remainder of their book to organizational structure and dynamics. Though they cite changes in access, increased numbers of females, minorities and single-parent students, the following paragraph exemplifies the traditional preoccupation with statistics and non-perception of cognitive development factors and interventions that could help to improve instructional policy. They state:

Today's typical student body mirrors the changing populations being served. Colleges are serving recent high school graduates, young adults, the middle-aged, and senior citizens

all in the same classroom. They represent the rich, the poor and the middle class. They are becoming more ethnically and culturally diverse. For example, Central Piedmont serves some sixty thousand students annually. One hundred and seven foreign countries are represented in its classrooms and CPCC is increasing its numbers of female, minority, and single parent students. Obviously, the general public recognizes that education and skills development are imperative to self-sufficiency and that community colleges offer the best opportunity for most people. In short, community colleges have been discovered in a huge way. Now they're struggling to meet the new demands that accompany their new students. (pp. 54-55).

In the 1960s students clamored for more say in their education and, then, student course evaluations became the mode of student input. However, Wilson (1998) raises doubts about the value of student perceptions of classroom instruction. Like the play dynamics in *Oleana*, power has shifted to the student side in post-secondary education. The college student is being treated as a customer in a retail environment and professors have to be aware of customer complaints. Wilson cites the plight of Professor Robert S. Owen, who lost his job at Bloomsburg University of Pennsylvania when students gave his class mixed reviews. Now at another university, Professor Owen gives only multiple-choice tests, asks students to critique research papers rather than write them, and gives extra points when students question the fairness of a test question, and when students come to the office, make sure they walk out happy. Wilson reported that in a second case the instructor conducted an action research project on improving student perceptions of instruction. After attending a media consultant's workshop, he added more gestures and varied voice pitch in one semester's class. The data showed no improvement in student achievement, but there were much better teaching effectiveness scores of the instructor. Even the standard textbook got higher marks in the experimental class.

Wilson reported a third case where poor evaluations almost cost the job of an assistant professor of journalism. The professor salvaged it by changing his teaching style to pander to the students.

In my mind, I became a teaching teddy bear. Students could do no wrong, and I did almost anything possible to keep them happy, all of the time, no matter how childish or rude their behavior, no matter how poorly they performed in the course.” (p. A3).

Such reports as these are indicators that basic expectations held by administrators and students for faculty need to be examined, if instruction in higher education is not to be reduced to the level of commercial traffic.

Summary of Study

The purpose of this study was to assess the area of agreement and disagreement by teachers and students in regard to expectations for classroom instruction. A total of 172 female and male students, from five Northern Colorado community colleges completed a confidential 12-item questionnaire. All Human Subjects Committee procedures were followed prior to, during and after the interviews.

The 12 items, representing two items for each of the six factors, were analyzed by the SAS System statistical analyses. The SAS System CORR Procedure was used to determine reliability; the procedure produced the Cronbach Coefficient Alpha and the Pearson Correlation Coefficient.

The separate items and also the factors were also analyzed by the SAS System GLM Procedure to assess differences by groups. Each factor was analyzed with grouped data for differences by status, by gender and by status-gender interaction. The GLM Procedure data analyses for each of the six factors were presented in the Presentation and Analysis of Data section, and the data analyses for each item are included in Appendix H.

Findings

The findings herein are grouped by research question. A simple summary of findings for each of the research factors is included in this section. For information relative to details of analyses by items refer to Chapter IV and Appendix H.

Research Question 1: Are the Expectations of Students and Faculty Significantly Different in Regard to "Transmission of Knowledge?"

The findings show that students and faculty significantly differ in regard to the purpose of classroom instruction. The student mean was 94.58, the faculty mean was 46.91, the *p* value was

<.01, and the very high d value was -1.3 for item 1 and -1.4 for item 2. It is clear that students expect to be given the correct information to memorize. Conversely, the faculty appears to have other objectives, perhaps for problem solving or conceptual analysis. The students in this sample appear to expect instruction on the early cognitive stages of Perry's scale (1970). Based upon these findings, the differentiation research question was accepted.

Research Question 2: Are the Expectations of Students and Faculty Significantly Different in Regard to "Classroom Entertainment?"

The findings show that students and faculty significantly differ in regard to entertaining instruction. Students expect entertainment to be interjected into classes. Faculty members also rated classroom entertainment at a medium high level. The student mean was 107.93, the faculty mean was 94.83, the p value was $<.01$, and the effect size d value was $+.08$. The effect size of $-.43$ for item 3 and $-.40$ for item 4 is in the medium range. The finding is in agreement with the Williams, et al (1997) conclusion that the media is one of the defining influences of Generation X youth. Based upon these findings, the differentiation research question was accepted.

Research Question 3: Are the Expectations of Students and Faculty Significantly Different in Regard to "Intellectual Challenge?"

The findings show that students and faculty significantly differ ($p = .00$) in regard to classroom intellectual challenge. Students expect challenge but faculty expect more. The student mean was 110.04, the faculty mean was 125.29, the p value was $<.01$, and the d value was found to be $.49$ and $.61$ respectively. Interestingly, both faculty and students in the sample expected moderately high challenge in the classroom. The nature of intellectual challenge could range from the surface learning of memorizing more information faster to the deep learning of information syntheses of problem solving. The qualitative nature of this intellectual challenge is yet to be elucidated. Based upon these findings, the differential research question was accepted.

Research Question 4: Are the Expectations of Students and Faculty Significantly Different in Regard to "Psychological Support?"

Analysis of the combined data for Items 7 and 8 did not show significant differentiation between student and faculty expectations. Responses to the item “The personal or emotional feelings of the student should be considered by the instructor,” did not clearly differentiate at the .05 level. However, the related item “Instructors should be supportive and very concerned about the students’ needs” did differentiate between the groups at the .05 level of significance. For Item 8, faculty believed that faculty should be more supportive of students than was the opinion of students themselves. The mean scores for both students (96.83) and faculty (105.77) were moderately high, 100 plus or minus 5 points on the 150 unit visual analog scale. Similarly, the effect size index d value of .21 and .33 was in the very low area. Based upon the combined item findings, the differentiation research question was rejected.

Research Question 5: Are the Expectations of Students and Faculty Significantly Different in Regard to “Student Achievement Responsibility?”

Analysis of the combined data for Items 9 and 10 did not show significant differentiation between student and faculty expectations. Responses to the item “Teachers are responsible for student achievement,” showed no significant student and faculty differentiation. The student mean was 52.22, the faculty mean was 60.54, the p value was .08, and the d value was found to be .11 for item 9 and -.50 for item 10. However responses to the item “If teachers are very good professionals, all students will learn,” did significantly differentiate. Both faculty and students scored this factor only in the 50 unit range, indicating that there were not strong agreement by either group for this responsibility factor. Based upon these findings the differentiation research question was rejected.

Research Question 6: Are the Expectations of Students and Faculty Significantly Different in Regard to “Class Content Formatting to the Text book?”

Analysis of the data for Item 11 and 12 showed significant difference of opinion for students and faculty. Faculty do not expect class content to be formatted to the textbook, and students tend to rate these items about halfway between agree and disagree. Based on these

findings the differentiation hypothesis was accepted. The student mean was 81.73, the faculty mean was 64.98, the p value was $<.01$, and the d value was found to be $-.46$ for item 11 and $-.50$ for item 12. These effect size estimates are in the medium range.

In summary, these students expect their instructors to provide the information to be learned in a memorable fashion. The information should be presented in an entertaining manner and in a less challenging way than is preferred by faculty although both students and faculty rated class entertainment moderately high. Faculty does not prefer that classes be formatted to the textbook. There were not clear differentiations in regard to psychological support or responsibility for student achievement. There were no sex difference or interaction statistically significant comparisons.

Discussion

The facilitating vehicle for instruction is effective communication. The tasks and subjects may vary, but schools are structured attempts to influence, inform, direct, and in some measurable way, positively change the students through communication. However, these communications are predicted upon shared language symbols and mutually understood cultural nuances. As illustrated by Perry's (1970) three cognitive developmental caricatures, it is possible for people to share words, with correct definition and spelling, without understanding critical nuances of higher order, complex organization, or metaphoric cognitive construct. For example, in the area of comedy, getting the punch line of a joke is a function of the comedian and the audience sharing language and cultural nuances. Thus, if students and faculty unknowingly arrive at the classroom with significantly different cultural backgrounds, frustration is predictable from one or both parties. Present generation students, who have been taught to memorize information to perform well on multiple choice tests of the so called "educational reforms," may be confused or angered by faculty who emphasize the processing of problem solving or derivation of logical inferences. The study was intended to examine the degree of congruency/difference between faculty and student expectations of classroom instruction. Awareness of differences in faculty and student

expectations could be the basis of intervention to raise low student achievement and eventual drop-out by at-risk students, who could learn but simply do not understand higher order relativistic generalizations, when collegiate faculty address theories (Perry, 1970).

Despite rising aspirations, an increasing percentage of students are not prepared for college work with an increasing number from the lower graduation quartiles (Carson, Huelskamp, & Woodall, 1992). Levine and Cureton (1998) reported a widening gap in the ways students have been formatted to think and learn and the ways in which faculty teach. The Shumba and Glass (1994) surveys showed that 45 percent of college faculty feel less comfortable with student preparation today than in the past. Student academic characteristics were reported to be focused on direct concrete experience, the practical and immediate and a preference for linear expository. Conversely, most of the faculty reported the professional style of focus on the global rather than the particular, faculty with abstractions and theories and an assumption that students, like themselves, need considerable autonomy to do their work. Obviously, differential expectations of classroom instruction exist and the results tend to support this conclusion.

Cognitive Function Characteristics.

The student sample is clearly at Perry's (1970) early cognitive development positions, wherein class information is expected to be an orderly dissemination of facts for memory. The findings of Factors 1 support this conclusion. Student moderate mean score preferences for classes formatted to the textbook is congruent with the student opinions in regard to knowledge transmission. Faculty mean scores were lower on both knowledge transmission and textbook formatting.

Inasmuch as there is no baseline data for comparing these current findings, the trend line can only be inferred. In regard to classroom knowledge transmission and textbook alignment, an inference can be logically made. The past two decades of state and federal public policy has directed teachers to focus instruction on test taking ability. Beginning with the publication, *Nation at Risk* (Gardner, 1983), national and state "educational reforms" have focused on raising

achievement test scores. Thus, high stakes educational testing has functioned to redirect classroom instruction to “teaching for the test” (Kohn, 2001).

Student course evaluations are not necessarily the problem in collegiate classrooms. However, as typically done, student evaluations exacerbate the delicate teacher and student communication problem. Historically, there has been an assumption that there is a direct qualitative and quantitative relationship between teaching and learning. Review of the literature suggests, however, that there is a complex set of variables related to both teaching and learning and qualitative type of learning, i.e., memorization versus problem solving (Wales & Nardi, 1984). Further it could be argued that students with different approaches to learning could do better with a teaching style congruent with their learning style (Ramsden & Enthwistle, 1981; Enthwistle & Tait, 1990; and Prosser & Trigwell, 1990). The so-called "American Education Reforms" of the past two decades have stressed low level of cognitive operation, assessed largely closed-ended tests from elementary school through high school. These students would have developed a "surface learning" style, and, thus, expect the dualistic teaching style described by Perry (1970). Conversely, students seeking understanding of concepts and exploration of relativistic relationships, called "deep learning," much prefer sophisticated and challenging instruction. However, student course evaluations typically do not contain questions related the teacher's focus on mastery learning, problem solving or thinking outside the box.

Instruction at the elementary Perry (1970) positions of dichotomy and multiplicity is preferred by students operating at the concrete sequential and memorization, and that is generally supported by politicians interested in continually raising test scores (Merrow, 2001). However, faculty members do not indicate a sharing of the politician and student position. A summative evaluation of whether instruction should be “ a systematic transfer of knowledge” depends upon the eye of the beholder. Teachers, typically at the middle to higher Perry cognitive positions, may argue that education should be more than memorization. If invention and innovation are to be

national priorities, instruction in problem solving, synthesis and other higher order cognitive operations would be preferred.

However, given the higher education trend of using student evaluations of classroom for faculty retention, promotion and merit salary increase, instructors who do not present orderly information, formatted to the textbook and as classroom entertainment may be at risk (Wilson, 1998). These findings are also congruent with the Generation X student orientation to sight and sound media. Teachers using Power Point presentations with video clips will be perceived as being better teachers, perhaps only because of student expectation and teacher delivery congruency (Sarup, 1993).

Support and Challenge.

Sanford (1967) observed that students entering higher education institutions demonstrated needs of support and challenge, perhaps depending upon the confidence and preparation levels. The support factor was recognized by both the student and faculty sample. For many students, particularly those of minority and first generation status, the college campus is a foreign and threatening situation (Levine & Cureton, 1998). The principal character in *Oleana* clearly needed much support and very little abstract construct challenge. However, for the well-prepared and confident student, support is of less importance than intellectual challenge and this was documented by the findings of the study. Interestingly, the student scores for both support and challenge were moderately high, approximately two-thirds up the 150 unit visual analog scale, perhaps even higher for challenge than support.

Achievement Responsibility.

For two decades the aggressive advocates of educational reform have placed responsibility for student achievement on the schools and their teachers. The current Colorado CSAP test rates schools, and their teachers, by using high states annual testing. Schools are given letter grades, A – F, based on student test scores, regardless of the school's demographics.

Surprisingly, both students and faculty responses in the low range, approximately 50 units for factor 5, indicate that they have not internalized the “reform politician” rhetoric.

The past two decades educators have witnessed an unprecedented rise in student consumerism. The aggressive attitudes within the student consumerism movement (faculty acquiescence to student demands, concern that negative grades bias teaching evaluations and an obsession for high grade expectation by students) may be a product of the societal forces that are facilitating the new historical era of hyperindividualism (Hoyle & Slater, 2001). However, societal forces such as changing classroom pedagogy, shifting classroom dynamics and administrator pressure to acquiesce to student and parent demands may be only symptomatic of the negative effects of affluence and privilege within the nation’s culture. Yet, regardless of the cause of student consumerism, it has critical implications for “ethical teaching,” the “use of responsible authority” and the “traditional definition of and requisites for academic achievement.” The present national and state level exercises in “education reform” public policies that attribute student achievement primarily to educators, with historically unprecedented punitive implications, are exacerbating the growing problem of external attribution for academic achievement. The finding in this study that considerable dissonance was manifest by both teachers and students to the questionnaire items dealing with responsibility for course achievement may be an indication that “attribution for student success” is an unsettled issue in this society. Thus, a frank discussion early in the course about the relative contributions expected from both faculty and students for academic success would be a defensive strategy to forestall that aspect of student consumerism.

Faculty Factors

Because they love learning, developing ideas and the research process, and are comfortable with autonomy, cognitive dissonance and relativistic theories, faculty members generally operate at the Perry Position of five and beyond. They deal with multiplicity, with confusion of ideas and they thrive in the flexible professorial lifestyle. However, teaching

undergraduate classes can provide the context for unwitting dissonance: the problem solving professor has to deal with the undergraduate student who wants simplistically to be told the facts (dualism) of the subject of the day. At the dualistic level, students just want the test answers for verbal regurgitation on the multiple choice or true-false tests. The significant preferences, shown by students on Factor 1, wherein they preferred “to be given the test answers to memorize.” However, to their credit, both students and faculty rated classroom challenge in the medium-high range.

There is a trend to reduce higher education instruction to the level of cognitive operation, to demand simplistic course answers, concrete experiences, focus on the practical and the immediate and a linear expository instructional style (Levine & Cureton, 1998). Because of the ever-pervasive student course surveys, used by administrators for tenure and merit salary exercises, faculty are being placed in an ethical dilemma. There is a tendency to capitulate, to play the role of the guru differentiating good ideas from bad ideas (Wilson, 1998). Such capitulation is reinforced by institutions, using simplistic student course surveys to rate instructor effectiveness, as if undergraduate students were highly trained consultants performing objective, reliable and valid formative and summative evaluations. Teaching behavior that is reinforced by outstanding teacher awards, tenure and promotion and merit salary exercises will tend to be repeated. Perhaps differential classroom expectations is an American phenomenon, for in Japan, where the educational system relies on rote learning, and discourages independent thinking and instills affiliative and dependency needs, instructors simply lead the large classes in the expected unison recitations (Hall & Hall, 1987, p. 50).

Interestingly, the faculty sample rated both support and challenge moderately high, two thirds up the 150 unit scale. The faculty mean for support was 105.77 and the challenge factor mean was 125.29. Both of these scores indicate personification of the traditional professional teacher model.

Recommendations

Based on the findings of this study and the conclusions drawn herein, the following recommendations are made.

1. Develop the research instrument factors by survey of topics as rated by teaching professionals.
2. Write several items relating to each factor and select the four with the highest correlation. Then rotate them in a fixed order throughout the instrument.
3. Pilot the instrument with a sample of students and faculty to assess the potential for student and faculty discrimination ability and the effect size.
4. If they are to be retained, further work should be done on the “psychological support” and “achievement responsibility” factors to construct items that produce highly correlated results. One item in each of the factor pairs prevented student and faculty differentiation.
5. The factors used in this study, and the findings herein, should be disseminated to teachers and administrators for the purpose of improving learning environments and classroom communications.
6. Faculty members should assess their respective classes early in the semester and use follow-up discussions to develop mutual understanding of expectations.
7. Faculty members using higher order cognitive function methodologies should use explanatory metacognition strategies to justify or explain to the students why their teaching is not for memorization of information. The Perry cognitive development schema is useful for such explanation.
8. Further research should be done to extend the sample base to other community colleges in other areas and should include the factors of respondent age and subject area specialization.

9. Further research should be done to extend the sample to four-year institutions, where sample stratification by undergraduate class, gender and student-faculty status can be assessed.

It is the hope of this researcher that this study will assist teachers and administrators to improve the quality of learning, as well as to open a new area of practical research to assist faculty to perform more effectively.

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APPENDICES

APPENDIX A
COMMITTEE APPROVAL OF
DISSERTATION PROPOSAL

**COMMITTEE APPROVAL
OF DISSERTATION PROPOSAL**

NOTE: Students should refer to form SOE 32-B for suggested content and format to include in the proposal.

Student M L Johnson

Dissertation Proposal Title Differential Analysis of Student and Teacher Instructional Expectations

We the undersigned agree the proposal submitted by the student listed above meets the minimum requirements for doctoral dissertation research.

Date 5/14/98

[Signature]
Adviser

[Signature]
Committee Member

[Signature]
Committee Member

Committee Member

[Signature]
Committee Member

This approval is conditional upon making the following additions or changes.

Define Sample
Develop Instrument
Develop Time Line
Define Data Collection Procedures

Filed with Graduate Programs Office
with a copy of the approved proposal

5/14/98
(Date)

APPENDIX B
AUTHORIZATION MATERIALS REGARDING
CSU HUMAN RESEARCH COMMITTEE

**Colorado State University Human Research Committee
Application to Use Human Subjects (H-100, Rev 7/99)**

Complete Part A and Part B. On separate pages, list all questions from Part C and respond to each as applicable. Part C should be replicated on your computer. For full review protocols, return the ORIGINAL (with original signatures) and 11 copies (each with all attachments except proposal/dissertation/thesis) to Regulatory Compliance, 410 University Services Center. Assistance is available on our web page at <http://www.research.colostate.edu/regulatory/>.

PART A. COVER SHEET

New Protocol Resubmission

1. Project Title: Differential Analysis of Student and Teacher Instruction Expectations

2. Principal Investigator (PI): Dr. Harold Anderson 3. Telephone: 484-5913
4. Department: School of Education 5. E-mail:
6. Co-Principal Investigator: M. L. Johnson 7. Telephone: 491-1502
8. Department: Health and Exercise Science 9. E-mail: johnson@cahs.colostate.edu

10. If Co-PI is a student, is this project for a: Thesis Dissertation Neither
(Attach thesis/dissertation prospectus, abstract, or methodology chapter.)

11. Date project activity to begin: Upon project approval

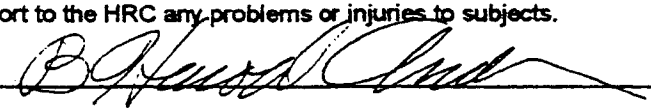
12. Will this project be supported by external funds? Yes (answer 13-15) No (go to signatures)

13. Funding Agency (attach proposal or methodology section):

14. Grant/contract number:

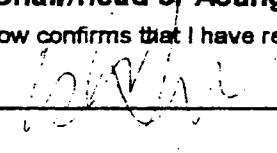
15. Proposal deadline:

As the PI submitting this proposed research and signing below, I agree to conduct the research involving human subjects as presented in the protocol or modifications to it and as approved by the Department and the Human Research Committee; to obtain and document informed consent and provide a copy of the consent form to each subject unless this is waived by the HRC; to present any proposed modifications in the research to the HRC for review and approval prior to implementation; to retain records for the mandated lengths of time; and to report to the HRC any problems or injuries to subjects.

PI Signature:  Date: 5/4/2000

Department Chair/Head or Acting (circle which) Signature

My signature below confirms that I have read this protocol and approve of this research.

Signature:  Date: 5/4/2000

COPIES

MEMORANDUM

TO: Harold Anderson, School of Education, 1588
FROM: Celia Walker, Administrator for the
Human Research Committee
SUBJECT: PROJECT APPROVAL
Title: Differential Analysis of Student and Teacher instruction Expectations
Protocol No.: 00-124H
Funding Agency: N/A
Funding Agency Deadline: N/A
DATE: February 8, 2002

I am pleased to inform you that the above-referenced project was approved by the Human Research Committee on February 7, 2002 for the period February 7, 2002 to November 16, 2002. Because of the nature of this research, it will not be necessary to obtain a signed consent form from the parents of under 18 year olds. The requirement of a consent form is waived under §46.116. The requirement of documentation of a consent form is waived via § 46.117 (c) (2). **Approval is for remaining 135 participants.**

As a condition of approval, letters of cooperation must be provided as they are available and before recruitment of participants.

A status report of this project will be required within a 12-month period from the date of approval. You will be sent a reminder approximately two months before the protocol expires. The Principal Investigator will report on the numbers of subjects who have participated this year and project-to-date, about problems encountered, and provide a verifying copy of the consent form or cover letter used. The necessary form (H-101) is available from the Regulatory Compliance web page (see below). Should the protocol not be renewed before expiration, all activities must cease until the protocol has been re-reviewed.

It is the responsibility of the investigator to immediately inform the Committee of any serious complications, unexpected risks, or injuries resulting from this research. It is also the investigator's responsibility to notify the Committee of any changes in experimental design, participant population, or consent procedures or documents. This can be done with a memo which completely describes the changes and their consequences (new consent form or cover letter, or altered survey instrument, for example). Students serving as Co-Principal Investigators may not alter projects without first obtaining PI approval. The PI is ultimately responsible for the conduct of the project.

This approval is issued under Colorado State University's OHRP Federal Wide Assurance 00000647 issued July 1, 2001. If approval did not accompany a proposal when it was submitted to a sponsor, it is the researcher's responsibility to provide the sponsor with the approval notice.


Please direct any questions about the Committee's action on this project to me for routing to the Committee. Additional information is available from the Regulatory Compliance web site at www.research.colostate.edu/regulatory/

xc: M. L. Johnson



Office of Regulatory Compliance
Office of Vice President for Research
and Information Technology
Fort Collins, CO 80523-2046
(970) 491-1563
FAX: 491-2293

MEMORANDUM

To: Harold Anderson, School of Education
From: Linda L. Kovar, Regulatory Coordinator for the Human Research Committee 
Date: October 9, 2000
Re: Differential Analysis of Student and Teacher Instruction Expectations

The Human Research Committee reviewed your response to questions about the above-referenced project according to its procedures. The following questions or concerns remain.

1. Approval, once it is granted, will be with the condition that either a letter of cooperation is provided by the community colleges, or you provide verification of IRB approval from those institutions that issue such approvals. Letters of cooperation from other organizations are in lieu of that organization's filing a single project assurance with OHRP (Office of Human Research Protections, formerly OPRR) in order for that organization to participate in your study. That is why the letters are necessary. The letters must be on the organization's letterhead, initiated by the organization, signed by a person authorized to do so and include the following statements: 1) that the organization is familiar with the scope of the project, 2) that it is satisfied the individuals it is involving are adequately protected as human research subjects, 3) that the subjects' participation is completely voluntary, and 4) that identify what the organization's involvement will entail.
2. Please provide a consent form that includes parental permission and child's assent (parent's permission plus child's assent equals consent) for those participants under the age of 18 years. Alternately, you may ask for waiver of consent under 45 CFR 46.116. To obtain such waiver by the HRC you need to verify that the project entails less than minimal risk to the participant, that not obtaining consent will not adversely affect the participant's rights/welfare, that it is not practicable to obtain parental permission (for example if the questionnaire is being completed during class), and if applicable you will provide feedback on the project to the participants.

Your response can be in the form of a memo and any revised attachments. Please *do not resubmit the H-100*; doing so will only delay review of your application. Sending documents such as consent forms as email attachments is not advised as a change in font style/size often occurs therefore changing the pagination. Our records must reflect the exact documents you will be using.

A Regulatory Compliance Office staff member will route your response to this memorandum to a committee member(s) for review, and final action will be taken. *If you have not replied to all HRC concerns within 3 months of the initial review of this protocol, the application will be withdrawn from further HRC consideration. The involvement of human subjects may not be initiated without HRC approval.* Please contact me at 1-0232 or Linda.Kovar@Research.ColoState.EDU if I can be of assistance.

Access our web page at <http://www.research.colostate.edu/regulatory/> for current information and forms for human research, including both the H-100 application for HRC approval and the H-101 renewal form in both PDF and Word formats.

Xc: M. L. Johnson, School of Education

Animal Care and Use · Drug Review · Human Research · Institutional Biosafety · Material Transfer Agreements · Radiation Safety
410 University Services Center

COPY

MEMORANDUM

TO: Harold Anderson, School of Education, 1588

FROM: Linda Kovar, Administrator for the ^{LK}
Human Research Committee

SUBJECT: **PROJECT APPROVAL**
Title: Differential Analysis of Student and Teacher Instruction Expectations.
Protocol No.: 00-124H
Funding Agency: N/A
Funding Agency Deadline: N/A

DATE: November 21, 2000

I am pleased to inform you that the above-referenced project was approved by the Human Research Committee on November 16, 2000 for the period November 16, 2000 to November 16, 2001. Because of the nature of this research, it will not be necessary to obtain a signed consent form from the parents of under 18 year olds. The requirement of a consent form is waived under § 46.116. The requirement of documentation of consent is waived under 46.117 (c) (2) with the return of the approved survey. **Approval is for 175 participants.**

As a condition of approval, letters of cooperation must be provided as they are available and before recruitment of participants.

A status report of this project will be required within a 12-month period from the date of approval. The necessary form (H-101) is available on the Human Research Committee web page.

It is the responsibility of the investigator to immediately inform the Committee of any serious complications, unexpected risks or injuries resulting from this research.

It is also the investigator's responsibility to notify the Committee of any changes in experimental design or consent procedures (file Form H-101).

This approval is issued under Colorado State University's OPRR Multiple Projects Assurance M-1153-01 issued August 1, 1996.

Please direct any questions about the Committee's action on this project to me for routing to the Committee.

attachment

xc: M. L. Johnson w/attachment

APPENDIX C
COOPERATING LETTER TO THE
COMMUNITY COLLEGES

February 6, 2001

Dr. Bruce Perryman, President
Northeast Junior College
100 College Drive
Sterling, CO 80751

Health and Exercise Science
Fort Collins, Colorado 80523-1582
(970) 491-5081
FAX: (970) 491-0445
<http://www.colostate.edu/Colleges/CAHS/hes>

Dear Dr. Perryman,

Recent experience in post-secondary teaching has led me to conclude that there may be areas of significant difference between what students expect and what faculty expect. Thus, I have spent considerable time developing a questionnaire instrument that assesses the factors of (1) orientation to the "transmission of knowledge" objective, (2) "classroom entertainment", (3) "intellectual challenge", (4) "psychological support", (5) "who is responsible for student achievement" and (6) "the formatting of class content to the textbook". Copies of the visual analog scale questionnaire, for student and for instructors, are enclosed.

As you see from the enclosed CSU Human Research Committee letter, the University has approved this study. We are now at the stage of finding cooperating institutions, which are to be community colleges in the state of Colorado. Thus, I am requesting permission to interview up to 20 faculty and 20 students at your school, on campus during non-class time.

For your convenience I have included a sample cooperation letter required by the CSU Human Research Committee. If it meets your specifications, you could copy it to your letterhead and sign or you could customize as desired. Enclosed is a stamped and addressed envelope for your convenience.

If you have any questions my phone number is 970-491-1502 and my email address is johnson@cahs.colostate.edu.

Thank you for any assistance given to me in this matter.

Sincerely,

M.L. Johnson, Ed.D.
professor

APPENDIX D
COOPERATION LETTERS FROM
COMMUNITY COLLEGES



Larimer Campus

4616 South Shields
Fort Collins, CO 80526
970-226-2500
Fax: 970-204-0466
<http://frontrange.rightchoice.org>

November 21, 2001

Dr. M.L. Johnson
Colorado State University
Health and Exercise Science
Fort Collins, CO 80523-1582

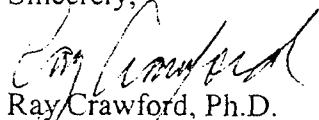
Dear Dr. Johnson,

Enclosed you will find your completed questionnaires from faculty and from students. There's quite a bunch!

Since there are so many from our college, I have a request. Would it be possible for you to run your statistical analysis just on the FRCC faculty and students, and share that information with me? This wouldn't be part of your dissertation necessarily, but since you'll be running the statistics anyway, and since there's a good response from our faculty and students, I'd be interested to see what this looks like for FRCC.

Thanks for considering this. Best wishes to you as you complete you dissertation.

Sincerely,


Ray Crawford, Ph.D.
Evening Administrator



FRONT RANGE
COMMUNITY COLLEGE
Excellence and Diversity

Westminster Campus

3645 West 112th Avenue
Westminster, CO 80031-2199
303-466-8811
Fax: 303-466-1623
<http://frontrange.rightchoice.org>

Other Locations:

Boulder Campus

5490 Spine Road
Boulder, CO 80301
303-516-8000
Fax: 303-516-1635

**Higher Education and
Advanced Technology
Center at Lowry**

8880 E. 10th Place
Denver, Colorado 80230
303-365-7655
Fax: 303-340-2130

Larimer Campus

4516 South Shields
Fort Collins, CO 80526
970-226-2500
Fax: 970-204-0466

Longmont Campus

2255 North Main Street
Suite 116
Longmont, CO 80501
303-516-8999
Fax: 303-516-8998

Brighton Center

1931 East Bridge Street
Brighton, CO 80601
303-404-5099
Fax: 303-655-1763

March 12, 2002

Dr. M. L. Johnson
215 Moby
Colorado State University
Ft. Collins, Co 80523

Dear Dr. Johnson,

Regarding your survey study entitled "Differential analysis of student and teacher instruction expectations", we understand that the project has been approved by the Colorado State University Human Research Committee (Protocol No. 00124H). Since the survey is only one page and it will be given only to individuals volunteering to do so, outside of class time, participants should be at minimal risk.

We understand that face-to-face interviews will be made using the appropriate teacher or student version of the Classroom Expectations Scale and that individuals can withdraw participation at any time.

Permission is hereby given to interview up to 20 teachers and 20 students. Interviews will be done on campus and outside of any participant class time at a location designated by this institution. The extent of this institution's involvement is only to allow the surveys to be given to teacher and student volunteers on campus.

Sincerely,

Dr. Bill Richards
Vice President of Westminster Campus





Bruce C. Perryman, Ph.D.
President

February 28, 2001

Dr. M.L. Johnson
207 Moby
Colorado State University
Ft. Collins, CO 80523

M.L.
Dear ~~Dr.~~ Johnson:

We hereby agree to cooperate in your study entitled, "Differential analysis of student and teacher instruction expectations". We understand that face-to-face interviews will be made using the Classroom Instruction Expectation Scale. Participation will be voluntary and any subject can withdraw participation at any time.

Permission is given to interview up to 20 students and 20 teachers. Interviews will be done on-campus and outside of any participant's class time.

Sincerely,

Bruce C. Perryman, Ph.D.
President

*Is there a date you want to do this?
I hope all is well with you & yours. In this
your Ph.D. study?*

February 26, 2002

Dr. M.L. Johnson
215 Moby
Colorado State University
Fort Collins, CO 80523

Dear Dr. Johnson,

Regarding your survey study entitled "Differential analysis of student and teacher instruction expectations", we understand that the project has been approved by the Colorado State University Human Research Committee (Protocol No. 00124H). Since the survey is only one page and it will be given only to individuals volunteering to do so, outside of class time, participants should be at minimal risk.

We understand that face-to-face interviews will be made using appropriate teacher or student version of the Classroom Expectations Scale and that individuals can withdraw participation at any time.

Permission is hereby given to interview up to 20 teachers and 20 students. Interviews will be done on campus and outside of any participant's class time at a location designated by this institution. The extent of this institution's involvement is only to allow the surveys to be given to teacher and student volunteers on campus.

Sincerely,



Consuelo Lopez, Vice President for Instruction and Student Services

of 6390

Greeley Campus 970 330 8008
5401 W. 20th Street 1 800 301 5388
P.O. Box 69 FAX 970 330 5705
Greeley, CO 80632 www.aims.edu

APPENDIX E
COVER LETTER TO POTENTIAL
RESEARCH SUBJECTS

Health and Exercise Science
Fort Collins, Colorado 80523-1582
(970) 491-5081
FAX: (970) 491-0445

<http://www.colostate.edu/Colleges/CAHS/hes>

September 10, 2002

TO: Whom it may concern

FROM: M.L. Johnson



RE: Research study

You are invited to participate in an interview questionnaire study about college classrooms. Your participation is completely voluntary and you can withdraw at any time.

I am interested in finding the areas that students and faculty have the same or different expectations about classroom instruction. If there are expectation differences we can hopefully improve teaching and learning by knowing of differences and what they are. Your opinions will be helpful in this process.

The interview should only take five minutes of your time. You would simply read the questionnaire items and make a mark on the agree-disagree line. Your completion of the questionnaire indicates your consent to be included in the study. Do not write your name on the questionnaire.

If you have any questions, the contact person is Dr. Harold Anderson. You may contact him at (970) 491-6316. Confidentiality is assured because no names or any personal identification is made on any elements of the study, other than the category information of student-faculty, sex and age. Obviously, reporting will be done only of categories. All information will be kept confidential and storage will be in a locked office file cabinet.

Thanks

APPENDIX F
CIES QUESTIONNAIRE FOR FACULTY

CLASSROOM INSTRUCTION EXPECTATION SCALE - FACULTY

General information: Please check the items that describe you now.

- 1.) Sex- Female Male 2.) Education: Bachelor , Masters , Doctoral
3.) Type of School- 2 year college University 4.) Age- Under 30 Over 30
5.) Subject area or major _____

Directions: The following questions are intended to relate to general expectations of college level work; and not necessarily to just one class. Please read each item and then make a vertical mark (/) on the line between disagree and agree. In the example below the question deals with teacher expertness. If you feel that all teachers should be a high level expert in the subject area, you would mark near the agree end of the line. If you feel that other factors are also important, you would mark in the center or lower on the line toward disagree.

Sample- Teachers should primarily be hired because of subject area expertness.

Disagree _____ Agree

1. Lectures should primarily be focused on preparing the student for the test questions.

Disagree _____ Agree

2. Lectures should be organized in easy to follow outline form for memorization of knowledge.

Disagree _____ Agree

3. Learning experiences designed by the teacher should be fun and enjoyable.

Disagree _____ Agree

4. Entertaining videos and or other media should be part of classes.

Disagree _____ Agree

5. Course standards should reflect an expectation of a high degree of scholarship and achievement.

Disagree _____ Agree

6. Analytical and critical thinking experiences should be part of each course.

Disagree _____ Agree

7. The personal or emotional feelings of the student should be considered by the instructor.

Disagree _____ Agree

8. Instructors should be supportive and very concerned about the students' needs.

Disagree _____ Agree

9. Teachers are responsible for student achievement.

Disagree _____ Agree

10. If teachers are very good professionals, all students will learn.

Disagree _____ Agree

11. Teachers should design the course around the textbook chapters.

Disagree _____ Agree

12. The content of teacher lectures should closely follow the textbook.

Disagree _____ Agree

APPENDIX G
CIES QUESTIONNAIRE FOR STUDENTS

CLASSROOM INSTRUCTION EXPECTATION SCALE - STUDENT

General information: Please check the items that describe you now.

- 1.) Sex- Female Male 2.) Classification - Freshman , Sophomore , Junior , Senior
3.) Type of School- 2 year college University 4.) Age- Under 30 Over 30
5.) Subject area or major _____

Directions: The following questions are intended to relate to general expectations of college level work; and not necessarily to just one class. Please read each item and then make a vertical mark (/) on the line between disagree and agree. In the example below the question deals with teacher expertness. If you feel that all teachers should be a high level expert in the subject area, you would mark near the agree end of the line. If you feel that other factors are also important, you would mark in the center or lower on the line toward disagree.

Sample- Teachers should primarily be hired because of subject area expertness.

Disagree _____ Agree

1. Lectures should primarily be focused on preparing the student for the test questions.

Disagree _____ Agree

2. Lectures should be organized in easy to follow outline form for memorization of knowledge.

Disagree _____ Agree

3. Learning experiences designed by the teacher should be fun and enjoyable.

Disagree _____ Agree

4. Entertaining videos and or other media should be part of classes.

Disagree _____ Agree

5. Course standards should reflect an expectation of a high degree of scholarship and achievement.

Disagree _____ Agree

6. Analytical and critical thinking experiences should be part of each course.

Disagree _____ Agree

7. The personal or emotional feelings of the student should be considered by the instructor.

Disagree _____ Agree

8. Instructors should be supportive and very concerned about the students' needs.

Disagree _____ Agree

9. Teachers are responsible for student achievement.

Disagree _____ Agree

10. If teachers are very good professionals, all students will learn.

Disagree _____ Agree

11. Teachers should design the course around the textbook chapters.

Disagree _____ Agree

12. The content of teacher lectures should closely follow the textbook.

Disagree _____ Agree

APPENDIX H
GENERAL LINEAR MODEL (GLM) PROCEDURE
FOR ANALYSIS BY ITEMS

The GLM Procedure

Dependent Variable: Item 1

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|-----------------|-----|----------------|-------------|---------|--------|
| Model | 3 | 92920.8735 | 30973.6245 | 24.80 | <.0001 |
| Error | 167 | 208605.8400 | 1249.1368 | | |
| Corrected Total | 170 | 301526.7135 | | | |

| R-Square | Coeff Var | Root MSE | Item 1 Mean |
|----------|-----------|----------|-------------|
| 0.308168 | 55.25898 | 35.34313 | 63.95906 |

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|---------------|----|-------------|-------------|---------|--------|
| Status | 1 | 91290.12508 | 91290.12508 | 73.08 | <.0001 |
| Gender | 1 | 675.27476 | 675.27476 | 0.54 | 0.463 |
| Status*gender | 1 | 955.47363 | 955.47363 | 0.76 | 0.383 |

| Source | DF | Type III SS | Mean Square | F Value | Pr > F |
|---------------|----|-------------|-------------|---------|--------|
| Status | 1 | 91301.92746 | 91301.92746 | 73.09 | <.0001 |
| Gender | 1 | 665.77885 | 665.77885 | 0.53 | 0.466 |
| Status*gender | 1 | 955.47363 | 955.47363 | 0.76 | 0.383 |

The GLM Procedure

Dependent Variable: Item 2

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|-----------------|-----|----------------|-------------|---------|--------|
| Model | 3 | 105808.7913 | 35269.5971 | 28.53 | <.0001 |
| Error | 167 | 206441.8870 | 1236.1790 | | |
| Corrected Total | 170 | 312250.6784 | | | |

| R-Square | Coeff Var | Root MSE | Item 2 Mean |
|----------|-----------|----------|-------------|
| 0.338858 | 45.50940 | 35.15934 | 77.25731 |

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|---------------|----|-------------|-------------|---------|--------|
| Status | 1 | 103174.0633 | 103174.0633 | 83.46 | <.0001 |
| Gender | 1 | 1736.8828 | 1736.8828 | 1.41 | 0.237 |
| Status*gender | 1 | 897.8452 | 897.8452 | 0.73 | 0.395 |

| Source | DF | Type III SS | Mean Square | F Value | Pr > F |
|---------------|----|-------------|-------------|---------|--------|
| Status | 1 | 103210.4694 | 103210.4694 | 83.49 | <.0001 |
| Gender | 1 | 1722.0753 | 1722.0753 | 1.39 | 0.239 |
| Status*gender | 1 | 897.8452 | 897.8452 | 0.73 | 0.395 |

The GLM Procedure

Dependent Variable: Item 3

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|-----------------|-----|----------------|-------------|---------|--------|
| Model | 3 | 12446.3698 | 4148.7899 | 4.99 | 0.002 |
| Error | 167 | 138744.5775 | 830.8059 | | |
| Corrected Total | 170 | 151190.9474 | | | |

| R-Square | Coeff Var | Root MSE | Item 3 Mean |
|----------|-----------|----------|-------------|
| 0.082322 | 25.50374 | 28.82370 | 113.0175 |

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|---------------|----|-------------|-------------|---------|--------|
| Status | 1 | 6961.169530 | 6961.169530 | 8.38 | 0.004 |
| Gender | 1 | 3027.033653 | 3027.033653 | 3.64 | 0.058 |
| Status*gender | 1 | 2458.166667 | 2458.166667 | 2.96 | 0.087 |

| Source | DF | Type III SS | Mean Square | F Value | Pr > F |
|---------------|----|-------------|-------------|---------|--------|
| Status | 1 | 6965.735127 | 6965.735127 | 8.38 | 0.004 |
| Gender | 1 | 2994.732512 | 2994.732512 | 3.60 | 0.059 |
| Status*gender | 1 | 2458.166667 | 2458.166667 | 2.96 | 0.087 |

The GLM Procedure

Dependent Variable: Item 4

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|-----------------|-----|----------------|-------------|---------|--------|
| Model | 3 | 9948.3315 | 3316.1105 | 2.86 | 0.038 |
| Error | 167 | 193400.3117 | 1158.0857 | | |
| Corrected Total | 170 | 203348.6433 | | | |

| R-Square | Coeff Var | Root MSE | Item 4 Mean |
|----------|-----------|----------|-------------|
| 0.048923 | 37.95736 | 34.03066 | 89.65497 |

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|---------------|----|-------------|-------------|---------|--------|
| Status | 1 | 7662.455040 | 7662.455040 | 6.62 | 0.011 |
| Gender | 1 | 2243.673580 | 2243.673580 | 1.94 | 0.165 |
| Status*gender | 1 | 42.202917 | 42.202917 | 0.04 | 0.848 |

| Source | DF | Type III SS | Mean Square | F Value | Pr > F |
|---------------|----|-------------|-------------|---------|--------|
| Status | 1 | 7704.027604 | 7704.027604 | 6.65 | 0.010 |
| Gender | 1 | 2239.954946 | 2239.954946 | 1.93 | 0.166 |
| Status*gender | 1 | 42.202917 | 42.202917 | 0.04 | 0.848 |

The GLM Procedure

Dependent Variable: Item 5

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|-----------------|-----|----------------|-------------|---------|--------|
| Model | 3 | 7288.7737 | 2429.5912 | 3.79 | 0.011 |
| Error | 167 | 107043.4485 | 640.9787 | | |
| Corrected Total | 170 | 114332.2222 | | | |

| R-Square | Coeff Var | Root MSE | Item 5 Mean |
|----------|-----------|----------|-------------|
| 0.063751 | 21.72145 | 25.31756 | 116.5556 |

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|---------------|----|-------------|-------------|---------|--------|
| Status | 1 | 7107.750403 | 7107.750403 | 11.09 | 0.001 |
| Gender | 1 | 155.519570 | 155.519570 | 0.24 | 0.623 |
| Status*gender | 1 | 25.503745 | 25.503745 | 0.04 | 0.842 |

| Source | DF | Type III SS | Mean Square | F Value | Pr > F |
|---------------|----|-------------|-------------|---------|--------|
| Status | 1 | 7089.859325 | 7089.859325 | 11.06 | 0.001 |
| Gender | 1 | 156.260316 | 156.260316 | 0.24 | 0.622 |
| Status*gender | 1 | 25.503745 | 25.503745 | 0.04 | 0.842 |

The GLM Procedure

Dependent Variable: Item 6

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|-----------------|-----|----------------|-------------|---------|--------|
| Model | 3 | 14793.1383 | 4931.0461 | 6.44 | 0.000 |
| Error | 167 | 127842.2769 | 765.5226 | | |
| Corrected Total | 170 | 142635.4152 | | | |

| R-Square | Coeff Var | Root MSE | Item 6 Mean |
|----------|-----------|----------|-------------|
| 0.103713 | 23.28252 | 27.66808 | 118.8363 |

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|---------------|----|-------------|-------------|---------|--------|
| Status | 1 | 13337.26623 | 13337.26623 | 17.42 | <.0001 |
| Gender | 1 | 109.69239 | 109.69239 | 0.14 | 0.705 |
| Status*gender | 1 | 1346.17973 | 1346.17973 | 1.76 | 0.186 |

| Source | DF | Type III SS | Mean Square | F Value | Pr > F |
|---------------|----|-------------|-------------|---------|--------|
| Status | 1 | 13272.04295 | 13272.04295 | 17.34 | <.0001 |
| Gender | 1 | 114.28321 | 114.28321 | 0.15 | 0.699 |
| Status*gender | 1 | 1346.17973 | 1346.17973 | 1.76 | 0.186 |

The GLM Procedure

Dependent Variable: Item 7

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|-----------------|-----|----------------|-------------|---------|--------|
| Model | 3 | 8836.5436 | 2945.5145 | 1.98 | 0.119 |
| Error | 167 | 248507.4330 | 1488.0685 | | |
| Corrected Total | 170 | 257343.9766 | | | |

| R-Square | Coeff Var | Root MSE | Item 7 Mean |
|----------|-----------|----------|-------------|
| 0.034337 | 41.03265 | 38.57549 | 94.01170 |

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|---------------|----|-------------|-------------|---------|--------|
| Status | 1 | 2784.211355 | 2784.211355 | 1.87 | 0.173 |
| Gender | 1 | 2306.152208 | 2306.152208 | 1.55 | 0.214 |
| Status*gender | 1 | 3746.180044 | 3746.180044 | 2.52 | 0.114 |

| Source | DF | Type III SS | Mean Square | F Value | Pr > F |
|---------------|----|-------------|-------------|---------|--------|
| Status | 1 | 2792.432968 | 2792.432968 | 1.88 | 0.172 |
| Gender | 1 | 2271.419070 | 2271.419070 | 1.53 | 0.218 |
| Status*gender | 1 | 3746.180044 | 3746.180044 | 2.52 | 0.114 |

The GLM Procedure

Dependent Variable: Item 8

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|-----------------|-----|----------------|-------------|---------|--------|
| Model | 3 | 6064.9661 | 2021.6554 | 2.33 | 0.076 |
| Error | 167 | 144852.8234 | 867.3822 | | |
| Corrected Total | 170 | 150917.7895 | | | |

| R-Square | Coeff Var | Root MSE | Item 8 Mean |
|----------|-----------|----------|-------------|
| 0.040187 | 27.11123 | 29.45135 | 108.6316 |

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|---------------|----|-------------|-------------|---------|--------|
| Status | 1 | 4139.912456 | 4139.912456 | 4.77 | 0.030 |
| Gender | 1 | 1924.760739 | 1924.760739 | 2.22 | 0.138 |
| Status*gender | 1 | 0.292913 | 0.292913 | 0.00 | 0.985 |

| Source | DF | Type III SS | Mean Square | F Value | Pr > F |
|---------------|----|-------------|-------------|---------|--------|
| Status | 1 | 4106.072464 | 4106.072464 | 4.73 | 0.031 |
| Gender | 1 | 1924.974349 | 1924.974349 | 2.22 | 0.138 |
| Status*gender | 1 | 0.292913 | 0.292913 | 0.00 | 0.985 |

The GLM Procedure

Dependent Variable: Item 9

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|-----------------|-----|----------------|-------------|---------|--------|
| Model | 3 | 814.2994 | 271.4331 | 0.20 | 0.895 |
| Error | 167 | 225569.4900 | 1350.7155 | | |
| Corrected Total | 170 | 226383.7895 | | | |

| R-Square | Coeff Var | Root MSE | Item 9 Mean |
|----------|-----------|----------|-------------|
| 0.003597 | 61.90510 | 36.75208 | 59.36842 |

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|---------------|----|-------------|-------------|---------|--------|
| Status | 1 | 654.8662179 | 654.8662179 | 0.48 | 0.487 |
| Gender | 1 | 77.8834870 | 77.8834870 | 0.06 | 0.810 |
| Status*gender | 1 | 81.5497356 | 81.5497356 | 0.06 | 0.806 |

| Source | DF | Type III SS | Mean Square | F Value | Pr > F |
|---------------|----|-------------|-------------|---------|--------|
| Status | 1 | 649.4401993 | 649.4401993 | 0.48 | 0.489 |
| Gender | 1 | 78.8267412 | 78.8267412 | 0.06 | 0.809 |
| Status*gender | 1 | 81.5497356 | 81.5497356 | 0.06 | 0.806 |

The GLM Procedure

Dependent Variable: Item 10

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|-----------------|-----|----------------|-------------|---------|--------|
| Model | 3 | 27935.9135 | 9311.9712 | 5.56 | 0.001 |
| Error | 167 | 279690.8350 | 1674.7954 | | |
| Corrected Total | 170 | 307626.7485 | | | |

| R-Square | Coeff Var | Root MSE | Item 10 Mean |
|----------|-----------|----------|--------------|
| 0.090811 | 76.64895 | 40.92426 | 53.39181 |

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|---------------|----|-------------|-------------|---------|--------|
| Status | 1 | 18185.12884 | 18185.12884 | 10.86 | 0.001 |
| Gender | 1 | 37.64997 | 37.64997 | 0.02 | 0.881 |
| Status*gender | 1 | 9713.13473 | 9713.13473 | 5.80 | 0.017 |

| Source | DF | Type III SS | Mean Square | F Value | Pr > F |
|---------------|----|-------------|-------------|---------|--------|
| Status | 1 | 18017.23491 | 18017.23491 | 10.76 | 0.001 |
| Gender | 1 | 45.14519 | 45.14519 | 0.03 | 0.869 |
| Status*gender | 1 | 9713.13473 | 9713.13473 | 5.80 | 0.017 |

The GLM Procedure

Dependent Variable: Item 11

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|-----------------|-----|----------------|-------------|---------|--------|
| Model | 3 | 15453.3249 | 5151.1083 | 3.84 | 0.010 |
| Error | 167 | 223888.4646 | 1340.6495 | | |
| Corrected Total | 170 | 239341.7895 | | | |

| R-Square | Coeff Var | Root MSE | Item 11 Mean |
|----------|-----------|----------|--------------|
| 0.064566 | 49.95328 | 36.61488 | 73.29825 |

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|---------------|----|-------------|-------------|---------|--------|
| Status | 1 | 11947.15404 | 11947.15404 | 8.91 | 0.003 |
| Gender | 1 | 2929.13495 | 2929.13495 | 2.18 | 0.141 |
| Status*gender | 1 | 577.03592 | 577.03592 | 0.43 | 0.512 |

| Source | DF | Type III SS | Mean Square | F Value | Pr > F |
|---------------|----|-------------|-------------|---------|--------|
| Status | 1 | 11984.87409 | 11984.87409 | 8.94 | 0.003 |
| Gender | 1 | 2913.66727 | 2913.66727 | 2.17 | 0.142 |
| Status*gender | 1 | 577.03592 | 577.03592 | 0.43 | 0.512 |

The GLM Procedure

Dependent Variable: Item 12

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|-----------------|-----|----------------|-------------|---------|--------|
| Model | 3 | 17749.2507 | 5916.4169 | 5.00 | 0.002 |
| Error | 167 | 194459.4862 | 1164.4281 | | |
| Corrected Total | 170 | 212208.7368 | | | |

| R-Square | Coeff Var | Root MSE | Item 12 Mean |
|----------|-----------|----------|--------------|
| 0.083641 | 47.95493 | 34.12372 | 71.15789 |

| Source | DF | Type I SS | Mean Square | F Value | Pr > F |
|---------------|----|-------------|-------------|---------|--------|
| Status | 1 | 12383.37378 | 12383.37378 | 10.63 | 0.001 |
| Gender | 1 | 252.33678 | 252.33678 | 0.22 | 0.642 |
| Status*gender | 1 | 5113.54013 | 5113.54013 | 4.39 | 0.037 |

| Source | DF | Type III SS | Mean Square | F Value | Pr > F |
|---------------|----|-------------|-------------|---------|--------|
| Status | 1 | 12309.24674 | 12309.24674 | 10.57 | 0.001 |
| Gender | 1 | 239.06428 | 239.06428 | 0.21 | 0.651 |
| Status*gender | 1 | 5113.54013 | 5113.54013 | 4.39 | 0.037 |