AN EVALUATION OF AN INTRODUCTORY COURSE IN TEACHER EDUCATION

Thesis for the Degree of Ph. D.
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JOHN THOMAS PARMETER
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ABSTRACT

AN EVALUATION OF AN INTRODUCTORY COURSE
IN TEACHER EDUCATION

By

John Thomas Parmeter

One of the most difficult tasks facing large, state-supported institutions of higher education is that of compensating for institutional conditions in order to provide quality programs for large numbers of undergraduate students. In evaluating a given program or course, two primary considerations are the degree to which the designated compensatory approach (1) best approximates "quality instruction" and "provision for student opportunity" given the institution's "predominant characteristics," and (2) acts in the long run to reorient the "predominant characteristics" toward conditions more appropriate for quality undergraduate programs and instruction.

Guided by the above perspective, an evaluation of the first course in the undergraduate teacher preparation sequence at Michigan State University was conducted during the spring term of 1968. This course which enrolled large numbers of students each term could be categorized as a lecture-discussion section, survey-type course and as a "system" of instruction relied heavily on the widespread

instructional use of graduate student teaching assistants. Evidence and expert opinion suggested that the use of teaching assistants to compensate for predominant characteristics of large, state-supported institutions of higher education was neither a reliable nor valid approach to use in the instruction of undergraduates. In decreasing senior faculty participation in the course, the College of Education argued that teaching assistants, incorporated into a "system" of instruction which had the dual objectives of quality undergraduate instruction and the instructional development of the teaching assistants, could be used validly and reliably as the foundation of the course.

To get at this issue involved the derivation of evaluative criteria, the development of an argument concerning the internal logic of such a course structure tempered by the reality of existing circumstances, the assessment of factors within the College of Education which were instrumental in the creation, direction, and organization of the course, the documentation of actual operation of the course, and most importantly, the assessment of course reliability and validity based upon the analysis of certain student outcomes controlled by a design which considered change over time and partitioned the sources of variance to the appropriate structural factors of the course.

The evaluative findings showed that there were significant differences attributable to the teaching assistants on important student outcomes, that the teaching assistants could not rank student performance to specified criteria reliably, that there were important differences

between the teaching assistants' perceptions of discussion section objectives and procedures, that there were observable and self-reported differences between the teaching assistants in their grasp of course content, and that student assessment of the teaching assistants was most negative toward their ability to employ important teaching strategies in the discussion sections. These findings indicated that the specified course form lacked in actual substance either "quality instruction" or "provision for student opportunity." The specified instructional development program for the teaching assistants was in part nonexistent and where present, failed of its purpose and was largely resented by the teaching assistants. These and other findings indicated that the course did not act in the long run to reorient the "predominant characteristics" toward the objectives.

The findings were then related to inconsistencies between course objectives, specified course procedures, course content, and program goals. By considering patterns of internal development within the College of Education during the period this course was being developed and placed in operation, it was concluded that the inconsistencies underlying the course failures were probably the result of a growing imbalance between the graduate and undergraduate programs favoring the graduate training and research interests of the faculty and the departments and that the use of teaching assistants under these conditions was inappropriate. However, it could not be concluded that graduate students were entirely inappropriate for instructional purposes if a more equal balance between graduate and undergraduate program interests could be achieved.

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AN EVALUATION OF AN INTRODUCTORY COURSE IN TEACHER EDUCATION

By

John Thomas Parmeter

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Chapter I

INTRODUCTION

This study represents part of a continuing effort by the College of Education at Michigan State University to provide self-evaluation of its program of undergraduate instruction. The setting of the study was the first course in the undergraduate teacher preparation sequence, Education 200, "The Individual and the School," which can be categorized as a lecture-discussion group, multi-section, survey-type course. As initiated in the Fall of 1966 following a major reorganization and integration of the entire teacher preparation sequence, the instructional content delegated to this course included an introduction to the teaching profession, to the program of teacher education, and primarily, to content in the area of educational psychology. The course enrolled approximately 1000 students, mainly sophomores, each term.

The role of the evaluation was to examine why the College of Education instituted the course as it did, explore the degree to which the structure described by the College of Education was, in fact, a working reality, and empirically describe and assess the structure toward desired educational objectives in light of certain student outcomes. The sources of evaluative evidence considered were historical documents, informal observations and discussions, questionnaires and inventories, and the measurement of student variables over time.

As conducted in the Spring term of 1968, the perspective of the evaluation was derived from the University's and the College of Education's stated concern for the improvement of undergraduate education, and the primary objective of teacher preparation which, as summarized by the Dean of the School of Teacher Education, was the development of those "basic understandings, skills, and attitudes which characterize a teacher who can respond competently to all situations within which he must function."[1]

What distinguished this course from any number of other undergraduate courses with large enrollments was the particular, purposeful emphasis the course planners, the Curriculum Review Committee of the College of Education, placed upon the course as a "system" similar to those employed in the business-industry model.[2] Whereas most large courses either have a faculty member responsible for instructional activities and the management of a cadre of graduate assistants, or a common curriculum and objectives employed by relatively independent instructors in a number of smaller-group settings, this course was built upon specialization and diversification of

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[1]Memorandum to Educational Development Project from Leland Dean, Associate Dean of the College of Education, as Preface to the College Curriculum Review Committee's, Report on Undergraduate Curriculum Revision, mimeographed material, Michigan State University, East Lansing, Michigan, April, 1965.

[2]Curriculum Review Committee, Report on Undergraduate Curriculum Revision, mimeographed material, College of Education, Michigan State University, East Lansing, Michigan, April, 1965.

labor, central administration independent of instruction, evaluation and feedback components, and personnel management and development. Ideally then, content specialists from the senior faculty would lecture on their respective specialties, teaching assistants (TA's) would provide clarification of the lectures and translate content into practice, a specialist in evaluation would evaluate student performance and development in light of course objectives for both the assessment of course effectiveness and as "feedback" to students, a specialist in instruction would see to the choice and development of the TA's, and a senior faculty member would administer the course and coordinate it with the other sequential offerings in the teacher preparation program.

As will be more clearly developed, the problem in this "systems" approach centers around the qualifications of TA's to instruct, the competence of TA's as instructors, and the difficulty their role creates in developing institutional and departmental reform. But in addition to these problems by virtue of the Review Committee's planned organization and structure for the course, there are several other reasons the TA's demanded special attention.[3] In the plan devised by the Review Committee, the course could not exist without the role of the TA; a decrease in senior faculty participation was justified on the basis of projected TA performance; the TA's would provide the only means for individualization of instruction or for participative instruction;

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[3] Ibid.

because of the impersonality of the lectures and exams, the students would probably tend to identify the course with the discussion section headed by the TA; because of constantly shifting subject matter, the TA's would be responsible for clarification and continuity; and perhaps most importantly in this case, because a primary objective of the course was the development of students toward becoming "competent" teachers, then it also became the responsibility of the TA to be a model of teaching competence broadly exhibiting the attitudes, skills, and understandings necessary for this role.

The terminology, focus, and design of this study were partially in response to the argument and decisions inherent in the Curriculum Review Committee's plan and partially in response to an evaluative decision to phrase this study in terms of the improvement of undergraduate education. Both the Review Committee and the evaluators agreed that the improvement of undergraduate education through the development of quality programs is of primary importance to the University and that an appropriate focus of this concern should be on a program of teacher education involving thousands of students. The Committee and the evaluators also agreed that the conditions in, or the characteristics of, the University and higher education in general strongly restrict the development of such a program, and that any approach taken should act to both provide immediate compensatory remedies to the state of undergraduate instruction and improve over time the basic conditions or characteristics within the University

which negatively affect the ability to provide quality undergraduate programs and instruction. The plan of the Curriculum Review Committee for this course as adopted by the College of Education contained a basic decision to de-emphasize the instructional role and responsibility of senior faculty and to instead rely upon a "system" of instruction to create the desired program results.[4] Thus the evaluative approach had to first attempt to assess the workability of the "system" followed by the assessment of the results of the "system" on the undergraduate students to ultimately get at the issue of appropriate nature and degree of faculty participation.

The use of the word "system" to designate the course approach is central to the evaluative approach. Although it could be argued that as a "system" the course had certain weaknesses, this argument would not effect the original designation of "system" as conceptually symbolic of the course. In order to de-emphasize the participation of faculty and at the same time provide a plan which was internally consistent with the dual objectives of immediate improvement of undergraduate instruction and long-range reorientation of institutional conditions or characteristics, it would first be necessary to alter the historical tradition of direct faculty responsibility for instruction and course outcomes in an acceptable manner. One such means both culturally acceptable and also widely evident within the University would be to

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[4] Ibid.

employ specialists to perform their various specialties in a central framework of administration. This would allow maximizing of limited resources to production while minimizing cost. By definition, this approach implies "systematic" treatment; in theory this approach would not seem to violate the historical tradition of faculty responsibility.

However, the stated purpose of the course approach, and accordingly the central evaluative question, was not the rationalization and justification of appearance or form, but rather of course effect or substance. If the course "system" was necessary to compensate for institutional characteristics which prevented a more traditional paradigm involving senior faculty instruction, then even while admitting that a "systems" approach theoretically might provide substance as well as form, it still remained to be established that the "system" could be implemented reliably in terms of the specified form and then that the form was a valid means of improving undergraduate instruction. This area open to empirical test was further accented by the Committee's provision that graduate student teaching assistants would carry primary instructional responsibility within the "system." Because the TA's were perceived as potentially the most unreliable part of the "system" as well as because of their importance within the "system," the reliability of their performance became the primary question.

The concept of reliability has a number of levels of abstraction

each of which is based upon certain assumptions (e.g., distribution of scores on a test, goodness of fit, reproducibility, etc.) but in general all levels suggest the notion of reliable, doing something consistently, predictability. Although reliability will be discussed at more than one level of abstraction in this study, in relation to the evaluation of "system" reliability, the meaning is operational consistency both internally and to course specifications. In other words, do the parts operate as specified, do supposedly equivalent components provide similar results, do the parts operate in concert with each other? Validity as a concept is less clear at any level of abstraction, but in general it connotes the idea of operating or performing to purpose or objective. In this study the evaluation of the validity of the course as a "system" implies the assessment of the course in relation to its approximation of immediate and long-range objectives of improving undergraduate education.

Simply stated then, the purpose of the evaluation was to assess the relative ability of the planned instructional approach--the course as a "system" and particularly the teaching assistants as a unit of that "system"--to approximate the objectives of the Institution and the College of Education. Was the course a reliable means by which to instruct undergraduates; was it a valid approach to the broader goals of the University and the goals of teacher preparation? Evidence and expert opinion suggested that the use of teaching assistants to compensate for predominant characteristics of large, state-supported institutions

of higher education was neither a reliable nor valid approach to use in the instruction of undergraduates. The College of Education argued that teaching assistants, incorporated into a "system" of instruction which had the dual objectives of quality undergraduate instruction and the instructional development of the teaching assistants, could be used validly and reliably as the foundation of the course. Thus the documentation and empirical questions in this study sought to answer whether this assumption was justified.

Within this perspective, the central issues were the teaching assistant as the means of instruction, the assumptions underlying the use of the teaching assistant as those means, and the criteria by which the teaching assistant as the means of instruction should be judged. To get at these issues involved the derivation of evaluative criteria, the development of an argument concerning the internal logic of such a course structure tempered by the reality of existing circumstances, the assessment of factors within the College of Education which were instrumental in the creation, direction, and organization of the course, the documentation of actual operation of the course, and most importantly, the assessment of course reliability and validity based upon certain student outcomes controlled by a design which considered change over time and partitioned the sources of variance to the appropriate structural factors of the course.

In the remainder of this chapter, a brief rationale and background for the study will be developed. Chapter II will focus on the

specified and actual organization of the course, develop the evaluative design, and cite the specific questions considered by the evaluation. Chapter III is devoted to a discussion of instrumentation and procedures of analysis. Chapter IV and Chapter V analyze and interpret the evaluative results, and Chapter VI summarizes the results, suggests certain recommendations based upon the results, and develops certain conclusions about the improvement of undergraduate education. A more extensive presentation of the data, instruments, and background materials is included in several appendices following the text of the study.

Evaluative Context and Model

Before turning to the detailed plan for Education 200 as specified by the Curriculum Review Committee and adopted by the College of Education, it is appropriate to develop a conceptual framework within which the course as part of an institutional setting may be fairly evaluated. This is necessary because of three distinct factors which, if ignored, would tend to distort or muddle the course and the evaluation.

First, conditions surrounding undergraduate education at Michigan State University and similar institutions are considerably less than ideal; the institution is faced with many problems which, in terms of attempts to improve undergraduate education, appear

almost insoluable.[5] There is not enough faculty. Irrespective of numbers of faculty, the interests of faculty are primarily oriented in directions other than instructional. Economics and bureaucracies hamper and distort intimate personal contact. Student values are mixed and in many cases appear anti-intellectual. In many ways, reward systems for both faculty and students are not conducive to educational or intellectual ideals. Considering these conditions and circumstances, there is a limitation on the immediate ability of any program, course, or plan involving large numbers of participants to make radical changes toward an ideal model of undergraduate education.

Second, the University, including the College of Education, has committed itself to the long-range improvement of the state of undergraduate education. In the Report of the Committee on Undergraduate Education (CUE) a thorough examination of the University was conducted including criticisms and recommendations for all areas and practices within undergraduate education.[6] The heart of

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[5]There are many good sources which discuss the current pressures and problems of higher education. Two of the best are:

Nevitt Sanford, ed., The American College (New York: John Wiley and Sons, 1962), and

David Riesman and Christopher Jencks, The Academic Revolution, (New York: Harper and Row, 1968).

[6]Committee on Undergraduate Education, Improving Undergraduate Education: The Report of the Committee, (East Lansing, Michigan: Michigan State University, 1967).

this report was summarized in five principles which guided CUE's study and recommendations. Briefly, these principles supported the academic process of interaction between student and teacher as the primary consideration in establishing and implementing the undergraduate programs; learning and scholarship were to be the standards by which programs were to be judged; quality of instruction and the instructor as a model were to be the primary concern of both individual faculty members and educational programs; liberal education as interpreted in terms of human development was to remain the foundation of the institutional approach and, if possible, be enlarged; and, the idea of educational opportunity was to be included in instruction and planning implying that entering characteristics of students should not be the primary determinant of degree of institutional and instructional impact. The implication of these principles does not imply immediate remedy to the institutional problems previously cited, but rather a concerted effort to improve the conduct and prestige of undergraduate education.

Third, the College of Education, through its Curriculum Review, Committee recognized both the problems inherent in implementing a better program of undergraduate instruction in teacher education, but at the same time, renewed the committment to improve the quality of undergraduate programs and instruction. In doing so, the Committee specified the central problems and areas of instructional concern:

> Providing quality programs to large numbers of students is one of the most challenging tasks faced by large universities. The task is more difficult because of the increasingly short supply of competent college teachers. Some institutions have attempted to overcome the shortage by staffing undergraduate courses with graduate assistants and have achieved varying degrees of success.
>
> In order to give undergraduates instruction the emphasis which we believe it deserves, the College of Teacher Education has designed a plan which will bring our undergraduate students in contact with outstanding senior faculty members and at the same time allow for student identification with a small group where his individual questions and comments can become meaningful (discussion sections headed by a graduate student teaching assistant).[7]

In this statement, the Committee re-emphasized the need to provide "quality programs" based upon instruction which included standards and models (implied by the contact with outstanding senior faculty), and provision for independent student development (implied by the idea of small group contact and the word "meaningful"). Without further explanation by the Committee the format implied would be the lecture-discussion format. The Committee does not specify with any greater detail the logical relationship between means and ends which created the decision to apply this course format in light of objectives, institutional problems, and instructional concerns.

Because the evaluation must take place within the context of this decision, and because the notions of "quality programs" and instructional concerns are not clearly specified, a brief theoretical model will be suggested based upon what seems to be implied in these three factors

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[7]Curriculum Review Committee, "Organizational Plan for Foundation Courses," Op. Cit., p. 1.

of institutional characteristics, standards surrounding undergraduate instruction, and decisions made in light of these characteristics and standards. The theoretical model will be followed by an application to a typical undergraduate procedure in large, state-supported institutions of higher education, followed by an evaluative application to the plan for Education 200. Because of the definitional limitations of the Curriculum Review Committee's report and other basic documents pertaining to undergraduate education at the University, the model and many of its concepts take the form of presuppositions by the author.

Ideally, undergraduate education is the planned response to a series of institutional objectives and philosophies. As such undergraduate education is composed of "quality programs" including a number of sequentially and non-sequentially organized instructional units (courses, practicums, independent studies, etc.) which in combination result in students exhibiting certain behavioral characteristics such as attitudes, skills, and competencies which in turn reflect the objectives and philosophies of the institution. The "instructional units" are identifiable by the inclusion of two components--quality instruction and provision for student opportunity. "Quality instruction" pertains to the assumption of instructional responsibilities to objectives and as such relates to the purposeful activities of those involved with instruction. "Provision for student opportunity" pertains to the application of instruction with a given population of students in order to insure the broadest possible desired results of that instruction. Add

to this the "predominant characteristics" of the institution and some conception of certain "critical issues" or points of contention located between actual means and ends, and the rudimentary model toward which program planning, development, evaluation, and reform are directed is complete. In this model, the primary operational tasks in relation to the components become those of filling in the specifics, determining the relative weights of each, assessing the reliability and validity of the resulting reality, and then recycling on the basis of the results. The principle proviso to this model is that it is dynamic and as a system, "open." This means that the model itself is generalizable, but the empirical details to which the model is applied are constantly changing.

Quality program -- A program which approximates some specific objective or set of objectives by providing organization, planned interventions, sequencing, and standards; it is primarily a strategy and set of controls rather than a direct part of teaching and learning.

Instructional units -- A specific division of a "quality program" which includes actual developmental activity and incorporates as standards both "quality instruction" and "provision for student opportunity"; it is the purposeful location within which the specific interaction between instructors and students takes place.

Quality instruction -- The quality control mechanisms of purposeful instruction within an instructional unit which assume the responsibilities of broader program goals and unit-specific goals; as such, these responsibilities include a curricular area, a content and experience area, and a pedagogical area. Quality instruction is directly a part of the student experience.

Provision for Student Opportunity -- A mechanism of purposeful instruction within an instructional unit by which maximum effectiveness of that unit in relation to a specific population of

students is achieved; as a strategy for maximum development of students, it means that the diversity or heterogeneity of students is dealt with by instructional means (teaching to accommodate and enhance the diversity) rather than distributing rewards according to that diversity (grading the already strongly predetermined levels of one particular aspect of the diversity), and in the case of instructional units with more than one element, it means the students are not subject to systematic sources of bias due to either the structure or instructional performances inherent within the elements.

Predominant characteristics -- These are the factors of circumstantial reality within which an instructional program has to function and are predominant because of their delimiting effects upon the nature and operation of programs; as such, they naturally affect the starting conditions and immediate objectives, but by their nature can become the basis of long-range objectives and projections.

Critical issues -- Those points of contention, either explicit or implicit, the resolution of which strongly influence the choice of means and ends; in this sense they may be variously held values, theoretical considerations, or operational assumptions.

Unity -- A hypothetical construct positing a theoretical baseline for a "quality program" of a one-to-one mutuality between students, faculty, and their respective interests.

Both "quality instruction" and "provision for student opportunity" pertain to instruction, and the results of that instruction, as it takes place in the classroom or other educational setting. In the definitive acts of a teacher or a student, or the interaction between the two, these two concepts may be difficult to separate. However, as purposeful intent they each have very distinct differences. "Quality instruction" is a concern for insuring that standards or qualitative objectives are met and provides for the necessary movements of any student or group of students to these standards. As such a concern, "quality instruction" includes a number of responsibilities. The first is to the curriculum

and curricular objectives which means that the instruction is responsive to and directed towards these ultimate goals including other elements of the Curriculum. The second is a content and experience responsibility which involves the choice and sequencing of materials in the instructional unit toward the goals of that particular unit. The third area of responsibility is the pedagogical responsibilities which include both the specific approaches used and the particular "style." No matter what the instructional approach the more important pedagogical responsibilities would include:

1. the determination of student readiness
2. the motivation of students to learning
3. the demonstration of skills, attitudes, and values to be developed
4. the inclusion of appropriate learning activities or practice tasks
5. the use of reinforcement and the development of satisfaction
6. the development of organization and meaning
7. the development of high standards of performance and means of judging student performance.[8]

Whereas "quality instruction" is standard-oriented toward objectives, "provision for student opportunity" is student-oriented toward objectives. Implicit in the former is the notion that there are behavioral

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[8]Paul L. Dressel, "The Role of Evaluation in Teaching and Learning," Evaluation in the Social Studies, Harry D. Berg, ed., (Washington, D. C.: National Council for the Social Studies, 1965), pp. 1-20.

intellectual standards toward which the instructional activity as a rational plan is directed. Implicit in the latter is the notion of potentially different paths to the behavioral standards, a commitment to students on behalf of the institution for maximum development, and an acknowledgement of the limitations of rational planning with regard to diversity of input student characteristics, changing circumstance, and imperfect theory and practice.[9] As an element within a rational "system," provision for student opportunity is the strategy by which an instructional unit achieves maximum desired results of the quality instruction. As a concept it does not presuppose uniformity of the resulting student product, but rather the maximum meeting of minimal behavioral standards inherent in both quality programs and quality instruction. At the least equality of educational opportunity assumes certain flexibility in the procedures of quality instruction toward the attainment of behavioral goals while at the most it would assume complete individualization of instruction. Because this concept represents an institutional responsibility to students as well as a program strategy, some of the characteristics within the instructional unit it presupposes would be provision for the individual student development of:

1. relevance -- the congruence between student goals and perspective and instructional unit goals and perspective

[9]For example, see Joseph Katz, ed., No Time for Youth, (New York: John Wiley and Sons, 1968).

2. clarity -- the congruence between instructional unit content and experiences and student knowledge and skills

3. competence -- the developing congruence between the model of quality instruction and the student as attempting to approximate a model of quality instruction

4. fairness -- the congruence between instructional unit responsibilities and student responsibilities (this may be interpreted as the relationship between contracting parties with obligations on the part of both as the agreed contractual arrangement).

While "quality programs" composed of "instructional units" each containing "quality instruction" and "provision for student opportunity" are the model toward which undergraduate education is ideally directed, the actual form and substance in an approximation of that model are determined by the "predominant characteristics" of a particular setting and the resolution of "critical issues" inherent in the "predominant characteristics" of that setting. The "predominant characteristics" of a setting are the expression of the number of students to the number of faculty, the respective interests of each, and the general factors which characterize each group including organization and historical precedent. Given these "predominant characteristics" of a setting, it is then possible to generate a number of alternative ways of approximating the ideal model of undergraduate education. These alternative ways of approximating the ideal model have been described as "critical issues," the resolution of which will create the actual form and substance of the model's approximation. In this sense,

"critical issues" act as an hypothesis at the level of every operational decision which can empirically be supported or disconfirmed.

In theory, based upon the ideal model and the assumption of unity of that model, the task of "quality program" development would clearly be the rational-empirical procedure suggested earlier resulting in increasing congruence between the model and the actual approximation of that model, and probably also resulting in an improvement in the model itself. Beyond unity--a one to one mutuality between students, faculty, and their respective interests--the problems of providing the "quality" or ideal model of undergraduate education expand geometrically. As the "predominant characteristics" move away from the concept of unity (either in numbers or interests or both) it becomes necessary to compensate for these "predominant characteristics" in order to approximate the ideal model. With each compensatory step comes one or more critical issues the resolution of which as suggested by definition may not necessarily be the most theoretically consistent with the ideal model. If the compensatory step is not theoretically consistent with the model, this necessitates additional compensatory steps to regain consistency with the ideal model. At some point in this process which theoretically could continue at length, the efforts to approximate the model may become efforts to rationalize the model; in essence, to create form without primary concern for substance. In situations where these results occur, the focus becomes one of appearance and the developmental activity becomes a

matter of "tinkering" to maintain the appearance of the model, rather than developmental activity aimed at reorienting the "predominant characteristics."[10]

Theoretically, the "predominant characteristics" move beyond unity with the single removal of equivalency between the number of faculty and students or between their respective interests which include organization and historical precedent. Although any break in this equivalency does create "critical issues" of choice, the notion of equivalency is only theoretical because of actual conditions in institutional higher education. As such, it only provides a baseline against which relative deviations from equivalency can be compared and the corresponding "critical issues" can be developed. In fact, the concern is with the relative ratio of faculty to students, the primary differences in their respective interests, organization and background, and the various interactions and resulting compensatory programs which emerge. What is important is the nature of the compensatory decisions, and the actual resulting form and substance of programs resulting from these compensatory decisions.

The importance of the ideal model and its theoretical functioning is most critical to the program development sequence of planning, creating, evaluating and revising. Because of the complexity of institutional higher education, it is imperative to have a model for the

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[10]See, for example, Paul L. Dressel and Frances H. DeLisle, Undergraduate Curriculum Trends, (Washington, D. C.::American Council on Education, 1969).

purpose of tracing back through the program development activities in order to isolate the imperfections or inconsistencies within the sequence. Most evaluation studies deal with operational considerations in relation to performances, but it is equally possible in light of this model that inappropriate resolution of more fundamental critical issues may also be at fault. This is especially a possibility whenthe relative distance between "predominant characteristics" and the concept of unity is comparatively large. Assuming that institutional and personal resources are finite in any given setting and that faculty have primary control over program decisions, then the greater the ratio between faculty and students and/or the greater the difference between faculty and student interests, the more likely the means of compensating to approximate the ideal model will result in a rationalization of form without substance, a situation which affords little chance for long-term improvement of undergraduate education.[11]

Institutional Conditions and Means of Compensation

Such a condition has been a part of large, state-supported institutions of higher education for some time. The predominant characteristics of these institutions, which categorically would include Michigan State University, would include:

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[11]See, for example, the discussion of "Ritualism" in Thomas Merton, Social Theory and Social Structure, (New York: The Free Press, 1957), p. 174.

1. a relatively high student to faculty ratio (as compared to other educational institutions in the country)

2. a research-oriented faculty with a perhaps genuine but limited interest in undergraduate teaching (limited by their own research interests and the narrowness of their graduate training)

3. a student body which is on the average of lesser, but also of far more heterogeneous academic ability and motivation than the student bodies at selective private colleges and universities (the same fact applies to students in different departments within the same institutions)

4. structures which make curriculum revision and innovation relatively easy within departments and relatively difficult across departments (which does not reflect the willingness of departments to deal in their own development and innovation, but rather the relative strength of the department in relation to the institution).[12]

As Trow suggests, the institutions within this category have stated commitments to both standards and a certain quality of undergraduate education, not dissimilar from that suggested in the CUE's Report. This implies both "quality programs" for undergraduates and an emphasis on undergraduate instruction as a means of enabling a widely disparate student population to achieve to the criteria of the quality program. But in order to move a heterogeneous population of students to at least criteria would imply instructional means which provided each student individually with a sense of "relevance," "clarity," "competence," and "fairness." This obviously suggests

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[12]Martin Trow, "The Undergraduate Dilemma in Large State Universities," Universities Quarterly, December, 1966, p. 17-18.

a certain quality of instruction and the necessity of some individualization of instruction. The natural consequences of courses (or programs) which enroll large numbers of students and which fail to compensate for the heterogeneity of the student population are:

1. the good students becoming lost, bored, and remaining unchallenged

2. the middle students--and all of the students to some degree--disassociating the material (theory and research) from their lives and their futures and from implications other than related to the discipline.

3. the poor students becoming totally uninvolved because they are not taught, because they cannot compete with the good students, and because within this setting, they cannot compensate in any way for the entering differential.[13]

The predominant means of compensating for these characteristics of large, state-supported institutions has been to employ the use of senior faculty (i.e., within the tenure system) primarily in the graduate areas of research and instruction and in the highly specialized, upper-level undergraduate areas. The contribution of senior faculty to early undergraduate areas has been generally limited to large lecture settings. The instructional gap created by this utilization of senior faculty has been filled by the TA in a classroom structure typically either the lecture-discussion section approach or the multi-section, independent instructor approach using common curriculum exams.[14] To a large degree this has been the compensatory resolution

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[13] Ibid., p. 35.

[14] Ibid., p. 30.

to the predominant characteristics of Michigan State University.

The Curriculum Review Committee appeared to regard this system more favorably than was justified when it stated that these above approaches had achieved "varying degrees of success."[15] In contrast, Trow points out that there has been very little success in relation to either developing "quality programs" or instructionally surmounting the predominant characteristics of the student population through the use of approaches built upon the role of the TA. He cited the following reasons:

1. The TA's are often poor instructors. Many times they are less competent, less able in the content field. In many instances they are chosen for reasons other than competence or ability in the field. Their form of support falls at the tail end of the graduate student support system--associateships, fellowships, research assistantships, teaching assistantships.

2. Apart from the question of abilities, the TA is, by the nature of circumstance, often poorly equipped or motivated to be a good undergraduate instructor. The work has no bearing on his future career or even graduate program. The senior staff derives little reward for taking interest in his teaching activities. In fact, the senior staff is usually bothered by TA's who must be administered. The TA's attitude toward the instructional activities is usually wrong due to both the fact that he must also carry a heavy graduate load and that in the process of defining himself and his intellect and competence in relation to the senior faculty, he takes on a stance both "iconoclastic" and "debunking."

3. While it is argued that the TA gets valuable professional training and experience as a function of his duties, this is not the reality. The TA gets little if any guidance. The

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[15]Curriculum Review Committee, Op. Cit., p. 1.

TA's do not design the courses in any way. He does not have to take the responsibility for failure if the course does not go well.

4. Other faults of the teaching assistantship are that it distracts the students from their graduate training and distracts the faculty in an unproductive manner. The role of TA is generally the major source of the student's support and demands time unrelated to his graduate work resulting in a longer period before the individual can finish his training and enter a professional career. The faculty must manage all of the TA's and coordinate the course which only involves the administration and overseeing of others although this rarely includes actual classroom observation and critiquing.

5. The necessity of TA's to teach or handle undergraduate courses restrict the freedom of the department (and other administrative units) to reform the graduate programs.

6. Since the design and procedure of the course is established by the departments and senior faculty, the result in terms of formal content is research and the academic interests of the faculty (lectures and reading). Any other elements, such as moral or interdisciplinary implications or the relevance of material to the students' lives, is left to the TA. The results of this is:

   a. since the TA is generally weak in content and research, a glossing or confusing or arbitrary stance is taken in relation to the material--rarely does a true integration take place;

   b. the course becomes a model, and a weak model at that, of the predominant research interests of the faculty;

   c. the examples, discussions, and activities within the TA's domain are involved with his beliefs and experiences rather than with content, skills as representative of the content, and the true implications or questions related to the material.[16]

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[16] Trow, Op. Cit., p. 19-23.

From an evaluational standpoint, what Trow is suggesting is that the use of TA's to compensate for the predominant characteristics of these large, state-supported institutions toward the objective of quality instruction is neither valid nor reliable. The use of TA's is not valid because: (1) it primarily serves the purposes of graduate programs and research interests of faculty, (2) it does not provide for the future improvement of instruction since the TA's get very little valuable training, (3) it exposes undergraduate instruction to TA's in a manner not conducive to creating further interest in developing instructional competence, (4) it detracts from the primary purposes of both the senior faculty and the TA's, (5) it orients the content and experiences away from the purposes of undergraduate education, and (6) it restricts the institutions ability to reform undergraduate instruction and the departments ability to reform graduate education.

Beyond the invalidity of using TA's to compensate, Trow also argues that TA's as a means of instruction are unreliable. This lack of reliability is because: (1) TA's are often poor instructors simply in terms of abilities, (2) TA's, by nature of the circumstance, are unlikely to be good instructors irrespective of ability due to motivational factors, other personally pressing demands on their time and energies, and attitudinal factors vis a vis the faculty and the institution, and (3) the resulting courses using TA's place the TA in a position of responsibility for which he has very little understanding, experience, or competence.

In summary, the result of using TA's as the means of compensation has proven invalid because it has not acted in the long run to reorient the predominant characteristics surrounding undergraduate education toward the ideal model. This approach has proven invalid to the more immediate objective of attempting to approximate the ideal model, given predominant characteristics because as a means of instruction, the role of the TA has been unreliable. In relation to students, courses employing the use of the TA have failed to approximate either "quality instruction" or "provision for student opportunity" which, in addition to the natural student consequences mentioned previously, has resulted in a situation where the means of dealing with student diversity has been to grade it rather than to teach for it.

The College of Education's Plan

Irrespective of these suggested limitations inherent in using the TA to compensate for the predominant institutional characteristics, the Curriculum Review Committee of the College of Education suggested a new plan which relied heavily upon the role of the TA in order both to achieve a "quality program" and to give "undergraduate instruction the emphasis which . . . it deserves."[17] The Committee, while not directly discussing these limitations, implicitly recognized them by the nature of the provisions included in its planned course structure. By including

[17] Curriculum Review Committee, Loc. Cit.

provisions to mediate against these limitations, the Committee also implicitly acknowledged much of Trow's evidence and arguments, but in turn, the Committee implicitly argued against the inevitability of Trow's conclusions.

In light of Trow's arguments, an instructional approach based upon extensive delegated responsibilities to TA's would fail to provide either immediate best approximation of "quality instruction" and "provision for student opportunity" or major reorientation of the predominant characteristics of the institution toward these objectives. In fact, if Trow's assessment was correct, it would act to perpetuate and perhaps enhance the existing conditions. However, the course planners provided for this potential criticism by stating that the course would serve a dual purpose in the interest of improving both college instruction and undergraduate education. That purpose would be both to provide the best possible instruction for undergraduates and to develop competent college instructors out of TA's through the use of a program of instructional development in which the TA's would be interns. By applying a "systems" approach to achieve these purposes which would, through specialization of efforts and central administration, meet both immediate and long-range objectives, the TA, according to the Review Committee, would become an important contributor to improving undergraduate education.

Because of these two compensatory decisions--(1) the dual objectives of the course toward providing a quality undergraduate

program and developing quality undergraduate instruction, and (2) the use of a "system" of instruction to accomplish these objectives--the Committee believed that broad usage of the TA to compensate for the characteristics of the University and the College was justified and would overcome previous limitations attributed to the TA. While it is evident that this approach does little to reorient the involvement of senior faculty in the instruction of undergraduates or improve the chances for institutional reform of departments, the above objectives in this plan were of stated importance to the University and in theory, the "systems" approach had some potential as a means toward achieving the objectives. But to reach that potential, it would first have to be shown that the "system" could be implemented in a reliable manner and that, if proven reliable, it then had validity to the indicated objectives.

Chapter II

BACKGROUND AND DESIGN

Organization of Education 200

Many undergraduate courses in large, state-supported institutions of higher education closely resemble the business-industry production model. The organization of ED-200 was concerned with "people-processing" for an expected enrollment of 1000 or more students per term. As the Curriculum Review Committee of the College of Education pointed out, "The coordination involved with courses enrolling such large numbers is an extremely difficult administrative task."[1]

To simply review the composite parts is quite an extensive task itself. Involved were:

1. one course coordinator
2. one course evaluator
3. four to eight lecturers
4. 10 to 20 teaching assistants
5. one teaching internship adviser
6. two different hours during the day at which times the course was offered, using the same personnel

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[1]Curriculum Review Committee, "Organizational Plan for Foundation Courses," Report on Undergraduate Curriculum Revision, mimeographed material, (East Lansing: College of Education, Michigan State University, April, 1965), p. 1.

7. the 800 - 1000+ students enrolled

The organizational idea was to take administrative responsibility away from the instructional participants, primarily the senior faculty. As recommended, the course coordinator would "be the person responsible for bringing unity to the course which will involve several different faculty lecturers . . . (and he) will also be responsible for the coordination of the discussion sections and be working closely with a faculty member responsible for course evaluation and a faculty member responsible for a college teaching internship . . . . " In brief, he would manage the affairs of the course and deal with what the Committee describes as "administrivia."[2]

The content of the course would center around the main interests and specializations of the senior faculty of the College, primarily the Department of Counseling, Personnel Services, and Educational Psychology.

> Senior faculty members who have a particular competence in some portion of the course content and who are known to be outstanding lecturers will be invited to give lectures on that portion of the course which falls within their particular area of interest and competence. Each senior faculty member thus will be involved with only from 3 to 6 lectures covering a particular unit of the course. Other times he will be free to pursue other research or instructional responsibilities. We expect he will be given generous load credit for his contribution to these basic courses and we hope that to be asked to participate in this manner will be viewed by the faculty member as a distinct honor.

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[2] Ibid.

> We expect that it will become much easier for us to employ competent new staff whose responsibility it will be to only make specialized contributions to the instruction in the undergraduate basic courses than it would be to employ staff solely for instructional responsibilities at the undergraduate level. (author's underlines)[3]

In addition to the lecture sessions which would be given to all students enrolled in each time section, three times per week, the students would be required to meet twice each week in discussion sections.

> ". . . the students will meet twice weekly in small (under 35) discussion sections which will be conducted by graduate assistants (TA's) employed for this purpose. During these sessions it is expected that the student will have an opportunity to have his questions clarified and be identified as an individual within the total group. It is expected that the discussion sections will be related closely to the lectures and that here the student will be concerned with the application to classroom problems of the concepts covered during the lecture sessions. (author's underlines)[4]

The content seminar for the TA's was designed to briefly acquaint them, at greater depth, with the content to be included in the different sets of lectures. Accordingly, "each lecturer will meet with the graduate assistants the week preceding his presentations to the large group of students . . . at which time he will cover in greater depth some of the material he expects to discuss with students the following week and will provide the graduate assistants with a list of readings which will better acquaint them with the material which he expects to cover."[5]

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[3]Ibid. [4]Ibid., p. 2. [5]Ibid.

Judging student performance in the course would be a dual effort. The first proviso involved judgments by the TA's of the performance of students in the discussion sections, and accounted for forty per cent of the total course grade. The nature, procedure, or content of this instructor grade was left undefined by the Curriculum Review Committee and no further restrictions were placed upon the TA's as the course was actually conducted. The second proviso involved examinations common for all students, in the form of a midterm examination accounting for twenty per cent of the total course grade, and a final examination accounting for forty per cent. Provision was also made for a senior staff member whose primary responsibility would be to develop examination.

> Examinations in a course enrolling large numbers of students are doubly important. The construction of evaluation instruments which will properly measure the progress students make toward the predetermined goals of the course is a most important function. To insure the development of reliable evaluation procedures, a person will be assigned full time to construct examinations . . . (and) will work in close cooperation with the faculty members and graduate assistants involved in teaching the course content. Eventually it is expected that a written examination will be developed which will properly measure a student's competence and make possible the completion of the course requirements by examination only.[6]

And what about the course objectives? The responsibilities for competencies to be developed by this course were listed at length by the Curriculum Review Committee in line with the purposes suggested

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[6]Ibid., p. 3.

by the Dean of the School of Teachers Education in an earlier section of the same report. The list is extensive and representative of the major research interests in a comprehensive educational psychology. The complete list is included in the Appendix; briefly, the main areas covered were: (1) Orientation to Professional Education; (2) Observation and Interpretation of Behavior in the Classroom; (3) Learning and Thinking in the Classroom; and, (4) Human Growth and Development. With only two exceptions, the key word in each objective is either "understands" or "recognizes" or "distinguishes" which can be interpreted to mean the student can recall some piece of information for a multiple-choice exam or he can apply some simple principle on a multiple-choice exam, e.g., "recognizes the pupil behaviors symptomatic of possible emotional disturbances."[7] The objectives represent very limited behavioral competencies, none of which have any proven direct relationship to teaching; they not surprisingly represent the research specialties of educational psychology, some of which are theoretically established and some of which are largely conjectural.

The course as conducted during the Spring term of 1968 appeared essentially the same as the organizational description. The content units contained in the lectures and readings were an extension of the objectives indicated above. The eight different lecturers were drawn from the senior faculty of the Department of Counseling,

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[7] Ibid., p. 4.

Personnel Services, and Educational Psychology, each lecturing for several sessions in his respective specialty. Sixteen discussion leaders (TA's) taught one discussion section during each of the two times-of-day the course was offered. Common course lectures were delivered Monday's, Wednesday's and Friday's and discussion sections took place on Tuesday's and Thursday's. Slightly more than 1000 students were initially enrolled. The roles of course administrator and course evaluator were held by the same person, a newly appointed assistant professor in the College holding a Ph. D. in educational psychology granted the previous year by Michigan State University. In this role he handled administrative duties, including the development of common examinations, and assignment of exam grades. Additionally, there was a college teaching internship coordinator, previously a distinguished professor of humanities at the University, who coordinated a content seminar for the TA's and conducted a program and seminar in the methods and development of college teaching in which the TA's were required to participate.

Evaluative Model and Assumptions

From the plan provided by the Curriculum Review Committee, and by observation of the outward appearance of the course as it was conducted during the term in which the evaluation took place, it seemed legitimate to conclude that Education 200 as a stated compensatory form approximated to some degree the ideal of an instructional unit containing "quality instruction" and "provision for student opportunity." It

included as a short-term objective the approximation of these characteristics given the circumstance and a long-term objective of the development of concern and ability in those potentially responsible in the future for instruction in higher education which, accordingly, should move the approximation closer to the concept of "unity." The question that followed from this conclusion was concerned with the degree to which the compensatory form had substance. Did the course as provided actually move toward these short and long-term objectives; did it approximate, given the circumstances, "quality instruction" and "provision for student opportunity," and was it successful in developing concern for and ability in undergraduate instruction in the TA's?

At the time this study was conducted, the course as specified by the Curriculum Review Committee of the College of Education had been in existence for two years. Thus an assumption made in this study was that initial difficulties in actually setting up the course, staffing it, smoothing out administrative procedures, and in general, creating a "system" had been accomplished so that the evaluation would be a reasonable test of the course to operate as specified. Because the evaluation took place during the third (Spring) term of the academic year, it was also assumed that by then the program of instructional development of TA's had taken place and that the measured resultant instructional competence of the TA's would be a reasonable test of the effectiveness of that part of the course. It followed that if neither one nor the other of these assumptions were correct, then the course should

be changed due to the inability to implement the suggested procedures. If both of these assumptions were correct, then the results of the evaluation could be considered a fair assessment of the course approach.

As stated, the most important operational distinction pertaining to this course is the notion of the course as a "system" and the functioning this notion implies. Although neither the Curriculum Review Committee nor the actual course description directly described the course as a "system" there can be no other evaluative means of describing the course. Education 200 had most of the components and functional relationships of a "system" such as the diversification and specialization of labor, central administration and central responsibility for operation, quality control devises, input, flow and output, and judgmental devises to check operation supposedly to output. Admittedly, as a "system" the course was underspecified in the sense of clarity of objectives, stated tolerance levels of difference in output, and clear provisions for decision-making based upon level of responsibility, but these weaknesses were weaknesses in application of the model. In fact, to meet both long-range and short-range objectives of the course, it was assumed the application of a systems approach was absolutely necessary to justify the compensatory means specified by the Review Committee.

The advantage of a "systems" approach is its ability to more efficiently and economically use limited resources, maximize production, and insure within designated limits certain levels of quality control

over the production. In this case, if there is a large faculty to student ratio, broad differences in interest, high demand for "certified" teachers (products), and limited additional resources (money, space, materials, etc.), then a course as "system" approach has within it a potential to compensate for existing conditions to provide the desired output. The specified internal program operation objectives indicate the internal criterion demands of the "system," and the demands both of students to enter the profession and outside agencies for the institutionally certified product create the production demands upon the "system." The optimal utilization of the system is the maximizing of both internal criterion demands and the external production demands. The additional further restraint upon the system is the long-range objective of altering the "system" over time to one which more closely approximates the ideal model of undergraduate education, i.e., the alteration of compensatory circumstances toward unity.

While the "systems" approach in form appears valid to approximate the objectives of the ideal model, this validity is subject to the obvious disadvantage of a "systems" approach. The first, and essential, component of validity is reliability; the remainder of validity is based upon the proven performance to objectives in terms of output or production. The obvious disadvantage of a "system" is the strictness of the internal reliability requirements necessary for the parts to function as a "system." For example, a given individual may vary an approach toward objectives if the responsibility for obtaining the

objectives is solely his and the variation appears to be a better means to achieve the objective. A "system" on the other hand, can be altered, but only "systematically" whereas nonsystematic alteration or variance among the parts of a "system" only detract from the actual operation of the "system." And, of course, the problem of achieving reliability is compounded by the relative complexity of the "system"; the level of complexity almost geometrically increases the need for and the difficulty in obtaining reliability.

The concept of reliability as it was used in this study meant only the degree to which the parts of the course as a "system" performed as specified and that those parts with more than one component were internally consistent. The tests of reliability could be accomplished in two different ways. The operation or behavior of the part, or its components, could be directly observed followed by estimations of reliability based upon these observations and/or the outcomes or products could be observed on those aspects directly the responsibility of a part or its components followed by estimations of reliability based on the observation of these results. Validity could also be tested in more than one way beyond the tests of reliability. The stated and observed organization of the "system" would indicate whether the "system" approximated form. Estimations of reliability would test whether the "system" actually functioned in accordance with the prescribed form. If the "system" proved reliable, then the results of the "system" could be examined for validity, both in relation to immediate course objectives and to long-range

objectives of program outcomes concerning both students and TA's. If the course as a "system" either did not conform to the specified form, or did not meet standards of internal reliability, then the tests of validity would have to be toward alternate outcome expectation based upon the differing form or unreliable "system."

Because of the organization of this course in relation to the arguments suggested by Trow and because of the functional requirements of instruction in the ideal model, the reliability of the TA's became the most important evaluative consideration. Knowing that the group of students was large and assuming that this large group of students was heterogeneous, the TA's were equally important with the lecturers in providing quality instruction based upon the specification of the lecturers providing "content" areas and the TA's providing extension of these areas, integration between areas, practical applications, and practice experiences. Also given these conditions surrounding the student population, the TA's were primarily responsible for accomplishing "provision for student opportunity" through clarification of materials, individualization of instruction, motivational components, relevance and fairness. Since the TA's accounted for forty percent of the final grade based upon their own determinations, they shared responsibility for "fairness" with the course evaluator whose tests accounted for sixty per cent of the final grade. If the system did not prove reliable at the level of the TA, it must at least be assumed that the course as a "system" was not accomplishing "provision for student opportunity."

And because the course planners built the course around the assumption that senior faculty participation could and should be de-emphasized, under circumstances of unreliability, it probably could be assumed that the course did not provide "quality instruction" either.

If the TA's as a group proved reliable in terms of student outcomes, the following step would be to examine the operation of the other parts of the course. If the other parts proved consistent to the specified procedures, the final evaluative step would be to examine the general course outcomes for evidence that the course was substantively approximating "quality instruction" and "provision for student opportunity" and that the TA's as a group showed increased interest toward and ability in instructing undergraduate students. Any variations from the specified operations of the course would also be tested against those desired outcome results and the effect these potential variations might have on the ability of the course to operate "systematically."

If the TA's as a group proved to be unreliable, then a trace-back procedure would be necessary to further determine whether the cause of this unreliability might be a malfunctioning inherent in other parts of the "system." If other parts of the "system" appeared not to be malfunctioning, more careful selection of the TA's or reorganization of the elements only related to the TA's might produce the appropriate results during the next year. If, however, the unreliability of the course could be attributed to more than one component, then at this point the feasibility of the course, irrespective of form, to produce

the substance of the model should be questioned. Trow's arguments against the broad usage of the TA's to instruct undergraduates were only partially resolved by the creation of a course "system"--the argument that the TA under any set of circumstances would be unable because of his graduate student responsibilities and position to provide "quality instruction"--and this in combination with a proven unreliability of the "system" would suggest that the appropriate additional test of validity would be the degree to which the results of the course approximated the results Trow suggested will occur when the TA is used to compensate for predominant characteristics. By considering the results of the course in this manner, it would be possible to examine the original "critical issue" resolution made by the College of Education to decrease the involvement of senior faculty.

Limitations and Scope of Evaluation

The derivation of evaluative criteria for this study caused a number of problems from the outset, and this difficulty eventually resulted in the acceptance of criteria which were more general and methodologically oriented than desired. The reason for these difficulties lay with a basic deficiency in the Curriculum Review Committee's report. Although not the subject of this study, this deficiency is typical of higher education in general. Nowhere was there a clear statement of what the objectives of the "quality programs" were to be. As indicated at the beginning of this study, the closest kind of a general objective included in the report was the statement preceding the report

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provided by the Dean, " . . . those basic understandings, skills, and attitudes which characterize a teacher who can respond competently to all the situations within which he must function."[8] This statement at least provided the notion of certain integrations having taken place in students leading to some forms of competency which must be exhibited within the teaching activities.

This is not to imply that the report did not include a list of objectives; it did include such a list at great length following each suggested course and one list of "additional competencies . . . " (see Appendix A). These lists were not acceptable because as behavioral objectives they failed their purpose. Rather than providing guides to instruction and means by which instructors could judge the developing performance of students, preparing to become teachers, listed at length were the minute areas of academic education, the research and professional specialties of the various departments of the College of Education. Although teaching obviously means many different behaviors and activities for which understanding and recognizing certain educational phenomena is important, pedagogy, implying both strategy and behavior, is the one aspect of the field of education which is uniquely its own and without exception there was no mention of any direct teaching or pedagogical competencies listed among the objectives.

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[8]Memorandum to Educational Development Project, Michigan State University, from Leland Dean, Associate Dean of the College of Education, as a preface to The Report on Undergraduate Curriculum Revision, Op. Cit.

Admittedly, the problem of developing a series of behavioral objectives is a difficult task, and behavioral objectives are not evident to any degree in any area of the University. While causes for this problem and the lack of any important attempt to remedy it could be listed conjecturally at length, suffice to say that it is an extremely serious problem, if only from an evaluational standpoint, and one which largely prohibits the functions of internal evaluation and program development from achieving any congruence.

Another problem in the development of criteria was the inability of the evaluation to actually engage in meaningful behavioral observation within the discussion sections headed by the teaching assistants. Although this form of evaluation was included in the original proposal, funds were not available to allow for this direct assessment of instruction by the TA's. Although a great deal of informal observation was accomplished, and many discussions concerning instruction and instructional approaches were held with course personnel, these forms of data could serve no more of a purpose than personal documentation of events. Therefore, direct measures to criteria of instructional behavior and classroom interaction could not be included in the study.

The result of these problems was that criteria for the evaluation became the degree to which the course as a "system" functioned reliably and the degree to which the limitations suggested by Trow concerning the use of TA's to compensate for the predominant characteristics of the institution pertained to this course. Although

these criteria do allow for certain judgments pertaining to the course's appropriateness, they largely fail the evaluative objective of providing specific recommendations for the improvement of instruction or the means to development of student teaching competence.

Sources of Data and Evaluative Structure

In order to assess the reliability and validity of the course, and particularly the TA's, without clear internal behavioral course objectives or direct observational data, it became necessary to include information and data from a variety of sources. Within the evaluative confines of on-going circumstance and limited historical documentation, an effort was made to:

1. ascertain the underlying reasons for the suggested course structure, and establish the course's developmental history both as a separate entity and as a part of a larger instructional program which itself was a part of the total instructional program of the College of Education;

2. observe the actual operation of the various parts of the course;

3. document the characteristics and indirectly observed interests and abilities of the TA's; and,

4. empirically assess over time student outcomes, particularly as they were affected by the fixed factors of "time-of-day" the sections of the course were offered and the discussion sections headed by the TA's.

All data which could be quantified and/or dealt with empirically will be discussed in the next chapter which also includes both procedures and specifics of analysis of the data. The text of this study is followed by several appendices including instruments, background information,

and more extensive presentation of data. The remainder of this chapter will be concerned with applying the above sources of data to the evaluative model and deriving a more specific set of questions toward which the data and information may be applied.

Most evaluative studies of instructional programs are based primarily upon an analysis of student results on some examination of instructional content and perhaps secondarily upon some indication of student attitude toward instruction. Although these both may be important outcomes of instruction and instructional conditions, they are only two of many potential outcomes, and not necessarily the most important outcomes. The question of what variables to consider depends entirely upon study objectives and/or course and instructional goals. As indicated, the plans for this course failed to specify strong behavioral objectives. In addition, the purpose of the study was to consider the course in relation to the degree of approximation of "quality instruction" and "provision for student opportunity" by testing the reliability and validity of the course as a "system" of instruction and the ability of the course to develop competent instructors out of teaching assistant interns. Thus for purposes of this study, there were several student variables considered to be important including standard test and grade measures of student performance, measures of heterogeneity and covariance, and measures which would provide tentative inference to future performance in the teacher education sequence. These variables were considered important both for what should happen as a result of an introductory experience, and for what should happen as a result of

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"quality instruction" and "provision for student opportunity."

It was assumed that if the course was reliable, and that the discussion sections had essentially equivalent groups of students (randomly selected to section), then the course as a "system" should show no significant differences on outcomes of performance, grades, general course attitude, attitude toward discussion section, level of aspiration-expectation, level of anxiety, or attitude toward specific factors which should increase as a result of the course experience. In looking at the general effect of the course over time, these same variables should be considered in terms of growth and change. Specific variables measured included:

1. entering characteristics of students
    a. university grade-point-average
    b. College Qualifying Test scores
    c. reason for taking the course
    d. orientation toward learning or "Learning Set"
    e. test anxiety
    f. "Extraversion"
    g. "Neuroticism"
    h. social desirability or acceptability need
    i. sex
    j. course load being carried
    k. credit hours accumulated

2. continuing measures of student performance

    a. examination scores--entering course, mid-course, outcome

    b. level of aspiration-expectation in relation to course--entering course, mid-course, and outcome

    c. course motivational attitude--entering course and outcome

    d. test-specific anxiety--entering course, mid-course, and outcome

    e. attitude toward use of theory in teaching--entering course, mid-course, and outcome

    f. attitude toward importance of course to teacher training--entering course, mid-course, and outcome

    g. certainty of entering teaching profession--entering course, mid-course, and outcome

    h. certainty of personal qualifications to teach--entering course, mid-course, and outcome

3. outcome measures of student performance attributable theoretically to student, teaching assistants, and measurement characteristics

    a. mid-term exam grade

    b. final exam grade

    c. discussion section grade

    d. course grade

    e. course project rank

To test for reliability of the discussion sections, and accordingly the TA's, the student variables were analyzed by analysis of variance broken down into cells by the two fixed factors of "time-of-day" the course was offered, and discussion section TA's. It was

assumed that although the students would probably receive some differences in treatment due to both these factors, if the course was operating "systematically" as specified, then the resulting effects would fail to support a null hypothesis of significant differences between the discussion sections. Because the null hypothesis was one of difference, the most serious statistical error potentially to occur would be a Beta error. Due to this consideration, and due to the developmental function of evaluative studies, the alpha level was set at $p < .10$. However, since this study was primarily an evaluative effort, the consideration of alpha level was primarily that of establishing some general interpretive guidelines for the analysis of data. As will be noted through the use of the omega squared statistic, the interpretation and discussion of the results focused on "importance" of results to specific questions as well as relative level of significance of differences.

In order to test the reliability of the TA's by analyzing the data for differences in student outcomes attributable to the discussion sections the primary assumption from a statistical standpoint which had to be met was that the assignment of students and instructors to discussion sections be random. Although this was accomplished at the beginning of the term, it was recognized that taking measurements in class at various times during the course might affect the initial assumption of randomization due to differential attendance, and thus numbers of responses. This, in combination with unequal numbers in the different sections, prohibited the use of covariance or multivariate

analysis to control for entering differences. In addition, there is usually a certain amount of shifting around by students during the first few days of a term. This was true for this study although it pertained only to additions and drops; for this particular term, no switches between discussion sections were allowed. All of these reasons seemed to demand that entering characteristics be analyzed in order to justify the initial randomization was still valid as a consideration for later assessments.

The evaluative strategy then was to compare the entering characteristics of the students by the factors of "time-of-day" and discussion sections for potential initial differences between groups. This would be followed using the same fixed factors by an analysis of the continuing measures for the potential development of differences over time. Finally those outcome variables attributable to more than just student performance would be analyzed according to the two factors.

If the TA's were "systematically" reliable, following the establishment of no significant difference on the entering student variables there should be no significant differences between the TA's on the continuing and other outcome student measures. However, it was recognized that there were no controls on potential entering differences between the two "times-of-day" the course was offered and so entering significant differences might occur on this factor. It was not considered important whether these significant differences disappeared over time or not as long as they did not result in significant

[illegible]

[illegible]

[illegible]

interactions with the TA factor and no significant differences occurred on the TA factor.

While all of the outcome variables could be considered important in the assessment of TA reliability, reasoning suggested that the outcomes involving grades, rankings of student performance, and student attitudes toward TA's were the clearest indices of reliability. On these variables, both the student and the TA were a potential source of variance. In the case of grades and ranks, the students obviously contributed to these outcomes by their efforts and entering abilities, but the TA might also contribute systematically as a source of variance by a tendency to mark higher or lower, by an inability to judge student performance adequately, by selecting markedly different areas of performance to judge, or by inadequately preparing the student to perform. While it was not expected that the instructors would perform identically in the discussion sections, if the course was reliable, particularly the TA development components, there should be no significant differences between the TA's on an instrument designed to assess the quality and competency of TA performance in the discussion section.

As an additional test of the reliability of the TA's, a random group of students was drawn from each discussion section to form a methodological section approximately the size of any given combined morning and afternoon discussion section for which a TA might be responsible. The performance of this group of students on a common course project was judged to common instructor criteria by an independent,

trained rater and these results were compared to the ratings assigned by the actual TA's.

Following the tests of reliability of the TA's as a group, the instructor characteristics, background, and responses to formal questions pertaining to their objectives and procedures in the discussion section were examined to aid in the interpretation of the empirical results. This information, in combination with the observation by the evaluators of course procedure, would provide insight into the degree of success of the instructional development program. The objective of this examination was to determine the degree of, or potential for, congruence between the stated or implied course performances of TA's and the actual performances of TA's.

Another aspect of the evaluation following the reliability tests on the TA's concerned the procedure, congruency, and results of student performance evaluation by those responsible for judging student performance in the course. Because this was both the responsibility of the TA's and a specialist who was independent of instruction and because of the rather complex formula for determining student rewards (grades) from these evaluations, it was important to determine the internal consistency of the individual evaluations, the degree to which these evaluations aided the instructional objectives, and the relative fairness by which grades were assigned in terms of both "quality education" and "provision for student opportunity."

Other areas observed and described in the evaluation included

the role and performance of the course administration, the nature and conditions of the lecture sessions, the circumstantial conditions surrounding the discussion sections, and the continuing relationship of this course to the remainder of the undergraduate teacher education program. Finally, an historical evaluation of the development of the course in relation to the general development of the College of Education was developed out of both formal position papers and informal working papers of the College of Education and particularly, the Department of Counseling, Personnel Services, and Educational Psychology. This historical assessment was also supported by informal observations, reports, and discussion by the evaluators with other individuals and structures in the College of Education.

In summary, within the perspective of the central question concerning the degree to which the course had substance to the objectives of "quality instruction" and "provision for student opportunity," the evaluative procedure is stated below in a list of specific questions pursued in order of the evaluative model. Although it could not be predetermined how the results to the questions would be interpreted beyond the empirical questions pertaining to the reliability of the TA's, the potential direction of the interpretation was specified in the evaluative model. It was assumed, for purposes of the evaluative model, that the course would operate as specified--that there would be substance as well as form--and if this assumption was not supported, the general direction of the interpretation would focus on the reservations

concerning the use of TA's as the means of undergraduate instruction suggested by Trow. Thus, a final step would be the consideration of student results attributable to the course and the degree to which these results approximated those suggested by Trow. The questions, in order of consideration, were:

1. Were there significant differences attributable to the discussion section (TA) factor on student entering-course variables?

2. What was the effect on the two factors--TA's and time-of-day--of continuing course measures:

   a. where initial significant differences occurred on the time-of-day factor;

   b. where no initial differences occurred on the time-of-day factor?

3. Were there significant differences attributable to the discussion section (TA) factor on:

   a. reward (grade) variables with special attention on those variables with potential systematic TA variance;

   b. outcome test performance variables;

   c. instructor rankings of common student course project performances;

   d. outcome student expectation of performance-level of aspiration variables;

   e. student attitude toward discussion section and TA;

   f. student post-attitude toward course?

4. Were the TA's as a group able to achieve acceptable reliability in ranking student performance to set criteria of performance?

5. What was the basis for selecting TA's?

6. What were the background characteristics of the TA's?

7. Did the graduate programs of the TA's appear to allow time for the development of instructional skills and to meet instructional responsibilities?

8. Were the TA's committed to a future career in undergraduate instruction or the development of undergraduate instruction?

9. Was there congruence between the TA's perceptions of course and discussion section objectives?

10. What in the way of materials or guidelines were provided the TA's to aid them in the conduct of the discussion sections, the judgment of student performance, and the grading of student performance?

11. Did a program of instructional development for the TA's take place, and if so, what was the nature of its content and experiences?

12. Did the course examinations allow for inferences to the degree of approximation of course or undergraduate instructional objectives?

13. Did the examinations judge student performance to some established criteria, or did they simply differentiate student scores into grading units?

14. What means were utilized as part of on-going procedure to evaluate student affective change toward the course and program goals?

15. What changes took place in specific student attitudes toward the course, the course content, and teacher education goals?

16. Was there a relationship between entering student ability or grade received in the course and the development of student course-related attitudes?

17. What was the primary emphasis of the course including both content and form of presentation?

18. What was the relationship of the course to the total program of the College of Education?

Chapter III

INSTRUMENTATION AND PROCEDURE

From an empirical standpoint, concern in this study centered upon the effect of a course, and its structural factors, upon various student outcomes. The important methodological considerations were: (1) what outcomes were to be considered, and why; (2) what were the internal measurement characteristics of these outcomes; and (3) how were they, in the form of data, obtained. The first question mentioned above suggests a rationale for the choice of variables and instruments. The second explores the important properties of the variables and instruments, primarily reliability and validity, which indicate the degree to which the measurement consistently gets at that which it is supposed to measure. The third question allows the reader to judge the nature and limitations of methodological controls utilized.

Categorization and Description of Student Variables

There are essentially three ways the student variables included in this study may be categorized, each indicating a different dimension: by type, by time of administration, and by function. First, the variables may be categorized by type: (a) reward, (b) performance, (c) level of aspiration-expectation, (d) past performance indicators, (e) attitudes or motivational predispositions toward instruction, (f) personality and/or

performance covariates, and (g) course-specific attitudes. Second, the same variables may be categorized by time of administration: (a) prior to entering the course, (b) at time of entrance to course, (c) mid-course, (d) post-course. Finally, the variables may be categorized according to function in the study: (a) used to determine entering conditions, (b) used to assess change over time, and (c) used to analyze outcomes. These three dimensions essentially explain why the variables included in this study were chosen.

The categorization of variables grouped by type serves to show the relationship of variables to the study, its hypotheses and questions, and to the study rationale and the broader objectives of both the University and the College of Education. The seven categories listed above under "type" may be briefly defined as follows:

(a) Reward variables -- these variables represent the extrinsic "valuing" or "rewarding" of student performances. More commonly called grades, the actual operation of these variables is more complex than implied by that term. A grade represents a component of student effort, a component of student ability toward whatever is being judged, a component of instructional bias due to choice of that being judged, and a component of instructional "error" in the awarding of the grade. Its importance is derived not so much from the "valuing" procedure itself, which is essential to good instruction, but rather to the effect the grade has upon the student and his predispositions, and the social use of the grade to judge students.

(b) Performance variables -- these variables are the actual results of student performance including both the performance itself and some determination of correctness of that performance which could be measured; this study was only concerned with those areas normally used to judge student performance, i.e., multiple-choice tests over content and simple application of content, and estimates of student

ability to recognize, analyze and interpret content-oriented problems by means of a paper.

(c) Level of aspiration-expectation variables -- level of aspiration and level of expectation are not the same underlying continuum, but they are closely related, and extremely difficult to separate in practice. These variables represent the expectancy or aspiration the student has for his performance, and accordingly reward, in the instructional setting. They are determined by past performances, and the social valuing of those performances, and other personality characteristics. Their importance to any instructional setting is the degree of congruence which is achieved between them and actual performance-reward. This degree of congruence, and the change of level of aspiration-expectation over time in the course provide insight into future willingness to be involved or perform. For an introductory course, such as the one in this study, they are especially important due to their preconditioning of student behavior and attitude to future work in the area.

(d) Past performance indicators -- these variables are the standard predictors of student performance and generally include two forms. One form is the accumulated student grades for previous course work, and the other is the results of standardized tests of ability and background. These variables are not singular, but rather they are global in the sense that past accomplishment partially predetermines future similar accomplishment on the basis of ability, motivation, and the tendency for others to judge one's efforts.

(e) Attitudes or motivational predispositions toward instruction -- these variables represent the student attitude toward the activities of a course and qualitative judgments about what they expect to, or felt did, occur. They would include reasons why the student enrolled, what he expected the course would be like, what he felt the course was like, how he valued certain instructional activities, and how he assessed certain instructional activities. Whereas the level of aspiration is concerned with the congruency between expectation of reward and actual reward, these variables are concerned with a student expectation and "valuing" and a perception-recollection and "valuing." Both categories have an effect upon the student's future involvement and performance in the area.

(f) Personality and/or performance covariates -- this rather broad grouping represents variables descriptive of entering differences between students which are not directly related to this course or past academic performances or abilities. Instead, they suggest selective tendencies which may come into play under certain conditions of instruction. For example, a person who is predisposed toward simple factual learning can probably be expected to fare better under conditions of instruction which are primarily lecture-multiple-choice testing; a person with strong test anxiety will probably fare less well under conditions of large group, standardized testing; an extroverted student may have instructional problems with an introverted instructor, etc. In general, the effects of interaction with these variables is unknown, but suspected.

(g) Course-specific attitudes -- these variables represent attitudes, and the development of underlying predispositions, toward specific conditions directly related to the content and purpose of the course. They get at student attitude toward the course and themselves in relation to their desire to teach, their ability to teach, the relation of the course content to their training to teach, the importance of the course content to actual practice of teaching Generally, they reflect attitude and change of attitude toward content of the course, relevance of this content to themselves and their future, and the importance of the experience of the course.

(h) Other variables -- information was also gathered concerning student sex, major, hours being carried that term, and credit hours completed before the start of the term.

The second method of categorizing student variables was by time of administration. There are two reasons why the administration or gathering of variables took place at different points of time rather than just at the end of the course. First, students were randomly assigned to sections but there was a small amount of shifting of students which is normal to a course of this size, and even randomization did not completely protect against loadings of some variable or another in a course

with this large a number of sections. Whereas many of the variables potentially are important covariates of performance, and ideally, even with random conditions, should be used in this manner, methodological constraints of unequal numbers in the discussion sections and unequal numbers over various administrations prohibited their use in this way. For this reason, these variables acted primarily as initial proof of conditions to further justify the assumption of randomization in the consideration of outcome variables. The other reason for a time differential was to assess the development of variables as a result of time and partial course effect. There was the further consideration of not disrupting the course any more than absolutely necessary, so the gathering of data took place at brief intervals at the start and end of course periods necessitating greater numbers of administrations. In order to simplify the explanatory task of this study, the variables were grouped into three distinct time periods of pre-, mid-, and post-course. The pre variables include both prior-to-entering-course variables and immediately-upon-entering-course variables; the mid-course variables include all variables gathered approximately the time of the mid-term examination, but both before and after; the post variables include all outcome variables, but some were gathered before the final examination and instructor grade, and some afterward.

When categorized by their function in the study, all student variables were used either to assess the nature of entering conditions, the nature and direction of change over time, or the several outcomes.

In some cases, variables were used for one or more functions, e.g., variables having pre, mid, and post measurements.

The variables as categorized by both type and time of administration, with a brief description of each, are shown in Table III-1. In this table the number included in parentheses below the number symbol (#) is the variable's identification number, which indicates the position in which that variable will fall in any listing of variables, or in tables of results, or in analyses.

Characteristics of the Data

All of the instruments used to derive student data are included in Appendix B. The summaries of all data by statistics of number, centrality, dispersion, skewness and kurtosis are included in Appendix C. These statistics are displayed first by all students combined, then as broken down by the two different periods the course was offered, and then broken down by sex of the students. Appendix D summarizes the data according to the same above statistics by discussion section. The intercorrelations between the variables are shown in Appendix E for all students combined and then broken down by times the course was offered. Appendix F provides correlations of each instructor by time between the instructor grade and other student variables.

The important relationships, or the lack thereof, and the breakdown and analysis of data by the factors of time-the-course-was-offered and discussion section will be discussed in the next chapter. The primary

Table III-1: Description of Student Variables by Administration, Range, Purpose, and Operation

	Variable	#	Administration Pre	Mid	Post	Range	Description
Reward	Course Grade	(1)			X	1-5	Actual grade in course received by student; determined by a weighted average of other grades received by student as shown below.
	Mid-Term Grade	(2)		X		1-5	Grade student received for performance on mid-term exam; accounts for 20% of course grade.
	Final Exam Grade	(3)			X	1-5	Grade student received for performance on entire final exam; accounts for 40% of course grade.
	Instructor Grade	(4)			X	1-5	Grade received by student for performance in discussion section; grade totally determined by TA by whatever means felt appropriate and accounted for 40% of course grade.
Performance	Course Project Rank	(5)			X	1-5	Rank assigned student by TA for performance to definitive, course-wide criteria on problem sensing-solving paper project; rank did not determine grade for project or necessarily reflect on course grade; included to provide measure of student ability other than multiple-choice test, and to provide index of TA ability to rank to criteria.
	Pre-Test	(6)	X			0-40	Performance index of entering student ability to deal with course exams and content; no grade involved.

Table III-1: (continued)

	Variable		#	Administration Pre	Mid	Post	Range	Description
Course Aspiration-Expectation	Actual Expectation	1	(14)	X			1-12	Gets at student self-assessment of how well he actually expects he will do in terms of a course grade; this variable was repeated at three different time intervals to assess change in actual level of expectation and/or aspiration.
		2	(15)		X		1-12	
		3	(16)			X	0-100	
	Low Expectation	1	(17)	X			1-12	Gets at student self-assessment of how poorly he expects he might do in terms of a course grade; this variable was repeated at three different time intervals to assess change in low level of expectation and/or aspiration.
		2	(18)		X		1-12	
		3	(19)			X	0-100	
	Aspiration-Expectation	1	(20)	X			1-12	Measures probability level of student expectation-aspiration.
		2	(21)		X		1-12	Student indicates probability on receiving any one of 12 different grades for each grade possibility; grade at 50/50 probability level is student score.
		3	(22)			X	1-12	
Past Performance	Univ. Grade-Point Average		(23)	X			0-4.	Student self-report of grade-point average at the University for all courses completed up to Spring term, 1968.
	Qualifying Test--Verbal		(24)	X			1-100	Standard percentage normal score for verbal ability section of College Qualifying Tests for MSU placement.

Table III-1: (continued)

	Variable	#	Administration Pre	Mid	Post	Range	Description
Past Performance	Qualifying Test-Quantitative	(25)	X			1-100	Standard percentage normed score for quantitative section of College Qualifying Tests (CQT) used as MSU entrance and placement exams. Standard percentage normed score for general estimate of entering ability from verbal, numerical and information scores of the College Qualifying Test (CQT) used as MSU entrance and placement exams; taken before starting classes freshman year.
	Qualifying Test-Total	(26)	X			1-100	
	Reason for Enrolling	(27)	X			1-5	Item asking student to indicate why he enrolled for course; response choices move from positive to neutral to negative reasons judged to have face validity.
Attitudes	Pre-Course Attitude	(28)	X			1-57	Measures student entering course motivation-attitude toward course; includes 57 statements which make possible descriptions of course which student responds to either positively or negatively; items move from extremely negative to extremely positive with score being median "yes" response.
	Post-Course Attitude				X	1-57	Same as Pre-Course Attitude with items adjusted to look backwards.

Variable	#	Mid-Point	Range	Description
Attitude Toward In-structor	(30)	x	0-4	A list of descriptive and attitude statements about dissection section instructors to which student responded either

Table III-1: (continued)

	Variable	#	Administration Pre	Mid	Post	Range	Description
Attitudes	Attitude Toward Instructor	(30)			X	0-23	A list of descriptive and attitude statements about discussion section instructors to which student responded either yes or no; score determined by addition of yes responses.
	Learning Set	(31)	X			-62+-62	Measures student orientation to type of learning moving from factually set to conceptually set; student responded to 31 force choice triads of learning activities either positive or negative or neutral with each item in triad being weighted -1, 0, or +1; addition of items created student score.
Personality	A - H Anxiety Scale	(32)	X			1-76	Measures facilitating and debilitating anxiety toward tests; facilitative items choices move from positive to negative, debilitative choices move from negative to positive; addition of item choices which are weighted from 1-5 create student score.
	Test Anxiety - Pre-Test	(33)	X			1-5	Each sourse exam began with an item to measure student's anxiety toward that particcular test; responses ranged from no anxiety to very high anxiety on a 1-5 scale.
	Test Anxiety - Mid-Test	(34)		X		1-5	
	Test Anxiety - Final	(35)			X	1-5	

Variable		Predominant Role	Values	Description
Eysenck Extraversion Scale	(36)	X	1-24	The Eysenck Personality Inventory provides measurements of personality into two almost orthogonal dimensions of extraversion and neuroticism. Extraversion refers to outgoing, uninhibited, impulsive
Eysenck Neuroticism Scale	(37)	X	1-24	
Eysenck Lie Scale	(38)	X	1-9	

Table III-1: (continued)

	Variable	#	Administration Pre	Mid	Post	Range	Description
Personality	Eysenck Extraversion Scale	(36)	X			1-24	The Eysenck Personality Inventory provides measurements of personality into two, almost orthogonal dimensions of extraversion and neuroticism. Extraversion refers to outgoing, uninhibited, impulsive and social inclinations while neuroticism refers to general emotional instability, emotional overresponsiveness, and a predisposition to neurotic breakdown underemotional stress; Inventory also includes a lie or socially desirable response scale.
	Eysenck Neuroticism Scale	(37)	X			1-24	
	Eysenck Lie Scale	(38)	X			1-9	
Course-Specific Attitutes	Commitment to Enter Profession	(39)	X			1-5	Gets at student's certainty of entering the teaching profession; item which has five levels moving from very certain to very uncertain was repeated at three different time intervals to assess change in degree of certainty. Gets at degree to which student feels teaching is the occupation for which was responded to from very strongly to not at all was repeated at three different time intervals to assess change in feeling of suitability.
	Commitment to Enter Profession	(40)		X		1-5	
	Commitment to Enter Profession	(41)			X	1-5	
	Suitability for Teaching	(42)	X			1-5	
	Suitability for Teaching	(43)		X		1-5	
	Suitability for Teaching	(44)			X	1-5	

Variable	#	Attitude Measure	Item Type	Range	Description
Importance of Theory	(45)	X		1–5	Gets at student's attitude toward the degree to which a

Table III-1: (continued)

	Variable	#	Administration Pre	Mid	Post	Range	Description
Course-Specific Attitudes	Importance of Theory	(45)	X			1-5	Gets at student's attitude toward the degree to which a knowledge of the theory and principles of human growth and behavior will be important in successfully performing as a teacher; this item which scores on a five-point scale from very positive to very negative was repeated over three different time intervals to assess changes in student's feeling of importance.
	Importance of Theory	(46)		X		1-5	
	Importance of Theory	(47)			X	1-5	
	Course as Preparation	(48)	X			1-5	Gets at student's attitude toward the course as important for preparation to successfully understand and deal with students in both their learning and personal development; this item which scores on a five-point scale from critical to not at all was repeated over three different time intervals to assess changes in student's feeling of importance of course.
	Course as Preparation	(49)		X		1-5	
	Course as Preparation	(50)			X	1-5	

concern of the discussion in the following paragraphs centers on the internal measurement characteristics of the variables (categorized by type) which include reliability, validity, and the effect, if any, of transformations on the data from its raw state to its coded study state. Because of the voluminous amount of data utilized in this study, the discussion will be kept as brief as possible, with reference made only to those characteristics which seem particularly pertinent to the study hypotheses and questions. For a further examination of the variables, the reader is invited to explore the Appendices.

Reward Variables

It is always a difficult task to determine the validity of grades and this is doubly true in this study due to the different sources from which the grades were derived. The validity of a grade is essentially based upon those elements of student performance which are measured and the reliability of both the measurement and the cutting points upon which the grades are based. In this study there is a further consideration of the summation process used to determine the final course grade of the student. The course grade was determined by a weighting-transformation procedure in which the mid-term grade contributed 20 per cent, the final exam grade contributed 40 per cent, and the instructor-awarded discussion section grade contributed 40 per cent. For purposes of analysis, reward data was coded 1 - 5 (F = 1, A = 5). Although the University uses a 0 - 4 classification, the grade of "F" was provided

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The data does not explain a great deal about the grades with the exception of high reliability between the mid-term grade and the mid-term exam ($r = .914$) and between the final exam grade and the final exam ($r = .910$). This indicates that the grade for examinations is representative of the performance on the tests. This was to be expected because the exams were standard for all students in the course and the breakdowns of those exams were consistent for all students in the course. The relationship between the mid-term exam grade and the final exam grade was relatively low ($r = .516$). This level of relationship is about the same as consistently shows between any course grade and the student's accumulated grade-point-average (GPA across innumerable studies is consistently around $r = .50$). The correlation between GPA and exam grades in this study was $r = .456$ for the mid-term exam grade and $r = .449$ for the final exam grade. This indicates that the exams were essentially different with covariance occurring due to factors associated with the GPA, primarily ability and motivation.

Whereas exam grades are at least reliable and valid for performance on the exams, the instructor grade is far more difficult to assess. It should be noted that instructors, with three exceptions, were either unable or unwilling to specify their basis for determining student grades. The instructor grade was weighted to account for 40

per cent of the student course grade and in a part-whole correlation with the course grade, it accounted for almost exactly that amount ($r = .644$) or ($r^2 = .415$). It does not correlate highly with other exam grades ($r = .371$ for the mid-term grade and $r = .289$ for the final exam grade). It correlates with GPA at about the same level as the exam grades ($r = .355$). At best, it correlates with the instructor rankings of student performance on a problem-sensing-solving project at a middle level which accounted for only about 35 per cent of the variance ($r = .585$ or $r^2 = .342$). By examining the bivariate relationships between the instructor grade and all other variables for each instructor as shown in Appendix F, it is obvious that the only consistent predictor of instructor grade in addition to the GPA was the mid-term exam. This indicates that the exam acted as a predetermining agent in the awarding of the instructor grade (based on the fact that there was considerably less correlation between the instructor grade and the final exam scores). In a multiple linear regression equation which only included entering predictor variables, a significant equation at the .01 level of probability accounted for only about 13 per cent of the variance (multiple $r = .362$). The components of this multiple correlation included the pre-test, GPA, attitude toward discussion instructor, low expectation 1, and the instructors themselves. None of the other entering or non-academic variables contributed a significant amount of variance to the equation. In short, the instructor grade shows little or no relationship to the variables included in this study. Therefore, estimates of

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its reliability and validity must either be very low, or at best unknown.

Performance Variables

A problem similar to the instructor grade occurs with the student project rank assigned by the instructor. All students in the course were assigned the same problem to be developed in a written presentation (see statement of the problem provided students and instructions and criteria for instructor ranking in Appendix B). In this case, however, the instructors were given fairly precise criteria for ranking student papers on a 1-5 scale, with examples of what performance constituted what rank. The instructors were asked to rank the students to this criteria, but that they could determine what grade to assign to the paper any way they wished. An independent rater from the area of educational psychology research also rated a randomly selected group of student papers from each discussion section. The random selection of student papers was conducted so that its size (n = 63) would constitute about the same number as any given instructor would have to rank for both of his discussion sections and an equal number of papers was selected from each discussion section (four from each instructor, two from the morning section and two from the afternoon section). Because the students were randomly assigned to discussion section at the beginning of the course, this procedure for choosing student papers allowed for the assumption that we had created a mock, equivalent discussion section for the purpose of checking instructor reliability. The rater

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was thoroughly trained to rank to criterion before ranking the actual papers.

The correlation between the independent ratings and the instructor ratings of the same papers was extremely low ($r = .309$). Even using a rank-order correlation equation there was only limited improvement ($r = .374$). There was a significant difference between the variance of the instructor ratings and the independent rater ($.10 > p > .05$), and there was a significant difference between instructors on the ratings of all student papers ($p < .001$, see Appendix G). This leads to the conclusion that in this case the instructors were unreliable judges of student performance. There is another interesting interpretation which also arises out of the relationship between the instructor grade and the ranking of student projects ($r = .585$). This correlation would seem to indicate that the instructors as a group are much less reliable than they are independently, or in other words, the instructors are perhaps relatively internally consistent in their judgments about students, but they are not externally consistent as a group.

As can be seen on Table III-2, there is almost no relationship between the instructor project ranks and the test indices of performance (the relationships that are shown are significant at least the .01 level of probability with an "n" between 500 - 1000). Again, it can be seen that the highest relationship is between the ranks and the mid-term exam ($r = .261$). This further substantiates the notion that the instructors are relatively pre-conditioned as to the students' ability and performance

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Table III-2: Matrix of Intercorrelations Between Performance Variables for all Students

		(5)	(6)	(7)	(8)	(9)	(10)
Course Project Rank	(5)						
Pre-Test	(6)	.112					
Mid-Term Exam	(7)	.261	.290				
Final Exam -- Recall	(8)	.186	.249	.493			
Final Exam -- Applied	(9)	.134	.243	.397	.486		
Final Exam -- Total	(10)	.179	.274	.524	.856	.752	

The pre-test was composed of 40 items chosen as representative from the different test item areas included in a pool of items being developed to form a comprehensive exam for the course. These items were supposedly the best performing items available to test the students' entering knowledge and ability in the course. In terms of the items' relationship to the readings and lecture content of the course, they could be said to have at least face validity. The internal reliability of this test (using the Kuder-Richardson Formula #20)[1] was r = .763.

As shown on Table III-2, the relationship of the pre-test to the other exam results is low but significant and consistent for each exam.

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[1]G. Frederic Kuder and Marion W. Richardson, "The Theory of the Estimation of Test Reliability," Principles of Educational and Psychological Measurement, William A. Mehrens and Robert L. Ebel, eds. (Chicago: Rand McNally, 1967), pp. 101.

The results of the exam were somewhat leptokurtic (kurtosis = 4.488 where kurtosis of 3.0 is optimal)[2] with a mean of 22.151, a standard deviation of 3.562, and a slight negative skewness. This means that approximately 85 per cent of all of the students taking this exam (n = 865) scored between 16 and 28 items correct. The students were told this exam would have no effect upon their course grades, and the giving of this exam was not noticeably different from the procedure previously used in the course. It was established practive to give the students a placebo exam to orient them to the kind of examination they would face for grade credit.

The mid-term exam was also composed of 40 multiple-choice items, but primarily directed to just the readings and lectures included in the first half of the course. The internal reliability of the test (using the Kuder-Richardson Formula #20)[3] was r = .847. This exam had a mean of 30.531 and a standard deviation of 3.928. It was negatively skewed and only slightly leptokurtic. As shown on Table III-2, the relationship between this exam and the final exam was significant but not particularly high indicating that for course purposes, it was measuring something substantially different. Because the mid-term exam was primarily a recall type exam, we would expect a stronger relationship between it and the recall section of the final exam (r = .493) than between it and the applied section of the final exam (r = .397).

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[3]Kuder, Op. Cit.

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[1]Ibid.

The final exam was composed of 80 items divided into essentially two different parts, the first being primarily recall of the courses content and lectures and the second part being a series of questions related to a simulated actual setting where the student would have to apply certain aspects of the content of the course in order supposedly to select the correct answer. The reliability for the entire exam (using the Kuder-Richardson Formula #20)[4] was r = .7104. The mean was 53.286 and the standard deviation was 7.182. The total exam was quite leptokurtic (kurtosis = 5.198) but this was attributable almost totally to the applied section where the kurtosis was extremely high (kurtosis = 12.851). By examining the intercorrelations on the parts and total scores, it is obvious that the two different parts measured essentially something different (r = .486). However, in terms of final score it is also obvious that the discrimination was primarily based upon the recall section. The curve of the applied section indicates that there was very little variance in scores on this section and the correlation between this section and the total score was lower (r = .752, as compared to r = .856) than on the recall section. This limited variance on approximately half of the test also probably contributed to the lower than expected, and lower than acceptable, reliability. The applied section is also much more closely related to a student's entering ability and test-taking ability as signified by a much higher correlation between it

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[4]Ibid.

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and the Qualifying Test-Total (r = .405 as compared to 4 = .281 for the recall section).

All that can finally be said for the exam performance variables is that they did measure recall of content fairly reliably, that they contained a strong component of entering ability and test-taking ability, and that they failed to adequately test student ability to apply information either because the items for this purpose did not discriminate properly, or because the items had too strong a relationship to different interpretations and test-taking ability.

Aspiration-Expectation Variables

The notion of "level of aspiration" has just recently been accepted as relevant to educational settings although as a social-psychological variable it has been recognized since the late 1930's. At best we can say that the failure to incorporate this determinant of behavior into educational practice in any systematic manner is due to the concentration in teacher education upon "method" rather than effect. While it is not the source of much systematic study in education yet, a host of publications have begun to develop inadvertently the impact of this upon educational performance and motivation, e.g., Rosenthal's methodologically weak but important theoretical studies included in Pygmalion in the Classroom.[5] Developed originally out of the work of

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[5]Robert Rosenthal and Lenore Jacobson, Pygmalion in the Classroom (New York: Holt, Rinehart and Winston, 1968).

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Lewin and his colleagues, this behavioral determinant is probably best explained in one of Lewin's original articles:[6]

> . . . These theoretical considerations show that most of the qualitative and quantitative results related to the level of aspiration can be linked to three factors, namely, the seeking of success, the avoiding of failure, and the cognitive factor of probability judgment. These forces operate in a setting which has to be characterized as a choice for a future objective. The strength of these forces and the values corresponding to the subjective probability depend upon many aspects of the life space of the individual at that time, particularly on the way he sees his past experiences and on the scales of his reference which are characteristic for his culture and his personality.

The inclusion of these variables in this study served two purposes. First, as aspiration-expectations of grade performance, they show over time the changes in both the seeking of success and the avoidance of failure as a result of the course. But more importantly for the study hypotheses, the element of probability judgment of grade performance over time serves to show how this element is affected by the discussion sections and the TA's.

The scores for the high, actual, and low expectation over the first two administrations were determined in the same way. The student was simply presented with a scale of potential grades from F to A+ (numbering from 1-12) and asked in each case to circle the grade he might receive in each case (high, actual, and low). His score represents the grade he circled. On the final administration, the student was asked

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[6]Kurt Lewin, Tamara Dembo, L. Festinger, and Pauline Sears, "Level of Aspiration," Personality and the Behavior Disorders, J. McVicker Hunt, ed. (New York: Ronald Press, 1944), pp. 376.

to estimate how well, actual, and how poorly he might do on the final exam. He was to estimate on the basis of a possible one hundred points. In the case of aspiration-expectation variables, these refer to the element of probability judgment. The student was presented with the same list of grades and was asked to indicate the chances in one hundred he had of receiving each grade with the proviso that the total chances he indicated had to add up to one hundred for all estimates. The student's score was determined by using the same twelve-point scale and awarding the scale score for the grade which showed the 50 per cent level of probability as determined in an additive manner.

Appendix E shows all of the internal reliability and validity estimates. The correlations between one administration and the next administration of the same variable-type are never less than $r = .500$, and as high as $r = .757$ between aspiration-expectation 2 and 3. While face validity is obvious for all of the variables, other forms of validity are more difficult to ascertain. From the standpoint of this study, about the most that can be said is that there was constant, significant, relatively high relationships between these indices and various reward variables, performance variables, and past performance variables, and that the relationships increase between course and reward variables and the aspiration-expectation variables with each administration indicating increasing congruence (see Table III-3).

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Table III-3: Matrix of Intercorrelations Between Aspiration-Expectation, Reward, and Past Performance Variables on All Students

		(20)	(21)	(22)
Aspiration-Expectation	1 (20)	----		
Aspiration-Expectation	2 (21)	.563	----	
Aspiration-Expectation	3 (22)	.519	.757	----
Course Grade	(1)	.274	.618	.600
Mid-Term Grade	(2)	.253	.686	.644
Final-Exam Grade	(3)	.278	.485	.416
Instructor Grade	(4)	.174	.342	.477
Univ. Grade-Point-Average	(23)	.475	.496	.464
Qualifying Test -- Verbal	(24)	.289	.326	.280
Qualifying Test -- Quantitative	(25)	.205	.227	.205
Qualifying Test -- Total	(26)	.326	.352	.303

Past Performance Variables

Very little needs to be said about these variables as they are standard in any college or univerity setting. The GPA is a 1-4 scale composed of the average of all grades that student has made at the University (F = 0, A = 4). Although these Grade-Point-Averages were self-reported by the students, previous studies have shown that students know their GPA and report it reliably.[7] On a small, randomly selected

[7]O. M. Davidson, "Reliability of self-reported high school grades," unpublished research report, American College Testing Program, Iowa City, Iowa, 1963.

sample, from this study (n = 63), an extremely high relationship was shown between self-reported GPA and University-calculated GPA (r = .945). The Qualifying Tests when coded for analysis were divided by 2 so that the range of scores would meet the requirements of a particular, multivariate computer program. That means that a score shown as 25 for one of the CQT areas in this study would actually be a standard score at the 50th percentile. This truncating of the range may have some minor effects in the analyses, but by inspection they do not seem noticeable.

Attitudes or Motivational Predispositions Toward Instruction

This grouping contains three, relatively distinct parts. Students responded to one of five possible reasons related to why they enrolled in the course (see Appendix B) with a certain amount of face validity for the assumption that the reasons moved from negative to neutral to positive. The scale of 1-5 represents this direction. No effort was made to check reliability of the scale. The item shows a low, but significant relationship to other attitudinal areas included in this study indicating limited validity (r = .366 with pre-course motivation, r = .226 with post-course motivation). Its use in the study was limited, and for the most part it provided little discrimination. Both the pre-course and the post-course motivation instruments were adapted from the

instructional research of Siegel and Siegel.[8] They consist of the same 57 items altered only to reflect a looking back stance in the post instrument. The items (see Appendix B) are a series of statements covering a wide variety of aspects related to the instructional setting and the conduct of instruction. The instructions asked the student to respond with either a yes or no answer to each item which would indicate whether or not he believed that item would reflect (or reflected) the course. The statements move from extremely negative to extremely positive. The students score is the median yes response. Siegel and Siegel reported the extended procedures of development of this instrument and showed split-test reliability of r = .78. In the case of the adapted version used in this study, it was possible to derive a test-retest estimate as well which we found to be adequately high (r = .633). In neither the Siegel study nor this study did the scores show any significant relationship to past performance variables indicating that it was not measuring general academic motivation, but rather, course-specific motivation or attitude.[9]

The validity of this instrument is difficult to assess. It shows low, but significant, relationships with all other measures of attitude. It does not show any relationship to performance, nor does it provide significant main effects between instructors. However, when results of

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[8]Laurence Siegel and Lila C. Siegel, The Instructional Gestalt in Televised University Courses (mimeographed research report, Miami University, Oxford, Ohio, June, 1966), p. 49.

[9]Ibid., p. 52.

this instrument are categorized into a four-cell matrix (high and low for the pre, and high and low for the post) a series of significant results occur which seem to indicate that the instrument is effective in interpreting results based upon shifts from either high to low or low to high course motivation. These results will be discussed in the next chapter.

"Attitude Toward Instructor" represents simply the sum of positive responses the student made on an instrument including 23 statements about procedures, qualities, and attitudes related to the teaching assistant discussion leader (see Appendix B). The independent items included on this list were chosen from a series of items being developed for an all-University student attitude toward instruction scale. The items had survived three administrations and analyses and were considered to be internally consistent with ability to discriminate. In some cases the items had to be slightly rephrased to fit the circumstances of a discussion section and the affect of this rephrasing is not known. Split-half reliability of the instrument was high ($r = .917$),[10] but the resulting curve was negatively skewed. Item analysis indicated that the simple attitude statements discriminated better than did the statements about performance.

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[10]Kuder, Loc. Cit.

Personality and Academic Characteristics Variables

The Learning Set or the Educational Set Scale was also adapted from the research of Siegel and Siegel.[11] The purpose of this scale was to provide an index of the student's preference toward type of learning moving from factual to conceptual. The student was asked to choose from three statements concerning learning conditions, the statement (condition) he would like the most and the statement (condition) he would like the least. Each triad of statements contained one more factually-oriented statement, one more conceptually-oriented statement, and one in-between statement. The instrument, composed of 31 triads, was scored by attaching a negative value of one for each factually learning-oriented statement and a positive value of one for each conceptually learning-oriented statement. There was no score for the choice of neutral items. If the student responded positively to a factual statement, and negatively to a conceptual statement in a triad, his score for that triad would be -2; conversely, if he scored a factual item negatively and a conceptual item positively in a triad, he would receive a score of +2. All of the statements were scaled for their degree of factual or conceptual orientation, and it was the weighting of this scale which determines the scoring in any given triad. Siegel and Siegel reported split-test reliability of 4 = .90 and test-retest (5-day interval) reliability of r = .92. In their development of validity for the scale,

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[11]Siegel, Op. Cit., p. 41.

they reported that there was no relationship to standard measures of ability (college entrance exams), or to a measure of creativity (Guildford's creativity tests).[12] The validity in relation to performance is described by Siegel and Siegel in an earlier study.[13] In this study they show that if you control for certain other classroom conditions (ability, degree of teacher-student interaction, etc.), the "set" does discriminate on performance between classes oriented either factually or conceptually.

For this study, the instrument was retained in its original form, but after preliminary scoring, all scores were converted to a positive scale. While no new estimates of reliability were developed, the relationship between this scale and other data included in this study further establishes the validity of the scale. There were low, but significant correlations with all reward variables except instructor grade (see Appendix E) and with all performance variables. This tends to support Siegel's findings. There are also low, significant correlations with past performance variables and a significant negative correlation with an index of test anxiety.[14]

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[12] Ibid., p. 47.

[13] Laurence Siegel and Lila C. Siegel, "Educational Set: a determinant of acquisition," Journal of Educational Psychology, 56, 1965, pp. 1-12.

[14] Siegel, Op. Cit., p. 94.

The Alpert-Haber Test Anxiety Scale as used in this study was a combination of two scales developed by the above authors.[15] To obtain a single index of debilitating test anxiety both the facilitating and debilitating scales of the original Alpert-Haber instrument were combined and the associated signs of the facilitating scale were changed. The items included in both scales asked specifically about anxiety experienced during the taking of exams. The authors show that the test anxiety scales and the scales of general anxiety largely measure different attributes and that the anxiety scales are better than the general scales in predicting academic performance. In addition, the test anxiety scales account for variance in academic performance over and above that variance accounted for by measures of aptitude or ability. The reported reliability of the scales for a test-retest situation over a ten-week interval was .83 for the facilitating scale and .87 for the debilitating scale, and over an eight-month period the reliability coefficients decreased only to .75 and .76 respectively.[16] In general the results of this study supported those of Alpert and Haber. There were consistent significant, negative correlations between the A-H Anxiety Scale and the measures of performance, both past and present. In addition, the test anxiety measure accounted for additional variance

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[15]Richard Alpert and Ralph Norman Haber, "Anxiety in Academic Situations," Journal of Abnormal and Social Psychology, Vol. 61, No. 2, 1960, pp. 207-15.

[16]Ibid., p. 213.

in the prediction of performance over several multiple linear regression equations.

Test specific anxiety was determined by asking the student to indicate how much anxiety he felt before beginning each of the exams. The student could choose between five alternatives moving from very little to very much. As could be expected there was almost no anxiety reported before the pre-test, and anxiety increased over both the mid-term exam and the final exam. The pre-test anxiety scores neither discriminated between nor correlated with any of the other variables or analysis factors. The mid and final anxiety scores both showed positive, significant correlations with the Alpert-Haber scale ($r = .362$ and $r = .348$ respectively), and low, significant, negative correlations to the respective test performances.

The Eysenck personality scales form a brief measure of global personality traits.[17] They are the subject of years of development, mostly of a factor analytic nature. The primary scales provide estimates of the individual's degree of extraversion--outgoing, uninhibited, impulsive, and social inclinations--and neuroticism--general emotional instability, emotional over-responsiveness, and predispositions to neurotic breakdowns. The instrument also includes a lie or socially desirable response scale to estimate falsification of responses. Since,

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[17]H. J. Eysenck and Sybil B. G. Eysenck, Eysenck Personality Inventory (San Diego, Cal.: Educational and Industrial Testing Service, 1963).

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in this study, the instrument was used as developed, the interested reader is referred to either Buros, The Sixth Mental Measurements Yearbook, or to Eysenck's Personality Structure and Measurement.[18]

Course-Specific Attitudes

These variables were the responses of students to four items repeated over three administrations which were concerned with specific areas potentially related to, or affected by the course. The reader may see them in instrument form in Appendix B, but the questions asked were as follows:

> Commitment to Enter Profession 1, 2, 3 -- How strongly committed are you to entering the teaching profession?
>
> Suitability for Teaching 1, 2, 3 -- How strongly do you feel that teaching is the occupation for which you are best fitted?
>
> Importance of Theory 1, 2, 3 -- How important do you feel a knowledge of the theory and principles of human growth and behavior will be in successfully performing as a teacher?
>
> Course as Preparation 1, 2, 3 -- How important do you think this course has been (will be, is) in preparing you to successfully understand and deal with students in both their learning and personal development?

Each item had five levels of response from which the student could

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[18]Oscar Buros, ed., The Sixth Mental Measurements Yearbook (Highland Park, N. J.; The Gryphow Press, 1965), pp. 215-217.

Hans J. Eysenck and Sybil B. G. Eysenck, Personality Structure and Measurement (San Diego, Cal.: R. R. Knapp, 1967).

Table III-4: Matrix of Intercorrelations Between Course-Specific Attitudes Across Administrations For All Students

Table III-4: Matrix of Intercorrelations Between Course-Specific Attitudes Across Administrations For All Students

		(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)
Commitment to Enter Prof.	1 (39)												
	2 (40)	.734											
	3 (41)	----	----										
Suitability for Teaching	1 (42)	.713	.616	----									
	2 (43)	.624	.782	----	.711								
	3 (44)	.707	.773	----	.595	.703							
Importance of Theory	1 (45)	----	----	.386	----	.127	----						
	2 (46)	----	----	.462	----	----	----	.383					
	3 (47)	----	.141	.423	.103	.197	.188	.159	.329				
Course as Preparation	1 (48)	.139	.158	.230	.185	.178	.149	.315	.344	.268			
	2 (49)	----	.119	.343	----	.182	.109	.198	.391	.497	.302		
	3 (50)	.609	.692	----	.609	.735	.802	.102	----	.214	.161	.101	

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choose, moving from very positive to neutral to very negative. The choices were weighted from 1 to 5 also moving from positive to negative. The items were administered before the beginning of the course, shortly after the mid-term exam, and immediately after the final exam.

The reliability and validity of single items is always difficult to judge, and likely to be quite unstable. The intercorrelation matrices included in Appendix E and as summarized in Table III-4 provide some indication of these qualities. In general, the relationship between administration 1 and 2 of all of the variables indicates the highest stability. Administration 3 showed little relationship to either of the previous administrations. From these correlations, it can be seen that the two items which refer to the student's further pursuit of the teaching profession (Commitment to Enter Profession and Suitability for Teaching) are much more stable than the two items with direct reference to the quality and importance to teaching of the course. This is to be expected. By selecting the curriculum, the students have made some form of longer-term commitment that, while perfectly able to change, they would be most unlikely to do so on the basis of one experience.

The Course as Preparation is highly related to the Commitment to Enter Profession and the Suitability for Teaching, and because of the way these relationships build over time, it would seem to be dependent upon these factors. However, a strong argument could be made that the students' feelings of suitability to teach were increasingly affected by their feeling toward the Course as Preparation. The Importance of

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Theory seems to be the least related to any of the other variables, and usbject to quite a bit of change over administrations. The initial Course as Preparation shows some relationship to Importance of Theory 2 and that the Course as Preparation 2 shows an increased relationship to Importance of Theory 3. This might indicate that the earlier range of feelings toward the Course as Preparation may affect later feelings toward the Importance of Theory.

Potential Restrictions on the Data

For the most part, the variables used in this study appear operationally sufficient, internally, for use in testing or answering the study questions. There are, however, three important potential restrictions on the data which must at least be mentioned. The first two concern the nature of the student responses to the various instruments and the other is the problem of the differential number of students responding to the different instruments.

In any research of this type, there is always the danger of what is known as the response-set, the demand-set, or the experimenter effect. Although each of these terms has reference to a slightly different factor, they all imply in common some element in the data-gathering situation which acts to create artifacts in the data.[19] The nature of the

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[19]A good discussion of the importance of conditions on performance can be found in: Michael A. Wallach and Nathan Kogan, Modes of Thinking in Young Children (New York: Holt, Rinehart and Winston, 1965); and a discussion of "significant other" effects on

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student responses to the various instruments could potentially have been affected by either the degree to which they saw their responses as having some effect upon them, such as partial determination of a grade, favorable treatment in the classroom, etc., or some form of initial or developed antipathy toward the evaluation itself. In both of these cases, the reference is to instruments administered beyond what would normally be a part of the course experience (not, for example, placebo exams, tests, or projects).

In order to avoid the students responding as if their responses might have some effect on them, the nature and purpose of the evaluation was explained in detail during the first class session. The primary points made during this discussion were that: (1) the purpose of the evaluation was to improve the course and undergraduate education, and that the object of the study was the course as conducted, (2) the persons in charge of the evaluation were independent of the course and its instruction or administration, and (3) the student responses were privileged, that no one in the instructional or administrative roles would be allowed to examine individual student responses. These facts were reemphasized at various other times during the period of the course both as part of instructions to the various instruments and verbally before

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performance can be found in: Robert Rosenthal, "The Effect of the Experimenter on the Results of Psychological Research," Progress in Experimental Personality Research, Brendon Maher, ed. (New York: Academic Press, 1964).

different administrations (see instructions for each instrument in Appendix B). In addition, inspection of the data (see Appendix C) seems to support the notion that no major response-sets did occur other than a general, overall tendency to rate some areas high which were interpreted as a natural desire to be more positive in an introductory experience. This was especially true, as noted before, on items such as Commitment to Enter the Profession which by the act of being in the course would naturally be high. All of the variables, with the exception of pre-test anxiety, either discriminated or showed a relatively broad range of scores. The only observed problem was with the attitude toward instructor data. It had the lowest number of respondents (having been administered the day after Memorial Day) and a noticeable amount of negative skewness. This might have been expected as an effect of the most positively-oriented students attending class that day, but nevertheless, the instrument did significantly discriminate between instructors. In all, we concluded that while response-set effects were certainly possible, the resulting effect, if any, upon the data would be to act as a conservative influence upon the data making significant results more difficult to achieve.

Another concern was whether the evaluation itself created a response-set, most likely negative, toward the evaluation. Every effort was made not to interfere in the normal class procedure and to simplify the means of responding by the students. However, a large number of instruments were administered, and a certain amount of class time was

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devoted to the evaluation (about five minutes before the start of several of the lectures and the first two days of class for the pre-course assessment and the placebo exam). Again, the data does not show any effect which might be attributed to the evaluation, although it is possible that the effect is hidden in reduced class attendance over the period of the course, or some other unrecorded fact. A question was included in the post-course assessment following the final exam which asked the students to indicate the amount they felt the evaluation had affected either the course or their participation in the course:

> "Do you feel that the course evaluation which took place this term has impaired either the conduct of or your participation in this course?"

Responses to this item indicated that 43 per cent believed not at all, an additional 26 per cent believed very little if at all, 10 per cent did not know, 13 per cent felt somewhat, and 3 per cent felt very much so (there were 5 per cent omits and a total number responding of 947).

By far the most serious problem related to the data was that of a differential number responding to the different instruments. The reader can see in Appendix C that this differential in several cases is quite large (up to 50 per cent difference between the final exam, n = 945, and the attitude toward instructor, n = 459). The reasons for this differential are mostly explainable by the fact that the numbers for each administration basically represented the number of students attending on any given day. It was estimated that the greatest loss between number of students attending a class on any given day and the number

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of responses returned was 10 per cent. The normal loss was generally in the area of 5 per cent or less. As in the other situations above, there is no definite way by which the effect of this differential can be positively measured. In order to estimate the possible effect, an analysis of the data of a group of students who had completed the majority of the instruments (all but one or two) was conducted and then compared to the totals on the respective administrations for all students (this group was also used as the basis for multiple linear regression and other multivariate analyses). An inspection of the two different sets of data--one for everyone in any particular administration and one for the group with the most data--showed that there was not a noticeable difference between the smaller group and all students responding on either mean, standard deviation, skewness, or kurtosis. This does not mean that the results on any single administration are generalizable to the entire group because, especially in the cases with the smallest number of respondents, this is the sub-population of students that attended class. We can project a certain number of absences on any given administration for justifiable reasons, but several of these results go far beyond what could possibly be accounted for by this assumption. About the most that can be said is that first, attendance is an important piece of data related to the course itself and should be considered an index of student involvement and interest, and second, and most importantly, the evaluation was concerned with the effect of the course on those students participating in the activities of the course so that in many instances, the number

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responding is representative of those with a contributive response to make.

Measurement of Instructor (TA) Characteristics

For purposes primarily other than this evaluation, certain measurements were taken from the discussion instructors (TA's) during the period of the evaluation, but because they will be used in a limited fashion later in this report, they will be briefly discussed here. The data gathered included several psychometric personality instruments, a series of open-ended questions concerning the course, the students and the conduct of the discussion sections, and a questionnaire aimed at providing information about the instructors' graduate studies, occupational aspirations, instructional background, and personal data. All but one of the instructors completed these measurements, but because the number was so small (n = 15) it was impossible to derive any estimate of reliability or validity. For those instruments with a previous developmental history, reference will be made to the appropriate sources. All instructor instruments are included in Appendix B.

The instruments administered to provide information about personality characteristics included two standardized instruments and three of a more experimental nature. The standardized instruments were the Eysenck Personality Scales, the same as discussed previously, which included an extraversion scale, a neuroticism scale, and a lie or social desirability scale, and California "F" Scale which is a measure

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of authoritarianism.[20] The other instruments used included one developed by Marlowe and Crowne which measures the individual's social approval need by the number of socially desirable responses made;[21] one developed by Sanford and Gough which measures the degree of the individual's rigidity of personality;[22] and one developed by Wallach and Kogan which attempts to get at the individual's willingness to take probabilistic risks, (situations in which the individual seeks to take risks with a 50 - 50 chance of success).[23] Although the results on this instrument measure either risk-taking or certainty of decision, or both, the confusion of the underlying continuums is not representative of a difference in overt behavior, but rather the cause of the behavior.

The open-ended questions asked the respondents to describe what they felt were the course objectives, the degree to which the objectives were being met, the important behavioral objectives of the discussion sections, what materials or methods or procedures were

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[20]Milton Rokeach, The Open and Closed Mind (New York: Basic Books, 1960), pp. 416-17.

[21]D. P. Crowne and D. Marlowe, The Approval Motive: Studies in Evaluative Dependence (New York: Wiley and Sons, 1964).

[22]H. G. Gough and R. N. Sanford, Rigidity as a psychological variable, unpublished manuscript, University of California, Institute of Personality Assessment and Research, Berkeley, Cal., 1952.

[23]Michael A. Wallach and Nathan Kogan, "Sex differences and judgment processes," Journal of Personality, Vol. 27, 1959, pp. 555-63.

employed to achieve the discussion section objectives, how the students should be evaluated in the course, the nature of the behaviors the students should be able to exhibit as a result of successful completion of the course, and how the course could be improved.

The questionnaire simply established information about the instructor's graduate program, educational background, teaching experience, future vocational preference, specific facts about how the discussion section was handled, and personal background data such as sex, marital status, etc. The purpose of this questionnaire was primarily to develop a description of the instructors as individuals with certain strengths and limitations which would either enhance or detract from their instructional abilities and efforts. Both the questionnaire and the open-ended questions were aimed at developing some feeling for the instructors' familiarity with the course and its content.

The instructors were also asked to clearly show how they determined the students' discussion section grades. This was to be turned in to the evaluators at the end of the course. However, only three of the sixteen instructors provided the information and although others promised to do so at a later date, this data never appeared. Efforts to obtain this data were abandoned finally after half of the instructors had permanently left campus.

Procedure

Many of the procedural details have already been discussed in the previous section on instrumentation, but are several elements of

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the procedure which must be explained in order to provide a feeling for sequence or needed detail for later discussions of analysis and interpretation. The areas needing further explanation are: (1) administrative approval and support, (2) randomization of students into discussion sections, (3) administration of instruments including both sequence and procedure, (4) the development of data files and data controls, and (5) scoring of instruments and analysis of data.

The study was approved by the School of Teacher Education several weeks prior to the beginning of the term. Additional support for the study was provided by the University's Educational Development Project which is under the direction of the Provost's office. At this time, the general direction and instrumentation of the study was determined and approved. According to the accepted proposal, the study was to be a multivariate evaluation of the beginning course in the School of Teacher Education concerned with course outcomes, operations, and instructional interactions. The original proposal was modified to eliminate the active observation of instruction because of budgetary limitations. It was agreed that the evaluation would be independent of the course, but that the individuals responsible for administration of the course would work closely with, and lend assistance to, the evaluation. For the most part, this provision became a reality. All management of the details and operation of the evaluation were handled independently by those responsible for the evaluation. For as long as funds lasted, a small staff of coders was hired to aid in both administration and the development of data files.

All students who enrolled for the course, either by pre-registration or during the normal spring registration, were randomly selected into the different discussion sections two days before the start of the course. This was accomplished by taking the alphabetical list of enrolled students and assigning a random number between one and sixteen to each name (there were sixteen discussion sections for each hour the course was offered) as it appeared on the list. After the initial randomization of students had taken place, the discussion sections were randomly assigned to the TA's by the same procedure. A second list of random numbers was generated (also between one and sixteen) by which any late additions to the course would be assigned to discussion section. If a student dropped the course during this initial period, he was replaced by a late enrolling student. No changes in section were allowed with the exception of a few special cases (several foreign students were assigned to an instructor who by reputation was effective in working with these students, but the foreign students were excluded from the analysis of data or other evaluative procedures because of the language difficulties). Later drops from the course could not be avoided or replaced. However, the discussion sections terminated the course with approximately the same number of students in each section, so it appeared that the major effect of randomization was maintained throughout the duration of the course. This assumption, which will be discussed in the following chapters, is important to any statistical analysis between discussion sections.

With the exception of the pre-test, all instruments were administered by the evaluators without the assistance of instructional personnel of the course. The pre-test was administered during the first discussion period by the instructors, but they had set instructions to provide the students and they had experience administering placebo exams previous to this instance. All other instruments not a part of the normal course procedure were handled by the evaluative staff either by directly entering the discussion section and administering the instruments (such as in the case of the Eysenck Scales and the Learning Set scale) or were distributed at the entrances to the lecture rooms. In the case of instruments administered prior to lectures, all of the students funneled through two or three points and were handed the instrument, a machine-scoring pencil, and a machine scorable answer sheet. After they had completed the instrument during the first five minutes of class time, they retained them until after class when they were collected as the student left the room. During the administration of the first two instruments at lecture sessions, instructions were provided verbally as well as in written form. After these sessions, it was assumed that the students could follow just the written instructions and procedure. Each instrument included complete written instructions.

Due to the large number of evaluative activities and in order to not disturb the normal functioning of the course any more than absolutely necessary, the administration of instruments took place at different periods of the course. These periods have been described

previously as pre, mid, and post, but the exact timing of evaluative activities and essential course activities is as follows:

March 25	randomization of students into discussion sections.
March 27	first day of class; pre-course assessment including Pre-Course Motivation, A - H Test Anxiety Scale, aspiration-expectation variables, course-specific attitude variables, past performance variables, personal and educational background data.
March 28	first discussion section; Pre-Test and Test Anxiety 1.
April 11	Eysenck Personality Scales and Learning Set.
April 25	Mid-Term Exam and Test Anxiety 2.
May 1	Mid-term assessment including aspiration-expectation variables, course-specific attitude variables, attitude toward mid-term.
May 6	instructor evaluation instruments distributed.
May 7	common student course project distributed.
May 23 - 28	student course project collected and ranked.
May 27	Post-Course Motivation.
May 31	Attitude Toward Instructor and aspiration-expectation variables.
June 3	Final Exam, Text Anxiety 3, course-specific variables, attitude toward final exam, attitude toward evaluation.
June 6	Makeup on Final Exam and evaluation instruments.

Because of the extensive number of instruments and the desire to make comparisons between administrations, students, and sections, the students were requested to identify themselves on each instrument

by means of their student identification number. As mentioned, the students were guaranteed anonymity from everyone but the evaluation staff with the further safeguard added that no compilation of data by student number would be begun until after the course had been completed and the grades had been assigned. Data for the study was carefully maintained by time of day and discussion section until the course was completed. Any data not bearing a student identification number, or with a number corresponding to the master student identification list was not included in the study. The control lists of students were also checked against discussion section results on tests and projects to insure the completeness of the data and accuracy of comparisons between design factors. In all, less than 3 per cent of the total number of students enrolled in the course were not included in the final data rolls and this number not included also contained 13 foreign students with possible language difficulties. The final number of students utilized in the study was 972 out of a possible 998 students. However, as previously mentioned, the number of students included in any given administration varied and a special sample of students with almost complete data (missing none or only one or two administrations) was constructed and numbered 532.

After actual completion of the course, all data was coded from scored response sheets, open-ended instruments, or grade-rank forms to a central file organized by the time the course was offered, the discussion section, and then by student number. This data was punched

onto standard data-processing cards. The remaining steps were computed transformations on certain variables previously indicated, under instrumentation, addition of certain instructor characteristics, and addition of the College Qualifying Test scores.

Special attention had to be paid to the smaller group of students who had been selected for having complete or almost complete data. This group was sorted out of the entire group and carefully checked for any missing pieces of data. For those with missing pieces of data, the mean values for the entire group were punched into the blanks. This approach guaranteed the least distortion of the data and a more conservative approach to hypothesis testing with this group.

Most of the instruments were constructed so as to be machine-scorable. Machine scoring was accomplished by the scoring office of the University's division of Evaluation Services. This service provided not only scored answer sheets, but also item analysis, summaries of the data, and programs by which to add weights to the responses on instruments which called for this (such as the Alpert-Haber Test Anxiety Scale). All data not machine-scorable was transposed directly from the instruments to the central data files. Most of this data was plotted according to set codes by a small staff carefully trained in this work. All coding was carefully checked.

All data were first analyzed by a computer program which allows for missing data and provides means, standard deviations,

numbers, variance, skewness, kurtosis, cross-products, and correlations.[24] In addition, all data was processed by a simple program which provides frequency counts for each variable by response category.[25] These two programs were used across all breakdowns of the data, including total, time-course-was-offered, sex, discussion sections, and certain cross-breaks such as high-low splits of the pre-course and post-course motivation. On the smaller sample of students with complete data, several prediction equations were computed using a least squares multiple linear regression routine which establishes the total multivariate prediction equation and then systematically deletes variables from the equation to form a new equation until certain quitting criteria are reached.[26] This program was used to predict several of the outcome variables on the basis of entering characteristics or on the basis of entering characteristics with the addition of course-experience variables. All two-way analysis of variance summaries included in this study were completed by hand using the partial summaries provided by the missing data statistics program. For these analyses,

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[24]Rubel, Op. Cit.

[25]Larry Thiel and Linda Patrick, Percount: Technical Report No. 18, mimeographed material, Michigan State University, Computer Institute for Social Science Research, East Lansing, Mich., May, 1968.

[26]Mary E. Raffer and William L. Ruble, Stepwise Deletion of Variables from a Least Squares Equation: Stat Series Description No. 8, mimeographed material, Michigan State University Computer Center, East Lansing, Mich., Jan., 1968.

the reader is referred to Hays' discussion on analysis of variance with fixed effects.[27]

To aid in the interpretation of results, the omega, squared index was calculated on all significant analysis of variance results to provide some estimate of the degree of importance of the significant difference. This index, shown as ω^2, was developed by Hays as a means to reduce the relative uncertainty about the dependent variable given a significant main effect on a factor(s) or an interaction. As Hays describes this statistic, the value ω^2 is " . . . the proportion of variance in Y accounted for by X."[28] More recently, the value of this statistic has been called into question by Glass and Hakstian on the basis that fixed effects cannot either logically or statistically be used to predict relationships.[29] However, their argument is concerned with using the index which they agree is correctly calculated, as a means of prediction while the use of the index in this study was only to add further description by way of showing the proportion of variance attributable to the observed differences between levels of a factor on a given variable. Because this was an evaluation study rather than an experimental

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[27]William L. Hays, Statistics for Psychologists (New York: Holt, Rinehart and Winston, 1963), pp. 387-406.

[28]Ibid. p. 325.

[29]Gene V. Glass and A. Ralph Hakstian, "Measures of Association in Comparative Experiments: Their Development and Interpretation," American Educational Research Journal, Vol. 6, No. 3, May, 1968, pp. 403-13.

study with all of the latter's concommitant controls, it seemed appropriate to provide as much explanation to the significance of results as possible.

All other data used in this study was gathered, scored, and analyzed by hand. This includes the instructor data and the assessment of open-ended questions, or the content analysis of reports and documents. Although the Computing Center, the Office of Institutional Research and the Computer Institute for Social Science Research all provided services and invaluable consultation, all decisions and responsibility for any aspect of the study were attributable to the two primary evaluators. The documentation used to support certain points or develop certain arguments came from the School of Teacher Education, the Provost's office, and the Department of Counseling, Personnel Services and Educational Psychology.

Chapter IV

RESULTS AND DOCUMENTATION

In this chapter, the data and documentation will be presented, interpreted, and discussed as it pertains to the individual study questions previously stated at the end of Chapter II. The questions will be considered in the order of their original presentation. Due to the large amounts of data in terms of variables, numbers of respondents, factors of analysis, and varieties of supportive documentation included in this study, only summary presentations will be included in the text, but appropriate references to complete data or documentation sources, including those contained in the appendices will be indicated. In this chapter, each question will be considered independently although any given source of data or documentation might pertain to more than one question. In Chapter V, the results will be combined and interpreted with regard to the central evaluative questions of course reliability and validity.

The first four study questions all involve the analysis of student variables. As indicated in Chapter III, the most important consideration affecting the generalization and interpretation of results observed on any given student variable is the number of observations included in the measurement. Measurements taken during the initial class periods and measurements related to course performance or grades

included virtually the entire student group; measurements taken during other class periods throughout the term had some important differences in the number of students responding to any given instrument. The number of students responding to each instrument is included in Appendix C and Appendix D by total, sex, time-of-day, and discussion section. The differential numbers were primarily due to attendance differences rather than failure of students to respond to the instruments, and therefore can be considered as an indicator of attendance over time and across the various divisions of the course.

Table IV-1 shows both the base number of students by discussion section, time-of-day, and totals and the proportion of students responding according to these same units at various points in time as represented by certain important continuing measurements. The base numbers, as shown on Table IV-1, were determined by the criteria of receiving a final grade in the course. The total number of students enrolled in the course after the initial week of drops and adds was 999 while the number of students receiving a final grade was 972. The difference between these two figures is attributable to a small number of students who dropped the course later in the term with a passing level of performance and a decision to not include foreign students with language difficulties who received considerably different treatment.

As shown on Table IV-1, there are observable and important differences in the proportion of students responding to the respective measurements both by class totals and across discussion sections.

VARIABLE	#	TYPE CLASS		INSTRUCTORS 1	2	3	4	5	6	7	8	Grand Total
Course Grade (%age Base n)	(1)	3	AM	39	37	30	38	38	37	39	32	577
			PM	27	21	25	28	29	23	26	26	395
			Total	66	58	55	66	67	60	65	58	972
Pre-Test	(6)	1	AM	.84	.94	.90	.94	.84	.91	.94	.90	.887
			PM	.85	.76	.88	.75	.75	.82	.88	.73	.797
			Total	.84	.85	.89	.84	.79	.86	.91	.81	.851
Grade-Point-Average	(23)	1	AM	.84	.91	.90	.94	.76	.91	.97	.78	.877
			PM	.85	.76	.86	.71	.82	.78	.80	.88	.823
			Total	.84	.83	.88	.82	.79	.84	.88	.83	.855
CQT - Total	(26)	1	AM	.69	.78	.76	.73	.65	.75	.74	.62	.759
			PM	.70	.61	.64	.89	.72	.78	.53	.73	.711
			Total	.69	.69	.70	.81	.68	.76	.63	.67	.740
Post-Course Attitude	(29)	3	AM	.43	.59	.53	.57	.55	.70	.48	.59	.555
			PM	.51	.52	.32	.28	.51	.56	.57	.38	.491
			Total	.47	.55	.42	.42	.53	.63	.52	.48	.529
Attitude Toward TA	(30)	3	AM	.48	.45	.33	.44	.65	.48	.46	.43	.453
			PM	.55	.66	.36	.42	.58	.39	.57	.34	.478
			Total	.51	.55	.34	.43	.61	.43	.51	.38	.464
Learning Set	(31)	1	AM	.87	.81	.83	.84	.94	.94	.87	.87	.844
			PM	.81	.76	.76	.92	.93	.91	.88	.80	.841
			Total	.84	.78	.79	.88	.93	.92	.87	.83	.843
Course as Preparation 1	(48)	1	AM	.89	.89	.90	.89	.81	.86	.97	.84	.887
			PM	.88	.90	.92	.71	.82	.95	.92	.92	.853
			Total	.88	.89	.91	.80	.81	.90	.94	.88	.873
Course as Preparation 2	(49)	2	AM	.76	.64	.63	.76	.76	.75	.58	.68	.698
			PM	.62	.76	.64	.71	.75	.65	.73	.61	.655
			Total	.69	.70	.64	.73	.75	.70	.65	.64	.681
Course as Preparation 3	(50)	3	AM	.92	.97	1.00	.94	.92	.89	.92	1.00	.946
			PM	.92	.95	.92	.92	1.00	.91	.88	.96	.949
			Total	.92	.96	.96	.93	.96	.90	.90	.98	.948

Table IV-1: Number of Students Included in Study and Proportion of Students Responding to Selected Instruments Grouped by Discussion Section, Time-of-Day and Totals

Pre-Test

Course Grade Comparison Report

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VARIABLE	#	TYPE	CLASS	INSTRUCTORS 9	10	11	12	13	14	15	16	Grand Total
Course Grade (%age Base n)	(1)	3	AM	36	35	36	35	39	38	33	35	577
			PM	25	25	25	25	24	21	24	21	395
			Total	61	60	61	60	63	59	57	56	972
Pre-Test	(6)	1	AM	.88	.94	.83	.80	.79	.84	.96	.88	.887
			PM	.84	.80	.72	.64	.83	.76	.87	.90	.797
			Total	.86	.87	.77	.72	.81	.80	.91	.89	.851
Grade-Point-Average	(23)	1	AM	.88	.82	.86	.82	.87	.86	.93	.88	.877
			PM	.92	.80	.72	.84	.91	.76	.87	.95	.823
			Total	.90	.81	.79	.83	.89	.81	.90	.91	.855
CQT - Total	(26)	1	AM	.75	.80	.80	.85	.79	.84	.75	.77	.759
			PM	.64	.72	.68	.76	.79	.57	.87	.66	.740
			Total	.69	.76	.74	.80	.79	.70	.81	.71	.555
Post-Course Attitude	(29)	3	AM	.50	.54	.47	.65	.56	.60	.60	.45	.555
			PM	.56	.36	.52	.44	.66	.47	.58	.61	.491
			Total	.53	.45	.48	.54	.61	.53	.59	.53	.529
Attitude Toward TA	(30)	3	AM	.44	.34	.41	.34	.48	.60	.33	.45	.453
			PM	.56	.44	.44	.36	.62	.38	.41	.52	.478
			Total	.50	.39	.42	.35	.55	.49	.37	.48	.464
Learning Set	(31)	1	AM	.94	.77	.88	.74	.87	.81	.72	.71	.844
			PM	.84	.84	.88	.80	.87	.76	.75	.85	.841
			Total	.89	.80	.88	.77	.87	.78	.73	.78	.843
Course as Preparation 1	(48)	1	AM	.91	.80	.86	.82	.84	.92	1.00	.94	.887
			PM	.92	.72	.76	.84	.83	.76	.87	.85	.853
			Total	.91	.76	.81	.83	.83	.84	.93	.89	.873
Course as Preparation 2	(49)	2	AM	.58	.68	.58	.74	.79	.71	.69	.74	.698
			PM	.72	.48	.56	.64	.70	.61	.66	.57	.655
			Total	.65	.58	.57	.69	.74	.66	.67	.65	.681
Course as Preparation 3	(50)	3	AM	.94	.94	.97	.97	.89	.92	.93	1.00	.946
			PM	.96	.96	.96	.88	1.00	.95	1.00	1.00	.949
			Total	.95	.95	.96	.92	.94	.93	.96	1.00	.948

Table IV-1: (continued)

Variable	(#)								
Course Grade	1			X	.001	.038	n.s.	n.s.	
Mid-Term Grade	2		X		.01	.017	n.s.	n.s.	
Final Exam Grade	3			X	.01	.028	n.s.	.05	.012

VARIABLE	(#)	ADMINISTRATION 1	2	3	INSTRUCTORS p	W^2	TIME-OF-DAY p	W^2	INTERACTION p	W^2
Course Grade	1			X	.001	.038	n.s.		n.s.	
Mid-Term Grade	2		X		.01	.017	n.s.		n.s.	
Final Exam Grade	3			X	.01	.028	n.s.		.05	.012
Instructor Grade	4			X	.001	.070	n.s.		n.s.	
Course Project Rank	5			X	.001	.136	n.s.		n.s.	
Pre-Test	6	X			n.s.		.001	.01	n.s.	
Mid-Term Exam	7		X		.01	.026	n.s.		.001	.039
Final Exam -- Recall Items	8			X	.001	.032	.10	.006	n.s.	
Final Exam -- Applied Items	9			X	.025	.017	n.s.		n.s.	
Final Exam -- Total	10			X	.001	.033	n.s.		n.s.	
Aspiration-Expectation 1	20	X			n.s.		.05	.004	n.s.	
Aspiration-Expectation 2	21		X		.05	.018	n.s.		n.s.	.008
Aspiration-Expectation 3	22			X	.10	.02	n.s.		n.s.	
Grade-Point-Average	23	X			n.s.		.05	.004	n.s.	

Table IV-2: Summary of Analysis of Variance Results by Factors and Their Interaction on Student Variables Showing Probability Level of Differences (p) and Proportional Reduction in Variance (ω^2).

Qualifying Test - Verbal	[illegible]	x	.10	.012	n.a.	n.a.
Qualifying Test - Quantitative	25	X	n.a.		n.a.	n.a.

VARIABLE	(#)	ADMINISTRATION 1	2	3	INSTRUCTORS p	W^2	TIME-OF-DAY p	W^2	INTERACTION p	W^2
Qualifying Test - Verbal	24	X			.10	.012	n.s.		n.s.	
Qualifying Test - Quantitative	25	X			n.s.		n.s.		n.s.	
Qualifying Test - Total	26	X			.025	.012	n.s.		n.s.	
Reason for Enrolling	27	X			n.s.		n.s.		n.s.	
Pre-Course Attitude	28	X			n.s.		n.s.		n.s.	
Post-Course Attitude	29			X	n.s.		.10	.027	n.s.	
Attitude Toward Instructor	30			X	.001	.122	n.s.	.	.05	.02
Learning Test	31	X			.01	.028	n.s.		.05	.012
A-H Anxiety Scale	32	X			n.s.		n.s.		n.s.	
Eysenck Extraversion Scale	36	X			n.s.		.05	.004	.01	.012
Eysenck Neuroticism Scale	37	X			n.s.		n.s.		n.s.	
Eysenck Lie Scale	38	X			.01	.02	n.s.		n.s.	
Suitability for Teaching 1	42	X			n.s.		.01	.006	n.s.	
Importance of Theory 3	47			X	n.s.		.01	.007	n.s.	
Course of Preparation 2	49		X		.025	.023	n.s.		n.s.	
Course of Preparation 3	50			X	n.s.		.10	.002	n.s.	

Table IV-2: (continued)

Since there are potentially conflicting interpretations to these differences and no empirical evidence to support any given interpretation, it can only be stated that attendance generally declined over time in the course, and that the declining attendance was differentially represented across discussion sections. However, these differences will be discussed speculatively in the summarization sections.

Table IV-2 summarizes the results of complex analysis of variance on all student variables used to answer study questions one through three. The results are displayed by level of probability (p) of observed differences as determined by the "f" test, and by ω^2 which represents the proportional reduction in variance on the respective, significant variable results attributable to the observed differences between factor levels or the interaction of factors. The variables are presented by approximate time of administration (pre, mid, and post), and by the factors (discussion section TA and time-of-day) and their interaction. Summary tables including means by cells, factor levels, and total, and the analysis of variance summary tables, are shown in Appendix G in similar order to the presentation of variables in Table IV-2.

QUESTION 1: Were there significant differences attributable to the discussion section (TA) factor on student entering-course variables?

As shown on Table IV-2, there were no significant differences attributable to the discussion section (TA) factor on any of the measurements

taken during the first two class periods (i.e., Pre-test, Grade-Point-Average, Aspiration-Expectation 1, Reason for Enrolling, Pre-Course Attitude, A-H Anxiety Scale, or any of the course specific attitudes). These variables represent the closest test of whether the initial randomization was successful and the analysis of variance results indicate that at the beginning of the course, statistical equivalency between discussion sections could be assumed.

The question of statistical equivalency as an assumption at continuing points of time during the course is to some degree confounded (see Table IV-2). Measurements conducted approximately two weeks later when analyzed resulted in significant main effects on the discussion section (TA) factor for the student Learning Set, ($p < .01$) and the Eysenck Lie Scale ($p < .01$). The results of analysis on the student Learning Set are further confounded by a significant interaction ($p < .05$). There are two potential explanations for these results which because of previously mentioned limitations could not be tested directly. First, it is possible that the equivalency between discussion sections was upset due to students dropping or adding the course during the first two weeks, or that randomization failed to establish equivalency in relation to these variables in the first place. Second, the results may be due to attendance factors, early course treatment, or both. As shown on Table IV-1, less students were in attendance on the day these measurements were taken than during the initial two days of class (those with data for both measurement periods numbered about 726 as compared

to 850 students tested the first two days).

In addition to the above confounding results, statistically significant differences were also observed in the analysis of variance results on the College Qualifying Tests (CQT's). There was a significant difference ($p < .10$) between discussion sections on the verbal portion of the CQT's and on the total CQT score ($p < .025$). These results may also support an hypothesis of difference between discussion sections. However, University records only included CQT results for 719 of the students and when these results were crossed with the measurements of the first two days of the course this number was reduced to approximately 650. It is even more likely that these results are spurious on the basis of decreased numbers than the results pertaining to the Learning Set and the Eysenck Lie Scale.

Because the question of statistical equivalency is confounded, the accuracy of later interpretations of significant results depends largely on the degree to which trends and other sources of supporting evidence can be established. In any event, all of the remaining discussions pertaining to the data must be discussed in light of potential dependency on the three significant differences of the three entering variables, the most important of which are the Learning Set and the CQT - Total score.

QUESTION 2: What was the effect on the two factors--discussion section (TA) and time-of-day--of continuing measures?

There was no feasible way by which the random selection of students into the two different hours of the day the course was offered

(time-of-day factor) could be accomplished. Because of the student self-selection into the time-of-day factor, it was necessary to consider the analysis of variance results pertaining to the continuing measures as two potentially separate questions both of which attempt to get at the relative effect of the discussion section (TA) factor over time:

(1) where initial significant differences occurred on the time-of-day factor; and,

(2) where no initial differences occurred on the time-of-day factor.

In addition, it was necessary to look at the time-of-day factor independently of the discussion section (TA) factor to attempt to answer the question of equivalency of treatment according to what hour a student chose to take the course. However, any interpretation to this question would be tenuous at best due to the failure to control randomly the choice of hour.

Based upon the assumption of initial equivalency of discussion sections within each of the two fixed levels of the time-of-day factor, the question of equivalent results of discussion section (TA) treatment was considered according to trends across continuing measures both by level of significance (p) and proportion of variance (ω^2) accounted for by differences between levels (discussion sections). The continuing measures included exams, measures of aspiration-expectation, and attitudes. The results of analysis are shown on Table IV-2.

There were no significant differences on the discussion section (TA) factor of the course Pre-Test. A significant difference was

observed on the Pre-Test attributable to the time-of-day factor ($p < .001$). On the Mid-Term Exam, there was a main effect ($p < .01$) on the discussion section (TA) factor and a significant interaction ($p < .001$). There was a significant main effect ($p < .001$) on the Final Exam - Total attributable to the discussion section factor and there were also main effects on the two different parts of the final exam. A main effect ($p < .10$) was also observed on the time-of-day factor for the Recall section of the Final Exam. The proportion of variance attributable to differences between factor levels increases over the three measurements on the discussion section (TA) factor and decreases on the time-of-day factor.

These results may be interpreted as an increasing effect of differences between the discussion sections. Besides the increasing trend of level of significant differences, the movement from a significant main effect on the time-of-day factor to a significant interaction and a significant main effect attributable to the discussion section factor on the mid-measurement to only a significant main effect attributable to the discussion section factor on the Final Exam - Total would indicate that the differences between the discussion sections in terms of treatment of students do make a difference on the students' examination performance. The possibility that the potential confounding of the results is due to real differences between discussion sections on the CQT indices seems unlikely when the trend in proportion of variance accounted for by the differences in discussion sections is

considered. If this were a confounding effect, it should appear consistently, but as observed, the proportion of variance accounted for by differences in the discussion sections increases rather than remaining constant between Mid-Exam and Final Exam. It is also possible that potentially real differences in the discussion sections on the student Learning Set might confound these observed results, but this too seems unlikely. The Learning Set attempts to measure the student's preference toward rote-recall learning and problem-applied learning. A real difference was observed on the initial time-of-day factor and on recall items (similar to the pre-test items) on the Final Exam, a significant main effect remains although it does not account for quite as large a percentage of the variance. In both cases, an examination of the means (See Appendix G) shows the PM section of the course higher.

The results on exam performance are similar to the results of the continuing measurement of student Aspiration-Expectation. On these measurements the analysis of variance results include a main effect ($p < .05$) on the initial time-of-day factor and no significant differences attributable to the discussion section (TA) factor. At mid-course, the results include a significant main effect ($p < .05$) on the discussion section factor and interaction effect ($p < .15$) which although not significant showed the developing trend. A main effect ($p < .10$) was also observed on the discussion section (TA) factor on the final Aspiration-Expectation measurement. On these measurements, there

was an increase, although slight, in the proportion of variance accounted for by differences in the discussion sections.

The analysis of grade (reward) results also indicates the increasing trend attributable to the discussion sections on both the level of significance ($p < .01$ to $.001$) and the proportion of variance accounted for by the differences between discussion sections ($\omega^2 = .017$ to $.038$). In this case, initial differences observed on the time-of-day factor for other performance measurements probably are reflected in the significant interaction ($p < .05$) on the Final Exam grade.

The results on continuing attitude measurements are not as clear. There is no difference attributable to either factor on Pre-Course Attitude, but there is a significant difference on the Post-Course Attitude attributable to the time-of-day factor ($p < .10$). In comparing the means corresponding to these results (see Appendix G) the PM section of the course, which also had significantly higher means on the other entering characteristics mentioned previously, had a lower Post-Course Attitude than the AM section. It is possible that the students' attitudes toward the entire course may have been affected by subtle changing of performance results and the corresponding subtle change in level of Aspiration-Expectation, thus resulting in a lower attitude for those with slightly better ability. This explanation may also be the case with regard to the specific final attitudes toward the Importance of Theory and the Course as Preparation. This interpretation, although tenuous, is improved by the results of the attitude toward the Course as Preparation

over continuing measures. There were no initial differences on this measure attributable to either of the two factors. However, on the mid-measurement, there was a significant difference attributable to the discussion section (TA) factor and on the final measurement, there was a significant difference attributable to the time-of-day factor. In this case, as in the case of Importance of Theory, the PM mean was lower than the AM mean (see Appendix G). It is possible that after no initial differences in entering attitude, but initial differences in entering performance and Aspiration-Expectation, that the reflection of diminishing initial differences was first seen as related to the discussion sections, but with continuing experience was finally attributed to the course in general.

There were no differences on later measurements attributable to either factor on attitude toward Commitment to Enter Profession or Suitability for Teaching which may indicate that the factors had no effect on these attitudes per se. Rather the commitment of students to teach and their respective suitability for teaching as a career were independently determined, and remained relatively uneffected by the course. This seems an appropriate interpretation particularly when it was observed that this attitude increased over the time of the course, but the attitude toward the course as preparation and the course's content decreased over time in the course (see Appendix C).

QUESTION 3: Were there significant differences attributable to the discussion section (TA) factor on:

a. reward (grade) variables with special attention placed on those variables with potential systematic TA variance

b. outcome test performance variables

c. instructor rankings of common student course project performances

d. outcome level of Expectation-Aspiration variables

e. student attitude toward discussion section and TA

f. student post-course attitude variables?

What this question asks, irrespective of anything else, is the degree to which the discussion sections and respectively the TA's had a differential effect on student course outcomes. The order by which the specific outcome areas are listed above reflects the area's importance to the ideal of "provision for student opportunity." How a student perceives himself as a result of his performance and how he perceives the course as fairly treating him in respect to other students is assumed to be critical to the student's future involvement with a program and his college experience in general. These performances and reward conditions should then be reflected in the student's level of Aspiration-Expectation and his various attitudes.

As the results summarized on Table IV-2 indicate, there were significant main effects attributable to the discussion section (TA) factor on all of the reward (grade) variables. While exam performance in the course obviously contributed to the grade results, and these

exam performance results will be discussed next, differences in exam performance attributable to the discussion sections must be interpreted more conservatively with regard to the direct effect of the TA than the reward results. This is due to the freedom allowed the TA's by the course administration in the determination of student grades. The TA's effect in this regard takes two forms. First, the TA, while not determining the grade result for examination performance, did maintain the student record and so was aware of student performance other than in the discussion section. Because the TA was solely responsible for forty per cent of the student's course grade even though this grade was supposed to reflect only discussion section performance, the TA potentially could have used this grade to adjust the student's course grade to the level he thought appropriate. It would be difficult to imagine this record-keeping responsibility, in combination with the grading responsibility, not to some degree pre-conditioning the TA's determination of discussion section grade. Second, as will be indicated more clearly later, there was very little restriction placed upon the TA as to both the performances upon which the discussion section grade should be based and the level of grading standard the TA should use. These freedoms allow for two potential effects: (1) the determination of discussion section grade may be based upon widely diverse criteria across the respective sections, and (2) the relative levels of grading used across the respective sections may result in systematic bias in the discussion section grade, the student's chances for a given

Summary of Means

Time	Instructors 1	2	3	4	5	6	7	8
AM	3.769	3,946	3.500	3.684	3.579	3.757	3.872	4.241
PM	3.667	3.952	3.600	3.519	3.966	3.739	3.615	4.346
Inst. Total	3.727	3.948	3.545	3.615	3.746	3.750	3.769	4.291

	Instructors 9	10	11	12	13	14	15	16
AM	3.722	3.714	3.806	3.800	3.949	3.211	3.576	3.629
PM	3.800	3.800	3.680	3.880	3.792	2.905	3.417	3.571
Inst. Total	3.754	3.750	3.754	3.833	3.889	3.102	3.509	3.607

Totals AM Mean = 3.732 PM Mean = 3.713 Course Mean = 3.724

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	.080	1	.080	-----	n.s.
instructors	52.157	15	3.477	5.709	.001
interaction	6.838	15	.456	-----	n.s.
within subjects	570.275	936	.609		
total	629.350	967			

Table IV-3: Instructor Grade Means by Discussion Section (GA), Time-of-Day, and Totals, and Analysis of Variance Results (N = 968)

grade fluctuating on the basis of which section he happens to draw.

The analysis of variance results indicate that there were systematic differences in the Instructor Grade. In addition to main effect of discussion section (TA) factor on discussion section grade ($p < .001$), a considerable proportion of the variance attributable to differences between discussion sections ($\omega^2 = .070$) is also the case. In comparing the means occurring in the different discussion sections (see Table IV-3), it can be seen that there is more than one entire grade difference between the lowest TA mean (3.102) and the highest TA mean (4.291). If the differences are due to different actual levels of performance rather than systematic grading differences of the TA's, the result in terms of fairness to students is the same. Because of the correlational results presented in Chapter III which show that the instructor grade has little consistent relationship to other measures of student ability or performance, the best interpretation of the observed differences between TA's grades is probably systematic bias in grading level contributing most of the difference with some small part being determined by differences in choice of performances judged. In any event, both reasons probably play a part in the results.

The potential confounding effects of CQT scores and Student Learning Set would seem to make no difference with regard to instructor grade results. There is virtually no correlation between the instructor grade and either of these two variables. Because there are low but significant correlations between the CQT - Total, the Learning Set,

and measures of performance, this would also support the interpretation of different grading levels as the major contributer to TA variance.

A student's performance on exams is obviously his own in the sense that it is his judgment or memory that results in the determination of how well he does on the exams. However, under the course "system" the discussion section and the TA are responsible for developing clarity and relevance to the student over material covered in the course. If it can be assumed that there were: (1) no important differences between discussion sections, and (2) equivalency of the student composite across the discussion sections, then there should be no significant difference attributable to discussion sections and TA's on examination results. However, the results of analysis of variance (see Table IV-2) support a null hypothesis of difference. Although the results are confounded by potential differences in two student attributes--CQT's and Learning Set--the significant main effect attributable to discussion section (TA) factor seems to be a real effect based upon the discussion of trends in the previous question. The main effect ($p < .001$) attributable to the discussion section (TA) factor on the recall items of the Final Exam is in addition to a main effect ($p < .10$) attributable to the time-of-day factor. This indicates that the discussion section effect was in addition to differences which occurred across the time-of-day factor on entering pre-test results. On the Final Exam applied items which were less appropriate for analysis of variance based upon the highly leptokurtic configuration of the measurement,

there is also a significant main effect attributable to the discussion section (TA) factor ($p < .025$). These items, which asked the student to make application of the content to educational settings were supposedly based upon the type of experience the student would receive in the discussion section. These results could be interpreted as an indication that the students either did not receive the same application experience in the discussion section or perhaps received essentially the same experience but with differential degrees of instructional effectiveness. Because of the leptokurtic nature of the measurement, it would seem more likely that the results were truly a discussion section (TA) effect rather than the result of confounding due to other potential differences. There is, however, a significant correlation between the CQT-Total and both the Final Exam-Total ($r = .408$) and Final-Exam-Applied ($r = .405$).

The interpretation that students did receive systematic differences in level of grading attributable to the discussion section (TA factor is also supported by the results of instructor ranking of common course project. There was a significant main effect attributable to the TA's ($p < .001$) as shown on Table IV-2. In this case, the instructors were requested to rank each student's performance according to set, closely defined criteria. The results for each instructor conformed to the expected normal curve of performances (see Appendix D) but there were significant differences between the level of individual TA curves. In this case, the proportion of variance attributable to TA's was higher

(ω^2 = .136) than the proportion on the instructor or discussion section grade (ω^2 = .070). Although the instructors could not rank to criteria reliably (discussed under the next question), these results still demonstrate the relative differences in level of instructor grading irrespective of criteria. Student performance on this course project might be slightly related to student Learning Set since the project called upon the student to integrate certain content to resolve a given problem. However, there is no correlation between the ranking and the Learning Set although this may be due to the instructor rankings rather than the true lack of relationship between student performance and Learning Set. This further supports the interpretation of systematic differences attributable to the TA's.

There was a significant main effect attributable to the discussion section (TA) factor on the student level of expectation-aspiration (see Table IV-2). These results were discussed quite fully under Question 2 and that discussion applies at this point also. Based upon trends as well as the above indicated main effect, it would seem that student level of expectation-aspiration was differentially affected by the TA's. While these results potentially may be confounded by other entering observed differences, the relationship between the level of aspiration-expectation and the student grade-point average on which there were no entering differences is considerably higher (r = .464) than on either the CQT-Total (r = .303) or the Learning Set (r = .131).

The results of analysis of student attitude toward discussion section and TA are severely limited by the number of students measured

(n = 451 or 46.4 per cent). This measurement was conducted immediately prior to the last lecture session when it was expected most students would attend. As shown in Table IV-2, there was a significant main effect attributable to the discussion section (TA) factor ($p < .001$) and a significant interaction ($p < .05$). The TA's accounted for 12.2 per cent of the variance and the interaction accounted for 1.2 per cent of the variance.

Despite the limitation of the number of students responding to the instrument, these results must be considered important for reasons in addition to the inferred difference in treatment as a result of the TA's. It is germaine at this point to discuss internal item responses in order to more clearly interpret the meaning of the significant difference attributable to the TA's.

The items on this instrument (see Table IV-4) were primarily concerned with performance characteristics of the TA's. However, responses to the items potentially involved some variance attributable to the TA popularity or personality factors rather than just an independent assessment of the teaching characteristics and quality of TA instruction. Interpretation of general results which to this point generally establish instructor differences in relation to student outcomes would seem to support this idea. In addition, of the 459 students responding to the instrument, 110 students responded positively to all twenty-three questions. Since there is no correlation between the scores on the attitude toward discussion section and TA and any of the other student outcome

Question	Item Number	Percent Agree	Percent Disagree	Point-Biserial Correlation	Index of Discrimination
Did your discussion section instructor interrelate the course materials and concepts in a systematic manner?	9	59%	39%	.6813	89
Did the discussion section assignments help you in understanding the course material?	4	60%	38%	.6407	82
Did your discussion section instructor instill in you an interest and enthusiasm for the materials?	6	63%	36%	.7600	91
Did the instructor's discussion or handouts supplement and clarify the difficult portions of the text and lecture materials?	5	64%	34%	.5284	68
Do you generally consider your discussion section experiences worthwhile?	23	65%	31%	.7685	89
Did you generally enjoy going to your discussion section?	22	66%	32%	.7511	83
Did the discussion section instructor seem to attempt to draw all the members of the section into the discussion?	16	68%	30%	.4929	63
Were the objectives of the discussion section adequately explained?	1	70%	29%	.6007	67

Table IV-4: Items and Item Analysis Results of Student Attitude Toward Discussion Section and TA

Question	Item Number	Percent Agree	Percent Disagree	Point-Biserial Correlation	Index of Discrimination
Did the discussion section instructor generally stimulate class discussion?	19	71%	27%	.6897	77
Did your discussion section instructor effectively use examples in explaining the course materials and answering questions?	10	76%	22%	.6624	69
Did the instructor in responding to questions in fact answer the question asked?	14	77%	21%	.6514	60
Did the discussion section instructor emphasize and demonstrate practical application of the course materials?	12	78%	21%	.6253	62
Did your discussion section instructor make you aware of what he expected you to do in the discussion section?	2	79%	20%	.6098	56
Did your discussion section instructor seem to have a firm grasp of the subject matter?	8	82%	16%	.6379	54
Did the discussion section instructor use student questions or ideas as a springboard to further discussion?	13	84%	14%	.6002	46
Did your discussion section instructor seem to be concerned with whether the students learned the materials?	11	85%	14%	.5612	44

Table IV-4: (continued)

Question	Item Number	Percent Agree	Percent Disagree	Point Biserial Correlation	Index of Discrimination
Did the discussion section instructor appear receptive to new ideas and others viewpoints?	18	85%	12%	.5166	38
Did you usually understand the instructor's answers to questions?	15	87%	12%	.6335	42
Did the discussion section instructor clearly explain how you would be evaluated and graded in the discussion section?	3	87%	11%	.3082	21
Were you generally attentive in your discussion section?	20	87%	10%	.4676	32
Did the instructor encourage students to express opinions?	17	88%	9%	.5272	34
Did your discussion section instructor seem to be interested in teaching?	7	89%	9%	.5699	36
Did you attend the discussion section on a regular basis?	21	92%	5%	.2638	13

Table IV-4: (continued)

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results, it is reasonable to assume that there is a confounding in the total score between popularity and proficiency. When the rank-order of the individual instructor means on this instrument were compared to the rank-order distribution of perfect positive scores for each instructor, there was only one important exception between the two rank-orders. In other words, the instructor with the highest mean score for the entire instrument had the greatest number of perfect scores and this correspondence continued through the list of instructors with the instructor having the lowest mean score also having no perfect scores. Interpreting this in relation to item analysis results would indicate that the result of relative instructor popularity had the effect of inflating the overall attitude toward performance estimates of the more popular instructors and depressing the estimates of the less popular instructors.

In looking at the item results (see Table IV-4) the column marked "Item Number" indicates the original position of the item on the instrument. "Percent Agree" and "Percent Disagree" indicate the percentage of student responses in the respective categories; any difference between the sum of these two percentages and 100 per cent indicates the percentage of students who omitted the item. The point-biserial correlation is between the specific response choice and the total score and is one indication of the particular item's ability to discriminate. The "Index of Discrimination" is the more popular Flanagan "r" which

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estimates item-instrument correlation from the tails of the distribution.[1] The items are included in Table IV-4 in a descending order by "Percent Disagree."

The results of the item analysis showed that almost all of the students responding to the instrument indicated they attended class on a "regular" basis (92 per cent) and were "attentive" in the discussion section (87 per cent). Examination of the item results shows that there was a trend in content of the items corresponding to the relative per cent disagreeing with the item. The least percentage of students disagreed with items which referred to their participation in the discussion section, the TA's interest in the students, and the notion that discussion took place in the discussion sections. A noticeably higher percentage of students disagreed with items which made reference to the TA's knowledge of content and its application, his ability to answer questions, and his use of examples. The most disagreement with items occurred in relation to questions about the TA's ability to employ teaching strategies such as explaining objectives, stimulating discussion, providing practice experiences, and enabling the students to understand course materials. Also occurring in this group of items with the highest percentage of disagreement were questions relating to student

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[1] John C. Flanagan, "General Considerations in the Selection of Test Items and a Short Method of Estimating the Product-Moment Coefficient from Data at the Tails of the Distribution," Principles of Educational and Psychological Measurement, William Mehrens and Robert Ebel, eds., Chicago: Rand McNally, 1967, pp. 369-75.

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enjoyment of discussion section and feelings of discussion section worth. The highest percentage of students disagreed with the ability of the TA to interrelate the materials and concepts in a "systematic" manner (39 per cent).

If, as indicated previously, the percentage of students agreeing to items is artificially inflated due to popularity issues, then these trends would be even more marked than the relative percentage figures indicate. Irrespective of this, the results taken literally are important. Not only are there significant differences between the student attitude toward discussion section and TA, the TA's are ranked least highly on items which directly pertain to their instructional ability, the areas which critically affect both "quality instruction" and "provision for student opportunity." To rephrase the general interpretation of these results, it could be said that the students who responded to this instrument and who also indicated a high degree of attendance in and attention to the discussion section felt that the TA's did discuss and encourage discussion, felt less sure that the instructor had a grip on the content, and had clear reservations about the TA's skills which underlie good teaching and student opportunity. It is also possible that the student assessment of TA knowledge and understanding of content and materials is inflated by the nature of the authority relationship between student and TA in the discussion sections; this is in reference to Trow's notion that teaching assistants by nature of their position tend to be "iconoclastic" or "debunking."

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There were no significant differences attributable to the discussion section (TA) factor on other student outcome attitudes, except as discussed under Question 2. These attitudes include Post-Course Attitude, and specific course objectives attitudes. As indicated under Question 2, these instruments pertained to the entire course and while there were some observed effects related to the results on these instruments, they appeared broader than attributable to just discussion section. The only exception, as previously mentioned, was the attitude toward the "Course as Preparation - 2" on which a significant main effect attributable to the discussion section (TA) factor was observed ($p = .025$). This measurement took place shortly after the Mid-Term Exam and may reflect an effect on student attitude by discussion section differences related to Exam performance. However, there is a significant correlation between this variable and both the Pre- and Post-Course Attitude ($r = .31$ and $.30$) which may indicate that differences between the discussion sections did subtly contribute to attitude, but the instrumentation was generally not sensitive enough to measure the difference.

QUESTION 4: Were the TA's as a group able to achieve acceptable reliability in ranking student performance to set criteria of performance?

The common course project and the result of an estimate of instructor ability to rank students to criteria is discussed at length in Chapter III. Based upon a randomly selected sample of students drawn

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from each discussion section, the correlation between the TA ratings of student performance and the ratings of a trained, independent rater was r = .309. The original purpose of this project was to provide a reliable non-multiple-choice index of student ability to integrate and resolve a problem related to the material and future teaching activities. Relatively extensive criteria were provided each instructor upon which ratings were to be based (see Appendix B). In order to avoid a conflict between the evaluative choice of criteria and the instructors' evaluative decisions, the ratings determined by the instructors did not have to be used in their calculation of student grades. Because the correlation between the instructors' ratings and those of trained, independent rater only accounts for approximately nine per cent common variance, the ratings could not be used as an estimate of student performance, but they did indicate the unreliability of the instructors as a group. Based upon the analysis of variance results on these ratings which showed a significant main effect attributable to the TA's (see previous question), it does not seem likely that the low correlational results could be due to inconsistency in the independent ratings.

Previously it was indicated that in judging student performance there were potentially two causes of differences between instructors beyond instructional ability differences: (1) instructors appeared to have different relative levels of judging student performance irrespective of what performance was being judged, and (2) instructors potentially were judging student performance on the basis of different performances

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or criteria. These interpretations are supported by the results on this instrument. The analysis of variance results support the first interpretation which show that the proportion of variance attributable to differences between the discussion sections ($\omega^2 = .136$) is considerably larger than could reasonably be attributed to either potential confounding entering differences or different criteria interpretations. The low correlational results between the TA's as a group and the independent rater support the second interpretation. Neither the potential different levels of grading nor the amount of variance accounted for by the correlation, or the sum of both, comes close to reasonable criterion reliability. If it is assumed that the TA's have some ability to judge student performance, then a large proportion of the variance must be attributable to differences in what performances were chosen to be judged. This interpretation is also supported by the correlation between the instructor ratings and other student outcome variables (see Appendix E). Correlations between the ratings and the Course Grade and the Instructor Grade ($r = .398$ and $.585$ respectively) are potentially part-whole correlations and would be expected; all other variables have extremely low or no correlation with the ratings. These composite correlations (TA's as a group) are not representative of correlations between the ratings and other variables within the individual discussion sections (see Appendix F). These results clearly support the interpretation of lack of homogeneity across instructors.

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QUESTION 5: What was the basis for selecting TA's?

There were no formal qualifications used as the basis of TA selection other than the necessity of pursuing a graduate program in the College of Education. The pool of potential TA's was created by referral of the credentials of entering advanced degree students from the different departments within the college, specific faculty recommendation, and some direct student applications. Selections were made by course administrative personnel on the basis of the academic and background credentials, and where possible an interview. It was stated by both the primary course administrator and the college teaching intern director who together were responsible for the choice of TA's that the most important consideration underlying choice was evidence of previous teaching experience, not necessarily at the college level. Secondary factors indicated were the general academic record and content background. Pursuit of a graduate program in educational psychology was not an important consideration.

QUESTION 6: What were the background characteristics of the TA's?

Graduate programs being pursued by the TA's were varied. All but one of the sixteen were pursuing doctorates--five in the area of curriculum and secondary education, three in elementary education, one in math education, two in counseling and student personnel administration, one in educational administration, and three in educational psychology. One was a master's degree candidate in college student personnel work.

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The amount of work completed on the individual graduate programs also varied widely. Twenty per cent of the TA's were less than half completed; an additional twenty per cent were half finished; sixty per cent were more than eighty per cent complete. However, sixty per cent of the TA's had not started their dissertations; one-third had begun preliminary work but had gathered no data; one essentially completed his program during the term.

Ten of the TA's were completing their first year (three terms) of instruction in Education 200. Four more had instructed Education 200 for five or more terms. Two were new instructors the term of the evaluation. Only one had no previous teaching experience; four had had previous experience at the post-secondary level of teaching.

Ten of the TA's were twenty-nine years old or less; six were more than thirty years of age. Twelve were male; four were female. All but one were married, and nine were parents.

QUESTION 7: Did the graduate programs of the TA's appear to allow time for the development of instructional skills and to meet instructional responsibilities?

This subjective question is highly susceptible to differences between individuals. The underlying idea, however, was to examine the graduate workload of the TA's and other particular pressures which might affect the ability to perform their instructional duties and develop their instructional skills. In general it appeared that as a group the TA's did not have sufficient time.

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There were certain ongoing requirements to be attended to in fulfilling their teaching duties: Class preparation for the twice weekly meetings of each of the two discussion sections; attendance at one of two lecture sessions three times per week; mastery of the content of new readings and/or lectures used that term in addition to command of the regular course materials; preparation of handouts for use in their discussion presentations; preparation and grading of quizzes, term papers or projects; administration of general course tests; attendance at staff meetings and seminars; and maintenance of office hours to deal with student queries or problems. The TA's were responsible for specifically determining forty per cent of a student's grade, and as the pivotal point between lecturers and course content, indirectly responsible for a considerably greater percentage of the student's grade.

In addition to these basic teaching duties, TA's carried their own graduate course loads. Not including research credits or teaching intern credits, six TA's were carrying ten or more credit hours during the term; four were carrying seven to nine credits; of the five TA's carrying six or less credits, two were studying for comprehensive examinations to be taken during the term. In combination with the normal pressure under which graduate students operate, most of the TA's had at least some family responsibility.

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QUESTION 8: Were the TA's committed to a future career in undergraduate instruction or the development of undergraduate instruction?

Based upon the TA's indicated future plans, as a group the TA's were not committed to teaching as a career. Four of the TA's indicated a career in administration; three indicated a future career in student personnel work; two expected to split their future work about 50-50 between teaching and research; seven indicated a future teaching career. None of the TA's indicated a future career primarily in research. Of the nine who indicated some future teaching plans, all indicated that their primary teaching interests and efforts would be directed to their graduate students in their area of specialization although they expected to have to have some instructional contact with undergraduates.

All of the TA's stated concern about the conditions under which they as graduate assistants had had to work. However, only three of the TA's stated concern in terms of the effect on the education of undergraduate students and provided any evidence of future interest in reshaping the conditions or the organization of undergraduate instruction. These three indicated an involvement in reforming their own teaching approaches toward a more student-oriented instructional setting, but that the ideas and attempts were based on their own experiences prior to Education 200. The majority of the TA's indicated a commitment to continuing the general model of undergraduate education provided by the College of Education.

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QUESTION 9: Was there congruence between the TA's perceptions of course and discussion section objectives?

TA responses to open-ended questions concerning the course and discussion section objectives led to two general conclusions: (1) there was a broad difference between TA's in terms of both quality of responses and perception of objectives, and (2) there was some congruence on the general level of objectives similar to the course description, but there were many differences in the operational interpretation of these objectives. The responses to the open-ended questions generally confirmed observations by the course evaluators about differences between the TA's.

The first conclusion was derived from an assessment of the general quality and degree of explicitness of the TA responses, and from the perspective by which the TA's answered the questions. Several TA's provided long lists of course objectives which corresponded to the materials covered in the course, broken generally into dual learning objectives of understanding and implications to teaching (application). The majority of TA's abbreviated this listing process into general objectives of understanding psychological principles and their application in teaching. For example, a typical response was:

> The objectives fall into two general areas, the first of these being the understanding of basic psychological concepts which include the areas of social, emotional, and physical maturation, learning procedures, and methods of measurement and evaluation. The second general area is the actual practice in application of the above concepts so that students can and will use the concepts learned in their future teaching.

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Several other TA's were more skeptical about the course objectives. For example:

> Just an introductory course in educational psychology stressing the views that are currently popular with no emphasis on the way it is in the public schools.

The responses pertaining to objectives of the discussion sections also varied from instructor to instructor, but the general notion of discussion for the purpose of clarification of materials and application to the act of teaching was present in most responses. None of the instructors could phrase the discussion section objectives in behavioral terms as requested. One instructor remarked that he " . . . didn't know how to describe anything in behavioral terms." All of the responses to this question were phrased in terms of what the instructor would do, rather than in terms of desired resultant student behaviors.

The particular graduate program the TA was pursuing conditioned the perception and orientation of objectives. These differences were reflected by the TA's conception of the learner in relation to the objectives. A TA pursuing work in counseling indicated the objectives in terms of enabling the student to accomplish such and such. A TA in developmental educational psychology indicated the objectives in terms of integrating the materials and practical applications for students. The two most popular ways of expressing objectives were "to provide" and "to give" the student understandings, etc. In general, the responses of TA's from the area of educational psychology more clearly exhibited an understanding of the meaning of "objectives," although two of these

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TA's felt that the course objectives lacked explicitness and were not clearly applied.

The second general conclusion to the effect that there was some general agreement over the course and discussion section objectives, but that this agreement was not reflected in operational interpretation of the objectives, is reflected in the above discussion. In addition, there were broad differences in the procedures the instructors stated they applied in the discussion section to achieve the objectives. Part of these differences are obviously due to the lack of understanding exhibited by the TA's of the term "behavioral objectives." This was also apparent by the lack of congruence between the TA's statements of objectives and their respective statements of what behaviors they felt the students should be able to exhibit as a result of the course experience.

QUESTION 10: What in the way of materials or guidelines were provided the TA's to aid them in the conduct of the discussion sections, the judgment of student performance, and the grading of student performance?

Prior to the start of fall classes, the TA's took part in orientation sessions designed to familiarize them with University and College of Education procedures in general, and to orient them to what would be expected of them in the role of teaching assistant. In terms of the latter, policies and procedures of the course were outlined such as computation of grades, attendance, etc. Also provided was a mimeographed handbook outlining minimal guidelines for conduct of a discussion

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section and the other-than-classroom responsibilities of the TA's. Included was a list of ideas on how to develop discussion and examples of various techniques which might be employed (e.g., buzz sessions, role-playing, application of classroom examples, etc.). A video-tape machine could be made available to tape classroom performance for self-critiquing. Two seminars designed to develop instructional skills (as specified in the Curriculum Review Committee's plan) and taken for course credit by the TA's are discussed in the following question.

QUESTION 11: Did the program of instructional development for the TA's take place, and if so, what was the nature of its content and experience?

No instructional development activities took place during the term the evaluation was conducted. Two seminars designed to develop the TA's instructional skills as specified in the Curriculum Review Committee's plan were conducted during the fall term.

In one of these seminars designed to familiarize the TA's with the course content the lecturers, prior to the actual lecture, would discuss with the TA's as a group the primary material to be covered. After the fall term, the TA's had no formal contact with the lecturers and virtually no unofficial contact concerning the course. This content seminar, according to several TA's, was of little value due to broad differences in content background across the TA's and due to lack of cogent examples of application of the content to the classroom. Several of the TA's indicated that the content seminar should have concentrated

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more time on the development of the research and theoretical implications of the materials since they had little previous background or understanding of educational psychology. Other TA's, particularly those in educational psychology graduate programs, felt that more time should have been spent on developing integration of the materials, while several TA's with little previous teaching experience felt that the content seminar should have concentrated on the application of materials in terms of examples and anecdotes. The result of these problems, by both direct observation and TA remarks, was that the TA's had difficulty integrating the course for the students, and concentrated much of their time in the specific areas with which they were previously familiar.

The second seminar was specifically directed at developing the instructional abilities of the teaching assistant. As conceived, a professor noted for his own classroom skills with undergraduates would chair a seminar, serve as a resource person, and give direction to the TA's development as college teachers over the course of the school year. There was universal TA criticism and discreditation of the results. Most of these comments were preceded by the proviso that the seminar director did make himself available at any time for discussion (as did the course coordinator), would willingly purchase reference materials asked for by the TA's, and that they recognized the director's teaching skill in his own major field; but he seemed unable to translate these experiences into transferable examples and experiences for their instructional development. One problem consistently

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identified was that there were no clear directions inherent within the seminar, that the seminar constantly turned into a "bull-session" about philosophical issues. Other comments depicted the seminar as failing to provide practical advice in the conduct and management of the discussion sessions, particularly in the determination of student performance and the management of classroom discussion toward a particular learner objective. Infrequent classroom visitations were conducted but feedback failed to focus on the application of instructional techniques and approaches. It was generally felt that in theory the seminar was an excellent idea, but that it lacked substance both in content and practical experience. TA discontent led to its abandonment after two terms.

These observations would seem to justify the conclusion that the instructional skills and the instructional approaches used by the TA's were the product of their entering capabilities and background interacting with trial and error experience in the discussion section. Generally, the TA's seemed aware of these limitations, unhappy with their discussion section results, and dissatisfied with both the time they felt that had wasted in the internship and the failure of the course to aid them in the development of their teaching.

QUESTION 12: Did the Course examinations allow for inferences to the degree of approximation of course or undergraduate instructional objectives?

The course examinations were primarily derived from the readings and lectures. One way to approach an answer to this question

would be to determine the degree to which these sources of the test items represent the course objectives. The problem with this approach is twofold: (1) As previously indicated, the objectives specified by the Curriculum Review Committee represent very limited behavioral objectives, far less than the stated purpose of this course would seem to demand; and (2) there were considerable differences from one term to the next in the choice of readings and lecturers.

What is more important is the fact that the tests determined the objectives, at least to the extent of determining 60 per cent of the level of student performance, which logically within the percentage constraints supposes the degree to which students individually and the course as a whole achieved course objectives. Test items were reused or discarded on the basis of their internal measurement characteristics, rather than on the degree to which they represented some specific objective. The reality of this procedure to the student would result in primary efforts being devoted to memorizing the text and lecture notes, and the test performance being determined by degree of effort directed toward this task weighted by a combination of entering ability characteristics. Under these conditions, some inference could be made to "quality instruction" differences between lecturers and between TA's in terms of presentation and clarification of materials, but the only other major inference which could logically be derived from test results would be the quality of the internal measuring characteristics of the tests (i.e., the ability of the test to reliably differentiate

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QUESTION 13: Did the examinations judge student performance to some established criteria, or did they simply differentiate student scores into grading units?

Student grades for examination performance were determined by where their scores fell in relation to cutting points on the distribution of scores for a given exam. Cutting points were determined by locating the most optimal places in the frequency distribution so that the grades would approximate a normal distribution. Any relationship between a given student grade and some criteria could only be inferred by the degree to which the test represented some criteria in combination with the degree to which the distribution of scores on the test represented the various levels of criterion achievement. Because of the weakness in both course and test criteria and because of the procedures used in translating test results to grades, it seems reasonable to infer that the tests served a primary purpose of differentiating students into grading units.

QUESTION 14: What means were utilized to evaluate as part of ongoing procedure student affective change toward the course and program goals?

Other than attempts included in this evaluation, there were no procedures included in the course to evaluate affective change. Previous to the term in which this evaluation took place, periodic efforts were made to assess student opinion pertaining to the TA's, but not to the course goals or content.

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QUESTION 15: What changes took place in specific student attitudes toward the course, the course content, and teacher education goals?

As part of the continuing measures (i.e., pre-course, mid-course, and post-course), the students were asked to indicate their certainty about entering the teaching profession, the degree to which they felt teaching was the occupation for which they were best suited, the degree to which they felt the course would be a valuable part of their teacher training, and the degree to which a knowledge of theory and the principles of human behavior and development were important to teaching. The results (see Table IV-5) indicated that the course had little influence on the students' personal decisions about their suitability for or their entering into the teaching profession (correlations between consecutive measurements were above .70). Student attitude toward the course as preparation for teaching was lower on the entering measurement, decreased slightly on the mid-measurement, and increased slightly on the final measurement. Student attitude toward the importance of theory which was relatively high to begin with decreased markedly over each continuing measurement. The results in Table IV-5 shown below are the summaries of these results over the different administrations. The level of attitude is inverse to the size of the number (1 = highest attitude, 5 = lowest attitude).

These results as trends were consistent across the different levels of course grade received, and across levels of entering grade-point-average (above 3.0, between 2.0 and 3.0, and below 2.0).

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Table IV-5: Means and Standard Deviations for all Students on Course-Specific Attitudes

Variable	Pre-Course Mean	Pre-Course SD	Mid-Course Mean	Mid-Course SD	Post-Course Mean	Post-Course SD
Commitment to Enter Profession	2.200	1.006	2.186	.941	2.015	.810
Suitability for Teaching	2.342	1.027	2.296	.993	2.250	1.007
Course as Preparation	2.430	.732	2.455	.788	2.294	1.072
Importance of Theory	1.695	.780	1.835	.796	2.456	.719

However, in both the case of grade received in the course and the case of entering grade-point-average level, as shown on Table IV-6, the trends were represented at different levels of attitude. These results will be discussed in the following question. The two most important inferences derived from these results were (1) the relative lack of effect of the course on student attitude toward entering the teaching profession and the relatively low attitude to the course as preparation, and (2) the consistently decreasing attitude toward theory and principles which were the primary content of the course.

QUESTION 16: Was there a relationship between entering student ability or grade received in the course and the development of student course-related attitudes?

The previous level of student performance in college and the grade a student received in the course both potentially might have affected the student's relative attitudes toward the course and toward

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Attitude Toward Course	Importance of Theory	Course as Preparation	Suitability for Teaching	Commitment to Enter Profession

Table IV-6: Means and Standard Deviations on Student Course Attitudes Across Continuing Measurements by Grade Received in Course and Entering Grade-Point-Average

		COURSE GRADE							
		Grade A (n = 109)		Grade B (n = 398)		Grade C (n = 385)		Grade D-F (n = 80)	
VARIABLE		mean	sd	mean	sd	mean	sd	mean	sd
Commitment to Enter Profession	Pre	2.333	1.079	2.226	1.015	2.127	.972	2.224	1.012
	Mid	2.283	1.009	2.238	.950	2.104	.892	2.130	1.002
	Post	1.980	.837	1.977	.797	2.055	.816	2.068	.816
Suitability for Teaching	Pre	2.541	1.057	2.417	1.052	2.207	.961	2.313	1.097
	Mid	2.456	1.029	2.355	1.006	2.157	.971	2.364	.892
	Post	2.388	1.032	2.262	1.014	2.180	.988	2.351	1.026
Course as Preparation	Pre	2.429	.642	2.467	.764	2.394	.722	2.406	.729
	Mid	2.404	.686	2.493	.849	2.421	.750	2.500	.792
	Post	2.378	1.098	2.320	1.029	2.915	1.081	2.541	1.173
Importance of Theory	Pre	1.677	.740	1.708	.787	1.708	.804	1.582	.678
	Mid	1.681	.728	1.817	.785	1.887	.809	1.978	.892
	Post	2.361	.694	2.450	.718	2.468	.717	2.541	.762
Attitud Toward Course	Pre	27.09	4.16	26.97	5.28	27.27	5.09	27.22	3.80
	Post	27.72	5.03	27.78	7.75	27.72	7.29	28.11	9.23

Table

Attitude toward Course	Importance of Theory	Course as Preparation for Teaching	Suitability for Teaching	Commitment to Enter Profession

Table IV-6 : (Means and Standard Deviations Continued)

VARIABLE		Grade-Point-Average GPA High (n = 171) MEAN	SD	GPA Middle (n = 515) MEAN	SD	GPA Low (n = 144) MEAN	SD
Commitment to Enter Profession	Pre	2.341	1.028	2.199	1.038	2.805	.879
	Mid	2.322	.961	2.216	.951	2.019	.840
	Post	1.994	.823	2.016	.812	1.970	.770
Suitability for Teaching	Pre	2.473	1.023	2.365	1.054	2.141	.885
	Mid	2.475	1.011	2.334	1.005	2.052	.838
	Post	2.444	1.086	2.253	.990	2.090	.913
Course as Preparation for	Pre	2.518	.736	2.427	.714	2.369	.711
	Mid	2.576	.851	2.442	.780	2.391	.686
	Post	2.436	1.134	2.305	1.062	2.067	.944
Importance of Theory	Pre	1.783	.771	1.659	.789	1.725	.736
	Mid	1.823	.786	1.812	.814	1.939	.823
	Post	2.478	.725	2.439	.698	2.425	.729
Attitude toward Course	Pre	26.44	4.86	27.08	5.29	27.53	4.04
	Post	26.61	6.44	28.06	8.63	28.09	4.44

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specific attitudes supposedly related to the course experience. The grade a student received in the course represented a composite of his course performance both on exams and in discussion section, and thus, should include some element of the student's perception of how well he felt he was doing at points in time previous to the end of the course. Table IV-6 displays means and standard deviations of attitude measurements over the continuing measures as organized into the Course Grade levels and the entering levels of Grade-Point-Average (GPA High includes the students with a 3.00 average or above, GPA Middle includes the students between a 2.00 and 3.00 average, and GPA Low includes students below a 2.00 average). The number of students indicated for each level of the different categories represents the total number of students in that category. The actual number of students reflected in a given mean or standard deviation varies for each administration, but these figures are provided in Appendix C. The more positive attitudes on the course-specific variables are represented by the lower scores; the more positive attitudes on the Pre- and Post-Course variables are represented by the higher scores.

In general, the level of the students' entering grade-point-averages seemed to affect both their entering and continuing attitudes toward the course and course-specific attitudes. Those students with a high GPA had both the lowest entering course attitudes and the lowest post-course attitudes. Those students with the lowest GPA had the highest entering attitudes and the highest post-course attitudes.

Those students with middle-range GPA's had attitudes falling somewhere in between. The only noticeable exception to this pattern was the attitude toward the relevance of theory to teaching. The results on this continuing measure progressively decreased from essentially the same entering course means for all three levels of GPA to essentially the same post-course means for all three levels of GPA.

The results according to level of grade received in the course (see Table IV-6) were not as clear although there was a significant relationship between entering Grade-Point-Average and Course Grade ($r = .523$). With the exception of the attitude toward the relevance of theory to teaching, the highest course-specific attitudes were held by those students who received a "C" grade in the course. The lowest attitudes were held either by the students receiving an "A" in the course or a "D" or "F" in the course. Those students receiving an "A" in the course also generally had the lowest entering attitude, but there was a noticeable shift in attitude of students receiving a "D" or "F" from higher entering attitude to lower post-course attitude. The attitude toward the relevance of theory to teaching was directly related to the grade received in the course.

QUESTION 17: What was the primary emphasis of the course including both content and its form of presentation?

The primary emphasis of Ed 200 was overwhelmingly research-oriented in the areas of educational psychology. Beginning with the first content lecture in which the valued model of teaching behavior

was one of the teacher " . . . who demonstrates research behavior"[2] and continuing through the course in both lectures and readings, both the content and its mode of presentation were concerned with empirical and theoretical interests of educational psychology research. This emphasis was congruent with the list of objectives suggested for the course by the Curriculum Review Committee in its earlier report (see Appendix A).

The texts used during the term (see course outline in Appendix A) included: (1) a book of readings covering research studies and theoretical positions in educational psychology, (2) an overview and summary of research and theory in child development, (3) a theoretical-empirical presentation and hierarchical integration of experimentally-derived types of learning, and (4) a book focused on the relationship betwen teaching behavior and perception of self. The articles and books not only represented the major area interests of the Department of Counseling, Personnel Services and Educational Psychology--learning and cognition, measurement, development, and clinical--but also represented a limited version of graduate program foundational readings. Both the learning theory book and the child development book were used in specialized courses in those areas. Many of the readings were contributed by theorists and researchers the knowledge of whose views was essential to successful completion of a graduate program.

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[2]Included in the second course lecture, "Scientific Aspects of Teaching," and quoted in the Course Outline which is reprinted in Appendix A.

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Jersild's, When Teachers Face Themselves, would appear on the surface not to fit this pattern, but in fact, represented the empirically less precise graduate training interests of the more clinical faction of the department.

The lectures were systematically organized into the different areas beginning with child development followed in order by emotional development, measurement and standardized tests, learning, and cognition. For the most part, lectures were organized around the major theories and research findings. While most lectures included some minor concern for implications to the school setting or brief application of some theory or research to an educational activity, these efforts were limited both by reduced scope and by lack of integration. The primary responsibility for this application and integration of materials was left to the discussion sections. The mode of presentation was to use the form of subjects and observations consistent with the area's theory and research. Thus, development was presented through the experimental and clinical studies of young children; emotional development was presented through a consideration of self-concept and a self-concept inventory; problems of growth and counseling were presented through the analysis of a counseling interview; measurement was presented through standardized test scores and items and the units of the normal curve; learning was presented through animal studies and closely controlled human research; cognition was presented by application of research learning-cognition tasks and their use in direct

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models such as programed instruction and instruction in foreign language; and motivation was presented in terms of conditions and summaries of the lecturer's own research on the characteristics of low motivated students.

The discussion sections differed according to the teaching assistant as to additional presentation and materials due to both the personal orientation of the TA and his level of understanding and familiarity with the content materials. However, as indicated, the TA's were responsible for the clarification, development of relevance, and integration of materials and so accordingly devoted some of their discussion to the lectures and the readings. The course exams which accounted for sixty per cent of the students' course grades were primarily composed of items derived from the readings and lectures, thus insuring student attention to the theory-research aspects of the course.

The logic underlying the course also supports the interpretation of the course as research-oriented. By determining the content on the basis of the research specialties of senior faculty whose primary concerns are to graduate training and empirical research, without placing the responsibility for the entire course content or student outcomes on this faculty, the obligation of faculty to the course becomes both limited and specialized. In theory, the primary source of direction and means by which the course must achieve direction are both a function and responsibility of the central course administration. In this case, the

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person responsible was a newly-confirmed Ph. D. in one of the research areas included in the course whose degree was directed by members of the Department of Counseling, Personnel Services, and Educational Psychology. By training, his background was responsive to the research-orientation of the course, and in terms of position both formally and informally, he was at a status disadvantage to those faculty for whom he was organizationally supposed to provide course leadership. Given these conditions, the amount of concern and the nature of a senior faculty member's involvement in the course would be determined by personal and vested interests, rather than by delegated responsibility and administrative leadership.

QUESTION 18: What was the relationship of the course to the total program of the College of Education?

There was both a stated and an implicit relationship between this course and the teacher-training program, and the total program of the College of Education. The stated relationship explains the structure and organization of the course as it was observed during the term of the evaluation; the implicit relationship partially explains the course content and actual conduct. The stated relationships have been in part summarized in earlier chapters and are included in their original adopted form of the Report on Undergraduate Education prepared by the Curriculum Review Committee of the College of Education in Appendix A. Briefly, this report specified (and the resulting organization included) the course as the introductory experience in

the teacher training program with primary content in educational psychology, but with a responsibility for introducing the student to the teaching profession and the teacher training program. The new teacher training program was organized into a block of required courses each of which had certain assigned responsibilities. As stated by the Associate Dean of the College, this organization, which was in keeping with the letter of the recommendations of the University's Committee on Undergraduate Education, was designed to aid the College in:

1. Developing more goal orientation of courses within our required offerings. If we identified objectives for the whole program the assignment of responsibility for teaching these concepts to courses within the total program would naturally follow. These assignments would thus establish goals for each course.

2. Securing greater uniformity of content in multiple section courses.

3. Eliminating unnecessary duplication of material in courses since the program would be structured as a unit. Also omissions of important concepts would be less likely to occur than when courses were constructed more or less independently.

4. Providing instructors of courses in the required professional sequences with better information concerning the fundamental concepts covered in other courses in the sequence.

5. Evaluating the success of programs against well defined goals.[3]

The development of the program of teacher education was only part of a major reorganization of the entire college. Paralleling the

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[3]Leland Dean, Loc. Cit.

growth of the teacher education program was the bifurcation of the graduate level program into one series of courses primarily aimed at the returning teacher-professional seeking additional credit and/or a lesser terminal professional degree than the Ph.D., and one series of courses primarily aimed at the full-time doctoral candidate. Theoretically, this would provide for the needs of the generalist-practitioner and the research-oriented specialist at the same time. These programs in combination with the reorganized teacher education program supposedly would then enable the College to meet its responsibility to the equally important constituent groups of undergraduates, practitioners, and graduate students in specialized Ph.D. training.

At the time of this study, all of the designated reorganization had formally taken place. However, implicit in the College's plan was a certain amount of "institutional upgrading," the effort to increase the College's prestige. This was particularly the case with the Department of Counseling, Personnel Services, and Educational Psychology. Unlike other programs where this procedure has taken place, the development of the graduate educational psychology program was quite clearly documented in a series of informal and formal position papers.

The graduate program in educational psychology which developed out of this reorganization was based upon a conception of the field composed of "three general areas: (1) Educational psychology as a field of study with a set of philosophical roots, historical antecedents and trends, and a range of contemporary foci and positions; (2) Educational

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Psychology as a body of inquiring strategies, techniques and technologies, by means of which the researcher contributes to the development of the field of study; and (3) the educational psychology of the above two categories as a body of knowledge, understandings and skills which the present graduate student must some day be prepared to teach."[4] The new full-time graduate student was expected to gain competence in all three areas.

The result of all of this was a new, expanded Ph. D. program in educational psychology, initiated in the fall of 1965, which called for three years of residential study with probably a fourth year devoted to dissertation. In addition, several new faculty members were added to the senior staff, strengthening the various specialties in educational psychology theory and research. Added pressure was brought to bear on the importance of faculty research and publication. Several new research institutes closely related to educational psychology were developed, accommodating both new faculty and graduate students.

Prior to the actual reorganization of the College, the Department of Counseling, Personnel Services, and Educational Psychology called upon the College of Education to consider and make policy decisions on the following issues:

1. Will the college take the final steps toward the large

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[4]Unpublished position paper of the Department of Counseling, Personnel Services, and Educational Psychology, undated but placed during the fall of 1964 by a faculty member of the Department.

class--larger credit block goals of the EDP and commit the savings to the development of a quality graduate program? The faculty in educational psychology is prepared to do this.

2. Are we prepared to mount a systematic campaign and commit the necessary resources (somewhat like Sabine's program on the undergraduate level) to recruit top candidates for graduate study directly out of the colleges?

3. Can we commit money to expanding the laboratory facility for educational psychology? We have made only a start in this direction.

4. Are we willing to live with the proposition that more than one conception of graduate training may be required in the College of Education? We propose to develop a leadership group and an elite, but at the same time we accept the legitimacy of other conceptions of graduate training for the areas within the College. The whole problem of the "new" 800 series is involved, of course.[5]

The implicit relationship between the development of the graduate program in educational psychology and the development of Ed 200 was that the graduate program was very costly, required a highly specialized, research-oriented faculty, focused its training and effort primarily on the professionally dedicated graduate student, and had little vested interest in undergraduate instruction needs, while the reorganization of the teacher education program created the economies to at least in part provide funds for the graduate program, release senior faculty from the major instructional responsibilities in the undergraduate program, and provide an additional source of employment for full-time graduate students.

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[5]Ibid.

Beyond these relationships which are now both realities and documented by position papers, the discussion becomes highly speculative. However, two additional inferences should at least be noted. First, the objectives provided by the Curriculum Review Committee, which was composed of members of the departments, focus on the research specialties of educational psychology the accomplishment of which, it might be argued, would only be possible through student exposure to highly specialized staff. Second, it would be advantageous to a research-oriented department to create a pool of potential graduate candidates who were already in command of basic background material. At the least, it seems legitimate to conclude that the graduate program in educational psychology benefited from the organization and conduct of Education 200 as much as the teacher training program and undergraduate instruction.

Chapter V

EVALUATIVE FINDINGS

In Chapter IV, the evaluative findings were presented as they pertained to the specific study questions. In this chapter, the findings will be summarized and integrated according to the central evaluative issues concerning the substantive operation and results of the course. Those issues are: (1) the degree to which the course, and particularly those aspects of the course directly involving the TA's, was "systematically" reliable; (2) the degree to which the course, given the existing "predominant characteristics" of the College of Education, approximated "quality education" and "provision for student opportunity"; (3) the degree to which the course substantively acted in the long run to achieve greater congruence between "predominant characteristics" and the objectives of "quality education" and "provision for student opportunity"; and (4) the appropriateness, given the observed course substance, of the widespread use of the TA as a means to compensate for "predominant characteristics" to achieve the above goals.

Briefly in review, the concern in this study was not with individual performances, per se, but rather with the operation of the course as a planned intervention, an intervention designed as a "system" to accomplish certain instructional goals and to improve the conditions of undergraduate instruction. It was implied by the course planners

that the "systems" approach was necessary to accomplish the goals and improve the undergraduate instructional conditions because of the "predominant characteristics" of the College at that time. In order to compensate for the "predominant characteristics" the critical issue resolved was to decrease faculty participation and responsibility in the course and instead rely upon specialization and diversification of labor under a central administration. An evaluative assumption was that if the specified form proved to be substantively operational then the specified objectives might potentially be achieved. Given this, the primary focus would necessarily be the performance of individuals as members of groups or units and the relative effects of these groups or units on student outcomes.

Summary of Evaluative Findings

The course as a structural and operational entity exists because of the conflicting pressures within large, state-supported institutions of higher education. These pressures are (1) those of a research-minded faculty whose interests, if any, in teaching undergraduates is limited primarily to those of high entering ability or mutual interests, (2) an administration with certain duties and responsibilities to undergraduate education, (3) a high student to staff ratio, (4) the forces of bureaucratization and "systems" inherent within large institutions and their administration, and (5) wide differences in the interests and abilities of students both in kind and degree. Limited but direct evidence indicates that this course was created in response to:

1. movement within the college to "upgrade" or increase the prestige of graduate programs, particularly educational psychology

2. a distinct alteration of valuing of professional staff activities by the College of Education to a system where research and the production of research-minded graduate students became relatively more important

3. the need to economize on the undergraduate areas of teacher education in order to partially support the developing graduate areas

4. the need to "mass" produce individuals accredited to teach in the public school systems, but,

5. whose content orientation was to the research-graduate training model due to the nature of senior faculty participation and interests, and departmental indirect control over choice of content.

To meet these "predominant characteristics" and pressures, and at the same time respond to pressures for reform of undergraduate instructional conditions, a "system" of instruction was instituted which combined under central administration reduced, specialized faculty participation, a large number of teaching assistants to fill the instructional gap, and a program of instructional development designed to raise the level of the TA's instructional skills. The findings, after the course had been in operation for two years and after the TA's with two exceptions had instructed for two or more terms, indicated that:

6. the majority of TA's used in the course were not pursuing a specialization in the primary course content area (educational psychology)

7. there were observable and self-reported differences between the TA's in their grasp of course content

8. the TA's could not specify behavioral objectives for

their activities in the discussion sections or for the course as a whole

9. there were important differences between the TA's in their conception of the purpose of the discussion sections as evidenced by their self-reported activities and approaches

10. the most important prerequisite for being selected to be a TA in the course was not interest, per se, in either college teaching or the development of undergraduate instruction, but rather previous teaching experience

11. little in the way of instructional development activities took place in the terms prior to the study, and none at all during the term of the study

12. the TA's were all carrying a difficult graduate load in addition to the responsibilities of the discussion sections and any instructional development activities included in the course structure, and several TA's were under other pressures of graduate study, either comprehensive exams or dissertations

13. although the TA's carried major instructional and student evaluational responsibilities (forty per cent of the course grade), only minimal guidelines for these responsibilities were formally provided by the course administration

14. while all of the TA's were concerned about the conditions under which they had to work, very few of the TA's stated concerns in terms of the effect of the conditions on undergraduates or in terms of improvement of undergraduate instruction

15. barely a majority of the TA's indicated any interest in teaching as a career after completion of graduate training and of those that did indicate some teaching, the primary emphasis was in graduate or specialized instruction

Irrespective of the functioning of the course structure, the empirical analysis of student outcomes indicated that:

16. there were systematic differences between TA's in the discussion section grades assigned to students

17. the TA's could not rank student performances to set

criteria reliably although the individual TA rankings of student performance did show a significant relationship to discussion section grades

18. there were systematic differences attributable to TA's on student outcome test performance; and accordingly, systematic differences in student grades for exam performance

19. there were systematic differences attributable to TA's in the students' levels of course aspiration-expectation

20. there were significant differences between TA's on the student attitudes toward the discussion section and the TA, although there were no consistent significant differences attributable to TA's on students' attitudes toward the course or on course-specific attitudes

Item analysis of student attitudes toward discussion section and the TA, while limited by low attendance on the day of the measurement, seemed to indicate that:

21. the students rated the TA's highest on items concerning discussion taking place and TA interest in students' discussing

22. the students rated the TA's less highly on their knowledge of content and its application

23. the students rated the TA's least highly on their ability to employ teaching strategies such as explaining objectives, stimulating discussion, providing practice materials, and enabling the students to understand course materials

Very little could be said about the effect of the course as a whole. The entering student population was very heterogeneous both in background and ability characteristics. If anything, the course seemed to "normalize" the population of students on these entering characteristics, and, when the instability of the instructor grades is taken into consideration, the course grades were distributed largely according to this

"normalized" entering population distribution. The findings indicated that:

24. tests were composed mostly of factual recall or simple application multiple-choice items based upon readings and lectures and were not clearly broken into any broader course objective areas

25. tests were based upon items according to their ability to discriminate between students rather than on their ability to assess student progress toward given goals

26. from the student standpoint, the tests became the objectives rather than mastery over materials and their application

27. mean student performance on the three exams progressed from 55 per cent correct response on the Pre-Test to 75 per cent correct response on the Mid-Term to 67 per cent correct response on the Final Exam

28. the mean test results may reflect the norm level of student prowess in answering multiple-choice exam items adjusted by other course performance demands on students and level of course attendance (the workload and difficulty of material increased during the second half of the term and the attendance at lectures decreased)

As indicated by the Associate Dean of the College, the development of student attitudes was an important aspect of the teacher training program.[1] In this area, the findings indicated that:

29. the course provided for no systematic means of assessing the movement toward general effective educational and professional goals although previous measurements of student attitude toward TA's had been taken

30. as indicated, the attendance in the course decreased over time until the final exam and post-course measurements; this fact might be taken as an affective index by itself, but it also may have affected the generalizability of some

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[1] Leland Dean, Loc. Cit.

of the study measurements of student course attitudes

31. student mean attitude to the course showed no change between pre- and post-measurement

32. students with a higher entering GPA had a lower attitude toward the course for both measurements than did students with lower GPA's

33. students' attitudes toward entering the teaching profession and toward their suitability as teachers increased over time in the course, but these attitudes were unrelated to attitudes toward the course or course conduct and content

34. although all of the student course-specific attitudes were relatively positive, the attitude toward the course as an important part of their preparation was consistently least positive over measurements

35. student attitude toward the importance of theory and the principles of human behavior and development to teaching were very positive at the beginning of the course, but decreased noticeably over each continuing measurement

36. generally, students who received a "C" grade in the course had the most positive course-specific attitudes over continuing measurements

37. generally, students with the highest GPA had the lowest course-specific attitudes over continuing measurements.

Course "Reliability"

The findings of this study failed to support the hypothesis that the course was "systematically" reliable, that there was consistency either across instructional units or between individuals within instructional units. However, before further discussing this conclusion, it is necessary to consider two other factors which potentially might affect the validity of this conclusion: (1) how dependable are the observed outcome differences, and (2) how important are the observed outcome

differences?

There is no way by which the degree of confounding of empirical outcome results can be directly tested. As indicated in the previous chapter, randomization of students into discussion sections was successful at the very beginning of the term; most importantly there were no significant differences observed between discussion sections on the entering student Grade-Point-Average. However, later measurements on the students' College Qualifying Test - Total scores and Learning Set scores did show significant differences attributable to discussion sections. These results were based upon a noticeably smaller number of students and were taken at a later point during the course than initial pre-course measurements. It is possible that the student outcomes were affected by a change in the initial randomization due to students dropping and adding the course. It is also possible that the reduced number responding resulted in the observed significant differences. Another alternative is the possibility that initial randomization of students into discussion sections failed to achieve equivalency on these variables between discussion sections.

Considering these alternatives, the general conclusion that the course was not reliable is based upon observed trends which indicated that the variance attributable to differences between TA's increased over different continuing measures and that there was initial equivalency between discussion sections on the most important Course Grade predictor, the entering Grade-Point-Average. This conclusion of real

differences between TA's is also supported by their failure to achieve reasonable reliability in ranking student performances to specified criteria. It is also supported by several interpretations of differences between TA's in relative level of judgment of student performances. When these results and interpretations are combined with the many differences in characteristics and backgrounds of the TA's which appear to have been relatively unaffected by any course instructional development intervention, the only reasonable conclusion would be one of difference-between-TA effects.

Moving from the assumption of TA effect, it is obvious from the findings that there were degrees of importance across the observed differences in student outcomes attributable to the TA's. To a certain degree, these differences are indicated by the reduction in the proportion of variance on the outcome variable attributable to the differences between TA's (ω^2). The greatest proportion of variance reduction respectively occurred on the Project Ranks, the Attitude Toward Instructor, and the Instructor Grade. Because these outcome variables reflect a potentially direct TA effect, they are obviously very important. The TA's either used different criteria to judge student performance, used a different range in assigning relative judgments, were differentially able to judge student performance, or some combination of all three. Considering the results of the student Attitude Toward Instructor and trends observed in the item responses, students also recognized performance differences between instructors.

Differences in exam results attributable to TA's is more indirectly related to the differences between TA's and this is reflected in the lower reduction in the proportion of variance. However, because the course grade results were determined largely by these results, from the standpoint of fairness to the students, the exam differences attributable to the TA's are very important. The most plausible interpretation of these significant differences is differences between the TA's in understanding and clarifying content for students, but an alternative interpretation might be differences in what the TA's emphasized in their discussion sections. The differences between TA's on student level of aspiration-expectation is the most difficult to interpret and so, how important these differences were remains mostly conjecture. It is theoretically possible that level of aspiration-expectation might have affected future student involvement in and attitude toward later parts of the teacher training program. It is also possible that these differences only reflected immediate student perceptions of relative achievement in the course and nothing more.

The specified instructional development activities were for all practical purposes nonexistent. What activities there were, failed to reduce the distance between TA instructional differences and were seemingly resented by the TA's. The evaluational activities of the course acted primarily to differentiate students and provided no evidence pertaining to the quality of the course in terms of either student performance or affective development. As a "system" the course was at

best internally unreliable and in certain cases almost inoperative.

By observation, there were obvious differences in the quality of instructional performances and underlying instructional abilities. This was true for lecturers as well as TA's. Some of the performances seemed very good, others seemed very bad. Although it is not the purpose of this study to become deeply involved in the analysis of individual performances, student attendance as well as observed student outcome differences suggest there were real quality differences in terms of such instructional activities as establishing "rapport" with the students, integrating different materials, using the appropriate example to clarify or apply a point. While it may well be contended that there will always be differences between individual instructional performances, in the context of this study, it is also true that these differences resulted in real performance differences on the part of students and real differences in the grade a student received dependent upon which discussion section he happened to draw.

Immediate Improvement of Undergraduate Instruction

Whether the course, as observed during the term of the study was better than what was previously offered is impossible to estimate. As a "system" of instruction it failed simply by lack of internal reliability to approximate "provision for student opportunity" and instructional "quality" varied. The valuing of course content decreased over time as did attendance. In comparing the course to the previously indicated list of instructional responsibilities, the following conclusions

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can be made:

1. little, if any, determination of student readiness took place; considering the heterogeneity of the student population this may have been impossible, but in the case of content, much of it was technically-oriented and of interest only to a small proportion of the students

2. the primary motivation of students to learn, observable consistently in the course, was the necessity of successful completion of the course and relative grade aspirations; other motivational elements occurred only differentially in the various parts

3. the demonstration of skills and attitudes to be developed was partially bifurcated between the research-oriented lectures and the teaching-experience-oriented discussion sections where there were obvious quality differences in the ability of the TA's to demonstrate

4. learning activities or practice tasks were fairly clearly dominated by the student preparation for exams; course projects were included but the inability of the TA's to judge the student performance on these tasks lessens their effectiveness

5. considering the decreasing attitude toward the course content and the inverse relationship between attitude toward the course and entering GPA, it would seem unlikely that any systematic use of reinforcement or the development of student satisfaction took place

6. by far the weakest aspect of the course was the provision for the development of organization and meaning; integration of materials was left to the TA's which, by their own self-reports, was indicated as their greatest weakness

7. the development of standards of performance and means of judging student performance has been discussed at length; it was concluded that there were important differences between the discussion sections on this instructional responsibility and that student performance in general was judged by a series of cutting points on the distribution of student performances.

Perhaps most importantly, the course as a model of instruction to students aspiring to become teachers was far removed from the

behaviors it suggested the students develop. The course ignored for the most part the basic tenants included in its content about the importance of differences between students, the conditions surrounding learning, the means of developing motivation, and the importance of instructional objectives. Even without the examples of these behaviors, there was little provision for the students to attempt to behaviorally apply them in the course. While one emphasis of the course was environmental differences in entering student abilities and the necessity of providing for these differences, no similar provision was included in course procedures, with the exception of some special attention for foreign students with limited English ability. This breakdown between theory professed in the course, and the actual practices observed in the course by the students, suggests among other things that the conception of the course was more one of form than one of substance.

Reorienting "Predominant Characteristics" Over Time

Perhaps more important than the momentary "best" approximation of the objectives inherent within a "quality program" is the degree to which the program acts in the long run to reorient the "predominant characteristics" toward these objectives. In the plan for Ed 200, provision for long term reorienting was only included with regard to the development of the TA's instructional skills and interests. In effect, the plan for the program indicated that the college could not or would not attempt reorientation through existing senior faculty. In fact, provision for senior faculty participation in the course moved the

"predominant characteristics" further away from the objectives by decreasing both senior faculty participation and responsibility, and by providing for senior faculty participation only in the narrow areas of specialization.

Thus, to achieve congruence with the general demands for improvement of and increased interest in undergraduate instruction, the plan specified that a program be included which would develop both skills and interest in undergraduate instruction in the TA's. The findings of this study indicated that, at best, the college teaching internship program was a formality which had little effect on the development of TA's as instructors, which was partially abandoned after the term immediately preceding this study, and which was negatively viewed by the TA's. In terms of TA outcomes, many of the TA's had no plans to engage in teaching after completing their degrees and those that were planning on teaching after completion of their graduate training indicated primary interest in instructing in their area of specialization with emphasis on graduate instruction. In the eyes of the undergraduates in the course, the most important weaknesses identified in the TA's performances were in the area of actual instructional skills.

Any discussion of whether the plan was truly intended to work or merely an afterthought following the reduction of senior faculty participation is purely speculative. However, without impuning individuals involved in the course, it was obvious that the central administration of the course lacked the powers or prestige to accomplish the development

of a program which seriously demanded the involvement of senior faculty or which could seriously alter the research-orientation of graduate training programs. The TA's in the course were responsible to the central administration for obvious required instructional activities, and while some of the TA's responded positively and innovatively to the freedom the course allowed them in the discussion sections, according to the TA's themselves, their primary interest was in completing the graduate programs specified by their respective graduate committees. As one instructor indicated, the freedom allowed in the discussion sections was an advantage allowing him to try out ideas, but that the use of this freedom should be encouraged rather than taken as if to fill a void.

Appropriateness of TA's

Previously, it was indicated that the "critical issue" resolution underlying the Curriculum Review Committee's plan for Ed 200 was to compensate for "predominant characteristics" of the College by further reducing the participation of senior faculty in the course, and then filling this instructional gap by employing widespread use of TA's to fulfill instructional responsibilities. Although the Committee's plan differed in form from other courses also employing widespread use of TA's, a central issue in this evaluation was the degree of substance in these formally specified differences. An important scholar of higher education, Martin Trow, had previously outlined at length the problems and probable consequences of using TA's to compensate for these "predominant characteristics" especially in the case of a heterogeneous

student population as usually found on large, state-supported campuses.

From an evaluational standpoint, what Trow suggested is that the use of TA's to compensate for the predominant characteristics of these large, state-supported institutions toward the objective of quality instruction is neither valid nor reliable. The use of TA's is not valid because: (1) it primarily serves the purposes of graduate programs and research interests of faculty, (2) it does not provide for the future improvement of instruction since the TA's get very little valuable training, (3) it exposes undergraduate instruction to TA's in a manner not conducive to creating further interest in developing instructional competence, (4) it detracts from the primary purposes of both the senior faculty and the TA's, (5) it orients the content and experiences away from the purposes of undergraduate education, and (6) it restricts the institution's ability to reform undergraduate instruction and the department's ability to reform graduate programs.

Beyond the invalidity of using TA's to compensate, Trow also argued that TA's as a means of instruction are unreliable. This lack of reliability is because: (1) TA's are often poor instructors simply in terms of abilities, (2) TA's, by nature of the circumstance, are unlikely to be good instructors irrespective of ability due to motivational factors, other personally pressing demands on their time and energies, and attitudinal factors vis-a-vis the faculty and the institution, and (3) the resulting courses using TA's place the TA in a position of responsibility for which he has very little understanding, experience, or competence.

The findings of this study almost totally support these contentions. In addition, Trow predicted that the results of a program highly dependent upon the use of TA's to fill the instructional gap with a large, heterogeneous population of students would result in entering diversity of students being graded rather than instructed. This contention is also supported by the findings of this study when the systematic bias in instructor grades is taken into consideration. Even in the case of instructor grades, the best predictor was the student's mid-term exam performance. Trow also indicated that in terms of student interest and involvement in the course, the results would be:

1. the good students becoming lost, bored, and remaining unchallenged

2. the middle students--and all of the students to some degree--disassociating the material (theory and research) from their lives and their futures and from implications other than related to the discipline

3. the poor students becoming totally uninvolved because they are not taught, because they cannot compete with the good students, and because within this setting, they cannot compensate in any way for the entering differential.

The study findings do not as clearly support these contentions, but the study design was not clearly directed toward this objective. However, there is some evidence which clearly supports parts of the predicted outcomes. The students with higher entering grade-point-averages did have a lower attitude toward the course than did other students. Irrespective of entering student characteristics, student attitude toward the course content in relation to their future teaching noticeably decreased. Attitude toward the course as part of their

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preparation for teaching fluctuated, but was generally lower than other attitude measures. Students receiving the lowest grades in the course had the lowest course attitudes at the end of the course, and attendance in the course lectures dropped off over time.

Summary

In summary, it is reasonable to conclude that the specified course form lacked substance in regard to either "quality instruction" or "provision for student opportunity" and that it failed either to "best" approximate these objectives given "predominant characteristics" or act positively toward reorienting in the long run the "predominant characteristics" toward these objectives. Considering Trow's arguments, and the close correspondence between the study findings and these arguments, the widespread use of the TA even with the specified variations included in this course was not an appropriate means by which to compensate for the "predominant characteristics" of the College. Although the course as a "system" failed to achieve reasonable reliability as analyzed during the term of the study, this does not imply that "systematic" approaches, per se, are inappropriate, but just that building a "system" of instruction based upon widespread, indiscriminate use of the TA is inappropriate.

Chapter VI

CONCLUSIONS

The main objective of this study has been to consider a particular "system" of instruction in relation to a general model of undergraduate instruction and some global objectives of undergraduate teacher education. However, any consideration of the course in relation to educational implications or means for impovement must take into consideration some broader issues. Given the conditions of large, state-supported institutions of higher education today which include widely heterogeneous undergraduate student populations and broad differences in both number and interests between senior faculty and undergraduate students, it seems clear that undergraduate instructional conditions are more a symptom than a cause. Instruction in and of itself is no more than a means to some desired goals and the relative quality of instruction determines the relative effectiveness of the means to the ends.

Equally as important as the conditions and quality of instruction are the choice of goals and their behavioral components including standards for student accomplishment. Both instruction and goals are inseparable for the development of a meaningful college experience, but only when there is a high degree of consistency between them. What distinguished the course observed in this study was not just the relative weaknesses in the instructional conditions, but also the lack

of consistency between goals and objectives, between specified performances and actual performances, and between stated purposes and underlying purposes. Under these circumstances it appears highly unlikely that any instructional end-product could have approached the objectives of undergraduate instruction and teacher education. Although the greatest performance inconsistencies were most clearly observed in the program responsibilities delegated to TA's, in light of other course inconsistencies these performance problems seem more effect than cause.

Course Inconsistencies

The most obvious inconsistency in this course centered around the course objectives. While it is not the purpose of an evaluation to determine the relative correctness of objectives, in the case of this course it was stated previously that the objectives represented extremely limited behavioral competencies and were of little value in considering the course in relation to either the broader goals indicated by the College or the goals of improving undergraduate instruction. The lack of agreement between the specific course objectives and the broader course goals was one important inconsistency, but even if it were assumed that the objectives were appropriate, there was a high degree of inconsistency between them and the specified structure of the course. The objectives primarily referred to recall of content. There was some congruence between the objectives, content as presented by texts and

lectures, and content of exams. But the component of the course responsible for insuring the learning of content, the TA's, were for the most part weak in the content areas. There was little or no integration of the content materials, and the exams did not evaluate student performance in terms of content areas but rather differentiated student performance into grading units. All of this, in addition to a large proportion of the students' grades being determined by TA awarded grades which showed little relationship to other measures of content attainment, indicates that the course objectives were either inappropriately pursued or did not provide a central theme around which the course could be organized.

The inconsistency between the specified operation of the course and its actual operation have already been discussed at length. Another inconsistency briefly mentioned was between the specified performances of personnel in the course and the choice of personnel. In addition, there was a gross inconsistency between the specified duties and responsibilities of the course administration and the actual authority allotted to the course administration to perform these duties and responsibilities.

These inconsistencies represent more than just weaknesses in planning or implementation. Underlying the course and College administration seems to be the effect which Merton describes as "ritualism"--the professing of certain goals and standards of behavior

while acting on the basis of previous goals and standards of behavior.[1] Underlying the senior faculty seems to be a form of "goal displacement" where the traditional educational values including undergraduate instruction are still maintained verbally, but actual performances are directed to new values and goals.

Imbalance Between Graduate and Undergraduate Programs

This problem most clearly resided in the nature of the relationship between the College's graduate program and the College's undergraduate program. In this relationship, it would appear that two distinct forces for change were operating which had different goals and different vested interests. The first force, previously discussed as "institutional upgrading," was primarily graduate program and department oriented. Roughly, this process was related to improving the College's relative prestige in relation to other areas of the University and other colleges of education. Prestige comes from having and exhibiting certain quantities and/or qualities of that which is valued by various social and constituent groups. What sets the valuing in higher educational institutions are the disciplines of knowledge and their professional organizations. As Gouldner indicates, this makes the faculty, and accordingly the disciplines, more "cosmopolitan" than "local."[2]

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[1]Robert Merton, Loc. Cit.

[2]Alvin Gouldner, "Cosmopolitans and Locals: Toward an Analysis of Latent Social Roles -- I, II," Administrative Science Quarterly, Vol. 2 (1957-58), pp. 281-306 and 444-80.

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What is rewarded by these "cosmopolitan" groups includes qualitative scholarship, quantitative publication, and novel ideas, none of which has any direct relationship to instruction. The second force developed out of the institutional movement toward a "rational" system in which there is congruence between structure, operation, and purpose or goal. This force was primarily centered in the University's administration and was directed toward more closely realizing the Institution's traditional goal of providing for student growth and development. The first force was represented by the upgrading in process in the area of graduate educational psychology. The second force was represented by the Committee on Undergraduate Education's report and by the provisions in the teacher education program for individual differences.

The College of Education as an administrative division of the University had certain responsibilities to provide better instruction for undergraduates. The College of Education as a compilation of departmental units was directly subject to the immediate pressures of these units' "cosmopolitan" interests. The solution, as exemplified in this course, was to create a structure which in form responded to the University goals, but which in substance responded to the faculty-departmental goals. Thus, the result as observed was a structural form without the ability to provide substance, and a substance without structural means to insure the responsibility of its accomplishment.

This situation is represented by the decision, or "critical issue" resolution, to decrease the participation of senior faculty in the course

while at the same time allow senior faculty to control the designation of objectives and content for the course. When there are conflicting forces residing in the determination of an issue which are unequally balanced in strength, the resulting compromise is bound to be further toward the direction of the stronger force. A compromise in relation to this course was reached only after the other-than-undergraduate-instructional interests of senior faculty were first insured.

The College, through the Curriculum Review Committee, was correct in recognizing that conditions in higher education in general create a situation in which it is difficult to attract qualified, research-oriented staff if serious demands are going to be made on their time by early undergraduate instructional responsibilities. However, the presumption implicit in this predicament is that research-oriented staff is the only desirable staff to recruit. This presumption infers either that undergraduate instructional interests of senior faculty are of secondary importance or that research-oriented staff are better instructors. There is no evidence to support the latter conclusion and the former conclusion supports the notion of an educational condition in which research and graduate training is of greater value to the College than undergraduate instructional interests.

Both graduate training and research interests, and undergraduate instructional interests are institutionally desirable. But it should be recognized that they represent different values, activities, and interests although the two program orientations are not necessarily mutually

exclusive. Thus the problem of recruiting staff is not only one of the availability of people to recruit, but also the problem of recruiting the appropriate staff member for a given area of concern. If institutional resources and the availability of potential personnel were unlimited, the problem would primarily be one of appropriate means of criteria for choice. Since this isn't the case, the problem also becomes one of achieving reasonable recruitment balance between graduate training and research goals and undergraduate instructional goals. The problem as represented by the results of this evaluation was that the balance was seriously upset in favor of the graduate training and research goals.

The ability of the faculty to develop clear goals and behavioral objectives in relation to its primary interests was not the problem, as exemplified by the clarity of the goals and objectives of the doctoral program in educational psychology. This does not imply that graduate training is free from need to reform; the opposite is the case. What it does imply is that a more balanced relationship needs to be established between graduate training and undergraduate programs whereby the needs of undergraduate students and provisions for their heterogeneity are included in the development of program goals, objectives, and instructional procedures.

To accomplish a balance between graduate interests and undergraduate interests, the College should attempt to first establish clear undergraduate behavioral priorities and corresponding criteria for course structure and student performance. Briefly, these would

include:

1. the types of global behavior a student should be able to exhibit upon completion of the program

2. the means by which these behaviors may be exhibited, not in the sense of content, per se, but rather in structure and outcome
3. recognition and provision for differences in student goals

4. provision for independent study and other student-derived plans of procedure

5. reorganization of the current system of student rewards to represent relative student movement toward program behavioral objectives

6. establishment of on-going evaluational procedures which:

    a. involve all participants (faculty and students) in the critical questions of goals and procedures

    b. provide frequent and relevant feedback to all participants

    c. would be responded to by all participants.

To avoid the process of program development and evaluation becoming an assertion of graduate-research interests and to insure the maintenance of balance between graduate and undergraduate programs, some of the following procedures probably should be implemented:

1. a higher priority should be placed on the recruitment of qualified faculty for instructional purposes in the undergraduate program

2. the informal control of the graduate faculty and the departments over the organization, conduct, and content of undergraduate instruction should be greatly decreased

3. any involvement in undergraduate instruction should include active participation in the development of instructional objectives, procedures, materials, and evaluation

4. clear minimal levels of instructional behavior should be established, expected, and enforced

5. clear rewards for both instructional performance and the development of instructional skills should be provided including monetary, professional academic rank, and relative course-load

6. the development of curriculum or instructional units and experimentation with instructional approaches should receive the same consideration as other more discipline-oriented research efforts

7. while high, relatively fixed standards of student performance should be developed and maintained, instruction should be judged by the relative movement a teacher creates toward these objectives on the part of all students

8. grading student behavior as it is presently conducted in terms of the normal curve differentiation should be changed to a system which allows for a broader range of entering abilities and outcome performances (perhaps a pre-test, post-test system)

9. graduate training should include as an optional provision the development of instructional capabilities including the development of understanding of undergraduate students, the development of undergraduate instructional skills and procedures in heterogeneous classrooms, and the development, application, and evaluation of content to instructional units in relation to undergraduate learning and goals.

No matter what specific steps are taken, the questions of balance and educational development should be pursued openly within the College. Not only do undergraduates have a particular perspective to be taken into consideration, their views are also needed to create an important counterbalance to the weight of the graduate training and research-oriented forces which predominate in higher education today. By defending a perspective to undergraduate students, perhaps the effect of the closer interaction will both modify the position of senior faculty and

improve the relevance and understanding of research and empirical behavior on the part of the undergraduates. At the least, this procedure will present a model of educational regeneration which undergraduates will carry with them into their professional teaching careers.

Graduate Students as Instructional Personnel

Trow indicated that TA's, as they are generally employed in large, state-supported institutions of higher education, are a poor way to compensate for the "predominant characteristics" of the institutions. The findings in this study clearly support his contentions. But does this mean that it is totally inappropriate to use graduate students as instructional means to achieve program goals? The "predominant characteristics" of Michigan State University and similar institutions include a high ratio of senior faculty to students and a very heterogeneous student population. To move toward the objectives of "quality instruction" and "provision for student opportunity" it is clearly necessary that effort must be made to provide some individualization of instruction. Individualization of instruction today means far more than just a closer relationship between student and instructor (e.g., programed instruction, computer-assisted instruction, sequentially organized curriculum, instructional aids), but some close relationship would seem necessary considering the differing developmental states of undergraduate students and the wide differences in their entering abilities and backgrounds. The problem of achieving improved

undergraduate instruction and of reorienting the "predominant characteristics" of the institutions still remain.

What is supported by this study in relation to Trow's arguments is that the widespread, indiscriminate use of TA's to compensate for differences in both numbers and interests between senior faculty and undergraduate students in order to support the primary research and graduate training interests of senior faculty is inappropriate. As Trow points out, there are potential weaknesses in the use of graduate students as instructional personnel simply by nature of their status as graduate students. The widespread, indiscriminate use of graduate students, as found in this study, will accentuate this problem. What Trow also argues is that the primary value system surrounding the undergraduate courses in which TA's carry instructional responsibilities is not conducive to enhancing instruction as a valued activity or to aiding the development of instructional skills. This too proved to be the case in this course.

However, the findings inherent in this study do not support an argument of total abandonment of the use of graduate students in instructional capacities either. It does not even support the abandonment of the use of TA's in a "system" of instruction, only the abandonment of the widespread use of TA's under conditions which are neither conducive to undergraduate instructional goals nor conducive to the development of instructional skills and values. The findings of this study indicated that there were wide differences between the TA's in their

instructional interests and abilities. It also supported the conclusion that the "system" of instruction was primarily oriented to research-graduate training interests rather than undergraduate instructional interests. And the findings also supported the conclusion that there were no cohesive course objectives around which a positive program of instructional development could take place.

If the use of graduate students for instructional purposes is conducted in a program of instruction which includes not only the form, but also the substance of undergraduate instructional objectives and instructional development objectives, graduate students who are interested in developing their skills and perhaps preparing for a career in college teaching offer certain advantages. They are interested in students, they may not be fully committed yet to research interests, because they are closer to the undergraduate students than senior faculty they more clearly recognize the frustration inherent in students when confronted with weak instruction, and they are not yet in a status position where they must act the role of professional research specialist and thus are more susceptible to instructional development activities. But to take advantage of these characteristics of certain graduate students, it would seem imperative that conditions under which they instruct and develop their instructional skills should be positive and clearly organized.

In addition to creating a more equal balance between graduate-research and undergraduate programs, which correspondingly should alter the primary value system surrounding undergraduate courses as

previously suggested, the use of graduate students for instructional purposes should be clearly defined in keeping with the recommendations of the CUES report. If graduate students are used to assist in courses, they should clearly be assistants working directly under the guidance of a faculty member responsible for course outcomes. If they carry actual instructional responsibility, the graduate students should be treated as college instructors and accordingly held responsible for course outcomes. If they carry partial responsibility within a "system" of instruction, graduate students should have clearly designated areas of responsibility, clear direction in meeting these areas of responsibility, and be held responsible for the outcomes of this responsibility.

Some minimal conditions on the use of graduate students for instructional purposes would appear to be: (1) an interest expressed in developing undergraduate teaching skills, (2) a period of training sufficient to insure undergraduate students a reasonable "quality" of instruction, (3) a thorough knowledge of the content and its applications and relationships, (4) an active program of positive instructor development evaluation, and (5) sufficient remuneration for the professional role being fulfilled.

A comprehensive program of college teaching development might include provisions for graduate students to advance in instructional responsibility in accordance with the observed gains in their instructional competence and understanding of content. Depending upon entering interests and qualifications, a graduate student might begin with

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observation of different instructional approaches used within the institution, move to actual assisting in a course with some limited experience allowed in preparing materials for a class session followed by critiques, revisions, and then application, and then based upon proven development move on to actual instructional responsibilities. Such a program might include peripheral parts devoted to research on instructional development, to the development of curricular materials, to the problems and methodology of evaluation in instructional development, and to the relationship between instructional approaches, degree of student heterogeneity, and patterns of student growth.

For a program of instructional development of graduate students to work, Trow's arguments and the findings of this study indicate that the program would have to have reasonable independence from more research-oriented programs and comparable prestige. In addition, the program's activities would have to be a real and meaningful part of the graduate students' graduate training program. To accomplish this it would seem necessary that successful completion of a graduate program for students electing to take part in instructional development activities would include development of instructional skills to some specified standards of accomplishment. But irrespective of specific programs or specific procedures, any success is largely dependent upon a change in the zeitgeist surrounding undergraduate instruction to one in which the curriculum and instructional activities are organized around differing undergraduate student backgrounds and abilities and

are directed to providing an integrated experience in relation to their needs.

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APPENDICES

APPENDIX A

Course Outline and Curriculum Review Committee Report

COURSE OUTLINE
EDUCATION 200
Spring, 1968

I. GENERAL PURPOSE OF EDUCATION 200:

The objective of this course is to help you toward a greater understanding of the principles underlying the task of guiding children toward maximum self-realization. The aim is to provide, not specific answers and prescriptions, but rather viewpoints, outlooks, and professional understanding of children and the procedures by means of which their growth and learning can be promoted most effectively.

There are no simple answers to the many questions regarding human behavior. The reason for your taking a course in educational psychology is not to provide you with cook-book recipes and rules of thumb aimed at dealing with the nonexistent "average" student. Rather, it is to provide you with insights into the psychology of being a teacher, to acquaint you with the role that every teacher plays as an educational psychology--an educator and a psychologist.

II. EDUCATION 200 FACULTY:

Several members of the senior faculty play a major role in the conduct of this course. These individuals include:

Dr. Keith Anderson, Assistant Professor - B.S., (Music and Social Science), St. Cloud State College; M.Ed., Wisconsin State University; M.A., Michigan State University; Ph.D., (Curriculum and Teacher Education), Michigan State University.

Dr. Norman Bell, Assistant Professor - B.S., (Math), Wheaton College; M.S., Northern Illinois University; Ph.D., (Counseling Psychology), Purdue University.

Dr. Harvey Clarizio, Assistant Professor - B.S., (General Psychology), St. Thomas College; M.A., University of Minnesota; S.Ed., University of Minnesota; Ed.D., (Educational Psychology), University of Illinois.

Dr. James Costar, Professor - B.A., (History), University of South Dakota; M.A., University of South Dakota; Ed.D., (Counseling and Guidance), Michigan State University.

Dr. William Farquhar, Professor - B.A., (Physical Sciences), University of Omaha; M.A., University of Omaha; Ph.D., (Counseling and Clinical Psychology), University of Minnesota

Dr. Donald Freeman, Assistant Professor - B.A., (Biology), GrinnellCollege; M.A., Michigan State University; Ph.D., (Educational Research), Michigan State University.

Dr. Robert Green, Associate Professor - B.A., (General Psychology), San Francisco State College; M.A., San Francisco State College; Ph.D., (Educational Psychology), Michigan State University.

Dr. Donald Hamachek, Associate Professor - A.B., (Psychology and Sociology), University of Michigan; M.S.W., University of Michigan; Ph.D., (Educational Psychology and Child Development), University of Michigan.

Dr. Clessen Martin, Associate Professor - B.A., (Psychology), Alma College; M.A., Wayne State University; Ph.D., (Experimental Psychology), Wayne State University.

Dr. Lee Shulman, Associate Professor - B.A., (Philosophy), University of Chicago; M.A., University of Chicago; Ph.D., (Educational Psychology), University of Chicago.

Dr. William Sweetland, Professor - B.A., (History), Colorado State College; M.A., Colorado State College; Ph.D., (Philosophy), Michigan State University.

Three members of this faculty are concerned with the administrative coordination of Education 200. If you have any questions or concerns regarding any phase of the course, feel free to contact one of these individuals:

	Office Number	Telephone Number
Dr. Keith Anderson	316 Erickson	353-3986
Dr. Donald Freeman	321 Erickson	355-1773
Dr. William Sweetland	317 Erickson	355-1769

III. DISCUSSION SECTIONS:

There will be two discussion periods each week. These discussion sections will have two main functions: (1) to provide opportunities for clarification of points covered in the lectures and

readings, and (2) to discuss practical applications of the principles and research findings presented in the course.

The discussion sections will be staffed by the following advanced graduate student in the College of Education:

Clifford Bee - B.A., M.A., Western Michigan University

Robert Boeck - B.A., Valparaiso University; M.A., Marquette University.

Thelma Boca - B.A., M.A., Michigan State University

David Harley - B.A., Southwestern University; M.S., East Texas State University.

Ermon Hogan - B.S., University of Minnesota; M.S., Atlanta University.

Frederick Howe - B.A., M.A., Michigan State University

John Klanderman - B.A., Hope College.

Albert Oosterhof - B.A., Hope College.

Frederick Staley - B.A., M.A., Western Michigan University.

Aaron Steenbergen - B.A., M.A., State College of Iowa.

George Thompson - B.A., De Paul University; M.A.T., Oklahoma City University.

Lyman Van Winkle - B.A., Calvin College; M.A., Michigan State University.

Warren Wilde - B.Ed., University of Alberta.

IV. TOPIC OUTLINE:

UNIT I: HUMAN GROWTH AND DEVELOPMENT

A. Various Phases of Development (Dr. Clarizio and Dr. Hamachek)

1. physical development
2. social development

3. intellectual development
4. emotional development
5. "self-concept" of the teacher

B. Educational Implications of Differences in Rate and/or Direction of Development (Dr. Freeman, Dr. Mehrens, and Dr. Costar)

1. dealing with differences through the guidance program
2. diagnosis of differences through the use of standardized tests

UNIT II: PRINCIPLES OF HUMAN LEARNING

A. Basic Learning Principles (Dr. Green, Dr. Bell, and Dr. Martin)

1. the role of environment in learning
2. Gagne's Hierarchy of Learning Tasks
   a. classical conditioning (signal learning)
   b. instrumental or operant conditioning (stimulus-response learning)
   c. motor and verbal chaining
   d. formation of verbal associations
   e. multiple discriminations
   f. concept learning
   g. principle learning
   h. problem solving

B. Educational Implications of Principles of Human Learning (Dr. Farquhar and Dr. Shulman)

1. motivation and learning
2. teaching strategies based on Gagne's Hierarchy
3. programmed instruction
4. the changing role of the teacher

V. READING ASSIGNMENTS:

The reading assignments for the course are as follows:

UNIT I. HUMAN GROWTH AND DEVELOPMENT

Bernard, Harold W. and Huckins, Wesley C., Readings in Educational Psychology. Cleveland and New York: World Publishing Company, 1967.

Articles #3, 19, 28, 36, 9, 11, 25, 37, 42, 43, 20, 48, and 27.

Jersild, Arthur T., When Teachers Face Themselves. Columbia: Teachers College Press, 1955.

Mussen, Paul H., The Psychological Development of the Child. Englewood Cliffs: Prentice-Hall, 1963.

Chapters I through IV.

UNIT II. PRINCIPLES OF HUMAN LEARNING

Bernard, W. H. and Huckins, W.C., Readings in Educational Psychology.

Articles #17, 30, 33, 34, 35, 32, 29, 13, and 39.

Gagne, Robert M., The Conditions of Learning. New York: Holt, Rinehart and Winston, 1965.

Since these assignments are closely related to specific topics in the course, it will be to your advantage to adhere as closely as possible to the assigned reading for each set of lectures. (Section VI of this document.)

VI. DATES AND DESCRIPTIONS OF THE LECTURES:

Introduction to Education 200

(1) WEDNESDAY, MARCH 27 - DESCRIPTION OF THE COURSE - Dr. Freeman
Dr. Freeman will describe the course organization, reading assignments and method of evaluating your performance in Education 200. The administrative coordinators and discussion instructors will be introduced.

(2) FRIDAY, MARCH 20 - SCIENTIFIC ASPECTS OF TEACHING - Dr. Green
The body of knowledge known as educational psychology is directly related to the results of research studies in human behavior. Understanding educational psychology, therefore demands understanding empirical research.

This initial lecture is designed to provide you with a rudimentary basis for interpreting the results of empirical investigations. In approaching this topic, Dr. Green describes three general attitudes which teachers tend to adopt in relating their behavior as teachers to continuing investigations of human behavior. These attitudes are: (1) the "dispenser of knowledge," (2) the teacher with a "research attitude," and (3) the teacher who demonstrates "research behavior."
READING ASSIGNMENT: Bernard and Huckins, Articles #3 and #19

UNIT I. HUMAN GROWTH AND DEVELOPMENT

A. Various Phases of Development

1. physical development
2. social development
3. intellectual development
4. emotional development
5. "self-concept" of the teacher

(3) MONDAY, APRIL 1 Through FRIDAY, APRIL 5 - PHYSICAL, SOCIAL, AND INTELLECTUAL DEVELOPMENT - Dr. Clarizio
Dr. Clarizio introduces Unit I with a discussion of the three phases of development listed above. This discussion focuses upon the following topics: the impact of heredity and environment on a youngster's "readiness" for school related tasks; the role of "developmental tasks" in the socialization of the child; and, Piaget's description of cognitive or intellectual development. The educational implications of each of these topics are also considered.
READING ASSIGNMENT: Mussen, Chapters I - IV; Bernard and Huckins, Articles #28 and #36.

(4) MONDAY, APRIL 8 Through FRIDAY, APRIL 12 - EMOTIONAL DEVELOPMENT - Dr. Hamachek
Because an individual's perceptions of himself have a decisive impact on general behavior, teachers must be aware of the factors which influence one's "concept of self." Dr. Hamachek describes the formation of one's self-concept and the role which these self-perceptions play in shaping classroom behavior. Dr. Hamachek also considers the general topic of "mental health" and its implications for teaching.
READING ASSIGNMENT: Bernard and Huckins, Articles

#9, 11, 25, 37, 42 and 43; Jersild, When Teachers Face Themselves*

B. Educational Implications of Differences in Rate and/or Direction of Development

1. dealing with differences through the guidance program.
2. diagnosis of differences through the use of standardized tests.

(5) MONDAY, APRIL 15 Through WEDNESDAY, APRIL 17 - DEALING WITH DIFFERENCES THROUGH THE GUIDANCE PROGRAM - Dr. Costar
A teacher's efforts to individualize instruction are facilitated by programs of guidance and pupil personnel services which have been established in most school systems. These services deal with the educational, vocational, and personal-social development of all children in the school. In the guidance program, every professional staff member (teachers, administrators, and guidance specialists) has an important role to play.

Dr. Costar will discuss the function and operation of elementary and secondary school guidance programs. He will then describe the guidance responsibilities of the classroom teacher and school counselor. This description will be highlighted by Dr. Costar's analysis of tape recorded counseling interviews.
READING ASSIGNMENT: Bernard and Huckins, Article #27

(6) FRIDAY, APRIL 19 Through WEDNESDAY, APRIL 24 - STANDARDIZED TESTS - Dr. Freeman
It should be evident that extensive differences in rate and/or direction of development exist among any group of youngsters. Before educators can effectively deal with these differences, some method must be used for making comparisons among individuals as well as for diagnosing the strengths and weaknesses of a given

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*This book deals with the "self-concept" of teachers (see topic outline). It represents the primary source of information on this topic and should, therefore, be read during the week following Dr. Hamachek's lectures.

individual. Most school systems have adopted a standardized testing program as an aid in making these inter- and intra-individual comparisons.

Dr. Freeman's lectures are aimed at providing you with some basis for interpreting the results of standardized tests. In his approach to this topic, Dr. Freeman provides examples of items which appear on intelligence tests; discusses the meaning of various forms of expressing an individual's level of performance on exams (grade equivalents, percentile ranks, standard scores); and, finally, describes how a teacher should and should not use standardized tests in making educational decisions. READING ASSIGNMENT: Bernard and Huckins, Articles #20 and 48.

(7) THURSDAY, APRIL 25 - MIDTERM EXAMINATION

UNIT II: PRINCIPLES OF HUMAN LEARNING

A. Basic Learning Principles

1. The Role of Environment in Learning
2. Gagne's Hierarchy of Learning Tasks
   a. classical conditioning
   b. instrumental or operant conditioning
   c. motor and verbal chaining
   d. formation of verbal associations
   e. multiple discriminations
   f. concept learning
   g. principle learning
   h. problem solving

(8) FRIDAY, APRIL 26 - FILM "Portrait of an Inner City School"

(9) MONDAY, APRIL 29 Through WEDNESDAY, MAY 1 - THE ROLE OF ENVIRONMENT IN LEARNING - Dr. Green
Evidence suggests that a strong relation exists between one's prior experiences and one's ability to profit from new experiences. Teachers must, therefore, be aware of the factors on a youngster's background which will either inhibit or enhance school achievement. Dr. Green identifies several of these factors (home, community, school, and peer group) and describes how each is related to various indices of school achievement.

READING ASSIGNMENT: Bernard and Huckins, Articles #17, 30, 33, and 34.

(10) FRIDAY, MAY 3 - FILM "Behavioral Theory and Practice: Parts I and II"

(11) FRIDAY, MAY 6 Through WEDNESDAY, MAY 8 - INTRODUCTION TO GAGNE'S HIERARCHY OF LEARNING TASKS - Dr. Bell
Nearly every teacher soon realizes that learners vary dramatically in their approach to, and performance on, given learning tasks. Gagne traces these differences in performance to two fundamental sources: (1) conditions within the learner (basic skills and abilities one brings to the learning task), and (2) conditions within the learning situation. Variance along these two dimensions serves as the basis for Gagne's hierarchy of learning tasks (classical conditioning to problem solving).

Dr. Bell begins his discussion with an overview of Gagne's position, and learning research generally. He then focuses on one type of learning, namely, operant conditioning. Dr. Bell describes the factors influencing this form of learning, and shows the critical relevance of these factors in the formulation of teaching strategies and the development of instructional aids.
READING ASSIGNMENT: Gagne, Chapter I (skim pp. 8-20 and pp. 22-29), 2, 3, and 4.

(12) FRIDAY, MAY 10 Through WEDNESDAY, MAY 15 - COMPLEX LEVELS OF LEARNING - Dr. Martin
Dr. Martin's lectures extend the description of Gagne's hierarchy to the higher or more complex levels of learning. Dr. Martin's initial lecture is concerned with individual differences in the formation and retention of multiple-discriminations. This discussion is then extended to an analysis of the conditions influencing retention and forgetting of all forms of learning. Finally, Dr. Martin describes problem solving behavior and discusses "creativity" within this problem solving framework.
READING ASSIGNMENT: Gagne, Chapters 5, 6 and 7

(13) FRIDAY, MAY 17 Through WEDNESDAY, MAY 22 - MOTIVATION AND LEARNING - Dr. Farquhar
One of the most critical roles which teachers play is that of enhancing and/or maintaining academic motivation. Dr. Farquhar's initial discussion is concerned with the

general nature of motivation. This discussion concentrates on factors within the learner and within the learning task which have been shown to influence motivation. The product of this discussion is a list of general characteristics of low motivated students.

Dr. Farquhar then presents a set of practical guidelines for teachers who are having trouble motivating students. READING ASSIGNMENT: Bernard and Huckins, Articles #32 and #35.

(14) FRIDAY, MAY 24 Through FRIDAY, MAY 31 - FORMULATING EFFECTIVE TEACHING STRATEGIES - Dr. Shulman
In this final series of lectures, Dr. Shulman considers the problem of developing effective teaching strategies. Clearly, a single optimal strategy does not exist for a given teacher in all situations, or for any set of teachers faced with the same situation. Rather, many relevant factors must be considered, including: characteristics of the students (as discussed in Unit I) relevant research in human learning; the general culture; and, the objective which the teacher is attempting to accomplish.

Dr. Shulman's discussions center around the general teaching strategies suggested by Gagne's ("simple to complex") and Bruner's ("complex to simple") positions. This contrast is illustrated with examples of teaching reading, social studies, and foreign language, as well as the development of programme instruction. In the final lecture, Dr. Shulman and Dr. Farquhar consider the impact of changing patterns of educational technology and our general culture on the basic role of the teacher. READING ASSIGNMENT: Bernard and Huckins, Articles #12, 29, and 39. Gagne, Chapter 8, 9, and 10.

(15) MONDAY, JUNE 3 - FINAL EXAMINATION
5:45 - 7:45 p.m. Room assignments will be announced during the last week of classes.

VII. EVALUATION:

Your final grade in Education 200 will represent a combination of the grades you receive in each of the following areas:

(1) Midterm Exam: A midterm examination will be administered on Thursday, April 25th. This exam will deal with the

lectures and reading assignments from Unit I of the course. It will consist of 40-50 objective items (multiple choice, true-false, etc.)

(2) Instructor's Evaluation: You will also receive a grade from your instructor which depicts your level of performance in the small group discussions. In general, it is the option of each instructor to determine how this grade will be derived. Typical sources of evaluation include: papers, essay exams, quizzes, quality of participation in discussions, etc.

Because each instructor will determine the assignments for his section, the basis for determining your final grade in Education 200 will vary somewhat from section to section. However, an attempt has been made to insure that the quantity of work involved and the method of assigning grades will be reasonably consistent across all sections.

Your instructor will describe the method by which this grade will be determined within the next few days.

(3) Final Exam: The final exam will consist of approximately 80 objective items. This exam will deal with the lectures and reading assignments for the entire course. However, it will emphasize the material in Unit II. As indicated in your schedule under "Common Final Exams," the date for this exam in Monday, June 3.

COMPUTATION OF YOUR FINAL GRADE:

You will receive a letter grade ("A", "B", "C", etc.) in each of the above three areas. Your final grade in Education 200 will consist of the weighted combination of each of these grades:

Relevant Area	Assigned Weight	Critical Date
(1) Midterm Exam	20%	Thursday, April 25
(2) Instructor's Grade	40%	Arranged
(3) Final Exam	40%	Monday, June 3 5:45 - 7:45 p.m.

IMPORTANT NOTE: Grades below a "D-" will carry a negative value in the above computations. In order to receive a passing grade in the course you must: (1) complete every assignment, every exam, and data from each research study in which you are asked to participate, and (2) maintain at least a "D" average.

Date: April 21, 1966

TO: Educational Development Project

FROM: Lee Dean

SUBJECT: Curriculum Review in College of Education

Two years ago a faculty committee was appointed in the College of Education to review the undergraduate curriculum required of all students seeking teacher certification. The committee was asked to identify those basic understandings, skills, and attitudes which characterize a teacher who can respond competently to all the situations within which he must function. It was expected that the identification and agreement upon the basic understandings would be helpful to us in:

a. Developing more goal orientation of courses within our required offerings. If we identified objectives for the whole program the assignment of responsibility for teaching these concepts to courses within the total program would naturally follow. These assignments would thus establish goals for each course.

b. Securing greater uniformity of content in multiple section courses.

c. Eliminating unnecessary duplication of material in courses since the program would be structured as a unit. Also omissions of important concepts would be less likely to occur than when courses were constructed more or less independently.

d. Providing instructors of courses in the required professional sequences with better information concerning the fundamental concepts covered in other courses in the sequence.

e. Evaluating the success of programs against well defined goals.

The committee worked for many weeks before bringing to the faculty a tentative listing of the components of our professional program which should be required of all future teachers. The faculty was asked to respond to a questionnaire indicating their judgment as to the importance of the various components suggested. This judgment was expressed on a five point scale ranging from "irrelevant" to "should understand well."

Faculty responses were then reviewed by the faculty committee and a new listing of suggested competencies was developed following faculty suggestions. This new listing was again circulated to the faculty and committee hearings were scheduled at which time faculty members were invited to come in and meet in person with the committee to suggest modifications or changes.

Suggestions obtained from faculty members during the hearings were incorporated and a final draft of the basic understandings, skills and attitudes expected from the required undergraduate program was finally agreed upon. This total listing was then categorized into areas and assigned to specific courses within the total program. Each of the four required courses thus was assigned a set of specific goals and these formed the basis for development of course content.

A copy of the final document which was adopted by the total faculty of the College of Education on April 5, 1965, is attached.

DATE: April 5, 1965

TO: Faculty Curriculum Committee

FROM: Curriculum Review Committee

SUBJECT: Report on Undergraduate Curriculum Revision

A sub-committee of the Curriculum Committee was appointed in December 1963, to study the undergraduate required curriculum and propose appropriate revisions. Early last fall they asked the faculty to react to a proposed definition of goals and content of the curriculum. These reactions were analyzed by the committee and a revised listing of competencies resulted. These behavioral expectations were assigned to specific segments of the total program.

During the first part of Winter Quarter, hearings were held by the committee. Faculty members wishing to express their judgments concerning the curriculum proposals were scheduled to discuss them directly with the committee. The total process has resulted in the present proposal.

Summary of Recommendations

A. The proposed goals for each of the courses making up the total required undergraduate curriculum were distributed to faculty members in January. Page two of the present document identifies additional competencies added as a result of suggestions made in the faculty hearings.

B. In considering the total program of teacher education, the committee included recommended course work which the institution might require of every teacher beyond initial certification before a permanent certificate can be issued. This now involves a total of 15 term credits following a bachelor's degree and under the proposed new certification code, it will be increased to 45 term credits after the bachelor's degree.

C. The course, ED 301, School and Society, should be scheduled as a post-student teaching course rather than a prerequisite to student teaching as at present. This should make possible the study of certain topics which are more appropriate after the student has had an opporunity to gain some background of experience in a school situation. To conform to an appropriate sequence of course numbers this course number should become ED 450.

D. The number of credits for secondary methods courses (ED 327) should be increased from three to five. This increase should be used to offer some general methods as a part of the total teaching

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methods course and to achieve specific objectives in the evaluation of instruction. The time each week would be divided between studying general methods as a total group and special methods in the major field in specialized subject area groups.

E. The number of credits granted for ED 200 and ED 301 (450) should be reduced from six to five credits each. In the large sections, three hours each week should be used for lecture and two hours each week used for discussion purposes. The discussion sections should be divided according to level (elementary and secondary) so application of theoretical concepts to classroom situations can be directly related to student's primary interest.

F. A student should become eligible for student teaching beginning with the second term of his junior year. (At present, a student is not eligible until the third term of his junior year.)

G. The student teaching coordinator should be responsiblt for teaching specific course content as a part of the seminar which accompanies student teaching. In addition, supervising teachers are expected to teach specific skills when a deficiency is noted in a student teacher. Supervising teachers should be helped to assume this responsibility through regularly scheduled supervising teacher seminars.

In addition to the above recommendations the committee also recommends continuing study of certain problems with the possibility of implementation of other changes as soon as practical. Included among these are:

A. An evaluation program designed to assess continuously the effectiveness of the courses in the undergraduate program and to identify weaknesses which should be remedied and needed changes which should be considered for adoption.

B. The development of a library of recorded classroom episodes which could be used as teaching aids throughout the on-campus phase of the program. These simulated classroom situations would at least partially help to overcome our inability to provide early classroom contacts for all of our students.

C. The lengthening of the period of field experience so that methods instruction could be combined with the experience in public school classrooms.

D. Moving further in the direction of organizing course content on a sequential rather than disciplinary basis by including in the first course those concepts in the various disciplines best taught at the introductory level and in later courses the more sophisticated concepts in those areas.

Course One

The responsibility for the development of expected competencies in educational psychology, human growth and development and human learning are assigned to ED 200, THE INDIVIDUAL AND THE SCHOOL, for five term credits.

In addition, an orientation to the profession is expected since this is the first course in the required sequence

The student who completes this course:

Orientation to Professional Education

1. Understands the structure and relevance of the various aspects of the program of Teacher Education at Michigan State University.

2. Recognizes the criteria by which a profession and a professional educator can be identified, and measures himself against these criteria.

Observation and Interpretation of Behavior in the Classroom

3. Recognizes the pupil behaviors characteristic of different levels of mental ability.

4. Recognizes the pupil behaviors symptomatic of possible emotional disturbances.

5. Recognizes the range of individual differences in abilities between pupils in the same classroom.

6. Recognizes the differences among abilities manifested by the same pupil.

7. Distinguishes among the kinds of thinking which can be expected of children of different ages.

8. Recognizes the relationship between levels of thinking and what can be taught and learned.

9. Recognizes the wide variety of non-cognitive variables affecting learning in the classroom, e.g., sex, social class, specific needs, etc.

10. Recognizes the differences in frustration tolerance characteristic of pupils of different ages.

11. Determines the proper length of teaching units on the basis of an understanding of frustration tolerance.

12. Understands the internal needs of pupils and their relationship to various kinds of teacher-induced motivation.

Learning and Thinking in the Classroom

13. Discriminates among the kinds of learning that take place in the classroom.

14. Distinguishes among the learning of skills, information, concepts and principles.

15. Distinguishes between cognitive and attitudinal learning.

16. Distinguishes between the products and processes of learning, i.e., between what is learned and how it is learned.

17. Recognizes the positive and negative consequence of "ability" and other kinds of grouping in developing formal classroom groups.

18. Recognizes inter-pupil and pupil-teacher behavior situations in relationship to principles of group psychology and individual development.

19. Analyzes teaching behaviors which elicit different educational outcomes, e.g., rote memorization, problem solving, self-expression.

20. Recognizes the hierarchial nature of objectives; that is, that more complex behavioral changes presuppose the prior modification of simpler behaviors.

21. Recognizes that objectives can be of different sorts, e.g., cognitive, affective, psychomotor, and that these are developed by specific kinds of learning experiences.

22. Recognizes the differences in levels of objectives, e.g., knowing, applying, analyzing, synthesizing.

23. Understands the value of many kinds of standardized psychological tests and their general areas of application.

Human Growth and Development

24. Recognizes the developmental tasks and general conflicts characteristic of children of different ages.

25. Recognizes the developmental changes in physical growth among school children and the relationships of physical development to classroom functioning.

26. Recognizes the patterns of development for various human characteristics and the points in time when educational interference is most likely to be successful in modifying.

Additional Competencies to be Developed Prior to Permanent Certification

It seems unrealistic to attempt to develop in the beginning teacher all the competencies expected of permanently certified professional educators. In the past the tendency in most teacher training programs has been to provide at least some instruction in all competencies perceived as necessary for the teacher. This approach has sacrificed depth for breadth and may have resulted in the masters level courses commonly elected to apply toward permanent certification seeming to repeat undergraduate materials even if at a more sophisticated level.

The present proposal insists that the course work to be applied toward permanent certification be a planned, sequenced, and required part of the teacher preparation program of this university; and that the competencies judged to be required of permanently certified teachers but not necessarily crucial for successful induction to the profession be deferred to the period after initial certification.

The competencies to be expected of teachers recommended by this institution for permanent certification should include (but not necessarily be limited to) the following:

Classroom Teaching and Learning

1. Uses evaluation techniques to compare different teaching behaviors for comparable students.

2. Evaluates in order to compare effects of teaching on groups of differing readiness.

3. Analyzes reports of educational research.

4. Evaluates the relationship of educational research to theories and practices in teaching.

5. Recognizes the relevant differences among theoretical positions concerning the learning process.

6. Matches principles of learning with the kinds of objectives and developmental levels for which they are most appropriate.

7. Identifies the different major theories of knowing.

8. Differentiates research as encompassing

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a. a teaching attitude.
b. a range of investigatory models and techniques.
c. a body of specific findings.

9. Demonstrates the logical and psychological relationship between the concepts being taught and the objectives sought.

10. Understands the psychology and sociology of decision-making and of behavior change.

11. Understands and implements the psychological and physiological processes underlying the basic skills used to receive, organize, and communicate information; e.g., reading, mathematical thinking, speaking and writing.

The School in American Society

12. Understands and interprets to others the goals and practices of the profession.

13. Analyzes the nature, program, purpose, values and value of professional organizations in education.

14. Understands representative philosophies of education and their implications for educational practice.

15. Possesses the tools for analytical activity concerning statements about education.

16. Understands the processes through which education initiates and/or implements social change.

17. Understands the basic technical terms, concepts, principles, and controversies in the philosophy and sociology of education as a basis for more advanced work in the field.

18. Identifies instances of economic, political, and social injustice in the school and community and the means possible to gain community support for their removal.

19. Analyzes the role of government in education at the Federal, State, and local level.

20. Analyzes the role of the church in public education.

21. Analyzes trends and cycles in education in relation to the history of American public education.

Building the Curriculum

22. Makes decisions regarding the scope and sequence relationships among curricular experiences.

23. Understands the advantages and disadvantages of such administrative patterns as: Departmentalized; Self-contained; Grade levels; Non-graded; Homogeneous; Heterogeneous.

24. Understands the role of the specialist in the school program, i.e., nurse, visiting teacher, home-bound teacher, diagnostician, etc.

25. Analyzes the relative advantage and disadvantage of such instructional patterns as: Separate subject; Correlated; Core; Unit; Team Teaching.

26. Constructs programs which show promise for creating social change.

27. Identifies, analyzes, and justifies curriculum scope and sequence.

28. Develops effective procedures for curriculum planning.

Financing the Educational Enterprise

29. Understands the sources and allocation of funds for all levels of education.

30. Analyzes the means by which educational opportunities are or may be equalized.

31. Understands the role of education in national development.

32. Understands the factors influencing public support for education.

33. Plans strategies for gaining community support for education.

ORGANIZATIONAL PLAN FOR FOUNDATION COURSES

COLLEGE OF EDUCATION

Introduction

Providing quality programs to large numbers of students is one of the most challenging tasks faced by large universities. The task is more difficult because of the increasingly short supply of competent college teachers. Some institutions have attempted to overcome the shortage by staffing undergraduate courses with graduate assistants and have achieved varying degrees of success.

In order to give undergraduate instruction the emphasis which we believe it deserves, the College of Education has designed a plan which will bring our undergraduate students in contact with outstanding senior faculty members and at the same time allow for student identification with a small group where his individual questions and comments can become meaningful.

During the next school year (1966-67) our new undergraduate curriculum will be implemented fully. This will mean that ED 200 will be offered for 5 term credits and will be required of all students including transfers. ED 450 will replace our old ED 301 and follow student teaching rather than precede it as formerly.

Our projection shows that approximately 1,350 students will enroll in ED 200 during the fall term. This number will drop to approximately 1,000 for winter term and 800 for spring term.

Due to the change in sequence of courses, it is more difficult to predict the numbers expected to enroll in ED 450 during the next school year. We do expect that by spring term we shall have approximately 800 students in this course.

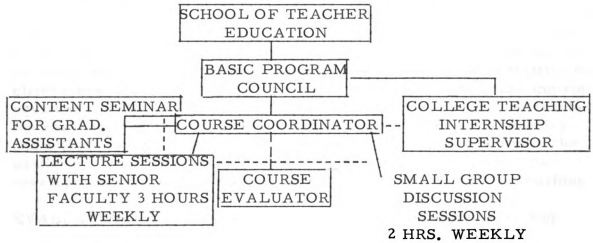
Course Organizational Plan

LECTURE SESSIONS--The coordination involved with courses enrolling such large numbers is an extremely difficult administrative task. It is our plan to separate much of the administrivia connected with the operation of such courses from the professional contribution which our senior staff members can make. It is proposed, therefore, that next year a course coordinator be appointed for each of these foundations courses enrolling large numbers of students. It will be his responsibility to coordinate the operation of large lecture sessions (approximately 450 each) but he will not necessarily be responsible for delivering any of the lectures himself. Instead, he will be the person responsible for

bringing unity to the course which will involve several different faculty lecturers. He will also be responsible for the coordination of the discussion sections and be working closely with a faculty member responsible for course evaluation and a faculty member responsible for a college teaching internship offered for graduate assistants helping with instruction in the course.

Senior faculty members who have a particular competence in some portion of the course content and who are known to be outstanding lecturers will be invited to give lectures on that portion of the course which falls within their particular area of interest and competence. Each senior faculty member thus will be involved with only from 3 to 6 lectures covering a particular unit of the course. Other time he will be free to pursue other research or instructional responsibilities. We expect he will be given generous load credit for his contribution to these basic courses and we hope that to be asked to participate in this manner will be viewed by the faculty member as a distinct honor.

ORGANIZATIONAL PLAN FOR LARGE GROUP INSTRUCTION



We expect that it will become much easier for us to employ competent new staff whose responsibility it will be to only make specialized contributions to the instruction in the undergraduate basic courses than it would be to employ staff solely for instructional responsibilities at the undergraduate level.

DISCUSSION SECTIONS--Besides the large lecture sections scheduled for 3 days each week, the students will meet twice weekly in small (under 35) discussion sections which will be conducted by graduate assistants employed for this purpose. During these sessions it is expected that the student will have an opportunity to have his questions

clarified and be identified as an individual within the total group. It is expected that the discussion sections will be related closely to the lectures and that here the student will be concerned with the application to classroom problems of the concepts covered during the lecture sessions.

In order to assure competence on the part of discussion leaders, all will be required to enroll during fall term for a credit seminar on the general course content. This seminar will be conducted by the senior faculty members who are responsible for specific lecture sessions. Each lecturer will meet with the graduate assistants the week preceding his presentations to the large groups of students in our Kiva. At this time he will cover in greater depth some of the material he expects to discuss with students the following week and will provide the graduate assistants with a list of readings which will better acquaint them with the material which he expects to cover. Any graduate student appointed to one of these positions will be told in advance that the seminar is a part of the requirements.

COLLEGE TEACHING INTERNSHIP--In addition, all graduate assistants will be enrolled in a college teaching internship for 3 term credits each quarter. A member of our faculty will be assigned full time to work on the development of the graduate assistants as college teachers, much the same as our coordinators of student teaching function in relation to elementary and secondary school teachers. Regular group and individual sessions will be held with the assistants, centered around their teaching responsibilities. We feel that such emphasis upon good teaching and efforts to improve teaching will be beneficial both in terms of the quality of the undergraduate course that is being offered and in the development of strong graduates who expect to go into college teaching.

EVALUATION INSTRUMENTS--Examinations in a course enrolling large numbers of students are doubly important. The construction of evaluation instruments which will properly measure the progress students make toward the predetermined goals of the course is a most important function. To insure the development of reliable evaluation procedures, a person will be assigned full time to construct examinations for the two basic courses, ED 200 and ED 450. This person, of course, will work in close cooperation with the faculty members and graduate assistants involved in teaching the course content. Eventually it is expected that a written examination will be developed which will properly measure a student's competence and make possible the completion of the course requirements by examination only.

Attached is a more detailed explanation of the responsibilities of the course coordinator and the college teaching internship coordinator.

THE ROLE OF THE COURSE COORDINATOR FOR ED 450

In Course Development:

1. Serve as Executive Secretary of the course curriculum committee. This course curriculum committee will be made up of three faculty members selected from the Social Foundations specialists on our faculty. It will be responsible for structuring the course to implement the purposes established for the course by the College of Education faculty in May 1965.

2. Arrange for the lecturers for various units of the course.

3. Arrange for more detailed descriptions of material to be covered in each unit. (This will consist of expanded description of course goals already determined by faculty.)

4. Develop calendar with lecture schedule determined for each quarter.

In Coordination of Lecture Sessions:

1. Build bridges between course units. Provide the thread that weaves the course into a unified area of study rather than a series of unrelated lectures.

2. Provide each lecturer with precise instructions as to material to be covered.

3. Orient each lecturer as to what precedes and what follows his assigned unit so that he clearly understands how his portion of the course fits into the total course.

4. Make suggestions concerning instructional aids which might be developed for lecturers.

In Coordination of Course Evaluation Procedures:

1. Develop a plan for determining students' grades and make sure students clearly understand these procedures.

2. Work closely with person responsible for test development.

3. Coordinate the suggestions of discussion section leaders related to development of test items.

4. Arrange for continuous course evaluation by students.

In Coordination of Discussion Sections:

1. Provide instructions for discussion leaders concerning goals for each discussion session. These instructions should be contained in a discussion leaders handbook which will also contain suggestions for conducting each scheduled session, instructional materials which might be used, etc.

2. Provide means of feedback from discussion leaders to lecturers regarding student reactions to their work in the course.

3. Develop well in advance a schedule of seminar sessions for graduate assistant discussion leaders conducted by course lecturers each week.

4. Conduct a pre-school workshop each fall for discussion leaders.

5. Provide information to graduate assistants regarding enrollment in seminars scheduled exclusively for them each fall term.

6. Work closely with the faculty person responsible for the supervision of the "College teaching internship" in which each group leader will enroll each quarter during the year. Make sure this requirement is clearly understood by each graduate assistant and his graduate program advisor.

7. Serve on the selection committee for graduate assistants for the forthcoming year.

In Long-Range Course Development:

1. As soon as curriculum structure will permit, develop a syllabus which can be provided for each student. This is needed as soon as it can be developed within practical limitations. This should provide the student with greater security than he now feels regarding the total course objectives and how the parts fit together.

2. Develop with the course curriculum committee and lecturers a book of readings which will become the text for the course. This, along with the syllabus, should be printed for the College of Education and royalties from its sale returned to the College.

THE ROLE OF THE COLLEGE TEACHING INTERNSHIP COORDINATOR

1. Supervise the work of the graduate assistants serving as discussion leaders in ED 200 and ED 450.

2. Provide a weekly seminar on the problems of college teaching for these graduate assistants.

3. Give individual attention and help to graduate assistants in the group.

4. Work closely with the course coordinator in integrating the discussion sessions with the lecture sessions to achieve total course goals.

5. Serve on a selection committee for graduate assistants for the forthcoming year.

APPENDIX B

Instruments

EDUCATION 200

PRE-COURSE STUDENT ASSESSMENT

Spring Term, 1968

School of Teacher Education

Michigan State University

The School of Teacher Education in conjunction with the Office of Institutional Research at Michigan State University is engaged in an extensive investigation of classroom instruction in its basic courses. One aspect of the over-all program concerns students' reactions to the course and other elements of instruction right at the beginning of the term.

There are four parts to this pre-course assessment. The first two parts are to be answered on the special answer sheet provided with this booklet. The last two parts are to be answered in the booklet itself according to the instructions given. Although you are required to identify yourself on this form and on the answer sheet, please be assured that your replies will have no bearing at all upon your grade in this course. The completed questionnaires will be analyzed by a special staff, unrelated to the instructional and evaluative personnel for Education 200. All replies will be treated with complete confidence.

The instructions for each part are listed at the beginning of that part. Do not omit any of the items. Fill in the information called for

below and at the top of the answer sheet now.

Name_____Student Number_____

Major_____G. P. A._____

Number of credit hours completed_____Age_____

How many credit hours including this course are you carrying this term

_____

EDUCATION 200

Part I -- Pre-Course Attitudes

This part consists of 57 statements of initial attitude toward the course. Read each statement and decide whether or not you agree with it. If the statement represents your own attitude, blacken the space between the dotted lines labeled 1 (agree) on the special answer sheet. If you disagree with the statement, fill in the space labeled 2 on the special answer sheet. You will see that there are five spaces for each answer on the answer sheet. Do not fill in any space but 1 or 2.

Please consider every statement carefully and mark your reaction to either the 1 (agree) or the 2 (disagree) column. Do not omit any of the items.

1. I feel I will be wasting my time in this course.
2. I wish I could have avoided taking this course.
3. I would recommend that as many students as possible avoid taking this course.
4. Even if I have the chance in the future, I will avoid having anything to do with this subject.
5. I have no interest in this subject area.
6. I anticipate that this will be a dull course.
7. A large portion of the course will be just "dead wood."
8. I do not expect this course to help me broaden my outlook.
9. This course deals with impractical things.
10. I have heard that the instructors do not make the material understandable.

11. This course will contribute very little to my fund of knowledge.

12. I have heard the instructors cannot teach.

13. I feel this course does not fill a gap in my previous background.

14. This course will not tie in with the work I intend to do.

15. I have heard that the instructors are not intellectually stimulating.

16. I have heard that the instructors do not care whether or not their students learn the material.

17. I believe there will be too much emphasis on outside readings in this course.

18. I anticipate that I will do little in the way of original thinking about the subject matter of this course.

19. I have heard that the instructors teach over your head.

20. I expect this course to be too hard for me.

21. I registered for this course mainly because my adviser told me to do so.

22. I have heard that this course does not inspire the students.

23. I have heard that this course does not relate the material to many other fields.

24. I expect this course to be too easy for me.

25. I expect this course to deal with detailed material.

26. This course is not in my major field of study.

27. I do not feel strongly one way or the other about being in this course.

28. I have heard that attendance is not taken in this course.

29. I believe there will be little emphasis on outside readings in this course.

30. I anticipate that this course will deal little with theory.

31. I have heard that the instructors are easy graders.

32. I have had very little of the material presented in this course before.

33. I expect this course to deal with concepts and principles rather than facts.

34. I do not expect this course to be mainly a memory course.

35. This course will be concerned with practical, down to earth matters.

36. I have heard that the instructors do not teach over your head.

37. This course will not duplicate material I have had before.

38. I feel I will not be wasting my time in this course.

39. I have heard that the instructors know their material well.

40. This course deals with practical things.

41. I have heard that the instructors care whether or not their students learn the material.

42. I heard that the instructors make the material interesting.

43. I am glad I am taking this course.

44. I can see how I could apply this course content in real life.

45. I anticipate that I will do a great deal in the way of original thinking about the subject matter of this course.

46. I have heard that the instructors are intellectually stimulating.

47. The instructors have the reputation of being good teachers.

48. I think I will forget less about this subject than about most other subjects.

49. I am in this course because I want to broaden my outlook.

50. This course deals with material about which I want to learn.

51. I have heard that the instructors are a great inspiration to their students.

52. This class will be more stimulating than most of the others I have taken or will take.

53. I anticipate that this will be an exciting course.

54. This course will cover material which, for the most part, I consider to be vital and significant.

55. This course will help me realize my professional or vocational goal.

56. I believe I will enjoy this course more than any other I am taking this semester.

57. I believe I will learn more from this course than any other I am taking this semester.

EDUCATION 200

Part II -- Test Attitude

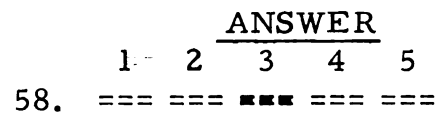
This part consists of 19 statements numbered from 58 to 76 about reactions to testing. Read each statement and decide to what degree it pertains to you. Under each statement are listed five alternative degrees of agreement with the statement. Pick the alternative that most closely represents your feelings and blacken the space of that alternative in the corresponding place for that item on the answer sheet.

In the following example, if you felt that nervousness while taking an exam hindered you from doing well about half of the time, you would blacken number three (3) on the answer sheet.

EXAMPLE:

58. Nervousness while taking an exam or test hinders me from doing well.

1. Always
2. Usually
3. Sometimes
4. Rarely
5. Never



Please consider every statement carefully. Do not omit any of these items. If you make a mistake or change your mind on any item, erase the incorrect response thoroughly and blacken the correct response.

58. Nervousness while taking an exam or test hinders me from doing well.

1. Always
2. Usually
3. Sometimes
4. Rarely
5. Never

59. I work most effectively under pressure, as when the task is very important.

1. Always
2. Usually
3. Sometimes
4. Rarely
5. Never

60. In a course where I have been doing poorly, my fear of a bad grade cuts down my efficiency.

1. Never
2. Rarely
3. Sometimes
4. Usually
5. Always

61. When I am poorly prepared for an exam or test, I get upset, and do less well than even my restricted knowledge should allow.

1. This never happens to me
2. This rarely happens to me
3. This sometimes happens to me
4. This usually happens to me
5. This practically always happens to me

62. The more important the examination, the less well I seem to do.

1. Always
2. Usually
3. Sometimes
4. Rarely
5. Never

63. While I may (or may not) be nervous before taking an exam, once I start, I seem to forget to be nervous.

1. I always forget to be nervous during an exam
2. I am rarely nervous during an exam
3. I am sometimes nervous during an exam
4. I am usually nervous during an exam
5. I am always nervous during an exam

64. During exams or tests, I block on questions to which I know the answers, even though I might remember them as soon as the exam is over.

1. I always block on questions to which I know the answers
2. I usually block on questions to which I know the answers
3. I sometimes block on questions to which I know the answers
4. I rarely block on questions to which I know the answers
5. I never block on questions to which I know the answers

65. Nervousness while taking a test helps me do better.

1. It never helps
2. It rarely helps
3. It sometimes helps
4. It usually helps
5. It always helps

66. When I start a test, nothing is able to distract me.

1. This is always true of me
2. This is usually true of me
3. This is sometimes true of me
4. This is rarely true of me
5. This is not true of me

67. In courses in which the total grade is based mainly on <u>one</u> exam. I seem to do better than other people.

1. Never
2. Rarely
3. Sometimes
4. Usually
5. Always

68. I find that my mind goes blank at the beginning of an exam, and it takes me a few minutes before I can function.

1. I almost always blank out at first
2. I usually blank out at first
3. I sometimes blank out at first
4. I rarely blank out at first
5. I never blank out at first

69. I look forward to exams.

1. Never
2. Rarely
3. Sometimes
4. Usually
5. Always

70. I am so tired from worrying about an exam, that I find I almost don't care how well I do by the time I start the test.

1. I never feel this way
2. I rarely feel this way
3. I sometimes feel this way
4. I usually feel this way
5. I almost always feel this way

71. Time pressure on an exam causes me to do worse than the rest of the group under similar conditions.

1. Time pressure always seems to make me do worse on an exam than others
2. Time pressure usually seems to make me do worse on an exam than others
3. Time pressure sometimes seems to make me do worse on an exam than others
4. Time pressure rarely seems to make me do worse on an exam than others
5. Time pressure never seems to make me do worse on an exam than others

72. Although "cramming" under pre-examination tension is not effective for most people, I find that if the need arises, I can learn material immediately before an exam, even under considerable pressure, and successfully retain it to use on the exam.

1. I am always able to use the "crammed" material successfully
2. I am usually able to use the "crammed" material successfully
3. I am sometimes able to use the "crammed" material successfully
4. I am rarely able to use the "crammed" material successfully
5. I am never able to use the "crammed" material successfully

73. I enjoy taking a difficult exam more than an easy one.

1. Always
2. Usually
3. Sometimes
4. Rarely
5. Never

74. I find myself reading exam questions without understanding them, and I must go back over them so that they will make sense.

1. Never
2. Rarely
3. Sometimes
4. Usually
5. Almost always

75. The more important the exam or test, the better I seem to do.

1. This is true of me
2. This is usually true of me
3. This is sometimes true of me
4. This is rarely true of me
5. This is never true of me

76. When I don't do well on a difficult item at the beginning of an exam, it tends to upset me so that I block on even easy questions later on.

1. This never happens to me
2. This rarely happens to me
3. This sometimes happens to me
4. This usually happens to me
5. This almost always happens to me.

EDUCATION 200

Part III -- Course Aspirations

(Repeated with minor alteration
three times during the course)

This part consists of a series of questions relating to your particular aspirations and expectations to this course. The instructions on how to respond to each item are indicated for that item. Pleas consider every question carefully. Do not omit any of the items.

1. On the grade scale below please circle the lowest grade you think you might receive in this course.

   A A- B+ B B- C+ C C- D+ D D- F

2. On the grade scale below please circle the highest grade you think you might receive in this course.

   A A- B+ B B- C+ C C- D+ D D- F

3. On the grade scale below please circle the grade you think you actually will receive in this course.

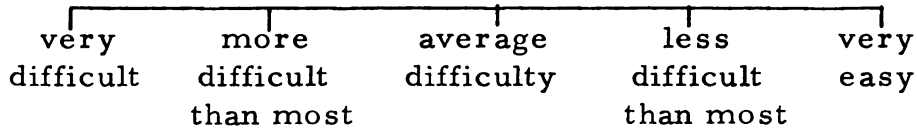
   A A- B+ B B- C+ C C- D+ D D- F

4. On the grade scale below please estimate in percentages your chances of getting each particular grade. For example, if you think you have a 50 percent chance of getting a "B" then write 50 below the letter B. Please write an estimate below each grade. (You can estimate zero (0) percent.)

   A B C D F

5. On the scale below please circle the appropriate response to this question:

How difficult do you think this course will be?



EDUCATION 200

Part IV -- Pre-Course Teacher Role Expectations

(Repeated with minor alteration
three times during the course.)

In this part, you are asked to respond to some questions concerning this course and your future role as a teacher. In answering these questions simple circle the number of the alternative that most closely corresponds to your feelings. Consider each question carefully. Do not omit any of the items.

1. How strongly committed are you to entering the teaching profession?

    1. I am absolutely certain I will become a teacher.

    2. I am quite certain I will become a teacher.

    3. I am somewhat undecided, but I will probably become a teacher.

    4. I am somewhat undecided, but I doubt that I will become a teacher.

    5. I am certain that I will not become a teacher.

2. How important do you feel a knowledge of the theory and principles of human growth and behavior will be in successfully performing as a teacher?

    1. An understanding of the theory and principles of human growth and behavior is essential to performing adequately as a teacher.

    2. An understanding of the theory and principles of human growth and behavior is an important prerequisite to adequate teaching.

3. An understanding of the theory and principles of human growth and behavior should aid a teacher in her work.

4. The theory and principles of human growth and behavior have little to do with adequate teaching in the classroom.

5. The theory and principles of human growth and behavior may be fine for the specialist or the college professor, but they have no relevance to teaching in the school classroom.

3. How important do you feel this course will be in preparing you to successfully understand and deal with students in both their learning and personal development?

1. I expect the content and experiences included in this course will be the most critical part of my training for successfully understanding and dealing with students in both their learning and personal development.

2. I expect the content and experiences included in this course will be an important part of my total training for successfully understanding and dealing with students in both their learning and personal development.

3. I expect the content and experiences included in this course will probably be helpful, but not necessarily critical, in my training to successfully understand and deal with students in both their learning and personal development.

4. I expect the content and experiences included in this course may be helpful, but one learns to understand and deal with students in both their learning and personal development primarily by experience.

5. Understanding and dealing with students can only be learned by experience.

4. How strongly do you feel that teaching is the occupation for which you are best suited?

1. Very strongly

2. quite strongly

3. only moderately

4. uncertain

5. not at all

5. Why did you enroll for this course?

1. The course was required or I would not have enrolled.

2. The course was not required, but even though I enrolled for it I doubt the wisdom of this action.

3. The course was required and I do not know whether or not I would have enrolled for it otherwise.

4. The course was required but I would have enrolled for it anyway.

5. The course was not required but I wanted to take it.

EDUCATION 200

Spring Term, 1968
Practice Examination
(Examples of Items)

Michigan State University
College of Education

SECTION NUMBER_____ DISCUSSION INSTRUCTOR_____

NAME_____ STUDENT NUMBER_____

General Instructions

This is a practice examination. The results of this exam will have no effect upon your grade in this course. Do as well as you can. The results of this exam will: (1) provide you with an indication of the content to be covered in this course, (2) be used to determine instructional emphasis on particular content areas, and (3) acquaint you with the nature and types of questions you will be asked on the mid-term and final exam.

Specific instructions for completing the exam are as follows:

1. Fill in the information requested at the top of this page.

2. Fill in the information requested on the answer sheet. Be sure to include your student number in the appropriate spot.

3. Select the one best answer to each item. Blacken the number of your choice on the answer sheet.

4. Answer every item. There is no penalty on this or future exams for guessing.

1. Are you anxious or worried about the examination you are about to take?

   1. Not at all worried or anxious.
   2. Only slightly worried or anxious.
   3. Somewhat worried or anxious.
   4. Quite worried or anxious.
   5. Extremely worried or anxious.

2. Given no other information, which of the following youngsters is most apt to be highly anxious within a school setting?

   1. John, who has both high intelligence and creativity.
   2. Sam, who has high intelligence, but low creative ability.
   3. Scott, who has high creative ability, but low intelligence.
   4. Mark, who is low in both intelligence and creativity.

3. For the past three years, Mark's parents have spent several hours each week encouraging their six year old son to read children's stories. Training of this type, which precedes maturation:

   1. will probably result in sizable gains in reading performance.
   2. will probably not result in immediate gains in performance, but will nevertheless pay off in the long run.
   3. will not have much effect on performance and may even result in a lack of interest or a negative attitude toward reading.

4. Which of the following junior high school youngsters is most apt to have a high level of academic motivation?

   1. Sally, who has an I.Q. of 100.
   2. Mary, who has an I.Q. of 130.
   3. Jim, who has an I.Q. of 100.
   4. Sam, who has an I.Q. of 130.
   5. Impossible to say, since there is no relation between I.Q. and level of academic motivation.

5. Teaching history for its psychological implications would involve:

   1. an emphasis on names and dates in order to improve a child's memory functions.
   2. an attempt to foster creativity by asking youngsters to imagine themselves in past situations.
   3. frequent discussions of how human motivations influenced the people of the past.
   4. descriptions of only those events which had a major psychological impact on the general populace.

EDUCATION 200
STUDENT LEARNING ATTITUDE

Instructions

We have selected several courses in which large numbers of students tend to enroll. For each course we have listed a variety of topics covered, items of information presented, and tasks to be accomplished.

Assume that you are enrolled in these courses and therefore are required to learn about each of the topics listed on the following pages.

The topics are listed in groups of three. Decide which one of the three topics in each group would interest you most and which one would interest you least. Rank the topics in each set of three indicating the extent to which each one interests you by assigning

1. to the topic that interests you MOST
2. to the topic in which you have an intermediate interest
3. to the topic that interests you LEAST

You may not omit a rank for any topic or assign the same rank to two topics within a set. Although it may sometimes be difficult for you to make a decision, it is imperative that you do so by assigning ranks of 1, 2, and 3 to the topics listed in each set.

Assume you are enrolled in a GEOGRAPHY course and must learn about the following:

A. Items 1 - 3

1. The factors responsible for westward population migration in the U.S.
2. The names of the capitals of the European countries.
3. The names and locations of the 10 largest rivers in the world.

B. Items 4 - 6

4. The average annual per capita consumption of petroleum products in the U.S.
5. The definitions of loess, mesas, drumlins, lithosphere, playas, and biosphere.
6. Requisites for artesian well systems.

C. Items 7 - 9

7. How artesian wells are formed.
8. Forecasts about the weather to be expected in New York City during the next 48 hours from examination of a weather map.
9. The chemical composition of laws.

D. Items 10-12

10. The meaning of "cold," "warm," "occluded," and "cyclonic" fronts.
11. The five major world producers (in order of importance) of iron, lead, zinc, and copper.
12. The role of seaports in national economy.

E. Items 13-15

13. The factors considered by geologists in attempting to locate oil deposits.
14. Statistics on the average family size for each socioeconomic subgroup.
15. Population shifts in the United States during the past 50 years.

F. Items 16-18

16. The names of the world's major glacial areas.
17. The influence of terrain upon agricultural crops.
18. The route taken by the St. Lawrence Seaway.

Assume you are enrolled in a SOCIAL SCIENCE course and must learn about the following:

A. Items 19-21

19. Environment as a partial determinant of mental illness.
20. The relationship between I.Q. and scholastic success in a college or university.
21. Average ages at which children first begin to creep, walk, identify colors, etc.

B. Items 22-24

22. The difference between a psychiatrist, a psychologist, and a psychoanalyst.
23. The percentage of youngsters apprehended as juvenile delinquents who subsequently are apprehended by the law for committing a major crime.

24. The role of psychological testing in vocational guidance.

C. Items 25-27

25. The proportion of United States residents now over age 65.
26. The effects of caffeine upon muscular coordination.
27. The meaning of "percentile" in interpreting test results.

D. Items 28-30

28. The primary symptoms differentiating psychotic (insane) behavior from neurotic behavior.
29. The specific human capabilities known to deteriorate after about age 60.
30. The average incomes of various classifications of workers in the U.S. (e.g., unskilled, semiskilled, technical, professional, etc.)

E. Items 31-33

31. The percentage of family income that ought to be budgeted for rent, food, clothing, recreation, etc.
32. What it is that the psychoanalyst attempts to do.
33. The current divorce rate in the United States.

Assume you are enrolled in a BUSINESS & ECONOMICS course and must learn about the following:

A. Items 34-36

34. The functions of the Securities and Exchange Commission.
35. Factors operating to diminish the size of the U. S. gold reserve.
36. Why an "easy money" policy may be unsound public policy.

B. Items 37-39

37. The names of the components of the "Gross National Product."
38. The meaning of an "odd lot" in stock purchases.
39. The purpose underlying agricultural price supports.

C. Items 40-42

40. Major events in the growth of U. S. labor unions.
41. The names of the nations constituting the "common market."
42. Factors underlying a decision to invest vs. a decision to save.

D. Items 43-45

43. The name of an inflationary potential in the economy which is artificially kept from registering itself in prices.
44. The relationship between disposable incomes and total expenditures for consumer goods.
45. The ways in which Federal Reserve monetary policy attempts to accomplish its goals.

E. Items 46-48

46. How to read entries in the stock market page of a newspaper.
47. The present established worth of an ounce of gold.
48. What is meant by a "holding company."

Assume you are enrolled in a GOVERNMENT course and must learn the following:

A. Items 49-51

49. The uses of international law in government.
50. The steps involved in amending the United States Constitution.
51. The functions of the Federal Communications Commission (FCC).

B. Items 52-54

52. The causes of the Cuban crisis.
53. The reasons for official U.S. opposition to recognizing Red China.
54. Comparative armed strength of the U. S. and Russia.

C. Items 55-57

55. Pros and cons of alternative solutions to U. S. housing problems.
56. Consequences of technological unification of the world.
57. A statement of the Marxist theory of history.

D. Items 58-60

58. The functions of the Central Intelligence Agency.
59. The estimated annual cost to the U. S. of the "cold war."
60. The pressures operating to produce European unity and disunity.

E. Items 61-63

61. Differences in the social and economic characteristics of midwestern republicans and democrats.
62. The limits of authority of a Justice of the Peace.
63. The names and dates of office of the U. S. presidents.

F. Items 64-66

64. The ways in which states are admitted to the Western State System
65. The meaning of government to John Locke.
66. The name of the international organization conducting surveys of the world food situation.

Assume you are enrolled in a NATURAL SCIENCE course and must learn about the following:

A. Items 67-69

67. The explanation for the fact that it is sometimes difficult to recognize voices on the telephone.
68. The distances from earth to the other planets in our galaxy.
69. The critical velocity required to escape the earth's gravitational pull.

B. Items 70-72

70. The names of the elements included within the "halide" group.
71. Statement of Newton's third law of motion.
72. The significance of a pH of 6.

C. Items 73-75

73. Formula for converting centigrade temperature readings to fahrenheit readings.
74. The difference in chemical structure between H_20 (water) and H_202 (hydrogen peroxide).
75. The distinction between "anode" and "cathode."

D. Items 76-78

76. Chemical factors associated with transmitting neural impulses.
77. Why thrust is generated by a jet engine.
78. The chemical structure of penicillin.

E. Items 79-81

79. The relative conductivity of certain substances (e.g., iron, copper, zinc, wood).
80. The meaning of "specific gravity."
81. The effect of increased pressure upon the boiling point of a liquid.

Assume you are enrolled in an ENGLISH course and must learn about or do the following:

A. Items 82-84

82. Write a report on the novel entitled 1984.
83. The names of Shakespeare's comedies.
84. The reason why Hedda Gabler (in Ibsen's Hedda Gabler) kills herself.

B. Items 85-87

85. The names of 10 contemporary authors and their most important works.
86. Write a biographical sketch based upon library research of any author (no longer living) of your choice.
87. The effects of 19th century American history upon the American literature of the period.

88.
89.

90.

91.

92.
93.

C. Items 88-90

88. The elements in a play that lead to its classification as a "tragedy."
89. The correct spelling for the word meaning "to pay" (i.e., is it "renumerate" or "remunerate").
90. Write a theme about the most interesting person you have ever met.

D. Items 91-93

91. The dates and major works of well-known poets like Whitman, Longfellow, Wordsworth, etc.
92. The role of the playwright in contemporary society.
93. The structure (i.e., number of lines, rhyming schemes, etc.) of sonnets.

EDUCATION 200

INSTRUCTOR QUESTIONNAIRE

Spring Term, 1968

Open-Ended Questions

1. EXPLICITLY AS POSSIBLE, WHAT DO YOU BELIEVE ARE THE GENERAL COURSE OBJECTIVES OF EDUCATION 200?

2. TO WHAT DEGREE DO YOU FEEL THESE OBJECTIVES ARE BEING MET (indicate as explicitly as possible both strengths and weaknesses)?

3. IN BEHAVIORAL TERMS, WHAT DO YOU BELIEVE TO BE THE MOST IMPORTANT OBJECTIVES OF YOUR DISCUSSION SECTIONS?

4. AGAIN BEHAVIORALLY, WHAT PROCEDURES, METHODS, MATERIALS OR TECHNIQUES DO YOU EMPLOY IN YOUR DISCUSSION SECTIONS TO ACHIEVE THE OBJECTIVES YOU HAVE INDICATED? (This could relate to how you structure your classroom, the type of materials you use to make points or provide certain experiences, how you control and direct discussion, how you evaluate your students or provide feedback, etc.)

5. HOW DO YOU THINK STUDENTS SHOULD BE EVALUATED IN THE COURSE AND TO WHAT DEGREE SHOULD THE DISCUSSION SECTION INSTRUCTOR HAVE CONTROL OVER THE STUDENT EVALUATION (this pertains to the type of evaluation, the conduct of the evaluation, feedback, etc.)?

6. WHAT BEHAVIORS DO YOU THINK A STUDENT SHOULD BE ABLE TO EXHIBIT AND/OR USE UPON SUCCESSFUL COMPLETION OF THIS COURSE (in answering this question use the minimum 'C' of the School of Teacher Education and higher grades as criterion for successful completion).

7. HOW CAN THE COURSE BE IMPROVED? (you are probably in the best position to see specific areas where improvement can be made; feel free to comment on the structure of the course, the administration, the teacher education program, policies or procedures. Be as specific as possible--your remarks can relate to any aspect of the course such as lectures, discussion sections, materials, objectives, the in-service training of interns, workload, pay, etc.)

8. TO WHAT DEGREE, IF ANY, DO YOU FEEL THE COURSE EVALUATION HAS EFFECTED EITHER YOUR DISCUSSION SECTIONS AND/OR GENERAL COURSE CONDUCT AND OBJECTIVES--please be as specific as possible--?

Background Information

Please respond to the following questions by either circling the number of the most appropriate alternative or filling in the appropriate information in the blank provided. If you feel that for any of the items there is no appropriate alternative provided for your situation, then add the appropriate statement after the last alternative and circle it.

1. In which department in the College of Education are you currently pursuing your graduate training?

   _____

2. What is your major?

   _____

3. At what level of progress are you in your graduate program?

   A. Course work:

      1. less than half completed

      2. about half completed

      3. 80% or more completed

   B. Comprehensive examinations

      1. not completed

      2. taking this term

      3. completed

C. Dissertation

1. not started

2. started, but not yet gathering data

3. gathering data

4. data gathered, in analysis and writing stage

5. essentially completed

4. What degree are you currently pursuing?

1. Masters

2. Ph. D.

3. Specialists

4. Ed. D.

5. How many course hours are you carrying this term (do not include 999 credits or intern credits)?

1. 0-3

2. 4-6

3. 7-9

4. 10-12

5. 12 or more

6. When do you expect to complete the work for your degree?

1. this term

2. by the end of the summer

3. by the end of next school year

4. later than the end of next school year

7. How heavy do you <u>perceive</u> your work load this term as compared to previous terms?

1. much heavier

2. heavier

3. about the same

4. a little less

5. much less

8. After you receive your degree, what form of work do you expect will dominate your time?

1. administration

2. teaching

3. research

4. about 50/50, research and teaching

5. clinical or special ed. or other

9. Do you have teaching experience previous to instructing Education 200?

1. yes

2. no

If yes, at what level?

1. elementary

2. secondary

3. post-secondary

4. both elementary and secondary

5. both secondary and post-secondary

6. both elementary and post-secondary

7. all three levels

If yes, other than your Education 200 experience, how many years teaching experience have you had?

1. one or less
2. 2-3
3. 4-5
4. 5-10
5. ten or more

10. How many terms have you instructed Education 200?

1. first term of instruction
2. 2nd term of instruction
3. 3rd term of instruction
4. 4th term of instruction
5. 5th or more

11. How often do you take roll in your discussion sections?

1. regularly
2. once a week
3. only on special occasions
4. only on the first day or two of the course

12. Do you attempt to learn all of the students' names in your discussion sections?

1. yes, by the end of the first week or two
2. yes, by the end of the course
3. no, only those that need or request special attention
4. no, only those names which are retained out of normal interaction in the discussion section
5. both 3 and 4 above

13. Do you have students identify themselves to other members of the discussion section group?

    1. no

    2. no, but I structure the small group setting so that they get to know each other

    3. yes, they introduce themselves at the start of the term

    4. yes, they introduce themselves at the start of the term and also provide a background sketch of themselves

14. Do you use visual means of identifying the students in your sections (such as the use of name tags, name cards, etc.)?

    1. yes

    2. yes, at first but later dropped or used only rarely

    3. no

15. How do you handle the seating arrangement in your discussion sections?

    1. students generally sit where they want in standard fashion facing the front of the classroom

    2. students sit where they wish, but in a circular or semi-circular arrangement

    3. students sit in special groupings (such as discussion, project or buzz groups)

    4. no predominant seating pattern, varies from day to day

16. What is your marital status?

    1. single

    2. married, no children

    3. married, one child

    4. married, more than one child

    5. other

17. Sex

    1. male

    2. female

18. Age

    1. under 24

    2. 24-26

    3. 27-29

    4. 30-34

    5. 35 or older

19. Where did you receive your undergraduate education?

    _____

20. When did you receive your bachelor's degree?

    _____

EDUCATION 200
INDIVIDUAL STUDENT PROJECT

The following pages outline the pattern of a series of behaviors observed in a classroom. The last two paragraphs on page three specify the use you are to make of this material in developing your written analysis of the situation.

Papers should be typed, double-spaced, unless otherwise having made previous arrangements. A guide to paper length (a question inevitably asked) is in the vicinity of five to eight pages, although length bears little relevancy to quality, and redundancy should be avoided at all cost.

DUE DATE: May 23

INDIVIDUAL STUDENT PROJECT
EDUCATION 200

You are in your final term at university. In past years you've volunteered your services as a student assistant in the public schools and this year is no exception. You've been doing some observing of student behavior in a 4th grade elementary room in a nearby small town.

At the moment the youngsters are engaged in a vocabulary task in which words are chosen from a vocabulary list and written in the appropriate blank space in a story in their reading workbook. While doing a little over-the-shoulder looking you mention to Tommy Oures, who's about half-finished, that he's missed a space in writing his answers and so his words are out of order. Tom smiles and says he hadn't noticed, and you both agree the easiest solution is to draw an arrow moving the words up. Later, Tom's work is not turned in to his teacher but remains on his desk, all words erased. This intrigues you, as the other day he completed only the first three arithmetic problems out of twenty, although those finished were correct. Yesterday the language arts lesson necessitated students rearranging a series of mixed-up sentences into sequential order to form a logical story, and turning the work in as a written composition. No paper appeared from Tom, but you noticed the sheet on his desk contained the first two sentences and on the edge of list of numbers ordering the sentences correctly.

Tom's teacher is not surprised when you mention your observation. Reporting this is his standard behavior, she shows you his weekly spelling test paper. Twenty words were read to students--Tom's paper contains only three, although all are correct. She mentions that there are five or six students who consistently fall below a score of fifteen out of twenty on the weekly spelling test, and that these scores would be considered "failures" since all words must be correct for an A, one error is a B, and so on. Currently, Tom is not doing satisfactory work in any of his subject. Her reports are that after repeating first grade Tom has been promoted yearly, although his work has been below average. His teacher last year, a male, tells you that when reading aloud Tom does so hesitatingly and unwillingly. He rarely initiated silent reading activity of his own.

Tom's cumulative record reports that his reading test score on a paper and pencil test administered this year falls at the tenth percentile. On a mathematics achievement test also administered this year his score fell at the 35th percentile. In first grade the school diagnostician reported a score of 109 on the Stanford-Binet Intelligence Test. This year when tested with the Wechsler Intelligence Scale for Children Tom's score was 114.

Tom is the second eldest of four sons. His parents are interested in school activities and willingly cooperate. His father, an accountant, engaged in activities with his sons. The mother, who does not work outside the home, sets aside a short period of time to be with each

child individually each day, in addition to the usual family interaction. Tom's period happens to be his nightly bath-time, when she bathes him. The other boys have different periods. His older brother, Tom's elder by two years, has not shown any such behavior in school, and teachers consider his performance satisfactory. The brother younger than Tom by one year has reading difficulty, though less severe, and is in remedial reading. Tom himself has not responded to the remedial reading program.

Tom is in no way belligerent in class. Although somewhat reserved, he's well-liked by his classmates and a part of their activities. His teachers do not class his behavior as any less mature than that of his age-mates. He seems to particularly enjoy class discussions, although reserved in overt participation himself. However, when he does respond his answers show careful thought and an ability to draw together disparate ideas. On occasions when he does complete assignments they are rated excellent. When you suggest he be given additional time to complete assignments his teacher says she has employed this strategy but it bears no correlation with whether or not the work is completed.

The week following your observations Tom's teacher must unavoidably leave the school system when her husband is moved. It is late February and no elementary teacher can be found to replace her on a permanent basis for ths remaining school year. You've worked as an assistant in this school system for three years and the position is offered to you. Since you'll graduate in March and have no real plans except to

wait for the draft (ladies excepted, of course), you decide to accept and work under a special permit. You aren't trained as an elementary teacher nor are you sure you want to make a career of teaching. However, Tom Oures now becomes your problem. He's not atypical of the problems encountered daily in thousands of classrooms, but this baby is all yours. How would you go about dealing with it within the classroom setting itself?

Now, as Dr. Green noted in his opening lecture, a teacher need not be the stereotype of the mad scientist or laboratory researcher to reflect attitudes and behaviors which permit precise observation of student behavior, leading to more accurate analysis of the interaction of variables in any given situation and hence to definite constructive steps to alter behavior.

With this in mind, you are to assess what you consider to be the pertinent information provided in Tom's case. First, raise and discuss questions related to variables that are present which you might possibly manipulate to alter Tom's behavior in a direction you consider constructive. Certain aspects are beyond your control and certain attempts at remedy have not been successful in the past. Explain why, in terms of educational psychology theory, the variables you choose seem most pertinent.

Second, based on this analysis discuss alternative strategies for your handling of the situation within the classroom to bring about desired change. Here again explain why, in terms of educational

psychology, these strategies seem the best alternatives. You have a series of lecture notes accompanied by class discussion and readings throughout the term which will discuss various topics relating to the variables in this situation. Might this be an organizational strategy?

DISCUSSION OF CRITERION FOR GRADING OF THE EDUCATION 200 INDIVIDUAL STUDENT PROJECT

Several assumptions underlie the writing of the student project. First, it seems to be a sad fact but true that all too often parents return from conferences with their child's teacher feeling that they gained little understanding of what was really taking place in the classroom situation that had necessitated the conference, and that the teacher was unable to offer them few insights into the child's behavior beyond their own intuitive approach. Rather than mouthing panaceas the hope is that the teacher analyzes behavioral acts to determine patterns over which he has sufficient control to increase the probability of success in bringing about behavioral change, and to set aside those over which he has little control rather than using them as rationales for inaction.

Secondly, it was felt that the situation provided your students for analyzing should be structured not along lines that allowed broad, sweeping generalizations, which are often made with little critical thought, in terms of "socio-economic deprivation," "underachievement," "reluctant reader," ad infinitum. Hopefully, this child is representative of the type of problem encountered daily in classrooms and not within a specialized setting, and typifies not a gross behavioral problem in terms of classroom organization but rather one of those gnawing problems teachers must grapple with while keeping the program moving in the classroom.

Third, the project assigned your students had to be more than

a question which if rewritten could constitute a multiple choice exam case. And, even more importantly, you are their instructor, not I. In the final analysis you would demand, and rightly so, the flexibility to determine in your own terms what constituted an acceptable discussion by the student. Therefore, I attempted to make the situation broad enough to allow students to take different approaches in discussing the material, but precise enough to force them if they wish to do well in terms of scoring to think critically and to organize seemingly disparate materials into a problem solving experience.

You will notice that the student has two tasks. First, to analyze and discuss variables that are present which he might possibly be able to manipulate to change the child's behavior in a direction considered constructive (as determined by your student). Second, the student is to discuss alternative strategies for his handling of the situation within the classroom to bring about desired change. Alternate approaches to handling the situation abound. You will notice that there are any number of clusters of behaviors which in turn regroup into interactions, and at any of these points alternative approaches are possible. One of the critical factors in judging an answer is the degree to which students weigh the consequences of suggesting certain alternatives. Certain alternatives are more logical than others, based upon what students have learned in the course. Throughout the situation, students are provided with cues to aid them in choosing alternatives. For example, the remarks concerning Tom's interaction with his mother as outlined in the paper

might provide students with data for an interesting discussion of their relationship, but in many ways this cue was provided as a dead-end. The assignment for your students asks them to analyze patterns and strategies over which they have influence so that they may manipulate the environment, as Dr. Green suggests in his opening course lecture. As we are very aware, what goes on in the home is to a great extent beyond the control of the teacher in terms of manipulation for change, and in this case is a very gross measure. How would the student work around this?

I. The types of behavioral cues provided for the student include behaviors such as:

   1. The seeming inability to complete a task if there is error involved. Several examples are provided which make this a possible conclusion.

   2. Test performance on individually administered intelligence tests.

   3. Test performance on paper and pencil achievement tests.

   4. Tom's ability to engage in discussions involving problem-solving ability.

   5. His apparent lack of hostility toward suggestions from the teaching assistant (at least judged from behavior) and reports of similar behavior patterns from previous teachers.

   6. The seeming consistency in behavior regardless of the sex of the teacher.

   7. The academic behavior of his brothers suggesting the problem is neither unique nor all-inclusive.

II. Such behavioral cues could lead to discussion of the possible conclusions the teaching assistant might draw from these behaviors. This might involve such considerations as:

1. The seeming need for performance close to perfection.

2. Possible unrealistic levels of aspiration.

3. Low risk-taking ability in terms of written work.

4. The low risk-taking syndrome as not necessarily reflected in other areas such as his willingness to commit himself in class discussions which need have no pat answer or in performance on the individually administered intelligence tests.

5. His present teacher's behavior in terms of spelling tests which would appear to reinforce low risk-taking ability and the need for perfection.

6. An apparent willingness to cooperate in activities (former teacher reports, performance in discussion), until his risk-taking level in written work was jeoporadized.

7. Social acceptance by classmates suggestive of cooperative inter-relationships.

8. Physical maturation as considered normal.

III. The various topics covered in the course provide the student with logical arguments with which to back up the conclusions drawn from his analysis. The following offer examples of such points, as covered in lectures, texts, and films.

1. MOTIVATION

Factors such as level of aspiration, risk-taking, and achievement levels are discussed by Farquhar and McClelland in "Achievement Motivation."

2. HUMAN GROWTH AND DEVELOPMENT

Dr. Clarizio's discussions and the readings refer to intellectual development, particularly as reflected by Piaget. A student in discussing Tom's problem solving ability and intelligence might point out where he seems to fit in Piaget's stages, and whether this might be considered normal. In addition, a student might comment upon Tom's concept of self in the light of what might be expected due to his seeming problem in risk-taking, and discuss this in terms of such things as dependency needs.

3. TESTING

From the discussions in the course of testing, the student could be led to questions of what the individual testing more precisely was able to pinpoint in terms of the child's attack on test items or academic problems, than was the paper and pencil type test. Tom's problems seem to center on how he attacks tasks, to a large extent. At a more general level, the student would refer to his scores in relationship to "normality," or talk of "achievement" versus "aptitude" measures.

4. ENVIRONMENT

Tom's relationship with his peers is reflected in the textual assignments here. Students could refer to the powerful and consistent environment approach in terms of the teacher's behavior in relation to spelling. Reference might be made to Dr. Green's point that in fact the school and particularly the teacher have little control over and can do little to manipulate variables within the home, and rather must try to work with those which are accessible to the teacher's manipulation. This argument might be used to point out that Tom's relationship to his mother is in many ways not under the influence of the school when actual behaviors are in question.

5. LEARNING THEORY

The student might refer to Gagne's levels of learning to discuss Tom's ability to perform cognitive tasks. The student might refer to Tom's seeming abilities at problem solving, the highest order task variety in the hierarchy. The student might direct himself to such points as reinforcement, and the necessity of determining what in fact is the act that the student feels is rewarded. How should a teacher go about rewarding a case such as Tom's, where perfection seems the level of aspiration? Since the paper is due prior to Dr. Shulman's lectures, these could not be considered in any framework designed by the student.

IV. Based upon the analysis of the variables open for manipulation, and the arguments put forth as rationales for conclusions drawn from the analysis, the student can offer alternative suggestions for possible attacks on the problem. Now, based upon the particular variables

chosen for analysis and the conclusions drawn these suggestions are going to vary widely. However, within these limits, grading criteria are possible. The critical criterion is: to what extent does the student fulfill the requirement outlined at the end of page three--namely, to specify possible courses of action which are under his control, based on the variables that he can, in fact, manipulate? Second, to what degree are they spelled out precisely so that, in fact, they might be implemented by the teacher within the classroom? That is, are the possible courses of action glittering generalities, or are they plausible acts? Third, to what degree do they follow logically from the analyses and conclusions drawn in the first part of the paper? For example, a student might suggest that in order to try to raise Tom's capacity to take a risk the teacher might engage in some form of "betting" activity with the student, to the extent of suggesting, for instance, that he obtained three right on the spelling test, and did he think it possible to get between four and seven right the next time. Over a period, the ante could be raised and made more precise in terms of narrowing the range of scores allowed. (Now, you and I can point out any number of reasons why this technique might fail, but it <u>is</u> a possible course to try, based on some of the behavioral cues provided. The student might have pointed out the imperativeness of getting Tommy to abandon all-or-nothing responses and suggests this as a technique to try.) Another suggestion might be that the teacher would abandon for the remainder of the year the all-or-nothing approach reflected in the grading of spelling, and

reinforce risk-taking with a more realistic grading criterion. Another alternative suggestion might be that the teacher avoid placing Tommy in a position where only dichotomous response of "yes" or "no" is possible, such as board work in front of the class involving responses which are all-correct or all-wrong. A fourth part of your grading criterion might be the extent to which student's suggestions avoid generalities which merely label but don't suggest specific behaviors, such as use of the panaceic "underachiever" without following this up with a good explanation of what is meant by this term in the student's view.

V. RANKING SCALE

The various points outlined in parts I, II, III, and IV are examples of the types of variables which can be used to establish a ranking system for the papers.

ASSIGNMENT OF A RANK OF 5

1. The student answers the two questions. That is, he applies his remarks specifically to the two questions he was asked to discuss.

2. Discusses a majority of the cues provided, and does so in terms of specific acts which are open to classroom manipulation.

3. Illustrates that he can integrate a series of acts into a logical pattern of behavior with regard to this particular situation.

4. Illustrates an understanding of the principles of ed. psych. by using principles discussed in the course to back up each of the conclusions drawn from analysis of the cues.

5. Suggests in terms of specific acts several courses of action which might be implemented and which follow from the conclusions drawn in part one of the paper. In sum, this student indicates ability to apply Dr. Green's principle that specific behavioral acts form patterns which if observed over time may be used as bases for possible alternative conclusions concerning that behavior.

ASSIGNMENT OF A RANK OF 4

1. The student answers the two questions. While he confines his remarks to analysis of the two questions he shows less ability to identify a number of interrelated cues and suggest alternative conclusions.

2. Identifies a number of cues, but cannot interrelate them into more than a generalized pattern of behavior.

3. Conclusions, though generalized, follow logically from the cues selected for analysis.

4. Uses principles discussed in the course to defend conslusions drawn.

5. Suggests in terms of specific acts several courses of action which might be implemented and which follow from the conclusions drawn.

ASSIGNMENT OF A RANK OF 3

1. The student answers both questions, but rather than specific acts serving as bases for discussion the student discusses generalities.

2. While the student identifies several variables which can be manipulated by the teacher, he cannot integrate them into possible patterns of behavior. Rather, they remain partially isolated pieces of behavior.

3. Conclusions drawn relate in a generalized manner to the behaviors chosen for analysis, but suggest inability to discuss a behavioral act in terms of specific criteria.

4. Uses ed. psych. concepts to defend conclusions drawn, but the concepts are "glittering generalities" such as "self concept" without specifying the student's definition of this term.

5. The remedial suggestions are largely ill-defined to the extent that they do not suggest specific actions or do they necessarily follow logically from the conclusions drawn in part one of the paper.

ASSIGNMENT OF A RANK OF 2

1. The student does not answer the questions asked but rather answers the question in terms of variables beyond the teacher's

control in the main.

2. The student identifies several variables which can be manipulated by the teacher, but does not discriminate these from others beyond the teacher's immediate control.

3. The variables remain isolated acts of behavior with no more than vague references to any consistency in behavior patterns.

4. Defense of the chosen variables consists mainly of statements which do not differentiate between an understanding of at least basic educational psych. principles as delineated in the course and generalized statements which label but do not define.

5. Suggestions of possible courses of action are confined to one or two highly generalized remarks which are jargon labels unapplicable to more specific acts and which do not give indication of being developed as logical outgrowths of conclusions drawn in part one of the paper.

ASSIGNMENT OF A RANK OF 1

1. The student does not answer the questions. He does not spell out the variables in terms of cues from the question nor does he pay more than lip-service to attempts to suggest remedies.

2. Variables are discussed randomly, and are mixed with conclusions. The student does not identify variables precisely nor differentiate manipulative classroom cues. (In less precise terms I suppose you could say this student indicates he probably was scrambling for an answer, gives little indication of having tried to analyze the data provided, and is either unable or unwilling to discuss the problem in terms of the course content.)

3. No attempt is made to integrate behaviors into patterns. Behaviors remain isolated.

4. With the exception of one or two references to concepts of ed. psych. no concrete rationale is offered for statements made.

5. Remarks as to alternative remedies are confined to one or two generalized remarks unrelated to specific behaviors, and with little reference to the discussion in the previous paragraphs. The remarks suggest to you that the remedies are not based upon specifying the possible alternatives open to teacher manipulation.

VI. USE OF THE CRITERIA AND RANKING SYSTEM

1. A student's overall paper will be assigned one of the five ranks, based upon which of the five sets of criteria his paper most closely approximates.

2. As this is a rank and not a grade, there are only five possible assignments, of which one is chosen.

3. Five is the highest rank; one is the lowest.

4. Students need not be told the rank unless you already use this method in your overall grading scheme.

5. In terms of the letter grade assigned each paper and returned to the student, that is certainly your prerogative and our intention has not been to infringe on this in any way. The letter grade is essentially independent of the ranking. For example, the five ranks do not correspond to A, B, C, D, F, for us. If you choose to adopt this strategy it is your individual preference. Someone else may have a system under which the five ranks represent A+, A, A-, B+, B; for another, B, B-, C+, C, C-.

6. Perhaps in grading of papers you prefer to utilize criteria such as "overall quality of written expression," or "quality of understanding." This again is certainly your prerogative. However, in establishing the five rankings it was felt that if the student showed he met the criteria in terms of analyzing the cues, illustrating that his conclusions were based on this analysis, offered logical explanations in terms of course content, and was consistent throughout the paper in following this strategy, the paper should, in precise terms, be illustrative of "organization" and "integration," etc. If you choose to expand the criteria, feel free to do so in terms of your letter grade assignment while confining the ranking to the limited criteria specified.

7. WEIGHTING OF PARTS ONE AND TWO

   Since the student's recommendations for courses of action in part two are dependent upon the careful rationale developed in part one of the answer, careful analysis of part one in terms of identifying cues and integrating disparate concepts is perhaps the most critical point in the assignment. Therefore, in assigning the overall rank, the weighting of the parts should be in the approximate proportion of two-thirds to one-third--two thirds on part one, one-third of the grade based upon decisions on part two.

8. The length suggested on the cover sheet is no more than a guide-line to relieve the minds of over-anxious students. The actual length, if you have a preference, is certainly your right to assign.

EDUCATION 200
Spring Term, 1968

DISCUSSION SECTION INSTRUCTOR EVALUATION

THE FOLLOWING QUESTIONS ASK YOU TO EVALUATE THE QUALITY, NATURE AND CONTENT OF THE DISCUSSION SECTION WHICH YOU ATTENDED. DUE TO THE LARGE ENROLLMENT IN THIS COURSE AND THE CORRESPONDING LARGE NUMBER OF DISCUSSION SECTIONS, YOU ARE THE MOST QUALIFIED TO PROVIDE THIS INFORMATION. PLEASE BE SURE YOU HAVE IDENTIFED YOUR DISCUSSION SECTION NUMBER OR THE NAME OF YOUR DISCUSSION SECTION INSTRUCTOR ON THE ANSWER SHEET.

1. Were the objectives of the discussion section adequately explained?
   1) yes 2) no

2. Did your discussion section instructor make you aware of what he expected you to do in the discussion section? 1) yes 2) no

3. Did the discussion section instructor clearly explain how you would be evaluated and graded in the discussion section? 1) yes 2) no

4. Did the discussion section assignments help you in understanding the course material? 1) yes 2) no

5. Did the instructor's discussion or handouts supplement and clarify the difficult portions of the text and lecture material? 1) yes 2) no

6. Did your discussion section instructor instill in you an interest and enthusiasm for the material? 1) yes 2) no

7. Did yourdiscussion section instructor seem to be interested in teaching? 1) yes 2) no

8. Did yourdiscussion section instructor seem to have a firm grasp of the subject matter? 1) yes 2) no

9. Did your discussion section instructor interrelate the course materials and concepts in a systematic manner? 1) yes 2) no

10. Did your discussion instructor effectively use examples in explaining the course materials and answering questions? 1) yes 2) no

11. Did your discussion section instructor seem to be concerned with whether the students learned the materials? 1) yes 2) no

12. Did the discussion section instructor emphasize and demonstrate practical application of the course materials? 1) yes 2) no

13. Did the discussion section instructor use student questions or ideas as a springboard to further discussion? 1) yes 2) no

14. Did the instructor in responding to questions in fact answer the question asked? 1) yes 2) no

15. Did you usually understand the instructor's answers to questions? 1) yes 2) no

16. Did the discussion section instructor seem to attempt to draw all the members of the section into the discussion? 1) yes 2) no

17. Did the instructor encourage students to express opinions? 1) yes 2) no

18. Did the discussion section instructor appear receptive to new ideas and others' viewpoints? 1) yes 2) no

19. Did the discussion section instructor generally stimulate class discussion? 1)yes 2) no

20. Were you generally attentive in your discussion section? 1) yes 2) no

21. Did you attend the discussion section on a regular basis? 1) yes 2) no

22. Did you generally enjoy going to your discussion section? 1) yes 2) no

23. Do you generally consider your discussion section experiences worthwhile? 1) yes 2) no

EDUCATION 200
Spring Term, 1968
Post-Course Attitudes

SINCE IT IS IMPOSSIBLE TO TAKE YOUR TIME TO ASK YOU EACH, PERSONALLY, YOUR IMPRESSIONS OF EVERY ASPECT OF THE COURSE, THESE ITEMS ATTEMPT TO COVER THE MANY POSSIBLE REPLIES YOU, AS A GROUP, MIGHT POSE. THESE SHOULD TAKE ONLY A MOMENT OR TWO. PLEASE MARK THEM AS YOU HAVE TIME THROUGHOUT THE HOUR.

Key:

Mark 1 if you agree with the statement.
Mark 2 if you disagree with the statement.

1. I have wasted my time in this course.

2. I wish I could have avoided taking this course.

3. I would recommend that as many students as possible avoid taking this course.

4. Even if I have a chance in the future, I'll avoid having anything to do with this subject.

5. I have no interest in this subject area.

6. This was a dull course.

7. A large portion of the course was just "dead wood."

8. This course did not help me broaden my outlook.

9. This course deals with impractical things.

10. The instructors did not make the material understandable.

11. This course contributed very little to my fund of knowledge.

12. The instructors cannot teach.

13. This course did not fill a gap in my previous background.

14. This course did not tie in with the work I intend to do.

15. The instructors were not intellectually stimulating.

16. The instructors did not care whether or not their students learned the material.

17. I believe there was too much emphasis on outside readings in this course.

18. I did little in the way of original thinking about the subject matter of this course.

19. The instructors taught over your head.

20. This course was too hard for me.

21. I registered for this course mainly because my adviser told me to do so.

22. This course did not inspire the students.

23. This course did not relate the material to many other fields.

24. This course was too easy for me.

25. This course dealt with detailed material.

26. This course is not in my major field of study.

27. I do not feel strongly one way or the other about having been in this course.

28. Attendance was not taken in this course.

29. There was little emphasis on outside readings in this course.

30. This course dealt little with theory.

31. The instructors have been easy graders.

32. I have had very little of the material presented in this course before.

33. This course dealt with concepts and principles rather than facts.

34. This course was not mainly a memory course.

35. This course was concerned with practical, down to earth matters.

36. The instructors did not teach over your head.

37. This course did not duplicate material I have had before.

38. I feel I have not wasted my time in this course.

39. The instructors know their material well.

40. This course dealt with practical things.

41. The instructors cared whether or not their students learned the material.

42. The instructors made the material interesting.

43. I am glad I took this course.

44. I can see how I could apply this course content in real life.

45. I did a great deal of original thinking about the subject matter of this course.

46. The instructors were intellectually stimulating.

47. The instructors have the reputation of being good teachers.

48. I think I will forget less about this subject than about most other subjects.

49. I took this course because I wanted to broaden my outlook.

50. This course dealt with material about which I wanted to learn.

51. The instructors were a great inspiration to their students.

52. This class was more stimulating than most others I've taken or will take.

53. This was an exciting course.

54. This course covered material which for the most part I consider to be vital and significant.

55. This course has helped me toward realizing my professional or vocational goal.

56. I enjoyed this course more than any other I took this term.

57. I learned more from this course than any other I took this term.

APPENDIX C

Descriptive Data Summaries for all Student Variables Including Number, Mean, Standard Deviation, Skewness, and Kurtosis Categorized by Total Students, Students by Time-of-Day, and Students by Sex

Appendix C-1: Descriptive Data Summaries for all Student Variables by Total

		N	Mean	S.D.	Skew.	Kurt.
Course Grade	(1)	972	3.542	.821	-.174	2.989
Mid-Term Grade	(2)	971	3.574	.989	-.198	2.732
Final Exam Grade	(3)	971	3.233	1.034	-.208	2.726
Instructor Grade	(4)	968	3.724	.807	-.122	2.712
Course Project Rank	(5)	909	3.525	.930	-.208	2.799
Pre-Test	(6)	827	22.151	3.562	-.273	4.488
Mid-Term Exam	(7)	897	30.531	3.928	-.602	3.399
Final Exam -- Recall Items	(8)	967	28.845	4.159	-.453	3.440
Final Exam -- Applied Items	(9)	967	24.462	4.092	.815	12.851
Final Exam -- Total	(10)	967	53.286	7.182	-.250	5.198
High Expectation 1	(11)	870	10.807	1.221	-.740	3.086
High Expectation 2	(12)	692	9.892	1.605	-.424	2.642
High Expectation 3	(13)	432	90.935	5.345	-.441	2.789
Actual Expectation 1	(14)	868	8.747	1.534	-.193	2.995
Actual Expectation 2	(15)	690	8.546	1.719	-.282	3.028
Actual Expectation 3	(16)	435	82.759	7.100	-3.408	37.207
Low Expectation 1	(17)	869	5.924	1.586	-.005	3.839
Low Expectation 2	(18)	690	6.043	1.744	-.026	3.423
Low Expectation 3	(19)	432	70.743	11.028	-3.189	20.297
Aspiration-Expectation 1	(20)	860	8.215	1.446	-.201	3.923
Aspiration-Expectation 2	(21)	684	8.209	1.542	.058	2.633
Aspiration-Expectation 3	(22)	430	8.409	1.585	-.271	2.623
Univ. Grade-Point Average	(23)	831	2.519	.490	.532	3.198
Qualifying Test -- Verbal	(24)	719	23.559	14.412	.143	1.805
Qualifying Test -- Quantitative	(25)	719	21.396	14.628	.314	1.865

Appendix C-1: (continued)

			N	Mean	S.D.	Skew.	Kurt.
Qualifying Test -- Total		(26)	719	21.497	14.496	.299	1.758
Reason for Enrolling		(27)	852	3.270	1.099	-.554	3.080
Pre-Course Attitude		(28)	844	27.118	4.975	.156	17.796
Post-Course Attitude		(29)	514	27.768	7.351	1.912	16.203
Attitude Toward Instructor		(30)	451	17.761	5.600	-.932	3.364
Learning Set		(31)	819	20.425	6.259	-.150	2.720
A - H Test Anxiety Scale		(32)	832	37.565	9.298	-.080	3.251
Test Anxiety -- Pre-Test		(33)	827	1.028	.237	9.394	96.700
Test Anxiety -- Mid-Term		(34)	953	2.783	.939	.216	2.821
Test Anxiety -- Final		(35)	965	3.018	1.041	.064	2.488
Eysenck Extraversion Scale		(36)	836	13.208	3.901	-.404	2.748
Eysenck Neuroticism Scale		(37)	836	10.541	4.599	.128	2.478
Eysenck Lie Scale		(38)	836	2.568	1.589	.495	2.928
Commitment to Enter Prof.	1	(39)	855	2.200	1.006	.599	2.754
Commitment to Enter Prof.	2	(40)	688	2.186	.941	.556	2.753
Commitment to Enter Prof.	3	(41)	921	2.015	.810	.156	1.967
Suitability for Teaching	1	(42)	850	2.342	1.027	.624	2.825
Suitability for Teaching	2	(43)	662	2.296	.993	.531	2.621
Suitability for Teaching	3	(44)	920	2.250	1.007	.667	2.893
Importance of Theory	1	(45)	855	1.695	.780	.783	2.676
Importance of Theory	2	(46)	667	1.835	.796	.500	2.389
Importance of Theory	3	(47)	919	2.456	.719	.569	2.966
Course as Preparation	1	(48)	849	2.430	.732	.704	3.262
Course as Preparation	2	(49)	662	2.455	.788	.586	2.982
Course as Preparation	3	(50)	921	2.294	1.072	.655	2.705

Appendix C-2: Descriptive Data Summaries for all Student Variables by AM Section

		N	Mean	S.D.	Skew.	Kurt.
Course Grade	(1)	577	3.549	.820	-.083	2.767
Mid-Term Grade	(2)	577	3.536	.979	-.116	2.793
Final Exam Grade	(3)	576	3.241	1.030	-.170	2.684
Instructor Grade	(4)	574	3.732	.798	-.080	2.557
Course Project Rank	(5)	544	3.539	.959	-.286	2.726
Pre-Test	(6)	512	21.859	3.614	-.463	5.004
Mid-Term Exam	(7)	545	30.428	3.913	-.485	3.001
Final Exam -- Recall Items	(8)	575	29.037	4.255	-.417	3.302
Final Exam -- Applied Items	(9)	575	24.416	3.820	-.056	3.241
Final Exam -- Total	(10)	575	53.452	6.987	-.267	3.525
High Expectation 1	(11)	527	10.708	1.285	-.735	3.241
High Expectation 2	(12)	419	9.864	1.623	-.401	2.706
High Expectation 3	(13)	252	90.754	5.721	-.429	2.701
Actual Expectation 1	(14)	526	8.681	1.530	-.236	3.085
Actual Expectation 2	(15)	418	8.548	1.750	-.280	3.157
Actual Expectation 3	(16)	252	82.845	6.158	-.712	5.345
Low Expectation 1	(17)	526	5.863	1.609	.090	3.840
Low Expectation 2	(18)	418	6.074	1.729	.072	3.304
Low Expectation 3	(19)	250	70.872	10.493	-2.827	17.534
Aspiration-Expectation 1	(20)	524	8.130	1.440	-.328	4.614
Aspiration-Expectation 2	(21)	416	8.202	1.542	.141	2.629
Aspiration-Expectation 3	(22)	248	8.327	1.613	-.208	2.506
Univ. Grade-Point Average	(23)	506	2.491	.471	.562	3.111
Qualifying Test -- Verbal	(24)	438	23.297	14.282	.181	1.815
Qualifying Test -- Quantitative	(25)	438	21.032	14.340	.359	1.917

Appendix C-2: (continued)

			N	Mean	S.D.	Skew.	Kurt.
Qualifying Test -- Total		(26)	438	21.189	14.385	.312	1.760
Reason for Enrolling		(27)	513	3.267	1.070	-.556	3.201
Pre-Course Attitude		(28)	509	27.338	4.659	.071	17.065
Post-Course Attitude		(29)	320	28.194	7.496	2.077	15.649
Attitude Toward Instructor		(30)	262	17.557	5.667	-.826	3.479
Learning Set		(31)	487	20.530	6.271	-.231	2.934
A - H Test Anxiety Scale		(32)	504	37.938	9.180	-.015	3.228
Test Anxiety -- Pre-Test		(33)	512	1.010	.132	14.142	206.664
Test Anxiety -- Mid-Term		(34)	572	2.813	.927	.181	2.906
Test Anxiety -- Final		(35)	575	3.049	1.058	.009	2.453
Eysenck Extraversion Scale		(36)	496	13.435	3.918	-.440	2.741
Eysenck Neuroticism Scale		(37)	496	10.565	4.649	.064	2.294
Eysenck Lie Scale		(38)	496	2.583	1.592	.494	2.849
Commitment to Enter Prof.	1	(39)	516	2.161	.993	.627	2.784
Commitment to Enter Prof.	2	(40)	420	2.205	.917	.514	2.681
Commitment to Enter Prof.	3	(41)	546	1.991	.800	.167	1.948
Suitability for Teaching	1	(42)	513	2.271	.992	.713	3.068
Suitability for Teaching	2	(43)	402	2.281	.957	.594	2.790
Suitability for Teaching	3	(44)	546	2.234	1.006	.675	2.901
Importance of Theory	1	(45)	516	1.665	.762	.805	2.692
Importance of Theory	2	(46)	405	1.832	.791	.547	2.630
Importance of Theory	3	(47)	545	2.406	.691	.610	3.089
Course as Preparation	1	(48)	512	2.424	.747	.685	3.242
Course as Preparation	2	(49)	403	2.442	.778	.702	3.124
Course as Preparation	3	(50)	546	2.244	1.072	.738	2.836

Appendix C-3: Descriptive Data Summaries for all Student Variables by PM Section

		N	Mean	S.D.	Skew.	Kurt.
Course Grade	(1)	395	3.532	.825	-.305	3.294
Mid-Term Grade	(2)	394	3.629	1.004	-.252	2.666
Final Exam Grade	(3)	395	3.220	1.042	-.260	2.779
Instructor Grade	(4)	394	3.713	.821	-.175	2.905
Course Project Rank	(5)	365	3.504	.885	-.072	2.925
Pre-Test	(6)	315	22.625	3.428	.123	3.148
Mid-Term Exam	(7)	352	30.690	3.950	-.785	4.045
Final Exam -- Recall Items	(8)	392	28.564	4.004	-.548	3.662
Final Exam -- Applied Items	(9)	392	24.531	4.466	1.590	19.770
Final Exam -- Total	(10)	392	53.043	7.463	-.218	7.046
High Expectation 1	(11)	343	10.959	1.099	-.620	2.103
High Expectation 2	(12)	273	9.934	1.580	-.457	2.527
High Expectation 3	(13)	180	91.189	4.774	-.386	2.655
Actual Expectation 1	(14)	342	8.848	1.538	-.132	2.831
Actual Expectation 2	(15)	272	8.544	1.674	-.285	2.774
Actual Expectation 3	(16)	183	82.639	8.240	-4.777	46.500
Low Expectation 1	(17)	343	6.017	1.562	-.154	3.904
Low Expectation 2	(18)	272	5.996	1.770	-.162	3.561
Low Expectation 3	(19)	182	70.566	11.751	-3.507	22.164
Aspiration-Expectation 1	(20)	336	8.348	1.448	-.013	2.775
Aspiration-Expectation 2	(21)	268	8.220	1.543	-.071	2.645
Aspiration-Expectation 3	(22)	182	8.522	1.544	-.353	2.828
Univ. Grade-Point Average	(23)	325	2.562	.515	.460	3.235
Qualifying Test -- Verbal	(24)	281	23.968	14.628	.084	1.794
Qualifying Test -- Quantitative	(25)	281	21.964	15.075	.245	1.793

Appendix C-3: (continued)

		N	Mean	S.D.	Skew.	Kurt.
Qualifying Test -- Total	(26)	281	21.975	14.680	.278	1.750
Reason for Enrolling	(27)	339	3.274	1.143	-.550	2.912
Pre-Course Attitude	(28)	335	26.785	5.410	.286	17.912
Post-Course Attitude	(29)	194	27.067	7.067	1.590	17.300
Attitude Toward Instructor	(30)	189	18.042	5.507	-1.088	3.221
Learning Set	(31)	332	20.271	6.247	-.031	2.419
A - H Test Anxiety Scale	(32)	328	36.991	9.463	-.160	3.244
Test Anxiety -- Pre-Test	(33)	315	1.057	.343	6.601	48.432
Test Anxiety -- Mid-Term	(34)	381	2.738	.957	.273	2.721
Test Anxiety -- Final	(35)	390	2.972	1.015	.145	2.560
Eysenck Extraversion Scale	(36)	340	12.876	3.858	-.366	2.785
Eysenck Neuroticism Scale	(37)	340	10.506	4.531	.227	2.775
Eysenck Lie Scale	(38)	340	2.547	1.586	.496	3.046
Commitment to Enter Prof. 1	(39)	339	2.260	1.025	.554	2.708
Commitment to Enter Prof. 2	(40)	268	2.157	.978	.621	2.839
Commitment to Enter Prof. 3	(41)	375	2.051	.824	.136	1.983
Suitability for Teaching 1	(42)	337	2.451	1.071	.484	2.544
Suitability for Teaching 2	(43)	260	2.319	1.048	.444	2.395
Suitability for Teaching 3	(44)	374	2.273	1.010	.656	2.883
Importance of Theory 1	(45)	339	1.740	.805	.741	2.622
Importance of Theory 2	(46)	262	1.840	.805	.430	2.041
Importance of Theory 3	(47)	374	2.529	.752	.486	2.786
Course as Preparation 1	(48)	337	2.439	.709	.742	3.279
Course as Preparation 2	(49)	259	2.475	.804	.419	2.801
Course as Preparation 3	(50)	375	2.368	1.069	.543	2.563

Appendix C-4: Descriptive Data Summaries for all Student Variables by All Males

		N	Mean	S.D.	Skew.	Kurt.
Course Grade (1)		331	3.474	.868	-.074	2.835
Mid-Term Grade (2)		330	3.512	1.008	-.104	2.632
Final Exam Grade (3)		330	3.185	1.077	-.168	2.621
Instructor Grade (4)		330	3.658	.811	.083	2.526
Course Project Rank (5)		308	3.484	.925	-.088	2.684
Pre-Test (6)		273	22.077	3.575	.120	2.853
Mid-Term Exam (7)		314	30.045	4.176	-.612	3.415
Final Exam -- Recall Items (8)		330	28.482	4.302	-.399	2.705
Final Exam -- Applied Items (9)		330	24.388	3.983	-.301	3.416
Final Exam -- Total (10)		330	52.894	7.175	-.316	3.084
High Expectation	1 (11)	290	11.107	1.239	-1.493	5.337
High Expectation	2 (12)	231	9.978	1.667	-.480	2.719
High Expectation	3 (13)	134	91.388	5.487	-.358	2.197
Actual Expectation	1 (14)	290	8.983	1.614	-.378	3.266
Actual Expectation	2 (15)	231	8.567	1.870	-.269	3.058
Actual Expectation	3 (16)	135	82.052	9.219	-4.526	39.170
Low Expectation	1 (17)	290	6.179	1.758	-.347	3.451
Low Expectation	2 (18)	231	6.009	1.967	-.125	3.044
Low Expectation	3 (19)	133	70.459	12.683	-3.030	16.926
Aspiration-Expectation	1 (20)	287	8.355	1.566	-.344	3.053
Aspiration-Expectation	2 (21)	229	8.227	1.600	-.084	2.653
Aspiration-Expectation	3 (22)	133	8.376	1.782	-.295	2.336
Univ. Grade-Point Average (23)		281	2.485	.444	.664	3.401
Qualifying Test -- Verbal (24)		239	22.536	14.858	.191	1.786
Qualifying Test -- Quantitative (25)		239	26.544	15.029	-.164	1.750

Appendix C-4: (continued)

		N	Mean	S.D.	Skew.	Kurt.
Qualifying Test -- Total	(26)	239	24.941	14.858	.030	1.654
Reason for Enrolling	(27)	284	3.335	1.229	-.440	2.553
Pre-Course Attitude	(28)	279	26.480	4.957	-1.715	5.991
Post-Course Attitude	(29)	162	26.500	7.514	1.058	12.006
Attitude Toward Instructor	(30)	141	18.511	5.267	-1.511	4.873
Learning Set	(31)	281	20.032	6.669	-.130	2.704
A - H Test Anxiety Scale	(32)	275	36.367	9.476	.110	3.387
Test Anxiety -- Pre-Test	(33)	273	1.015	.148	11.110	134.733
Test Anxiety -- Mid-Term	(34)	323	2.622	.942	.303	2.843
Test Anxiety -- Final	(35)	328	2.899	1.010	.167	2.626
Eysenck Extraversion Scale	(36)	292	13.092	3.929	-.363	2.544
Eysenck Neuroticism Scale	(37)	292	9.332	4.256	.118	2.297
Eysenck Lie Scale	(38)	292	2.627	1.729	.502	2.728
Commitment to Enter Prof. 1	(39)	286	2.472	.976	.283	2.507
Commitment to Enter Prof. 2	(40)	231	2.459	.959	.370	2.614
Commitment to Enter Prof. 3	(41)	314	2.086	.824	.148	2.115
Suitability for Teaching 1	(42)	282	2.535	1.027	.448	2.499
Suitability for Teaching 2	(43)	218	2.541	1.034	.378	2.368
Suitability for Teaching 3	(44)	313	2.399	1.005	.467	2.610
Importance of Theory 1	(45)	286	1.815	.848	.742	2.717
Importance of Theory 2	(46)	220	1.945	.848	.509	2.683
Importance of Theory 3	(47)	314	2.570	.730	.569	2.752
Course as Preparation 1	(48)	283	2.558	.762	.694	3.177
Course as Preparation 2	(49)	217	2.581	.772	.454	2.719
Course as Preparation 3	(50)	314	2.446	1.069	.409	2.365

Appendix C-5: Descriptive Data Summaries for all Student Variables by All Females

		N	Mean	S.D.	Skew.	Kurt.
Course Grade	(1)	635	3.583	.791	-.187	3.006
Mid-Term Grade	(2)	635	3.616	.975	-.245	2.794
Final Exam Grade	(3)	635	3.266	1.008	-.218	2.772
Instructor Grade	(4)	632	3.761	.795	-.191	2.758
Course Project Rank	(5)	597	3.541	.931	-.270	2.879
Pre-Test	(6)	551	22.198	3.562	-.475	5.338
Mid-Term Exam	(7)	579	30.812	3.765	-.564	3.266
Final Exam -- Recall Items	(8)	633	29.036	4.086	-.475	3.884
Final Exam -- Applied Items	(9)	633	24.449	3.834	-.136	3.612
Final Exam -- Total	(10)	633	53.534	7.157	-.202	6.316
High Expectation 1	(11)	577	10.660	1.183	-.410	2.416
High Expectation 2	(12)	459	9.858	1.566	-.396	2.587
High Expectation 3	(13)	296	90.770	5.274	-.512	3.109
Actual Expectation 1	(14)	575	8.631	1.482	-.130	2.875
Actual Expectation 2	(15)	457	8.543	1.639	-.300	2.927
Actual Expectation 3	(16)	298	83.131	5.878	-.691	5.623
Low Expectation 1	(17)	576	5.792	1.475	.167	4.312
Low Expectation 2	(18)	457	6.070	1.619	.079	3.587
Low Expectation 3	(19)	297	70.892	10.256	-3.213	21.875
Aspiration-Expectation 1	(20)	570	8.146	1.381	-.142	4.615
Aspiration-Expectation 2	(21)	453	8.210	1.507	.145	2.612
Aspiration-Expectation 3	(22)	295	8.444	1.476	-.227	2.749
Univ. Grade-Point Average	(23)	547	2.540	.507	.524	2.927
Qualifying Test -- Verbal	(24)	478	24.084	14.194	.124	1.809
Qualifying Test -- Quantitative	(25)	478	18.872	13.752	.541	2.192

Appendix C-5: (continued)

		N	Mean	S.D.	Skew.	Kurt.
Qualifying Test -- Total	(26)	478	19.828	14.023	.422	1.874
Reason for Enrolling	(27)	565	3.237	1.030	-.681	3.423
Pre-Course Attitude	(28)	562	27.450	4.957	1.083	23.376
Post-Course Attitude	(29)	351	28.382	7.199	2.451	18.708
Attitude Toward Instructor	(30)	307	17.420	5.734	-.717	2.968
Learning Set	(31)	534	20.616	6.017	-.155	2.670
A - H Test Anxiety Scale	(32)	554	38.181	9.130	-.156	3.249
Test Anxiety -- Pre-Test	(33)	551	1.034	.271	8.501	78.505
Test Anxiety -- Mid-Term	(34)	626	2.866	.930	.185	2.833
Test Anxiety -- Final	(35)	633	3.079	1.054	.005	2.444
Eysenck Extraversion Scale	(36)	539	13.256	3.879	-.436	2.883
Eysenck Neuroticism Scale	(37)	539	11.180	4.641	.090	2.504
Eysenck Lie Scale	(38)	539	2.532	1.512	.471	2.988
Commitment to Enter Prof. 1	(39)	566	2.060	.996	.817	3.156
Commitment to Enter Prof. 2	(40)	455	2.051	.903	.656	2.904
Commitment to Enter Prof. 3	(41)	603	1.980	.801	.152	1.867
Suitability for Teaching 1	(42)	565	2.241	1.013	.743	3.113
Suitability for Teaching 2	(43)	442	2.174	.947	.593	2.785
Suitability for Teaching 3	(44)	603	2.172	1.002	.791	3.139
Importance of Theory 1	(45)	566	1.633	.738	.755	2.394
Importance of Theory 2	(46)	445	1.780	.766	.456	2.029
Importance of Theory 3	(47)	601	2.401	.705	.568	3.053
Course as Preparation 1	(48)	563	2.362	.706	.692	3.254
Course as Preparation 2	(49)	443	2.391	.787	.672	3.194
Course as Preparation 3	(50)	603	2.212	1.063	.805	3.018

APPENDIX D

Descriptive Data Summaries for all Student Variables
by Discussion Section Including Number
Mean, Standard Deviation and Skewness

Appendix D-1: Descriptive Data Summaries for all Student Variables for Instructor 1

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Course Grade	(1)	39	3.744	.818	-.086	27	3.704	.724	.497
Mid-Term Grade	(2)	39	3.744	1.019	-.378	27	3.704	.869	.248
Final Exam Grade	(3)	39	3.462	.996	-.217	27	3.556	1.013	-.380
Instructor Grade	(4)	39	3.769	.742	.389	27	3.667	.734	.000
Course Project Rank	(5)	39	2.872	.864	.248	27	2.963	.940	-.210
Pre-Test	(6)	33	21.061	3.691	-.007	23	23.435	3.501	.661
Mid-Term Exam	(7)	38	31.132	4.101	-.412	26	30.846	3.833	-.319
Final Exam -- Recall Items	(8)	39	29.821	4.328	-.308	27	30.111	3.534	-.008
Final Exam -- Applied Items	(9)	39	24.821	3.308	-.923	27	25.222	4.518	-.500
Final Exam -- Total	(10)	39	54.641	6.503	-.666	27	55.333	6.765	-.459
High Expectation 1	(11)	34	10.706	1.142	-.271	25	10.560	1.083	-.258
High Expectation 2	(12)	31	9.613	1.476	.250	20	10.100	1.483	-.969
High Expectation 3	(13)	18	90.000	4.173	.760	15	91.400	4.120	.065
Actual Expectation 1	(14)	34	8.412	1.617	.095	25	8.480	1.085	-.447
Actual Expectation 2	(15)	31	8.581	1.566	.351	20	8.250	1.208	-.126
Actual Expectation 3	(16)	18	82.222	5.082	.168	15	83.200	3.840	-.346

Appendix D-1: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Low Expectation 1	(17)	34	5.735	1.442	-.758	25	5.520	1.262	-1.568
Low Expectation 2	(18)	31	6.032	1.530	.616	20	5.650	1.531	-.291
Low Expectation 3	(19)	18	71,833	7,580	.799	15	66,667	19,334	2.963
Aspiration-Expectation 1	(20)	34	8.118	1.297	.879	24	7.750	.989	-.034
Aspiration-Expectation 2	(21)	31	8.097	1.375	.997	20	7.800	1.281	.843
Aspiration-Expectation 3	(22)	18	8.222	1.353	-.121	15	8.533	1.187	-.082
Univ. Grade-Point Average	(23)	33	2.536	.406	.719	23	2.304	.425	-.205
Qualifying Test -- Verbal	(24)	27	24.333	13.106	.353	19	30.842	12.954	-.563
Qualifying Test -- Quantitative	(25)	27	24.148	13.900	.289	19	19.789	15.028	.386
Qualifying Test -- Total	(26)	27	24.148	11.740	.236	19	26.368	15.210	-.093
Reason for Enrolling	(27)	35	3.143	1.061	-.737	24	3.292	.999	-.342
Pre-Course Attitude	(28)	33	27.455	3.898	-.805	23	27.000	3.885	-2.003
Post-Course Attitude	(29)	17	27.941	11.399	1.849	14	29.071	12.923	1.063
Attitude Toward Instructor	(30)	19	16.842	6.094	-1.355	15	16.600	5.329	-.356
Learning Set	(31)	34	21.353	7.092	-.375	22	20.682	6.011	.196
A - H Anxiety Scale	(32)	32	36.844	8.196	-.019	22	35.727	9.637	-.799
Test Anxiety -- Pre-Test	(33)	33	1.030	.174	5.480	23	1.000	.000	.000

Appendix D-1: (continued)

Variable	#	AM N	AM Mean	AM S.D.	AM Skew.	PM N	PM Mean	PM S.D.	PM Skew.
Test Anxiety -- Mid-Term	(34)	39	2.178	.857	.063	27	2.926	.958	.415
Test Anxiety -- Final	(35)	39	3.051	.916	-.101	27	3.185	.962	-.112
Eysenck Extraversion Scale	(36)	36	13.389	3.682	-.813	22	13.312	1.790	.330
Eysenck Neuroticism Scale	(37)	36	10.778	4.882	.122	22	11.227	4.139	.016
Eysenck Lie Scale	(38)	36	1.889	1.410	.447	22	2.818	1.790	.330
Commitment to Enter Prof. 1	(39)	34	2.147	1.132	.854	24	2.583	1.018	.401
Commitment to Enter Prof. 2	(40)	31	2.258	.893	.330	18	2.500	1.150	.358
Commitment to Enter Prof. 3	(41)	36	2.222	.797	-.069	25	2.120	.781	-.207
Suitability for Teaching 1	(42)	35	2.257	.980	.608	24	2.667	1.090	.486
Suitability for Teaching 2	(43)	30	2.333	.922	.368	17	2.647	1.115	.456
Suitability for Teaching 3	(44)	36	2.139	.961	.701	25	2.600	.913	-.134
Importance of Theory 1	(45)	34	1.912	.830	.486	24	1.708	.751	.518
Importance of Theory 2	(46)	30	2.067	.828	.249	17	1.529	.624	.682
Importance of Theory 3	(47)	36	2.472	.654	1.036	24	2.500	.722	-.354
Course as Preparation 1	(48)	35	2.600	.736	.774	24	2.417	.717	1.381
Course as Preparation 2	(49)	30	2.467	.776	1.238	17	2.176	.529	.235
Course as Preparation 3	(50)	36	2.277	.944	.248	25	2.720	1.021	.103

Appendix D-2: Descriptive Data Summaries for all Student Variables for Instructor 2

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Course Grade	(1)	37	3.649	.889	.264	21	3.762	.889	.041
Mid-Term Grade	(2)	37	3.486	1.170	-.178	21	3.810	.981	.062
Final Exam Grade	(3)	37	3.351	.919	.120	21	3.333	.966	.316
Instructor Grade	(4)	37	3.950	.815	.098	21	3.952	.865	.090
Course Project Rank	(5)	37	3.622	1.139	-.247	21	3.714	.845	.572
Pre-Test	(6)	35	23.057	3.497	.098	16	22.250	4.640	.642
Mid-Term Exam	(7)	37	30.162	3.948	-.452	21	31.190	3.723	-.064
Final Exam -- Recall Items	(8)	37	28.649	4.043	-.068	21	29.000	3.808	-.301
Final Exam -- Applied Items	(9)	37	25.000	3.440	.162	21	26.905	9.518	3.160
Final Exam -- Total	(10)	37	53.757	6.559	-.123	21	53.095	8.031	-.536
High Expectation 1	(11)	34	10.735	1.238	-.456	18	11.278	1.019	-1.266
High Expectation 2	(12)	25	9.920	1.552	.067	17	10.471	1.375	-.169
High Expectation 3	(13)	18	91.889	4.575	-.545	13	91.615	4.464	-.519
Actual Expectation 1	(14)	34	8.676	1.492	.013	18	9.222	1.478	-.168
Actual Expectation 2	(15)	25	8.840	1.772	-.166	17	9.176	1.237	-.751
Actual Expectation 3	(16)	18	84.056	4.646	-.511	13	84.538	6.091	-.021

Appendix D-2: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Low Expectation 1	(17)	34	5.676	1.918	.575	18	6.278	1.447	.338
Low Expectation 2	(18)	25	5.920	1.579	.198	17	6.353	1.412	.583
Low Expectation 3	(19)	17	71.412	7.550	-.137	13	73.077	6.982	-.201
Aspiration-Expectation 1	(20)	33	8.182	1.509	.351	18	8.556	1.294	-.965
Aspiration-Expectation 2	(21)	25	8.200	1.528	.301	17	8.647	1.222	-.564
Aspiration-Expectation 3	(22)	17	8.824	1.704	-.499	13	9.231	1.589	-.651
Univ. Grade-Point Average	(23)	34	2.497	.370	.524	16	2.694	.800	-.365
Qualifying Test -- Verbal	(24)	29	24.379	13.814	-.159	13	24.308	18.377	.124
Qualifying Test -- Quantitative	(25)	29	24.172	15.128	.001	13	20.846	16.385	.344
Qualifying Test -- Total	(26)	29	22.724	12.598	.153	13	20.462	16.045	.539
Reason for Enrolling	(27)	33	2.909	1.234	-.434	19	3.737	1.195	-1.084
Pre-Course Attitude	(28)	33	26.758	4.437	-1.249	20	27.450	4.261	-1.241
Post-Course Attitude	(29)	22	28.591	3.996	-1.451	11	28.364	5.025	-2.327
Attitude Toward Instructor	(30)	17	20.882	3.238	-1.872	14	20.500	5.200	-1.891
Learning Set	(31)	30	19.533	4.819	-.208	16	12.438	1.632	-.646
A - H Anxiety Scale	(32)	33	38.152	10.094	-.129	20	33.150	7.652	-.342
Test Anxiety -- Pre-Test	(33)	35	1.000	.000	.000	16	1.063	.250	3.615

Appendix D-2: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Test Anxiety -- Mid-Term	(34)	36	2.833	.775	.291	21	3.000	.632	.000
Test Anxiety -- Final	(35)	37	3.162	1.143	.018	21	3.000	.775	-.661
Eysenck Extraversion Scale	(36)	31	14.355	3.878	-.078	19	9.158	2.218	.644
Eysenck Neuroticism Scale	(37)	31	11.258	5.053	-.146	19	7.368	2.191	-1.234
Eysenck Lie Scale	(38)	31	3.226	1.746	.221	19	2.842	1.167	.312
Commitment to Enter Prof. 1	(39)	33	2.061	1.029	.753	19	2.211	1.134	.751
Commitment to Enter Prof. 2	(40)	25	2.200	.957	.756	16	2.250	1.183	.249
Commitment to Enter Prof. 3	(41)	36	1.778	.760	.388	20	1.800	.696	.289
Suitability for Teaching 1	(42)	33	2.152	.939	.385	19	2.474	1.172	.065
Suitability for Teaching 2	(43)	38	2.250	.897	,600	16	2.438	1.263	-.060
Suitability for Teaching 3	(44)	36	2.222	.960	.726	20	2.400	1.231	.583
Importance of Theory 1	(45)	33	1.697	.810	.956	19	1.737	.806	.499
Importance of Theory 2	(46)	24	1.750	.676	.324	16	1.686	.793	.598
Importance of Theory 3	(47)	36	2.361	.639	.866	20	2.100	.553	.077
Course as Preparation 1	(48)	33	2.273	.517	.308	19	2.421	.692	.289
Course as Preparation 2	(49)	24	2.458	.932	1.277	16	2.313	.704	-.485
Course as Preparation 3	(50)	36	2.194	.980	.895	20	2.450	1.356	.303

Appendix D-3: Descriptive Data Summaries for all Student Variables for Instructor 3

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Course Grade	(1)	30	3.566	.679	.092	25	3.520	.821	.164
Mid-Term Grade	(2)	30	3.777	.774	-.035	25	3.600	1.000	.102
Final Exam Grade	(3)	30	3.367	1.033	-.208	25	3.160	1.106	-.320
Instructor Grade	(4)	30	3.500	.630	.000	25	3.600	.577	.265
Course Project Rank	(5)	30	3.866	.507	-.253	25	3.640	.638	.444
Pre-Test	(6)	27	22.519	2.750	.460	22	22.318	2.750	-.566
Mid-Term Exam	(7)	27	31.778	2.607	-.243	24	30.292	4.418	-.675
Final Exam -- Recall Items	(8)	30	30.267	3.832	.028	24	27.917	4.708	-.067
Final Exam -- Applied Items	(9)	30	23.833	4.052	.120	24	24.292	3.629	.098
Final Exam -- Total	(10)	30	54.100	6.728	.012	24	52.208	7.199	-.012
High Expectation 1	(11)	27	10.667	1.414	-1.303	23	11.043	.976	-.387
High Expectation 2	(12)	19	10.474	1.504	-.753	17	9.588	1.839	-.362
High Expectation 3	(13)	10	92.700	3.434	-1.225	8	90.375	4.479	-.215
Actual Expectation 1	(14)	27	8.778	1.121	-.722	23	8.870	1.632	.085
Actual Expectation 2	(15)	19	8.895	1.286	-.766	17	8.588	1.661	-.328
Actual Expectation 3	(16)	10	84.600	2.503	.391	8	84.750	6.364	.068

Appendix D-3: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Low Expectation 1	(17)	27	5.963	1.427	.389	23	6.174	1.370	1.090
Low Expectation 2	(18)	19	6.158	1.922	-.904	17	5.765	1.522	-.249
Low Expectation 3	(19)	10	71.200	5.770	-.218	8	73.625	7.328	-.384
Aspiration-Expectation 1	(20)	27	8.037	1.427	.015	23	8.391	1.373	-.199
Aspiration-Expectation 2	(21)	19	8.263	1.593	-.105	17	8.059	1.713	-.709
Aspiration-Expectation 3	(22)	10	8.400	1.265	-.458	9	8.667	1.414	.344
Univ. Grade-Point Average	(23)	27	2.444	.414	.761	19	2.558	.423	.089
Qualifying Test -- Verbal	(24)	23	26.478	14.333	.075	16	30.375	12.511	-.408
Qualifying Test -- Quantitative	(25)	23	17.957	13.033	.433	16	24.063	17.631	.282
Qualifying Test -- Total	(26)	23	23.304	15.355	-.032	16	28.938	12.091	-.496
Reason for Enrolling	(27)	27	3.296	.912	-.616	23	3.304	1.363	-.348
Pre-Course Attitude	(28)	23	27.043	4.353	-1.534	21	26.667	2.852	.438
Post-Course Attitude	(29)	16	29.313	11.841	2.124	8	24.000	5.372	.109
Attitude Toward Instructor	(30)	10	14.900	6.839	-.013	9	17.222	5.094	-.336
Learning Set	(31)	25	22.680	6.842	-.944	19	20.895	7.164	.458
A - H Anxiety Scale	(32)	23	41.087	6.060	.258	21	36.190	10.073	-.292
Test Anxiety -- Pre-Test	(33)	27	1.000	.000	.000	22	1.136	.640	4.364

Appendix D-3: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Test Anxiety -- Mid-Term	(34)	30	2.967	.964	-.168	24	2.667	.963	.707
Test Anxiety -- Final	(35)	30	3.233	1.006	.140	24	2.750	1.152	.327
Eysenck Extraversion Scale	(36)	26	12.577	4.178	-.605	18	11.611	4.340	-.487
Eysenck Neuroticism Scale	(37)	26	11.346	3.969	-.262	18	10.944	4.345	-.200
Eysenck Lie Scale	(38)	26	2.231	1.275	.504	18	2.111	1.410	.059
Commitment to Enter Prof. 1	(39)	27	2.222	.892	-.115	23	2.348	1.191	.617
Commitment to Enter Prof. 2	(40)	20	1.950	.826	.667	18	1.944	.725	.078
Commitment to Enter Prof. 3	(41)	30	1.967	.859	.063	23	1.783	.902	.438
Suitability for Teaching 1	(42)	27	2.259	.859	.223	23	2.609	1.076	.607
Suitability for Teaching 2	(43)	19	2.053	.848	1.025	16	2.000	.817	.759
Suitability for Teaching 3	(44)	30	2.067	.828	.249	23	2.217	.795	.711
Importance of Theory 1	(45)	27	1.889	.801	.198	23	1.478	.665	1.027
Importance of Theory 2	(46)	19	1.684	.820	.628	16	2.063	.772	-.102
Importance of Theory 3	(47)	30	2.500	.820	.000	23	2.478	.665	1.027
Course as Preparation 1	(48)	27	2.259	.526	.254	23	2.261	.688	.487
Course as Preparation 2	(49)	19	2.316	.820	.614	16	2.688	.793	.598
Course as Preparation 3	(50)	30	2.267	1.048	.546	23	2.348	1.027	.549

Appendix D-4: Descriptive Data Summaries for all Student Variables for Instructor 4

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Course Grade	(1)	38	3.421	.858	.118	28	3.321	.945	.394
Mid-Term Grade	(2)	38	3.447	1.058	.001	27	3.481	1.014	-.174
Final Exam Grade	(3)	37	2.946	1.026	.265	28	3.107	1.031	.198
Instructor Grade	(4)	38	3.684	.933	.058	27	3.519	.893	.439
Course Project Rank	(5)	37	3.541	.900	.343	27	3.630	1.006	.100
Pre-Test	(6)	36	22.056	3.537	-.483	21	22.143	2.833	.406
Mid-Term Exam	(7)	32	30.094	4.019	-.357	13	31.154	3.508	-.290
Final Exam -- Recall Items	(8)	37	27.973	4.206	.258	28	27.036	3.766	-.363
Final Exam -- Applied Items	(9)	37	23.784	3.945	.692	28	24.750	3.816	-.020
Final Exam -- Total	(10)	37	51.757	7.069	.742	28	51.786	6.477	.023
High Expectation 1	(11)	36	10.444	1.463	-.361	21	10.810	1.289	-.355
High Expectation 2	(12)	29	9.759	1.640	-.198	20	9.950	1.572	-.333
High Expectation 3	(13)	17	91.235	5.663	-.376	12	91.667	4.499	.028
Actual Expectation 1	(14)	35	8.314	1.859	.116	21	9.143	1.682	-.359
Actual Expectation 2	(15)	29	8.000	2.188	-.937	20	8.700	1.809	.242
Actual Expectation 3	(16)	17	83.118	4.885	-.524	12	83.333	7.177	.228

Appendix D-4: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Low Expectation 1	(17)	36	5.556	1.539	-.177	21	6.048	1.465	.698
Low Expectation 2	(18)	28	5.607	1.449	.118	20	6.000	2.406	-.488
Low Expectation 3	(19)	17	69.588	8.610	-1.201	12	70.333	6.706	-.221
Aspiration-Expectation 1	(20)	36	7.667	2.070	-1.191	21	8,619	1.431	-.036
Aspiration-Expectation 2	(21)	29	8.000	1.389	-.244	19	8.536	1.577	.562
Aspiration-Expectation 3	(22)	17	8.353	1.618	-.138	12	8.250	1.712	.163
Univ. Grade-Point Average	(23)	36	2.417	.386	.350	20	2.690	.530	.636
Qualifying Test -- Verbal	(24)	28	18.893	13.309	.576	25	24.840	17.011	.030
Qualifying Test -- Quantitative	(25)	28	19.821	14.702	.480	25	21.160	16.319	.552
Qualifying Test -- Total	(26)	28	16.464	13.503	1.261	25	21.920	17.725	.435
Reason for Enrolling	(27)	34	3.353	1.203	-.708	20	3.050	1.538	-.263
Pre-Course Attitude	(28)	35	27.514	4.111	-2.248	21	25.238	5.847	-1.017
Post-Course Attitude	(29)	22	29.364	9.902	2.461	8	27.375	4.479	-1.473
Attitude Toward Instructor	(30)	17	18.765	4.562	-1.223	12	20.917	3.029	-1.393
Learning Set	(31)	32	20.156	6.253	-.482	26	20.231	6.464	-.338
A - H Anxiety Scale	(32)	35	39.914	10.354	.284	21	37.238	11.770	-.303
Test Anxiety -- Pre-Test	(33)	36	1.000	.000	.000	21	1.000	.000	.000

Appendix D-4: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Test Anxiety -- Mid-Term	(34)	38	3.053	.868	.401	24	3.042	1.042	.152
Test Anxiety -- Final	(35)	37	3.297	.968	.122	28	3.179	1.188	-.215
Eysenck Extraversion Scale	(36)	33	12.939	3.816	-.552	26	14.038	4.133	-.375
Eysenck Neuroticism Scale	(37)	33	10.121	5.017	.095	26	10.731	5.158	.457
Eysenck Lie Scale	(38)	33	3.091	1.400	.183	26	2.808	1.497	.189
Commitment to Enter Prof. 1	(39)	34	2.088	.900	.333	20	2.200	.834	.179
Commitment to Enter Prof. 2	(40)	29	2.138	.875	.707	20	1.950	.999	1.401
Commitment to Enter Prof. 3	(41)	36	1.944	.753	.089	27	2.111	.801	.260
Suitability for Teaching 1	(42)	34	2.382	.888	1.021	20	2.250	1.020	.096
Suitability for Teaching 2	(43)	29	2.276	1.032	.819	20	2.050	1.050	.460
Suitability for Teaching 3	(44)	36	2.167	.878	.442	27	2.074	1.035	.912
Importance of Theory 1	(45)	34	1.647	.774	1.090	20	1.600	.754	.786
Importance of Theory 2	(46)	29	1.931	.753	.110	20	1.900	.788	.172
Importance of Theory 3	(47)	36	2.389	.688	.941	27	2.630	.792	.749
Course as Preparation 1	(48)	34	2.676	.768	.205	20	2.700	.801	.579
Course as Preparation 2	(49)	29	2.414	.825	.280	20	2.650	.745	-.139
Course as Preparation 3	(50)	36	2.195	1.009	.619	26	2.077	1.093	.597

Appendix D-5: Descriptive Data Summaries for all Student Variables for Instructor 5

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Course Grade	(1)	38	3.579	.683	.227	29	3.655	.814	-.322
Mid-Term Grade	(2)	38	3.579	.948	-.037	29	3.586	1.018	-.341
Final Exam Grade	(3)	38	3.447	.931	-.159	29	3.345	.936	-.203
Instructor Grade	(4)	38	3.579	.500	-.319	29	3.966	.566	-.014
Course Project Rank	(5)	38	3.421	.599	.308	29	3.724	.072	.423
Pre-Test	(6)	32	22.188	2.741	-.620	22	22.545	3.997	-.010
Mid-Term Exam	(7)	36	30.389	3.659	-.348	29	29.724	4.651	-1.222
Final Exam -- Recall Items	(8)	38	29.553	3.326	-.807	29	28.897	3.405	-.490
Final Exam -- Applied Items	(9)	38	24.895	3.740	-.469	29	24.690	3.865	.066
Final Exam -- Total	(10)	38	54.447	6.202	-.977	29	53.586	5.883	-.302
High Expectation 1	(11)	33	10.424	1.173	.185	24	11.000	1.022	-.750
High Expectation 2	(12)	30	10.033	1.732	-.903	22	10.273	1.549	-1.019
High Expectation 3	(13)	22	90.182	6.471	-.478	17	91.706	5.632	-.526
Actual Expectation 1	(14)	33	8.758	1.480	-.339	24	9.208	1.769	-.034
Actual Expectation 2	(15)	30	8.767	1.736	-1.123	22	9.091	1.716	-.549
Actual Expectation 3	(16)	22	83.318	4.550	-.919	17	82.941	6.349	-.943

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Appendix D-5: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Low Expectation 1	(17)	33	5.909	1.528	.261	24	6.625	1.610	-.390
Low Expectation 2	(18)	30	6.433	1.775	-.114	22	6.773	2.159	-.252
Low Expectation 3	(19)	22	73.909	5.450	1.080	17	69.353	19.029	-3.059
Aspiration-Expectation 1	(20)	33	8.242	1.458	-.491	24	8.500	1.719	-.341
Aspiration-Expectation 2	(21)	30	8.367	1.510	-.821	22	8.773	1.771	-.648
Aspiration-Expectation 3	(22)	22	8.000	1.069	-.479	17	8.412	1.734	.885
Univ. Grade-Point Average	(23)	29	2.490	.509	.651	24	2.667	.534	.317
Qualifying Test -- Verbal	(24)	25	19.480	15.511	.575	21	17.952	17.333	.699
Qualifying Test -- Quantitative	(25)	25	19.960	16.131	.445	21	23.667	12.936	.322
Qualifying Test -- Total	(26)	25	17.480	16.104	.566	21	20.000	14.318	.708
Reason for Enrolling	(27)	31	3.419	.807	-.508	24	3.208	1.318	-.624
Pre-Course Attitude	(28)	33	27.667	3.208	-.414	24	27.083	5.199	-.732
Post-Course Attitude	(29)	21	28.571	4.422	-2.625	15	27.667	3.976	-1.340
Attitude Toward Instructor	(30)	25	16.920	8.134	-.060	17	19.176	4.217	-1.101
Learning Set	(31)	36	20.139	5.880	-.338	27	21.333	5.903	-.431
A - H Anxiety Scale	(32)	32	37.562	9.840	.092	24	35.125	10.448	-.112
Test Anxiety -- Pre-Test	(33)	32	1.000	.000	.000	22	1.000	.000	.000

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Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Test Anxiety -- Mid-Term	(34)	36	3.000	.862	.272	29	2.552	.827	.218
Test Anxiety -- Final	(35)	38	3.211	1.143	-.090	28	2.857	1.044	.288
Eysenck Extraversion Scale	(36)	37	13.595	3.586	-.111	27	12.222	3.994	-.281
Eysenck Neuroticism Scale	(37)	37	10.757	4.734	-.045	27	9.593	4.422	.090
Eysenck Lie Scale	(38)	37	2.270	1.539	.927	27	2.630	1.597	.279
Commitment to Enter Prof. 1	(39)	31	2.065	.680	.572	24	2.083	.881	.229
Commitment to Enter Prof. 2	(40)	30	2.200	.847	.651	22	2.091	.921	.569
Commitment to Enter Prof. 3	(41)	35	2.057	.725	-.084	29	1.897	.860	.541
Suitability for Teaching 1	(42)	31	2.194	1.046	.672	23	2.217	.951	.204
Suitability for Teaching 2	(43)	29	2.276	.882	.707	22	2.000	.926	.737
Suitability for Teaching 3	(44)	35	2.229	.843	.747	29	1.931	.961	1.366
Importance of Theory 1	(45)	31	1.677	.702	.523	24	1.708	.908	.960
Importance of Theory 2	(46)	29	1.655	.720	1.188	22	1.727	.827	1.051
Importance of Theory 3	(47)	35	2.371	.808	.255	29	2.379	.677	.096
Course as Preparation 1	(48)	31	2.387	.882	.349	24	2.500	.722	1.061
Course as Preparation 2	(49)	29	2.069	.530	.089	22	2.364	.847	.198
Course as Preparation 3	(50)	35	2.114	.932	.567	29	1.966	.865	.739

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Appendix D-6: Descriptive Data Summaries for all Student Variables for Instructor 6

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Course Grade	(1)	37	3.514	.804	-.207	23	3.652	.832	.230
Mid-Term Grade	(2)	37	3.486	1.070	-.378	23	4.043	.767	-.071
Final Exam Grade	(3)	37	3.135	1.004	-.439	23	3.435	.945	-.304
Instructor Grade	(4)	37	3.757	.796	-.213	23	3.739	.915	.172
Course Project Rank	(5)	37	3.865	.751	.221	23	3.870	.694	.167
Pre-Test	(6)	34	21.118	2.952	-.239	19	22.579	3.150	.433
Mid-Term Exam	(7)	36	30.250	4.225	-.550	23	32.087	2.891	-.331
Final Exam -- Recall Items	(8)	37	28.757	4.099	-.439	23	29.304	3.444	-.052
Final Exam -- Applied Items	(9)	37	24.135	4.204	-.169	23	25.478	3.776	.002
Final Exam -- Total	(10)	37	52.892	7.195	-.077	23	54.783	6.230	.097
High Expectation 1	(11)	35	10.600	1.333	-.369	22	10.955	1.253	-.955
High Expectation 2	(12)	28	9.893	1.707	-.968	16	10.438	1.896	-1.142
High Expectation 3	(13)	16	91.625	4.380	-.236	9	91.667	6.538	-.474
Actual Expectation 1	(14)	35	8.629	1.610	-.750	22	8.955	1.397	-.240
Actual Expectation 2	(15)	28	8.679	1.541	-.436	16	9.125	1.962	-.672
Actual Expectation 3	(16)	16	82.188	5.231	-.118	9	83.111	6.827	-.336

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Appendix D-6: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Low Expectation 1	(17)	35	5.800	1.677	-.173	22	6.136	1.670	-.910
Low Expectation 2	(18)	28	5.929	1.980	-.278	16	6.250	1.915	-.956
Low Expectation 3	(19)	16	66.125	18.568	-3.051	9	67.000	26.966	-1.851
Aspiration-Expectation 1	(20)	35	8.000	1.475	-.836	21	8.286	1.384	.400
Aspiration-Expectation 2	(21)	28	8.036	1.688	-.198	16	8.500	1.789	-.289
Aspiration-Expectation 3	(22)	16	8.188	1.721	-.217	9	8.778	2.108	-.371
Univ. Grade-Point Average	(23)	34	2.447	.448	1.547	18	2.500	.518	.060
Qualifying Test -- Verbal	(24)	28	22.464	13.343	.237	18	25.778	16.466	-.149
Qualifying Test -- Quantitative	(25)	28	22.286	15.352	.297	18	21.111	17.057	.338
Qualifying Test -- Total	(26)	28	20.571	13.669	.326	18	22.111	16.708	.207
Reason for Enrolling	(27)	32	3.469	1.047	-.345	22	3.182	1.053	-.870
Pre-Course Attitude	(28)	34	28.912	8.118	3.406	21	27.238	5.421	-2.973
Post-Course Attitude	(29)	26	27.231	10.520	2.650	13	28.308	5.483	-1.733
Attitude Toward Instructor	(30)	18	17.278	4.574	-.234	9	20.222	3.563	-1.072
Learning Set	(31)	35	20.486	7.023	.009	21	22.429	5.446	-.365
A - H Anxiety Scale	(32)	33	35.121	7.457	.152	20	36.400	9.196	.011
Test Anxiety -- Pre-Test	(33)	34	1.000	.000	.000	19	1.000	.000	.000

Appendix D-6: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Test Anxiety -- Mid-Term	(34)	37	2.784	.917	.439	23	2.826	1.072	.351
Test Anxiety -- Final	(35)	37	3.081	1.010	.329	23	3.217	.998	-.165
Eysenck Extraversion Scale	(36)	34	14.235	3.782	-.505	22	13.545	4.416	.449
Eysenck Neuroticism Scale	(37)	34	9.765	4.652	.361	22	10.227	4.956	-.100
Eysenck Lie Scale	(38)	34	2.824	1.604	1.007	22	3.272	1.486	.321
Commitment to Enter Prof. 1	(39)	34	2.206	1.095	.709	22	2.091	.868	.274
Commitment to Enter Prof. 2	(40)	28	2.286	.937	.230	15	2.133	.743	-.203
Commitment to Enter Prof. 3	(41)	33	2.030	.809	-.054	21	2.048	.805	-.084
Suitability for Teaching 1	(42)	32	2.469	.983	.812	21	2.143	.854	.222
Suitability for Teaching 2	(43)	28	2.357	.989	.405	15	2.000	.756	.000
Suitability for Teaching 3	(44)	33	2.333	1.216	.713	21	2.286	.835	.447
Importance of Theory 1	(45)	34	1.559	.746	.906	22	1.682	.779	1.223
Importance of Theory 2	(46)	28	1.750	.799	.471	16	1.688	.602	.185
Importance of Theory 3	(47)	33	2.242	.614	-.170	21	2.571	.870	.943
Course as Preparation 1	(48)	32	2.469	.841	.594	22	2.409	.666	.339
Course as Preparation 2	(49)	28	2.179	.612	-.095	15	2.400	.632	-.491
Course as Preparation 3	(50)	33	2.485	1.278	.673	21	2.333	1.065	.830

Appendix D-7: Descriptive Data Summaries for all Student Variables for Instructor 7

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Course Grade	(1)	39	3.719	.826	-.010	26	3.654	1.056	-.518
Mid-Term Grade	(2)	39	3.538	.790	.684	26	3.885	1.107	-.671
Final Exam Grade	(3)	39	3.487	.914	-.276	26	3.423	1.238	-.336
Instructor Grade	(4)	39	3.872	.767	-.491	26	3.615	.983	-.458
Course Project Rank	(5)	39	3.666	.737	-.989	25	3.520	.714	.279
Pre-Test	(6)	37	21.865	3.552	-.472	22	22.818	3.096	-.259
Mid-Term Exam	(7)	37	30.649	3.385	-.076	23	32.174	3.589	.072
Final Exam -- Recall Items	(8)	39	30.103	4.210	-.450	25	29.880	4.055	-.393
Final Exam -- Applied Items	(9)	39	25.179	3.008	.160	25	25.640	4.812	-.296
Final Exam -- Total	(10)	39	55.282	6.341	.158	25	57.520	10.705	1.659
High Expectation 1	(11)	38	10.895	1.181	-.594	24	11.375	1.014	-1.316
High Expectation 2	(12)	23	9.739	1.764	-.356	19	10.526	1.467	-.433
High Expectation 3	(13)	17	90.824	6.921	-.308	14	92.929	4.323	.003
Actual Expectation 1	(14)	38	8.763	1.584	-.637	24	9.083	1.412	-.150
Actual Expectation 2	(15)	23	8.522	1.928	.122	19	9.263	1.661	-.057
Actual Expectation 3	(16)	17	82.412	8.155	.019	14	85.571	4.879	-.208

Appendix D-7: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Low Expectation 1	(17)	37	5.973	1.323	.707	24	6.500	1.615	-.158
Low Expectation 2	(18)	23	6.261	1.630	.471	19	6.895	1.761	-.025
Low Expectation 3	(19)	17	70.294	8.191	.079	14	74.174	7.205	-.391
Aspiration-Expectation 1	(20)	38	8.132	1.120	.911	24	8.708	1.334	-.123
Aspiration-Expectation 2	(21)	23	8.087	1.782	.261	19	8.947	1.580	-.346
Aspiration-Expectation 3	(22)	17	8.176	1.912	.184	14	9.357	1.392	-.136
Univ. Grade-Point Average	(23)	38	2.432	.555	-.143	21	2.719	.491	.437
Qualifying Test -- Verbal	(24)	29	25.552	13.045	.147	14	27.714	13.618	.097
Qualifying Test -- Quantitative	(25)	29	20.276	12.323	.563	14	28.643	15.869	-.487
Qualifying Test -- Total	(26)	29	22.138	12.665	.251	14	26.500	16.180	-.085
Reason for Enrolling	(27)	38	3.105	1.110	-.209	24	3.208	1.141	-.417
Pre-Course Attitude	(28)	39	26.641	4.710	-1.384	21	27.667	2.852	-.940
Post-Course Attitude	(29)	19	26.474	3.935	-1.056	15	26.533	5.139	-1.470
Attitude Toward Instructor	(30)	18	19.667	3.199	-.764	15	19.000	3.836	-.849
Learning Set	(31)	34	20.588	5.919	.012	23	22.217	7.348	-.476
A - H Anxiety Scale	(32)	39	35.615	11.629	-.139	21	36.714	9.029	.759
Test Anxiety -- Pre-Test	(33)	37	1.000	.000	.000	22	1.182	.588	2.846

Appendix D-7: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Test Anxiety -- Mid-Term	(34)	38	2.526	.979	.713	24	2.500	.885	1.155
Test Anxiety -- Final	(35)	39	2.846	.875	-.177	25	2.920	1.037	.617
Eysenck Extraversion Scale	(36)	34	12.765	4.229	.303	26	12.885	3.491	-.863
Eysenck Neuroticism Scale	(37)	34	11.176	4.920	-.146	26	11.577	4.337	.348
Eysenck Lie Scale	(38)	34	2.588	1.654	.557	26	2.346	1.648	.742
Commitment to Enter Prof. 1	(39)	38	2.105	1.110	.752	24	1.958	.806	.581
Commitment to Enter Prof. 2	(40)	23	2.217	1.085	.213	19	2.368	1.165	.544
Commitment to Enter Prof. 3	(41)	36	1.972	.736	.042	23	2.261	.810	-.499
Suitability for Teaching 1	(42)	38	2.237	1.076	.572	24	2.292	.999	.459
Suitability for Teaching 2	(43)	22	2.318	1.129	.567	19	2.632	1.165	.756
Suitability for Teaching 3	(44)	36	2.333	1.129	.779	22	2.318	.995	1.113
Importance of Theory 1	(45)	38	1.579	.642	.632	24	1.792	.823	.399
Importance of Theory 2	(46)	23	1.739	.752	.453	19	2.000	.882	.000
Importance of Theory 3	(47)	36	2.306	.624	.413	23	2.478	.665	1.027
Course as Preparation 1	(48)	38	2.447	.724	.402	24	2.208	.588	1.268
Course as Preparation 2	(49)	23	2.783	.795	.398	19	2.684	.820	.628
Course as Preparation 3	(50)	36	2.250	1.180	.985	23	2.435	.992	.755

Appendix D-8: Descriptive Data Summaries for all Student Variables for Instructor 8

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Course Grade	(1)	32	3.781	.751	-.558	26	4.000	.800	-.478
Mid-Term Grade	(2)	32	3.750	.803	.474	26	4.000	1.200	.850
Final Exam Grade	(3)	32	3.313	.998	-.063	26	3.462	1.104	-.265
Instructor Grade	(4)	29	4.241	.435	1.209	26	4.346	.485	.647
Course Project Rank	(5)	----	----	----	----	----	----	----	----
Pre-Test	(6)	29	21.793	6.699	-1.157	19	23.105	2.706	-.719
Mid-Term Exam	(7)	30	31.700	2.926	.150	14	32.714	3.292	-.490
Final Exam -- Recall Items	(8)	32	29.688	4.432	-.139	26	29.769	4.633	-.832
Final Exam -- Applied Items	(9)	32	24.500	3.370	.154	26	24.923	3.999	-.023
Final Exam -- Total	(10)	32	54.188	6.718	-.110	26	54.923	7.838	-.564
High Expectation 1	(11)	28	10.857	1.353	-1.747	24	10.750	1.391	-.433
High Expectation 2	(12)	24	9.958	1.654	-.580	17	10.353	1.619	-.686
High Expectation 3	(13)	14	90.000	5.023	-.094	9	92.556	4.187	-1.478
Actual Expectation 1	(14)	28	9.107	1.227	.161	24	8.375	1.555	-.223
Actual Expectation 2	(15)	24	8.708	1.574	.085	17	8.824	1.877	-.262
Actual Expectation 3	(16)	14	83.714	6.232	.221	9	85.000	5.679	-.456

Appendix D-8: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Low Expectation 1	(17)	28	6.179	1.634	.434	24	5.875	1.361	.441
Low Expectation 2	(18)	24	6.333	1.435	.568	17	6.941	1.784	-.386
Low Expectation 3	(19)	14	72.286	6.402	-.704	9	71.111	10.833	-.693
Aspiration-Expectation 1	(20)	28	8.643	1.129	.423	24	8.375	1.583	.570
Aspiration-Expectation 2	(21)	23	8.478	1.410	.194	17	8.706	1.649	-.203
Aspiration-Expectation 3	(22)	14	8.643	1.216	.454	9	9.000	1.323	.000
Univ. Grade-Point Average	(23)	25	2.704	.477	.549	23	2.704	.533	.476
Qualifying Test -- Verbal	(24)	20	24.350	16.165	-.023	19	21.263	12.565	.078
Qualifying Test -- Quantitative	(25)	20	19.859	14.365	.487	19	26.895	13.320	-.507
Qualifying Test -- Total	(26)	20	21.650	15.895	.191	19	23.105	14.015	-.185
Reason for Enrolling	(27)	27	3.333	.961	-.442	24	3.333	.761	.581
Pre-Course Attitude	(28)	27	28.185	3.235	-1.024	23	25.522	5.177	-2.197
Post-Course Attitude	(29)	19	24.368	5.679	-.769	10	23.700	7.718	-.778
Attitude Toward Instructor	(30)	14	15.071	6.604	-.512	9	10.000	6.124	.998
Learning Set	(31)	28	20.250	6.731	-.510	21	20.381	6.477	-.056
A - H Anxiety Scale	(32)	26	36.962	7.785	.020	23	38.696	5.873	-.350
Test Anxiety -- Pre-Test	(33)	29	1.000	.000	.000	19	1.158	.688	4.007

Appendix D-8: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Test Anxiety -- Mid-Term	(34)	32	2.594	1.043	.527	26	2.808	.749	.318
Test Anxiety -- Final	(35)	32	3.031	1.257	.039	26	2.846	.925	-.002
Eysenck Extraversion Scale	(36)	27	12.888	3.876	-.298	21	14.238	3.360	-1.070
Eysenck Neuroticism Scale	(37)	27	11.148	4.597	.428	21	11.238	5.272	.148
Eysenck Lie Scale	(38)	27	2.667	1.687	.637	21	2.571	1.207	1.052
Commitment to Enter Prof. 1	(39)	27	1.926	.917	.451	22	2.227	1.066	.502
Commitment to Enter Prof. 2	(40)	23	2.391	1.118	.578	17	2.059	1.029	.592
Commitment to Enter Prof. 3	(41)	32	2.000	.803	.000	25	2.120	.882	.140
Suitability for Teaching 1	(42)	27	2.148	1.134	1.159	24	2.708	1.122	.218
Suitability for Teaching 2	(43)	22	2.500	1.336	.368	16	2.500	1.095	-.157
Suitability for Teaching 3	(44)	32	2.156	1.167	.930	25	2.360	1.036	.383
Importance of Theory 1	(45)	27	1.519	.700	.962	24	1.750	.847	.932
Importance of Theory 2	(46)	22	1.773	.612	.132	17	1.824	1.015	.729
Importance of Theory 3	(47)	32	2.375	.609	1.359	25	2.760	.831	.020
Course as Preparation 1	(48)	27	2.370	.792	.673	24	2.667	.702	.542
Course as Preparation 2	(49)	22	2.545	.739	.204	16	2.625	.806	-.025
Course as Preparation 3	(50)	32	2.250	1.191	.785	25	2.400	.866	.314

Appendix D-9: Descriptive Data Summaries for all Student Variables for Instructor 9

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Course Grade	(1)	36	3.444	.695	.201	25	3.400	.866	-.864
Mid-Term Grade	(2)	36	3.000	.828	-.306	25	3.320	1.215	-.352
Final Exam Grade	(3)	36	3.111	1.036	-.380	25	3.000	.957	.000
Instructor Grade	(4)	36	3.722	.882	.315	25	3.800	.913	-.268
Course Project Rank	(5)	36	3.694	1.037	-.454	25	3.720	.843	-.294
Pre-Test	(6)	32	20.063	3.370	.485	21	22.333	2.763	.548
Mid-Term Exam	(7)	34	27.912	3.903	-.159	23	30.565	3.987	-.472
Final Exam -- Recall Items	(8)	36	28.944	3.992	-.461	25	27.880	4.512	-2.547
Final Exam -- Applied Items	(9)	36	23.417	4.345	-.440	25	22.760	4.684	-1.660
Final Exam -- Total	(10)	36	52.361	7.003	-.168	25	50.640	8.621	-2.594
High Expectation 1	(11)	33	10.212	1.364	-.691	24	10.917	.929	-.168
High Expectation 2	(12)	24	9.042	1.853	.064	20	9.650	1.599	-.042
High Expectation 3	(13)	16	90.313	6.205	.056	14	90.571	3.777	-.267
Actual Expectation 1	(14)	33	8.152	1.642	-.246	24	8.875	1.262	-.292
Actual Expectation 2	(15)	24	7.500	1.642	.903	20	8.150	1.387	-.395
Actual Expectation 3	(16)	16	81.375	5.772	.329	14	82.071	3.852	-.659

Appendix D-9: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Low Expectation 1	(17)	33	5.697	1.380	-.744	24	5.833	1.050	1.029
Low Expectation 2	(18)	24	5.167	1.834	.398	20	5.400	.754	.726
Low Expectation 3	(19)	15	67.467	8.123	-.324	14	69.643	6.823	.064
Aspiration-Expectation 1	(20)	33	7.818	1.570	.354	24	8.208	1.318	1.238
Aspiration-Expectation 2	(21)	24	7.417	1.666	.466	20	7.750	.967	.516
Aspiration-Expectation 3	(22)	16	7.438	1.861	.230	14	8.429	1.399	-.986
Univ. Grade-Point Average	(23)	32	2.510	.502	.915	23	2.591	.526	.242
Qualifying Test -- Verbal	(24)	27	21.296	15.399	.149	16	24.000	11.928	-.497
Qualifying Test -- Quantitative	(25)	27	20.963	14.192	.312	16	15.563	11.707	.390
Qualifying Test -- Total	(26)	27	20.074	15.578	.334	16	17.875	10.262	.560
Reason for Enrolling	(27)	33	3.152	1.149	-.551	24	2.875	1.076	-.819
Pre-Course Attitude	(28)	33	26.091	5.288	-1.463	23	25.913	5.017	-1.259
Post-Course Attitude	(29)	18	27.278	5.131	-2.625	14	24.071	5.663	-1.334
Attitude Toward Instructor	(30)	16	13.125	5.679	-.142	14	10.143	4.605	1.116
Learning Set	(31)	34	19.794	6.456	.628	21	19.571	6.660	.315
A - H Anxiety Scale	(32)	33	41.091	7.476	-.090	23	38.609	8.559	.743
Test Anxiety -- Pre-Test	(33)	32	1.000	.000	.000	21	1.143	.478	3.272

Appendix D-9: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Test Anxiety -- Mid-Term	(34)	36	2.806	1.142	.037	24	2.958	.999	-.451
Test Anxiety -- Final	(35)	36	2.861	1.150	-.069	25	3.000	1.118	.000
Eysenck Extraversion Scale	(36)	33	14.182	3.828	-.634	21	12.619	4.067	-1.028
Eysenck Neuroticism Scale	(37)	33	10.091	4.544	-.064	21	12.524	3.790	-.316
Eysenck Lie Scale	(38)	33	2.455	1.394	-.151	21	2.524	1.250	.023
Commitment to Enter Prof. 1	(39)	33	2.121	1.023	.999	24	2.042	.859	.342
Commitment to Enter Prof. 2	(40)	24	2.083	.974	.698	20	1.950	.887	.561
Commitment to Enter Prof. 3	(41)	34	2.059	.886	.417	24	2.375	.647	.477
Suitability for Teaching 1	(42)	33	2.242	.867	.099	24	2.292	.859	.671
Suitability for Teaching 2	(43)	21	2.190	.981	.590	18	2.111	.676	-.121
Suitability for Teaching 3	(44)	34	2.235	1.130	.423	24	2.083	.654	-.075
Importance of Theory 1	(45)	33	1.758	.936	.961	24	1.958	.806	.074
Importance of Theory 2	(46)	22	1.682	.894	1.073	19	1.947	.848	.097
Importance of Theory 3	(47)	33	2.545	.617	.636	24	2.583	.654	.640
Course as Preparation 1	(48)	33	2.424	.830	1.076	24	2.417	.584	-.341
Course as Preparation 2	(49)	21	2.619	.740	.718	18	2.888	1.023	.563
Course as Preparation 3	(50)	34	2.206	1.067	.798	24	2.167	.817	.671

Appendix D-10: Descriptive Data Summaries for all Student Variables for Instructor 10

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Course Grade	(1)	35	3.343	.802	.005	25	3.520	.653	-.075
Mid-Term Grade	(2)	35	3.286	1.017	.087	25	3.560	.961	.402
Final Exam Grade	(3)	35	2.800	.994	-.139	25	3.160	.850	-.307
Instructor Grade	(4)	35	3.714	.825	.566	25	3.800	.817	.375
Course Project Rank	(5)	35	3.343	1.327	-.345	25	3.120	.728	-.845
Pre-Test	(6)	33	21.636	3.380	-.410	20	22.650	2.323	.179
Mid-Term Exam	(7)	33	29.545	4.154	-.477	24	30.708	3.394	-.139
Final Exam -- Recall Items	(8)	35	27.543	3.625	-.417	25	28.320	3.301	-.274
Final Exam -- Applied Items	(9)	35	23.086	3.510	.408	25	23.920	2.971	-.310
Final Exam -- Total	(10)	35	50.800	6.310	-.202	25	52.240	5.349	-.366
High Expectation 1	(11)	30	10.767	1.195	-.528	19	10.368	1.212	.220
High Expectation 2	(12)	25	9.600	1.528	-.157	13	9.154	1.463	-.108
High Expectation 3	(13)	12	87.917	4.621	.281	10	88.700	6.717	-.126
Actual Expectation 1	(14)	30	8.433	1.331	-.747	19	8.000	2.028	.370
Actual Expectation 2	(15)	25	8.280	1.696	.283	13	7.308	1.437	-.036
Actual Expectation 3	(16)	12	79.666	7.820	.002	11	80.455	8.226	.141

Appendix D-10: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Low Expectation 1	(17)	30	5.733	1.680	-.414	19	5.474	1.679	.372
Low Expectation 2	(18)	25	5.920	1.681	-.516	13	5.000	1.291	.000
Low Expectation 3	(19)	12	67.500	8.909	-.260	11	69.091	6.640	1.150
Aspiration-Expectation 1	(20)	30	7.900	1.185	-.058	19	7.737	1.628	.437
Aspiration-Expectation 2	(21)	25	7.920	1.498	.594	13	7.308	1.377	.020
Aspiration-Expectation 3	(22)	11	8.000	1.483	.771	10	7.800	1.814	-.396
Univ. Grade-Point Average	(23)	29	2.383	.409	.582	20	2.565	.498	.695
Qualifying Test -- Verbal	(24)	28	23.607	14.426	.115	18	23.000	13.231	.144
Qualifying Test -- Quantitative	(25)	28	21.143	14.998	.228	18	20.167	14.505	.308
Qualifying Test -- Total	(26)	28	22.929	14.787	-.030	18	19.944	13.675	.489
Reason for Enrolling	(27)	28	3.464	1.071	-.643	19	3.053	.911	-.555
Pre-Course Attitude	(28)	29	27.931	4.511	-1.861	20	26.200	4.503	-1.146
Post-Course Attitude	(29)	19	30.105	2.105	-.656	9	25.000	6.245	-1.440
Attitude Toward Instructor	(30)	12	20.917	3.554	-1.630	11	18.455	7.230	-1.422
Learning Set	(31)	27	19.148	5.662	-.008	21	20.619	7.249	-.660
A - H Anxiety Scale	(32)	29	37.897	7.997	-1.065	20	39.850	6.968	-.545
Test Anxiety -- Pre-Test	(33)	33	1.061	.348	5.480	20	1.100	.308	2.667

Appendix D-10: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Test Anxiety -- Mid-Term	(34)	34	2.882	.686	.146	24	2.500	.885	.770
Test Anxiety -- Final	(35)	35	3.257	1.010	.337	25	2.760	1.012	.741
Eysenck Extraversion Scale	(36)	28	14.464	3.595	-.864	21	13.381	4.455	.030
Eysenck Neuroticism Scale	(37)	28	9.607	4.833	.163	21	8.810	4.082	.385
Eysenck Lie Scale	(38)	28	2.857	1.508	.510	21	1.905	2.095	1.532
Commitment to Enter Prof. 1	(39)	29	2.207	1.082	1.304	19	2.158	.958	.071
Commitment to Enter Prof. 2	(40)	25	2.160	.800	.210	13	2.462	1.127	.099
Commitment to Enter Prof. 3	(41)	33	2.030	.728	-.045	23	2.348	.885	.072
Suitability for Teaching 1	(42)	28	2.250	1.076	.761	19	2.421	.902	.008
Suitability for Teaching 2	(43)	24	1.917	.717	.839	13	2.769	1.092	-.329
Suitability for Teaching 3	(44)	33	2.273	.977	1.271	23	2.261	1.009	.272
Importance of Theory 1	(45)	29	1.690	.850	.633	18	1.777	.648	.210
Importance of Theory 2	(46)	24	1.875	.680	.146	12	1.750	.754	.416
Importance of Theory 3	(47)	33	2.333	.646	.996	23	2.870	.757	.213
Course as Preparation 1	(48)	28	2.393	.685	.745	18	2.500	.618	.768
Course as Preparation 2	(49)	24	2.458	.833	.826	12	2.333	.779	.581
Course as Preparation 3	(50)	33	2.242	1.146	1.157	24	2.750	1.113	-.266

Appendix D-11: Descriptive Data Summaries for all Student Variables for Instructor 11

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Course Grade	(1)	36	3.806	.980	-.711	25	3.440	.651	-.701
Mid-Term Grade	(2)	36	3.861	.990	-.705	25	3.400	.957	-.291
Final Exam Grade	(3)	36	3.472	1.134	-.289	25	3.040	.790	-.587
Instructor Grade	(4)	36	3.806	.822	.055	25	3.680	.690	.491
Course Project Rank	(5)	36	4.083	.732	-.126	25	4.200	.764	-.344
Pre-Test	(6)	30	23.300	3.042	.218	18	22.722	4.363	-.922
Mid-Term Exam	(7)	35	31.686	3.969	-1.144	24	29.958	4.398	-1.685
Final Exam -- Recall Items	(8)	36	29.611	4.197	-.393	25	28.240	3.270	-.532
Final Exam -- Applied Items	(9)	36	25.139	3.900	-.481	25	23.640	3.390	-.889
Final Exam -- Total	(10)	36	54.750	7.396	-.285	25	51.080	7.604	-2.130
High Expectation 1	(11)	32	11.188	1.120	-.925	19	11.000	1.155	-.667
High Expectation 2	(12)	26	10.808	1.167	-.544	15	9.067	1.486	-.117
High Expectation 3	(13)	13	94.846	3.508	-.373	10	90.600	4.248	.513
Actual Expectation 1	(14)	32	9.219	1.385	-.251	19	8.684	1.635	.211
Actual Expectation 2	(15)	26	9.346	1.522	.160	15	7.667	2.024	-1.081
Actual Expectation 3	(16)	13	87.692	5.376	-1.123	11	73.000	23.448	-2.608

Appendix D-11: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Low Expectation 1	(17)	32	6.344	1.696	.414	19	5.579	1.895	.076
Low Expectation 2	(18)	26	6.846	2.130	.179	14	5.357	2.061	-1.211
Low Expectation 3	(19)	13	78.846	6.349	-.679	10	67.500	5.893	-.215
Aspiration-Expectation 1	(20)	32	8.625	1.362	.394	19	7.947	1.615	.087
Aspiration-Expectation 2	(21)	26	8.923	1.440	.546	13	7.462	1.613	-.672
Aspiration-Expectation 3	(22)	13	9.615	1.261	-.270	10	7.500	1.080	-1.115
Univ. Grade-Point Average	(23)	31	2.523	.527	.176	18	2.428	.319	.274
Qualifying Test -- Verbal	(24)	29	25.103	13.375	.009	17	26.647	12.796	-.095
Qualifying Test -- Quantitative	(25)	29	21.897	14.797	.378	17	23.471	15.517	.200
Qualifying Test -- Total	(26)	29	24.000	13.551	.105	17	24.824	11.518	-.125
Reason for Enrolling	(27)	32	3.469	.164	-.485	19	3.684	1.204	-.937
Pre-Course Attitude	(28)	31	27.258	3.296	-1.276	18	29.833	11.116	2.869
Post-Course Attitude	(29)	17	28.941	4.264	-2.665	13	32.923	12.751	3.080
Attitude Toward Instructor	(30)	15	17.933	5.750	-2.078	11	19.000	3.768	-.400
Learning Set	(31)	32	22.344	5.416	-.288	22	19.455	5.369	-.520
A - H Anxiety Scale	(32)	31	36.129	6.474	.129	17	39.176	9.322	-.563
Test Anxiety -- Pre-Test	(33)	30	1.000	.000	.000	18	1.000	.000	.000

Appendix D-11: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Test Anxiety -- Mid-Term	(34)	36	2.667	.926	.049	24	2.750	1.294	.231
Test Anxiety -- Final	(35)	36	2.806	1.091	.258	24	2.792	1.250	.129
Eysenck Extraversion Scale	(36)	31	12.258	3.286	-.450	22	13.000	3.464	-.106
Eysenck Neuroticism Scale	(37)	31	10.129	4.985	-.222	22	12.409	5.000	-.252
Eysenck Lie Scale	(38)	31	2.129	1.522	.471	22	2.318	1.585	.929
Commitment to Enter Prof. 1	(39)	32	2.281	1.023	.517	19	2.737	1.284	.021
Commitment to Enter Prof. 2	(40)	24	2.417	.776	.283	15	2.067	1.099	1.201
Commitment to Enter Prof. 3	(41)	35	1.829	.785	.675	24	2.167	.817	-.308
Suitability for Teaching 1	(42)	32	2.438	1.105	.379	19	2.842	1.344	.011
Suitability for Teaching 2	(43)	21	2.476	.928	.071	14	2.429	1.223	.433
Suitability for Teaching 3	(44)	35	2.429	.979	.012	24	2.292	1.197	.973
Importance of Theory 1	(45)	32	1.594	.712	.754	19	1.789	.918	.868
Importance of Theory 2	(46)	21	1.524	.680	.892	14	1.643	.843	.738
Importance of Theory 3	(47)	35	2.429	.698	.784	24	2.625	.824	.305
Course as Preparation 1	(48)	31	2.484	.677	1.043	19	2.316	.671	.703
Course as Preparation 2	(49)	21	2.381	.590	1.223	14	2.357	.929	.433
Course as Preparation 3	(50)	35	2.514	1.121	.535	24	2.458	1.179	.834

Appendix D-12: Descriptive Data Summaries for all Student Variables for Instructor 12

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Course Grade	(1)	35	3.743	.741	.440	25	3.600	.577	-1.061
Mid-Term Grade	(2)	35	3.743	.852	.224	25	3.880	.927	-.401
Final Exam Grade	(3)	35	3.686	.932	-.002	25	3.040	1.098	-.464
Instructor Grade	(4)	35	3.800	.833	.074	25	3.880	.726	.177
Course Project Rank	(5)	35	3.114	.993	.318	24	3.125	.797	.305
Pre-Test	(6)	28	21.464	2.782	.160	16	22.313	2.869	.848
Mid-Term Exam	(7)	33	31.303	3.432	-.238	22	31.773	3.651	-.649
Final Exam -- Recall Items	(8)	35	30.457	3.776	-.345	24	29.000	3.890	-.842
Final Exam -- Applied Items	(9)	35	26.257	4.189	.598	24	23.792	4.899	-.622
Final Exam -- Total	(10)	35	56.657	6.164	.154	24	52.792	7.587	-.319
High Expectation 1	(11)	30	11.033	1.033	-.639	21	11.381	.805	-.783
High Expectation 2	(12)	27	9.963	1.581	-.534	17	10.118	1.691	-.668
High Expectation 3	(13)	12	90.750	8.551	-.263	8	91.625	2.134	.240
Actual Expectation 1	(14)	30	9.267	1.507	.274	21	9.429	1.287	-.415
Actual Expectation 2	(15)	27	8.852	1.791	.022	17	8.882	1.317	-.963
Actual Expectation 3	(16)	12	82.750	11.848	-1.791	8	85.250	2.866	-.501

Appendix D-12: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Low Expectation 1	(17)	30	5.833	1.913	.572	21	6.429	1.076	.806
Low Expectation 2	(18)	27	6.444	1.783	.300	17	5.882	1.364	.369
Low Expectation 3	(19)	12	66.667	24.526	-1.460	8	73.875	5.139	-.470
Aspiration-Expectation 1	(20)	30	8.233	1.547	.399	21	9.048	1.203	.261
Aspiration-Expectation 2	(21)	27	8.297	1.659	.288	16	8.250	1.342	-.642
Aspiration-Expectation 3	(22)	12	8.917	1.730	-.858	8	8.750	.886	.493
Univ. Grade-Point Average	(23)	29	2.645	.543	.229	21	2.571	.531	1.011
Qualifying Test -- Verbal	(24)	30	27.300	13.941	.121	19	23.632	12.289	.454
Qualifying Test -- Quantitative	(25)	30	23.200	13.441	.278	19	23.632	16.108	-.208
Qualifying Test -- Total	(26)	30	24.567	15.135	.134	19	22.421	14.789	.128
Reason for Enrolling	(27)	29	3.103	1.047	-.588	21	3.429	.926	-.174
Pre-Course Attitude	(28)	27	27.296	4.614	-2.412	21	27.714	2.952	.562
Post-Course Attitude	(29)	23	29.174	7.284	1.290	11	27.636	3.139	.027
Attitude Toward Instructor	(30)	12	17.250	5.259	-.954	9	20.778	2.682	-1.069
Learning Set	(31)	26	21.808	4.988	-.345	20	20.950	5.969	.227
A - H Anxiety Scale	(32)	26	37.269	8.558	.087	20	40.400	10.086	.256
Test Anxiety -- Pre-Test	(33)	28	1.071	.378	5.004	16	1.000	.000	.000

Appendix D-12: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Test Anxiety -- Mid-Term	(34)	35	2.914	.887	.167	22	2.727	.935	.565
Test Anxiety -- Final	(35)	35	3.000	1.085	.000	24	2.792	.885	.415
Eysenck Extraversion Scale	(36)	27	13.333	5.008	-.517	20	12.150	3.870	-.782
Eysenck Neuroticism Scale	(37)	27	10.926	4.531	-.032	20	8.650	4.771	.285
Eysenck Lie Scale	(38)	27	2.407	1.500	.391	20	3.150	1.785	.225
Commitment to Enter Prof. 1	(39)	29	2.103	.817	.211	21	2.571	1.207	.178
Commitment to Enter Prof. 2	(40)	27	2.222	.801	.962	16	2.500	1.033	.375
Commitment to Enter Prof. 3	(41)	34	2.118	.880	.042	22	1.818	.907	.755
Suitability for Teaching 1	(42)	29	2.207	.726	.245	21	2.524	1.078	.551
Suitability for Teaching 2	(43)	27	2.593	.694	.717	16	2.625	1.147	-.043
Suitability for Teaching 3	(44)	34	2.412	1.019	.330	22	2.591	1.141	.461
Importance of Theory 1	(45)	29	1.552	.572	.378	21	1.667	.730	.584
Importance of Theory 2	(46)	27	1.889	.847	.210	16	1.813	.834	.353
Importance of Theory 3	(47)	34	2.471	.615	.907	22	2.364	.848	.678
Course as Preparation 1	(48)	29	2.483	.829	.438	21	2.476	.750	1.177
Course as Preparation 2	(49)	26	2.385	.752	.401	16	2.250	.931	.512
Course as Preparation 3	(50)	34	2.441	1.133	.338	22	2.273	1.032	1.031

Appendix D-13: Descriptive Data Summaries for all Student Variables for Instructor 13

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Course Grade	(1)	39	3.590	.850	-.154	24	3.417	.830	-.430
Mid-Term Grade	(2)	39	3.538	.884	.114	24	3.625	.824	.305
Final Exam Grade	(3)	39	3.179	1.121	-.358	24	2.958	1.233	-.347
Instructor Grade	(4)	39	3.949	.759	.084	24	3.792	.721	.319
Course Project Rank	(5)	39	4.103	.821	-.189	24	3.750	.897	.139
Pre-Test	(6)	31	22.613	2.729	-.215	20	20.900	3.932	.924
Mid-Term Exam	(7)	37	30.865	3.743	-.380	23	30.130	3.757	-.530
Final Exam -- Recall Items	(8)	38	29.158	4.547	-.354	24	27.333	4.869	.146
Final Exam -- Applied Items	(9)	38	24.474	3.718	.176	24	23.417	3.450	.028
Final Exam -- Total	(10)	38	53.632	7.269	-.090	24	50.833	7.528	.041
High Expectation 1	(11)	35	10.771	1.629	-1.408	23	10.870	1.058	-.209
High Expectation 2	(12)	30	10.133	1.432	.264	17	9.647	1.455	-.740
High Expectation 3	(13)	17	90.706	5.205	.334	13	91.077	3.796	.623
Actual Expectation 1	(14)	35	8.857	1.556	-.663	23	8.652	1.301	-.342
Actual Expectation 2	(15)	29	8.586	1.680	.262	17	8.706	1.160	-.395
Actual Expectation 3	(16)	17	83.235	5.019	.154	13	85.077	4.769	.550

Appendix D-13: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Low Expectation 1	(17)	35	6.171	1.403	.339	23	6.087	1.041	.815
Low Expectation 2	(18)	30	6.200	1.584	.671	17	5.882	1.219	1.082
Low Expectation 3	(19)	17	71.471	7.054	-.083	13	71.769	5.540	-.383
Aspiration-Expectation 1	(20)	35	8.286	1.296	-.956	22	8.455	1.057	-.002
Aspiration-Expectation 2	(21)	29	8.483	1.405	.429	17	8.353	1.320	.329
Aspiration-Expectation 3	(22)	17	8.706	1.359	-.219	13	8.923	1.382	-.647
Univ. Grade-Point Average	(23)	34	2.474	.471	.926	22	2.582	.484	.659
Qualifying Test -- Verbal	(24)	31	20.709	15.107	.416	19	17.000	13.956	.680
Qualifying Test -- Quantitative	(25)	31	22.323	14.405	.295	19	18.000	15.301	.715
Qualifying Test -- Total	(26)	31	17.968	14.008	.713	19	15.579	12.107	.926
Reason for Enrolling	(27)	33	3.212	1.269	-.499	20	3.500	1.100	-.851
Pre-Course Attitude	(28)	33	27.091	4.260	-1.795	22	27.409	4.043	-1.774
Post-Course Attitude	(29)	22	29.090	7.387	2.628	16	26.129	7.079	-1.107
Attitude Toward Instructor	(30)	19	15.526	5.521	-.356	15	20.533	2.722	-1.577
Learning Set	(31)	34	20.059	6.382	.182	21	18.810	5.085	-1.038
A - H Anxiety Scale	(32)	33	40.576	9.291	-.447	22	39.091	9.170	.537
Test Anxiety -- Pre-Test	(33)	31	1.000	.000	.000	20	1.000	.000	.000

Appendix D-13: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Test Anxiety -- Mid-Term	(34)	39	3.179	.914	.268	24	2.792	1.021	.175
Test Anxiety -- Final	(35)	38	3.263	1.005	-.221	24	3.083	.929	-.165
Eysenck Extraversion Scale	(36)	35	12.914	4.076	.081	22	13.727	2.848	.459
Eysenck Neuroticism Scale	(37)	35	11.114	5.080	.096	22	10.773	3.664	1.637
Eysenck Lie Scale	(38)	35	2.543	1.615	.134	22	2.500	1.683	.460
Commitment to Enter Prof. 1	(39)	34	2.441	1.078	.228	22	2.182	.907	.029
Commitment to Enter Prof. 2	(40)	31	2.548	.888	.142	17	2.000	.935	.472
Commitment to Enter Prof. 3	(41)	35	2.114	.900	.021	24	1.917	.929	.498
Suitability for Teaching 1	(42)	33	2.455	1.227	.622	20	2.400	1.273	.622
Suitability for Teaching 2	(43)	31	2.452	.888	.148	17	2.176	1.131	.715
Suitability for Teaching 3	(44)	35	2.343	1.027	.266	24	2.125	.992	.294
Importance of Theory 1	(45)	34	1.912	.866	.169	22	1.773	.813	.428
Importance of Theory 2	(46)	31	2.097	.831	-.180	17	2.059	.966	.311
Importance of Theory 3	(47)	35	2.600	.775	.046	24	2.625	.770	.155
Course as Preparation 1	(48)	33	2.364	.699	.498	20	2.150	.745	.546
Course as Preparation 2	(49)	31	2.871	.806	.234	17	2.353	.862	.470
Course as Preparation 3	(50)	35	2.229	.973	.503	24	2.250	1.152	.545

Appendix D-14: Descriptive Data Summaries for all Student Variables for Instructor 14

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Course Grade	(1)	38	3.211	.905	-.203	21	3.190	.928	-.384
Mid-Term Grade	(2)	38	3.316	.775	.810	21	3.429	.926	-.561
Final Exam Grade	(3)	38	3.026	1.000	-.217	21	3.286	1.146	-.783
Instructor Grade	(4)	38	3.211	1.018	-.118	21	2.905	.995	.191
Course Project Rank	(5)	38	3.105	1.060	.203	21	3.190	.981	-.388
Pre-Test	(6)	32	21.906	3.052	.443	16	22.500	4.131	.668
Mid-Term Exam	(7)	36	28.806	3.786	.031	20	30.900	3.567	-.887
Final Exam -- Recall Items	(8)	38	28.342	4.939	-1.180	21	28.523	4.203	-.796
Final Exam -- Applied Items	(9)	38	23.237	4.030	-.630	21	24.619	4.006	-.301
Final Exam -- Total	(10)	38	51.579	8.323	-1.210	21	53.190	7.271	-.890
High Expectation 1	(11)	36	10.750	1.156	-.514	16	10.813	.981	-.494
High Expectation 2	(12)	27	9.556	1.695	-.435	13	9.462	1.713	-.449
High Expectation 3	(13)	22	88.864	7.053	.125	8	88.750	5.970	-.509
Actual Expectation 1	(14)	36	8.639	1.313	.077	16	8.750	1.065	-1.198
Actual Expectation 2	(15)	27	8.444	1.553	-.586	13	7.846	2.035	.278
Actual Expectation 3	(16)	22	80.910	6.133	.076	8	82.605	5.680	.809

Appendix D-14: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Low Expectation 1	(17)	36	5.889	1.635	-.854	16	5.688	1.352	.590
Low Expectation 2	(18)	27	6.038	1.285	.816	13	5.462	2.259	-.286
Low Expectation 3	(19)	22	71.409	5.762	.368	8	73.125	8.425	-.135
Aspiration-Expectation 1	(20)	36	8.111	1.304	-.286	16	8.313	1.250	-.404
Aspiration-Expectation 2	(21)	27	8.037	1.506	-.270	13	7.615	1.805	-.194
Aspiration-Expectation 3	(22)	22	8.000	1.662	.000	8	7.750	2.188	-.186
Univ. Grade-Point Average	(23)	33	2.415	.442	.658	16	2.488	.418	.340
Qualifying Test -- Verbal	(24)	32	22.250	12.979	.197	12	16.417	11.889	.469
Qualifying Test -- Quantitative	(25)	32	15.281	11.762	.972	12	18.417	13.447	.831
Qualifying Test -- Total	(26)	32	17.750	12.562	.669	12	11.333	11.138	1.697
Reason for Enrolling	(27)	35	3.457	1.067	-.551	16	3.250	1.065	-.856
Pre-Course Attitude	(28)	35	28.114	4.999	-2.282	14	27.714	4.906	-1.188
Post-Course Attitude	(29)	23	27.348	5.765	-1.867	10	25.600	5.873	-.533
Attitude Toward Instructor	(30)	23	19.087	4.833	-1.211	8	18.250	3.284	-.598
Learning Set	(31)	31	21.032	5.742	.342	16	20.188	4.340	-.809
A - H Anxiety Scale	(32)	35	39.029	10.780	.297	13	34.462	10.752	.123
Test Anxiety -- Pre-Test	(33)	32	1.000	.000	.000	16	1.000	.000	.000

Appendix D-14: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Test Anxiety -- Mid-Term	(34)	38	2.789	.843	.136	20	2.550	.826	-.163
Test Anxiety -- Final	(35)	38	3.316	.962	-.111	21	3.048	.921	.694
Eysenck Extraversion Scale	(36)	31	13.226	3.499	-.847	16	14.250	2.720	.385
Eysenck Neuroticism Scale	(37)	31	10.290	4.353	.320	16	10.875	4.425	.544
Eysenck Lie Scale	(38)	31	3.161	2.002	.434	16	2.750	1.612	.222
Commitment to Enter Prof. 1	(39)	35	2.114	1.105	.568	16	1.688	.704	.485
Commitment to Enter Prof. 2	(40)	28	2.036	1.071	.850	13	1.538	.660	.760
Commitment to Enter Prof. 3	(41)	35	1.886	.867	.495	20	2.050	.686	-.058
Suitability for Teaching 1	(42)	35	2.143	1.061	.911	16	1.875	.806	1.010
Suitability for Teaching 2	(43)	26	2.115	1.143	.920	13	1.769	.832	1.342
Suitability for Teaching 3	(44)	35	2.114	.963	.973	20	1.900	.852	.712
Importance of Theory 1	(45)	35	1.343	.539	.222	16	1.625	.806	.764
Importance of Theory 2	(46)	27	1.815	.879	.712	13	1.846	.689	.179
Importance of Theory 3	(47)	35	2.514	.853	.820	20	2.600	.754	.786
Course as Preparation 1	(48)	35	2.257	.817	.488	16	2.313	.479	.809
Course as Preparation 2	(49)	27	2.667	.961	.707	13	2.308	.480	.833
Course as Preparation 3	(50)	35	2.057	1.083	1.014	20	2.200	.951	.346

Appendix D-15: Descriptive Data Summaries for all Student Variables for Instructor 15

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Course Grade	(1)	33	3.091	.766	-.576	24	3.167	.702	-.228
Mid-Term Grade	(2)	33	3.394	1.273	-.589	24	3.208	.932	-.093
Final Exam Grade	(3)	33	2.545	.938	-.133	24	2.875	.947	-.378
Instructor Grade	(4)	33	3.576	.830	-.078	24	3.417	.504	.338
Course Project Rank	(5)	33	3.091	1.011	.002	24	2.750	.794	.466
Pre-Test	(6)	32	20.531	2.973	.054	21	22.810	3.970	-.460
Mid-Term Exam	(7)	29	29.759	4.626	-.808	23	28.217	4.264	-.157
Final Exam -- Recall Items	(8)	33	25.970	4.940	-.146	24	27.333	3.691	-.223
Final Exam -- Applied Items	(9)	33	23.364	2.837	-.176	24	23.708	2.851	.117
Final Exam -- Total	(10)	33	49.091	6.356	-.385	24	51.042	5.630	-.203
High Expectation 1	(11)	33	10.515	1.202	-.091	23	10.957	1.107	-.531
High Expectation 2	(12)	26	9.500	1.503	-.684	16	9.438	1.153	-.117
High Expectation 3	(13)	11	89.364	5.680	-.663	10	88.800	5.940	.357
Actual Expectation 1	(14)	33	8.394	1.391	-.025	22	8.727	1.907	-.022
Actual Expectation 2	(15)	26	8.154	1.933	-.967	15	7.533	1.552	.351
Actual Expectation 3	(16)	11	81.636	5.697	-.652	10	77.400	5.481	1.167

Appendix D-15: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Low Expectation 1	(17)	33	5.848	1.503	.262	23	5.391	2.388	-.456
Low Expectation 2	(18)	26	5.654	1.672	-.954	16	5.375	1.857	-.054
Low Expectation 3	(19)	11	69.455	17.242	-2.374	10	66.800	8.377	-.539
Aspiration-Expectation 1	(20)	31	7.968	1.224	.283	20	8.100	2.049	-.213
Aspiration-Expectation 2	(21)	25	7.960	1.241	-.324	15	7.667	1.496	.461
Aspiration-Expectation 3	(22)	10	7.900	2.025	-.620	10	7.770	1.059	.627
Univ. Grade-Point Average	(23)	31	2.368	.469	.061	21	2.381	.507	.732
Qualifying Test -- Verbal	(24)	25	21.880	15.770	.273	21	25.048	14.935	.284
Qualifying Test -- Quantitative	(25)	25	19.680	17.080	.364	21	18.476	14.243	.447
Qualifying Test -- Total	(26)	25	19.680	16.173	.467	21	22.000	14.707	.013
Reason for Enrolling	(27)	33	3.182	.950	-.590	22	3.045	1.046	-.357
Pre-Course Attitude	(28)	31	26.097	5.564	-1.399	23	23.826	7.756	-1.023
Post-Course Attitude	(29)	20	27.950	11.980	1.732	14	25.714	5.254	-1.035
Attitude Toward Instructor	(30)	11	20.091	3.885	-1.145	10	17.700	4.572	-.022
Learning Set	(31)	24	16.042	7.049	-.509	18	19.556	6.299	.209
A - H Anxiety Scale	(32)	31	38.000	10.450	.136	21	37.810	8.072	-.540
Test Anxiety -- Pre-Test	(33)	32	1.000	.000	.000	21	1.095	.436	4.249

Appendix D-15: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Test Anxiety -- Mid-Term	(34)	33	3.000	.968	.210	24	2.792	.779	.370
Test Anxiety -- Final	(35)	33	2.727	1.206	.104	24	3.250	1.032	-.030
Eysenck Extraversion Scale	(36)	26	14.923	4.019	-.998	19	13.105	4.040	-.977
Eysenck Neuroticism Scale	(37)	26	9.885	4.217	.167	19	10.421	4.414	.180
Eysenck Lie Scale	(38)	26	1.923	1.324	.037	19	2.211	1.653	.415
Commitment to Enter Prof. 1	(39)	33	2.242	.867	.099	22	2.636	1.177	.562
Commitment to Enter Prof. 2	(40)	26	2.000	.849	.401	16	2.250	.775	.444
Commitment to Enter Prof. 3	(41)	31	2.065	.680	-.075	24	2.000	.834	.000
Suitability for Teaching 1	(42)	33	2.212	.960	1.071	22	2.818	1.097	.588
Suitability for Teaching 2	(43)	23	2.043	.767	.546	16	2.438	.964	.413
Suitability for Teaching 3	(44)	31	2.097	.870	.431	24	2.458	1.215	.693
Importance of Theory 1	(45)	33	1.970	.810	.413	21	1.905	.995	.815
Importance of Theory 2	(46)	23	2.130	1.014	.808	16	2.000	.817	.000
Importance of Theory 3	(47)	31	2.258	.682	.287	24	2.375	.647	.477
Course as Preparation 1	(48)	33	2.455	.833	1.301	21	2.714	1.056	.331
Course as Preparation 2	(49)	23	2.391	.583	1.136	16	2.438	.629	1.069
Course as Preparation 3	(50)	31	2.129	.991	.366	24	2.500	1.216	.445

Appendix D-16: Descriptive Data Summaries for all Student Variables for Instructor 16

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Course Grade	(1)	35	3.571	.739	.416	21	3.429	.811	-.919
Mid-Term Grade	(2)	35	3.686	1.051	-.270	21	3.524	1.078	-.186
Final Exam Grade	(3)	35	3.486	1.040	.039	21	3.333	1.238	-.336
Instructor Grade	(4)	35	3.629	.547	-1.071	21	3.571	.978	-.697
Course Project Rank	(5)	35	3.714	.572	.058	20	3.650	.813	.104
Pre-Test	(6)	31	22.709	4.474	-.228	19	24.474	3.373	.167
Mid-Term Exam	(7)	35	31.057	4.087	-.556	20	29.900	4.217	-1.432
Final Exam -- Recall Items	(8)	35	29.686	3.771	-.152	21	28.429	4.142	-.295
Final Exam -- Applied Items	(9)	35	25.343	4.325	-.102	21	25.048	4.248	-.559
Final Exam -- Total	(10)	35	55.029	6.680	.043	21	53.476	7.878	-.394
High Expectation 1	(11)	33	10.818	1.380	-.611	17	11.353	.931	-1.231
High Expectation 2	(12)	25	9.920	1.824	-.132	14	10.214	1.424	.108
High Expectation 3	(13)	17	91.882	5.999	-.368	10	93.500	4.170	-.693
Actual Expectation 1	(14)	33	8.636	1.868	.133	17	9.176	1.704	-.126
Actual Expectation 2	(15)	25	8.640	2.039	.260	14	8.857	1.562	.244
Actual Expectation 3	(16)	17	83.530	6.206	.024	11	83.364	5.644	.237

Appendix D-16: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Low Expectation 1	(17)	33	5.576	1.921	.353	17	6.647	1.935	-.177
Low Expectation 2	(18)	25	6.200	2.082	-.130	14	6.357	1.393	.926
Low Expectation 3	(19)	17	72.235	8.707	-.354	11	73.182	8.739	.586
Aspiration-Expectation 1	(20)	33	8.212	1.691	-.496	16	8.563	1.548	-.232
Aspiration-Expectation 2	(21)	25	8.640	1.823	.297	14	8.500	1.401	.785
Aspiration-Expectation 3	(22)	16	8.250	1.949	-.195	11	8.727	1.489	.107
Univ. Grade-Point Average	(23)	31	2.642	.539	.693	20	2.525	.567	1.045
Qualifying Test -- Verbal	(24)	27	24.963	16.183	.110	14	24.786	15.671	-.101
Qualifying Test -- Quantitative	(25)	27	23.000	14.597	.086	14	29.357	13.826	-.482
Qualifying Test -- Total	(26)	27	24.111	17.080	.019	14	27.286	17.184	-.199
Reason for Enrolling	(27)	33	3.273	.944	-.792	18	3.389	1.461	-.706
Pre-Course Attitude	(28)	33	27.424	3.812	-.277	20	27.250	5.340	-1.881
Post-Course Attitude	(29)	16	29.688	3.027	-.570	13	28.846	3.648	-1.062
Attitude Toward Instructor	(30)	16	16.625	4.911	-.293	11	19.364	6.622	-2.544
Learning Set	(31)	25	22.960	6.168	-.709	18	22.556	5.617	.127
A - H Anxiety Scale	(32)	33	36.455	9.371	.084	20	32.450	12.530	.115
Test Anxiety -- Pre-Test	(33)	31	1.000	.000	.000	19	1.000	.000	.000

Appendix D-16: (continued)

Variable	#	AM				PM			
		N	Mean	S.D.	Skew.	N	Mean	S.D.	Skew.
Test Anxiety -- Mid-Term	(34)	35	2.286	.926	.083	21	2.381	1.244	.199
Test Anxiety -- Final	(35)	35	2.600	.946	-.186	21	2.857	.910	.690
Eysenck Extraversion Scale	(36)	27	13.000	4.215	-.006	18	13.500	3.451	.119
Eysenck Neuroticism Scale	(37)	27	10.630	4.001	.428	18	10.278	4.430	-.078
Eysenck Lie Scale	(38)	27	3.111	1.577	.114	18	1.833	1.339	.311
Commitment to Enter Prof. 1	(39)	33	2.212	1.053	.382	18	2.389	1.145	.644
Commitment to Enter Prof. 2	(40)	26	2.077	.977	.638	13	2.538	.877	.265
Commitment to Enter Prof. 3	(41)	35	1.800	.833	.384	21	1.952	.805	.804
Suitability for Teaching 1	(42)	33	2.273	.944	1.016	18	2.556	1.294	.546
Suitability for Teaching 2	(43)	26	2.231	1.032	.641	12	2.750	1.138	-.266
Suitability for Teaching 3	(44)	35	2.171	1.071	.821	21	2.571	1.076	-.066
Importance of Theory 1	(45)	33	1.364	.603	1.407	18	1.889	.900	.715
Importance of Theory 2	(46)	26	1.769	.710	.347	12	1.917	.793	.140
Importance of Theory 3	(47)	35	2.314	.676	.701	21	2.476	.873	.305
Course as Preparation 1	(48)	33	2.394	.704	.928	18	2.556	.616	.563
Course as Preparation 2	(49)	26	2.077	.688	.093	12	2.667	1.073	-.222
Course as Preparation 3	(50)	35	2.057	1.136	.864	21	2.667	1.278	.355

APPENDIX E

Intercorrelation Matrix for all Student Variables by Total Students and Students by Time-of-Day

Appendix E-1: Intercorrelation Matrix for all Student Variables by Total Students

Course Grade		(1)				
Mid-Term Grade		(2)	.676			
Final Exam Grade		(3)	.774	.516		
Instructor Grade		(4)	.644	.371	.289	
Course Project Rank		(5)	.398	.219	.181	.585
Pre-Test		(6)	.302	.270	.302	.124
Mid-Term Exam		(7)	.676	.914	.522	.374
Final Exam -- Recall Items		(8)	.724	.479	.832	.305
Final Exam -- Applied Items		(9)	.606	.401	.765	.239
Final Exam -- Total		(10)	.765	.514	.910	.313
High Expectation	1	(11)	.286	.222	.302	.165
High Expectation	2	(12)	.587	.701	.458	.339
High Expectation	3	(13)	.451	.455	.374	.285
Actual Expectation	1	(14)	.286	.226	.289	.199
Actual Expectation	2	(15)	.578	.700	.453	.342
Actual Expectation	3	(16)	.401	.413	.340	.279
Low Expectation	1	(17)	.244	.222	.211	.174
Low Expectation	2	(18)	.502	.609	.380	.308
Low Expectation	3	(19)	.298	.350	.213	.235
Aspiration-Expectation	1	(20)	.274	.253	.278	.174
Aspiration-Expectation	2	(21)	.618	.686	.485	.342
Aspiration-Expectation	3	(22)	.600	.644	.416	.477
Univ. Grade-Point Average		(23)	.505	.456	.449	.355
Qualifying Test -- Verbal		(24)	.288	.252	.310	.101
Qualifying Test -- Quantitative		(25)	.285	.265	.317	.117
			(1)	(2)	(3)	(4)

Appendix E-1: (continued)

Qualifying Test -- Total		(26)	.345	.310	.383	.122	----
Reason for Enrolling		(27)	----	----	----	----	----
Pre-Course Attitude		(28)	----	----	----	----	----
Post-Course Attitude		(29)	----	----	----	----	----
Attitude Toward Instructor		(30)	----	----	-.134	----	----
Learning Set		(31)	.227	.192	.266	----	----
A-H Test Anxiety Scale		(32)	-.240	-.268	-.265	----	----
Test Anxiety -- Pre-Test		(33)	----	----	----	----	----
Test Anxiety -- Mid-Term		(34)	-.152	-.100	-.160	----	----
Test Anxiety -- Final		(35)	-.160	-.181	-.156	----	----
Eysenck Extraversion Scale		(36)	----	----	----	----	----
Eysenck Neuroticism Scale		(37)	----	----	----	----	----
Eysenck Lie Scale		(38)	----	----	----	----	----
Commitment to Enter Prof.	1	(39)	----	----	----	----	----
Commitment to Enter Prof.	2	(40)	----	----	.105	----	----
Commitment to Enter Prof.	3	(41)	----	----	----	----	----
Suitability for Teaching	1	(42)	----	----	.140	----	----
Suitability for Teaching	2	(43)	----	.102	.142	----	----
Suitability for Teaching	3	(44)	----	----	----	----	----
Importance of Theory	1	(45)	----	----	----	----	----
Importance of Theory	2	(46)	----	-.100	-.101	----	----
Importance of Theory	3	(47)	----	----	----	----	----
Course as Preparation	1	(48)	----	----	----	----	----
Course as Preparation	2	(49)	----	----	----	----	----
Course as Preparation	3	(50)	----	----	----	----	----
			(1)	(2)	(3)	(4)	(5)

Appendix E-1: (continued)

Pre-Test	(6)					
Mid-Term Exam	(7)	.290				
Final Exam -- Recall Items	(8)	.249	.493			
Final Exam -- Applied Items	(9)	.243	.397	.486		
Final Exam -- Total	(10)	.274	.524	.856	.752	
High Expectation 1	(11)	.209	.200	.251	.273	.304
High Expectation 2	(12)	.332	.682	.415	.367	.464
High Expectation 3	(13)	.309	.467	.363	.268	.381
Actual Expectation 1	(14)	.198	.221	.251	.249	.291
Actual Expectation 2	(15)	.327	.667	.427	.345	.449
Actual Expectation 3	(16)	.232	.411	.309	.226	.338
Low Expectation 1	(17)	.149	.201	.217	.164	.217
Low Expectation 2	(18)	.285	.608	.376	.269	.381
Low Expectation 3	(19)	.145	.342	.241	.123	.213
Aspiration-Expectation 1	(20)	.197	.230	.228	.241	.261
Aspiration-Expectation 2	(21)	.315	.691	.437	.373	.480
Aspiration-Expectation 3	(22)	.328	.651	.408	.303	.439
Univ. Grade-Point Average	(23)	.215	.413	.399	.373	.480
Qualifying Test -- Verbal	(24)	.285	.296	.220	.352	.342
Qualifying Test -- Quantitative	(25)	.130	.250	.230	.320	.329
Qualifying Test -- Total	(26)	.274	.320	.281	.405	.408
Reason for Enrolling	(27)	----	----	----	----	----
Pre-Course Attitude	(28)	----	----	----	----	----
Post-Course Attitude	(29)	----	----	----	----	----
Attitude Toward Instructor	(30)	----	-.103	----	----	-.121
		(6)	(7)	(8)	(9)	(10)

Appendix E-1: (continued)

Learning Set		(31)	.174	.224	.239	.219	.277
A-H Test Anxiety Scale		(32)	-.184	-.276	-.224	-.250	-.279
Test Anxiety -- Pre-Test		(33)	----	----	----	----	----
Test Anxiety -- Mid-Term		(34)	-.145	-.110	-.169	-.164	-.180
Test Anxiety -- Final		(35)	-.101	-.168	-.152	----	-.160
Eysenck Extraversion Scale		(36)	-.122	-.112	----	-.113	-.113
Eysenck Neuroticism Scale		(37)	----	----	----	----	----
Eysenck Lie Scale		(38)	----	----	----	----	----
Commitment to Enter Prof.	1	(39)	.111	----	----	.101	----
Commitment to Enter Prof.	2	(40)	.106	----	.105	----	.118
Commitment to Enter Prof.	3	(41)	----	----	----	----	----
Suitability for Teaching	1	(42)	.107	----	.120	.159	.134
Suitability for Teaching	2	(43)	----	.102	.127	.166	.152
Suitability for Teaching	3	(44)	.171	----	----	.101	.112
Importance of Theory	1	(45)	----	----	----	----	----
Importance of Theory	2	(46)	----	----	----	----	----
Importance of Theory	3	(47)	----	----	----	----	----
Course as Preparation	1	(48)	----	----	----	----	----
Course as Preparation	2	(49)	----	----	----	----	----
Course as Preparation	3	(50)	.143	----	----	----	----
			(6)	(7)	(8)	(9)	(10)

Appendix E-1: (continued)

High Expectation	1	(11)					
High Expectation	2	(12)	.526				
High Expectation	3	(13)	.532	.635			
Actual Expectation	1	(14)	.714	.486	.513		
Actual Expectation	2	(15)	.491	.827	.636	.570	
Actual Expectation	3	(16)	.386	.518	.721	.400	.562
Low Expectation	1	(17)	.407	.345	.337	.597	.570
Low Expectation	2	(18)	.380	.641	.490.	.480	.766
Low Expectation	3	(19)	.193	.478	.308	.266	.541
Aspiration-Expectation	1	(20)	.621	.437	.473	.781	.530
Aspiration-Expectation	2	(21)	.479	.812	.623	.569	.853
Aspiration-Expectation	3	(22)	.468	.704	.666	.520	.757
Univ. Grade-Point Average		(23)	.420	.404	.365	.475	.448
Qualifying Test -- Verbal		(24)	.343	.335	.256	.341	.335
Qualifying Test -- Quantitative		(25)	.254	.284	.266	.173	.200
Qualifying Test -- Total		(26)	.398	.392	.342	.354	.352
Reason for Enrolling		(27)	----	----	----	----	----
Pre-Course Attitude		(28)	----	----	----	----	----
Post-Course Attitude		(29)	-.109	----	----	----	----
Attitude Toward Instructor		(30)	----	----	----	----	----
Learning Set		(31)	.208	.208	.217	.181	.199
A-H Test Anxiety Scale		(32)	-.362	-.363	-.352	-.352	-.398
Test Anxiety -- Pre-Test		(33)	----	----	----	----	----
Test Anxiety -- Mid-Term		(34)	-.173	-.130	-.169	-.180	-.211
Test Anxiety -- Final		(35)	-.167	-.177	-.203	-.182	-.224
			(11)	(12)	(13)	(14)	(15)

Appendix E-1: (continued)

Eysenck Extraversion Scale		(36)	----	----	----	----	----
Eysenck Neuroticism Scale		(37)	-.131	----	-.172	-.114	-.139
Eysenck Lie Scale		(38)	----	----	----	----	----
Commitment to Enter Prof.	1	(39)	----	----	----	----	----
Commitment to Enter Prof.	2	(40)	----	----	----	----	----
Commitment to Enter Prof.	3	(41)	----	----	----	----	----
Suitability for Teaching	1	(42)	----	----	----	----	----
Suitability for Teaching	2	(43)	----	----	----	----	----
Suitability for Teaching	3	(44)	----	----	----	----	----
Importance of Theory	1	(45)	----	----	----	----	----
Importance of Theory	2	(46)	----	----	----	----	----
Importance of Theory	3	(47)	----	----	----	.124	----
Course as Preparation	1	(48)	----	----	----	----	----
Course as Preparation	2	(49)	.109	----	----	----	----
Course as Preparation	3	(50)	----	----	----	----	----
			(11)	(12)	(13)	(14)	(15)

Actual Expectation	3	(16)					
Low Expectation	1	(17)	.320				
Low Expectation	2	(18)	.482	.565			
Low Expectation	3	(19)	.559	.257	.576		
Aspiration-Expectation	1	(20)	.400	.630	.507	.292	
			(16)	(17)	(18)	(19)	(20)

Appendix E-1: (continued)

Aspiration-Expectation 2	(21)	.571	.515	.790	.545	.563
Aspiration-Expectation 3	(22)	.749	.445	.690	.497	.519
Univ. Grade-Point Average	(23)	.329	.399	.412	.190	.475
Qualifying Test -- Verbal	(24)	.237	.198	.316	----	.289
Qualifying Test -- Quantitative	(25)	.136	.125	.161	----	.205
Qualifying Test -- Total	(26)	.235	.210	.300	----	.326
Reason for Enrolling	(27)	----	----	----	.139	----
Pre-Course Attitude	(28)	----	----	----	----	----
Post-Course Attitude	(29)	----	----	----	----	----
Attitude Toward Instructor	(30)	----	----	----	----	.106
Learning Set	(31)	.115	----	.159	----	.157
A-H Test Anxiety Scale	(32)	-.289	-.263	-.351	-.208	-.373
Test Anxiety -- Pre-Test	(33)	----	----	----	----	----
Test Anxiety -- Mid-Term	(34)	----	-.150	-.202	-.121	-.216
Test Anxiety -- Final	(35)	-.148	-.147	-.235	-.146	-.227
Eysenck Extraversion Scale	(36)	----	----	----	----	----
Eysenck Neuroticism Scale	(37)	-.118	----	-.106	----	----
Eysenck Lie Scale	(38)	----	----	----	----	----
Commitment to Enter Prof. 1	(39)	----	----	----	----	----
Commitment to Enter Prof. 2	(40)	----	----	----	----	----
Commitment to Enter Prof. 3	(41)	----	----	----	----	----
Suitability for Teaching 1	(42)	----	----	----	----	----
Suitability for Teaching 2	(43)	----	----	----	----	----
Suitability for Teaching 3	(44)	----	----	----	----	.110
Importance of Theory 1	(45)	----	----	----	----	----
		(16)	(17)	(18)	(19)	(20)

Appendix E-1: (continued)

Importance of Theory	2	(46)	----	----	----	----	----
Importance of Theory	3	(47)	----	.108	----	----	.108
Course as Preparation	1	(48)	----	----	----	----	----
Course as Preparation	2	(49)	----	----	----	----	----
Course as Preparation	3	(50)	----	----	----	----	----
			(16)	(17)	(18)	(19)	(20)

Aspiration-Expectation	2	(21)					
Aspiration-Expectation	3	(22)	.757				
Univ. Grade-Point Average		(23)	.496	.464			
Qualifying Test -- Verbal		(24)	.326	.280	.395		
Qualifying Test -- Quantitative		(25)	.227	.205	.299	.288	
Qualifying Test -- Total		(26)	.352	.303	.451	.807	.714
Reason for Enrolling		(27)	----	----	----	----	----
Pre-Course Attitude		(28)	----	----	----	-.117	----
Post-Course Attitude		(29)	----	----	----	----	----
Attitude Toward Instructor		(30)	-.108	----	-.147	-.148	----
Learning Set		(31)	.205	.131	.232	.314	.163
A-H Test Anxiety Scale		(32)	-.395	-.339	-.374	-.420	-.245
Test Anxiety -- Pre-Test		(33)	----	----	----	----	----
Test Anxiety -- Mid-Term		(34)	-.186	-.173	-.115	-.198	-.154
Test Anxiety -- Final		(35)	-.235	-.227	-.173	-.162	-.123
			(21)	(22)	(23)	(24)	(25)

Appendix E-1: (continued)

Eysenck Extraversion Scale	(36)	----	----	-.197	-.204	-.115
Eysenck Neuroticism Scale	(37)	----	-.106	----	----	----
Eysenck Lie Scale	(38)	----	----	----	----	----
Commitment to Enter Prof. 1	(39)	----	----	----	----	.137
Commitment to Enter Prof. 2	(40)	----	----	.107	----	----
Commitment to Enter Prof. 3	(41)	----	----	----	----	----
Suitability for Teaching 1	(42)	----	----	----	.107	.161
Suitability for Teaching 2	(43)	----	----	.106	.117	.153
Suitability for Teaching 3	(44)	----	----	.129	----	.113
Importance of Theory 1	(45)	----	----	----	----	----
Importance of Theory 2	(46)	----	----	----	----	----
Importance of Theory 3	(47)	----	----	----	----	----
Course as Preparation 1	(48)	----	----	----	----	----
Course as Preparation 2	(49)	----	----	----	----	----
Course as Preparation 3	(50)	----	----	.106	.126	----
		(21)	(22)	(23)	(24)	(25)

Qualifying Test -- Total	(26)					
Reason for Enrolling	(27)	----				
Pre-Course Attitude	(28)	-.161	.366			
Post-Course Attitude	(29)	----	.226	.633		
Attitude Toward Instructor	(30)	-.116	.136	.182	.152	
		(26)	(27)	(28)	(29)	(30)

Appendix E-1: (continued)

Learning Set		(31)	.310	----	----	----	-.137
A-H Test Anxiety Scale		(32)	-.463	----	----	----	----
Test Anxiety -- Pre-Test		(33)	----	----	----	----	----
Test Anxiety -- Mid-Term		(34)	-.246	----	----	----	----
Test Anxiety -- Final		(35)	-.234	----	----	----	----
Eysenck Extraversion Scale		(36)	-.206	----	----	----	----
Eysenck Neuroticism Scale		(37)	----	-.169	----	----	----
Eysenck Lie Scale		(38)	----	----	----	----	----
Commitment to Enter Prof.	1	(39)	.150	.110	-.149	----	----
Commitment to Enter Prof.	2	(40)	.131	.120	-.141	----	----
Commitment to Enter Prof.	3	(41)	----	-.164	-.213	-.270	----
Suitability for Teaching	1	(42)	.170	----	-.203	----	----
Suitability for Teaching	2	(43)	.191	----	-.204	-.145	----
Suitability for Teaching	3	(44)	.138	.113	-.160	-.117	----
Importance of Theory	1	(45)	----	-.130	-.318	-.187	----
Importance of Theory	2	(46)	----	-.140	-.292	-.258	----
Importance of Theory	3	(47)	----	-.105	-.240	-.285	----
Course as Preparation	1	(48)	----	----	-.399	-.193	----
Course as Preparation	2	(49)	.109	-.123	-.314	-.300	-.200
Course as Preparation	3	(50)	.154	----	-.183	-.140	----
			(26)	(27)	(28)	(29)	(30)

Appendix E-1: (continued)

Learning Set		(31)					
A-H Test Anxiety Scale		(32)	-.210				
Test Anxiety -- Pre-Test		(33)	----	----			
Test Anxiety -- Mid-Term		(34)	-.165	.362	.123		
Test Anxiety -- Final		(35)	-.117	.348	.115	.557	
Eysenck Extraversion Scale		(36)	----	----	----	----	----
Eysenck Neuroticism Scale		(37)	----	.264	----	.227	.201
Eysenck Lie Scale		(38)	----	----	----	----	----
Commitment to Enter Prof.	1	(39)	----	-.104	----	----	----
Commitment to Enter Prof.	2	(40)	----	----	----	----	----
Commitment to Enter Prof.	3	(41)	----	----	----	----	----
Suitability for Teaching	1	(42)	----	----	----	----	----
Suitability for Teaching	2	(43)	----	----	----	----	----
Suitability for Teaching	3	(44)	----	----	----	----	----
Importance of Theory	1	(45)	----	----	----	----	----
Importance of Theory	2	(46)	----	----	----	----	----
Importance of Theory	3	(47)	----	----	----	----	-.105
Course as Preparation	1	(48)	.107	----	----	----	----
Course as Preparation	2	(49)	----	----	----	----	----
Course as Preparation	3	(50)	----	----	----	----	----
			(31)	(32)	(33)	(34)	(35)

Appendix E-1: (continued)

Eysenck Extraversion Scale		(36)					
Eysenck Neuroticism Scale		(37)	-.138				
Eysenck Lie Scale		(38)	-.149	-.165			
Commitment to Enter Prof.	1	(39)	----	----	-.128		
Commitment to Enter Prof.	2	(40)	-.105	----	-.116	.734	
Commitment to Enter Prof.	3	(41)	----	----	----	----	----
Suitability for Teaching	1	(42)	-.138	----	-.161	.713	.616
Suitability for Teaching	2	(43)	-.158	----	-.147	.624	.782
Suitability for Teaching	3	(44)	-.109	----	----	.707	.773
Importance of Theory	1	(45)	----	----	----	----	----
Importance of Theory	2	(46)	----	----	----	----	----
Importance of Theory	3	(47)	----	----	-.102	----	.141
Course as Preparation	1	(48)	----	----	----	.139	.158
Course as Preparation	2	(49)	----	----	----	----	.119
Course as Preparation	3	(50)	-.146	----	-.109	.609	.692
			(36)	(37)	(38)	(39)	(40)

Commitment to Enter Prof.	3	(41)					
Suitability for Teaching	1	(42)	----				
Suitability for Teaching	2	(43)	----	.711			
Suitability for Teaching	3	(44)	----	.595	.703		
Importance of Theory	1	(45)	.386	----	.127	----	
			(41)	(42)	(43)	(44)	(45)

Appendix E-1: (continued)

Importance of Theory	2	(46)	.462	----	----	----	.383
Importance of Theory	3	(47)	.423	.103	.197	.188	.159
Course as Preparation	1	(48)	.230	.185	.178	.149	.315
Course as Preparation	2	(49)	.343	----	.182	.109	.198
Course as Preparation	3	(50)	----	.609	.735	.802	.102
			(41)	(42)	(43)	(44)	(45)

Importance of Theory	2	(46)					
Importance of Theory	3	(47)	.329				
Course as Preparation	1	(48)	.344	.268			
Course as Preparation	2	(49)	.391	.497	.302		
Course as Preparation	3	(50)	----	.214	.161	.101	
			(46)	(47)	(48)	(49)	(50)

Appendix E-2: Intercorrelation Matrix for all Student Variables by Total Students by AM Section

Course Grade	(1)					
Mid-Term Grade	(2)	.663				
Final Exam Grade	(3)	.771	.514			
Instructor Grade	(4)	.628	.332	.278		
Course Project Rank	(5)	.406	.222	.178	.610	
Pre-Test	(6)	.350	.321	.324	.137	.121
Mid-Term Exam	(7)	.671	.914	.526	.351	.247
Final Exam -- Recall Items	(8)	.707	.472	.843	.288	.192
Final Exam -- Applied Items	(9)	.653	.429	.804	.269	.148
Final Exam -- Total	(10)	.786	.519	.950	.317	.192
High Expectation 1	(11)	.324	.229	.346	.174	.109
High Expectation 2	(12)	.579	.695	.441	.312	.238
High Expectation 3	(13)	.427	.404	.361	.259	.180
Actual Expectation 1	(14)	.315	.239	.315	.213	.169
Actual Expectation 2	(15)	.562	.678	.441	.306	.202
Actual Expectation 3	(16)	.458	.502	.370	.323	.226
Low Expectation 1	(17)	.229	.221	.195	.154	.117
Low Expectation 2	(18)	.487	.597	.362	.276	.186
Low Expectation 3	(19)	.355	.433	.289	.274	.147
Aspiration-Expectation 1	(20)	.298	.253	.300	.161	.113
Aspiration-Expectation 2	(21)	.607	.662	.469	.337	.210
Aspiration-Expectation 3	(22)	.576	.609	.397	.431	.305
Univ. Grade-Point Average	(23)	.530	.473	.482	.337	.206
Qualifying Test -- Verbal	(24)	.254	.203	.295	----	----
Qualifying Test -- Quantitative	(25)	.285	.243	.304	----	----
		(1)	(2)	(3)	(4)	(5)

Appendix E-2: (continued)

Qualifying Test -- Total	(26)	.318	.264	.366	----	----
Reason for Enrolling	(27)	----	----	----	----	----
Pre-Course Attitude	(28)	----	----	----	----	----
Post-Course Attitude	(29)	----	----	----	----	----
Attitude Toward Instructor	(30)	----	-.104	-.150	----	----
Learning Set	(31)	.213	.158	.278	----	----
A-H Test Anxiety Scale	(32)	-.256	-.246	-.287	----	----
Test Anxiety -- Pre-Test	(33)	----	----	----	----	----
Test Anxiety -- Mid-Term	(34)	-.151	----	-.168	----	----
Test Anxiety -- Final	(35)	-.164	-.148	-.159	----	----
Eysenck Extraversion Scale	(36)	-.101	-.117	-.114	----	----
Eysenck Neuroticism Scale	(37)	----	----	----	----	----
Eysenck Lie Scale	(38)	----	----	----	----	----
Commitment to Enter Prof. 1	(39)	----	----	----	----	----
Commitment to Enter Prof. 2	(40)	----	----	----	----	----
Commitment to Enter Prof. 3	(41)	----	----	----	----	----
Suitability for Teaching 1	(42)	----	----	.122	----	----
Suitability for Teaching 2	(43)	----	----	.151	----	----
Suitability for Teaching 3	(44)	----	----	----	----	----
Importance of Theory 1	(45)	----	----	----	----	----
Importance of Theory 2	(46)	----	-.107	-.121	----	----
Importance of Theory 3	(47)	----	----	----	----	----
Course as Preparation 1	(48)	----	----	----	----	----
Course as Preparation 2	(49)	----	----	----	----	----
Course as Preparation 3	(50)	----	----	----	----	----
		(1)	(2)	(3)	(4)	(5)

Appendix E-2: (continued)

Pre-Test	(6)					
Mid-Term Exam	(7)	.332				
Final Exam -- Recall Items	(8)	.264	.488			
Final Exam -- Applied Items	(9)	.269	.424	.510		
Final Exam -- Total	(10)	.304	.527	.884	.846	
High Expectation 1	(11)	.232	.233	.287	.360	.369
High Expectation 2	(12)	.378	.698	.397	.371	.442
High Expectation 3	(13)	.298	.427	.327	.343	.375
Actual Expectation 1	(14)	.214	.261	.279	.317	.338
Actual Expectation 2	(15)	.390	.671	.429	.351	.451
Actual Expectation 3	(16)	.361	.522	.367	.309	.382
Low Expectation 1	(17)	.173	.225	.221	.162	.221
Low Expectation 2	(18)	.336	.597	.381	.275	.377
Low Expectation 3	(19)	.268	.454	.315	.218	.298
Aspiration-Expectation 1	(20)	.217	.272	.256	.295	.311
Aspiration-Expectation 2	(21)	.380	.684	.441	.394	.481
Aspiration-Expectation 3	(22)	.381	.638	.405	.377	.441
Univ. Grade-Point Average	(23)	.252	.494	.457	.458	.527
Qualifying Test -- Verbal	(24)	.243	.258	.193	.369	.322
Qualifying Test -- Quantitative	(25)	.104	.267	.216	.340	.324
Qualifying Test -- Total	(26)	.242	.311	.249	.424	.387
Reason for Enrolling	(27)	----	----	----	----	----
Pre-Course Attitude	(28)	----	----	----	----	----
Post-Course Attitude	(29)	----	----	----	----	----
Attitude Toward Instructor	(30)	----	-.138	----	-.150	-.134
		(6)	(7)	(8)	(9)	(10)

Appendix E-2: (continued)

Learning Set	(31)	.182	.221	.223	.240	.264
A-H Test Anxiety Scale	(32)	-.189	-.281	-.239	-.283	-.298
Test Anxiety -- Pre-Test	(33)	----	----	----	----	----
Test Anxiety -- Mid-Term	(34)	-.118	----	-.171	-.134	-.183
Test Anxiety -- Final	(35)	-.124	-.151	-.141	-.111	-.150
Eysenck Extraversion Scale	(36)	-.154	-.135	----	----	-.117
Eysenck Neuroticism Scale	(37)	----	----	----	----	----
Eysenck Lie Scale	(38)	----	----	----	-.105	----
Commitment to Enter Prof. 1	(39)	----	----	----	.114	.111
Commitment to Enter Prof. 2	(40)	----	----	----	.108	.114
Commitment to Enter Prof. 3	(41)	----	----	----	----	----
Suitability for Teaching 1	(42)	----	----	.104	.159	.149
Suitability for Teaching 2	(43)	----	----	.127	.201	.187
Suitability for Teaching 3	(44)	.126	----	----	----	.100
Importance of Theory 1	(45)	----	----	----	----	----
Importance of Theory 2	(46)	----	----	----	----	----
Importance of Theory 3	(47)	----	----	----	----	----
Course as Preparation 1	(48)	----	----	----	----	----
Course as Preparation 2	(49)	----	-.100	----	----	----
Course as Preparation 3	(50)	----	----	----	----	----
		(6)	(7)	(8)	(9)	(10)

Appendix E-2: (continued)

High Expectation	1	(11)					
High Expectation	2	(12)	.547				
High Expectation	3	(13)	.586	.619			
Actual Expectation	1	(14)	.726	.490	.559		
Actual Expectation	2	(15)	.520	.832	.639	.574	
Actual Expectation	3	(16)	.489	.657	.724	.513	.699
Low Expectation	1	(17)	.421	.347	.327	.595	.450
Low Expectation	2	(18)	.441	.648	.484	.521	.765
Low Expectation	3	(19)	.280	.501	.418	.344	.534
Aspiration-Expectation	1	(20)	.632	.464	.507	.766	.532
Aspiration-Expectation	2	(21)	.515	.823	.624	.581	.845
Aspiration-Expectation	3	(22)	.536	.705	.655	.574	.747
Univ. Grade-Point Average		(23)	.463	.442	.379	.528	.481
Qualifying Test -- Verbal		(24)	.332	.333	.301	.344	.327
Qualifying Test -- Quantitative		(25)	.254	.235	.239	.213	.154
Qualifying Test -- Total		(26)	.385	.366	.356	.383	.326
Reason for Enrolling		(27)	----	----	----	----	----
Pre-Course Attitude		(28)	----	----	----	----	----
Post-Course Attitude		(29)	----	----	-.106	----	----
Attitude Toward Instructor		(30)	----	----	-.156	-.120	----
Learning Set		(31)	.239	.197	.286	.249	.203
A-H Test Anxiety Scale		(32)	-.378	-.384	-.407	-.416	-.428
Test Anxiety -- Pre-Test		(33)	----	----	----	----	----
Test Anxiety -- Mid-Term		(34)	-.157	-.100	-.174	-.200	-.220
Test Anxiety -- Final		(35)	-.170	-.156	-.219	-.196	-.212
			(11)	(12)	(13)	(14)	(15)

Appendix E-2: (continued)

Eysenck Extraversion Scale		(36)	----	----	----	----	----
Eysenck Neuroticism Scale		(37)	-.147	-.114	-.213	-.152	-.151
Eysenck Lie Scale		(38)	----	----	----	----	----
Commitment to Enter Prof.	1	(39)	----	----	----	----	----
Commitment to Enter Prof.	2	(40)	----	----	----	----	----
Commitment to Enter Prof.	3	(41)	----	----	----	----	----
Suitability for Teaching	1	(42)	----	----	----	----	----
Suitability for Teaching	2	(43)	----	----	----	----	----
Suitability for Teaching	3	(44)	----	----	----	----	----
Importance of Theory	1	(45)	----	----	----	----	----
Importance of Theory	2	(46)	----	----	-.111	----	----
Importance of Theory	3	(47)	.123	----	----	.170	----
Course as Preparation	1	(48)	.116	----	----	----	----
Course as Preparation	2	(49)	.122	----	----	.108	----
Course as Preparation	3	(50)	----	----	----	----	----
			(11)	(12)	(13)	(14)	(15)

Actual Expectation	3	(16)					
Low Expectation	1	(17)	.415				
Low Expectation	2	(18)	.636	.591			
Low Expectation	3	(19)	.663	.313	.573		
Aspiration-Expectation	1	(20)	.500	.623	.551	.379	
			(16)	(17)	(18)	(19)	(20)

Appendix E-2: (continued)

Aspiration-Expectation 2	(21)	.711	.508	.785	.550	.584
Aspiration-Expectation 3	(22)	.739	.447	.703	.566	.552
Univ. Grade-Point Average	(23)	.415	.378	.445	.301	.521
Qualifying Test -- Verbal	(24)	.286	.172	.329	.158	.295
Qualifying Test -- Quantitative	(25)	.218	.164	.132	----	.259
Qualifying Test -- Total	(26)	.317	.208	.293	.139	.356
Reason for Enrolling	(27)	----	----	----	.114	----
Pre-Course Attitude	(28)	-.118	----	----	----	----
Post-Course Attitude	(29)	----	----	----	----	----
Attitude Toward Instructor	(30)	----	----	----	----	-.139
Learning Set	(31)	.203	----	.170	.145	.190
A-H Test Anxiety Scale	(32)	-.345	-.281	-.391	-.316	-.444
Test Anxiety -- Pre-Test	(33)	----	----	----	----	----
Test Anxiety -- Mid-Term	(34)	-.124	-.175	-.200	----	-.261
Test Anxiety -- Final	(35)	-.211	-.154	-.237	-.147	-.250
Eysenck Extraversion Scale	(36)	----	----	----	----	----
Eysenck Neuroticism Scale	(37)	-.132	-.125	-.100	----	-.142
Eysenck Lie Scale	(38)	----	----	----	----	----
Commitment to Enter Prof. 1	(39)	----	----	----	.107	----
Commitment to Enter Prof. 2	(40)	----	----	----	----	----
Commitment to Enter Prof. 3	(41)	----	----	----	----	----
Suitability for Teaching 1	(42)	----	----	----	----	----
Suitability for Teaching 2	(43)	----	----	----	----	----
Suitability for Teaching 3	(44)	----	----	----	.128	.102
Importance of Theory 1	(45)	----	----	----	----	----
		(16)	(17)	(18)	(19)	(20)

Appendix E-2: (continued)

Importance of Theory	2	(46)	----	----	----	----	----
Importance of Theory	3	(47)	----	.109	----	----	.118
Course as Preparation	1	(48)	----	----	----	----	----
Course as Preparation	2	(49)	----	----	----	----	----
Course as Preparation	3	(50)	----	----	----	----	----
			(16)	(17)	(18)	(19)	(20)

Aspiration-Expectation	2	(21)					
Aspiration-Expectation	3	(22)	.744				
Univ. Grade-Point Average		(23)	.516	.501			
Qualifying Test -- Verbal		(24)	.319	.310	.374		
Qualifying Test -- Quantitative		(25)	.212	.180	.279	.311	
Qualifying Test -- Total		(26)	.341	.305	.440	.817	.714
Reason for Enrolling		(27)	----	----	----	-.105	----
Pre-Course Attitude		(28)	----	----	----	----	----
Post-Course Attitude		(29)	----	----	----	----	----
Attitude Toward Instructor		(30)	----	----	-.169	----	----
Learning Set		(31)	.209	.192	.249	.333	----
A-H Test Anxiety Scale		(32)	-.421	-.360	-.391	-.383	-.209
Test Anxiety -- Pre-Test		(33)	----	----	----	----	----
Test Anxiety -- Mid-Term		(34)	-.179	-.109	----	-.185	-.160
Test Anxiety -- Final		(35)	-.230	-.202	-.159	-.156	-.138
			(21)	(22)	(23)	(24)	(25)

Appendix E-2: (continued)

Eysenck Extraversion Scale	(36)	----	----	-.183	-.182	-.114
Eysenck Neuroticism Scale	(37)	-.120	----	----	----	----
Eysenck Lie Scale	(38)	----	----	----	-.122	----
Commitment to Enter Prof. 1	(39)	----	----	.116	----	.148
Commitment to Enter Prof. 2	(40)	----	----	----	----	.110
Commitment to Enter Prof. 3	(41)	----	----	----	----	----
Suitability for Teaching 1	(42)	----	----	----	----	.146
Suitability for Teaching 2	(43)	----	----	.171	.131	.142
Suitability for Teaching 3	(44)	----	----	.127	----	.105
Importance of Theory 1	(45)	----	----	----	----	----
Importance of Theory 2	(46)	----	-.112	----	----	----
Importance of Theory 3	(47)	----	----	----	----	----
Course as Preparation 1	(48)	----	----	----	----	----
Course as Preparation 2	(49)	----	-.102	----	----	----
Course as Preparation 3	(50)	----	----	.118	----	----
		(21)	(22)	(23)	(24)	(25)

Qualifying Test -- Total	(26)					
Reason for Enrolling	(27)	----				
Pre-Course Attitude	(28)	-.138	.329			
Post-Course Attitude	(29)	----	.176	.592		
Attitude Toward Instructor	(30)	----	----	.160	.149	
		(26)	(27)	(28)	(29)	(30)

Appendix E-2: (continued)

Learning Set		(31)	.292	----	----	.140	----
A-H Test Anxiety Scale		(32)	-.432	-.104	----	----	----
Test Anxiety -- Pre-Test		(33)	----	----	----	----	----
Test Anxiety -- Mid-Term		(34)	-.246	----	----	.101	----
Test Anxiety -- Final		(35)	-.237	----	----	----	----
Eysenck Extraversion Scale		(36)	-.190	----	----	----	----
Eysenck Neuroticism Scale		(37)	-.119	-.178	----	----	----
Eysenck Lie Scale		(38)	----	----	----	----	----
Commitment to Enter Prof.	1	(39)	.130	.114	-.122	----	----
Commitment to Enter Prof.	2	(40)	----	.129	-.104	----	----
Commitment to Enter Prof.	3	(41)	----	-.178	-.202	-.228	----
Suitability for Teaching	1	(42)	.117	----	-.162	----	----
Suitability for Teaching	2	(43)	.176	----	-.224	-.171	----
Suitability for Teaching	3	(44)	.102	.152	-.121	-.142	----
Importance of Theory	1	(45)	----	-.231	-.370	-.192	-.128
Importance of Theory	2	(46)	----	-.127	-.270	-.221	----
Importance of Theory	3	(47)	----	----	-.260	-.252	-.181
Course as Preparation	1	(48)	----	-.116	-.427	-.152	----
Course as Preparation	2	(49)	----	----	-.280	-.214	-.184
Course as Preparation	3	(50)	.110	----	-.138	-.190	----
			(26)	(27)	(28)	(29)	(30)

Appendix E-2: (continued)

Learning Set		(31)					
A-H Test Anxiety Scale		(32)	-.210				
Test Anxiety -- Pre-Test		(33)	----	----			
Test Anxiety -- Mid-Term		(34)	-.154	.358	----		
Test Anxiety -- Final		(35)	-.117	.369	----	.535	
Eysenck Extraversion Scale		(36)	----	----	----	----	----
Eysenck Neuroticism Scale		(37)	-.101	.266	----	.257	.212
Eysenck Lie Scale		(38)	-.136	----	----	----	.110
Commitment to Enter Prof.	1	(39)	----	-.106	----	----	----
Commitment to Enter Prof.	2	(40)	----	----	----	----	----
Commitment to Enter Prof.	3	(41)	----	----	----	----	----
Suitability for Teaching	1	(42)	----	----	----	----	----
Suitability for Teaching	2	(43)	----	----	----	----	----
Suitability for Teaching	3	(44)	----	----	----	----	----
Importance of Theory	1	(45)	----	----	----	----	----
Importance of Theory	2	(46)	----	----	----	----	----
Importance of Theory	3	(47)	----	----	----	----	----
Course as Preparation	1	(48)	.142	----	----	----	----
Course as Preparation	2	(49)	----	----	.108	----	----
Course as Preparation	3	(50)	----	----	----	----	----
			(31)	(32)	(33)	(34)	(35)

Appendix E-2: (continued)

Eysenck Extraversion Scale		(36)						
Eysenck Neuroticism Scale		(37)	-.183					
Eysenck Lie Scale		(38)	-.103	-.135				
Commitment to Enter Prof.	1	(39)	----	----	-.131			
Commitment to Enter Prof.	2	(40)	-.105	----	-.108	.747		
Commitment to Enter Prof.	3	(41)	----	----	----	----	----	
Suitability for Teaching	1	(42)	-.148	----	-.166	.695	.602	
Suitability for Teaching	2	(43)	-.164	----	-.123	.647	.784	
Suitability for Teaching	3	(44)	-.107	----	----	.722	.758	
Importance of Theory	1	(45)	----	----	----	----	----	
Importance of Theory	2	(46)	----	----	----	----	----	
Importance of Theory	3	(47)	----	----	----	.111	.182	
Course as Preparation	1	(48)	----	----	----	.132	.155	
Course as Preparation	2	(49)	----	----	----	----	.119	
Course as Preparation	3	(50)	-.140	----	----	.630	.683	
			(36)	(37)	(38)	(39)	(40)	

Commitment to Enter Prof.	3	(41)						
Suitability for Teaching	1	(42)	----					
Suitability for Teaching	2	(43)	----	.707				
Suitability for Teaching	3	(44)	----	.583	.695			
Importance of Theory	1	(45)	.408	----	----	----		
			(41)	(42)	(43)	(44)	(45)	

Appendix E-2: (continued)

Importance of Theory	2	(46)	.470	----	----	----	.386
Importance of Theory	3	(47)	.421	----	.240	.196	.164
Course as Preparation	1	(48)	.252	.198	.191	.129	.304
Course as Preparation	2	(49)	.326	----	.177	----	.173
Course as Preparation	3	(50)	----	.593	.709	.811	----
			(41)	(42)	(43)	(44)	(45)

Importance of Theory	2	(46)					
Importance of Theory	3	(47)	.373				
Course as Preparation	1	(48)	.324	.287			
Course as Preparation	2	(49)	.383	.470	.308		
Course as Preparation	3	(50)	----	.190	.152	----	
			(46)	(47)	(48)	(49)	(50)

Appendix E-3: Intercorrelation Matrix for all Student Variables by Total Students by PM Section

Course Grade		(1)					
Mid-Term Grade		(2)	.697				
Final Exam Grade		(3)	.778	.522			
Instructor Grade		(4)	.668	.427	.304		
Course Project Rank		(5)	.385	.219	.186	.545	
Pre-Test		(6)	.263	.177	.276	.108	.107
Mid-Term Exam		(7)	.687	.914	.518	.412	.288
Final Exam -- Recall Items		(8)	.753	.501	.818	.331	.175
Final Exam -- Applied Items		(9)	.552	.368	.721	.204	.117
Final Exam -- Total		(10)	.737	.513	.858	.307	.160
High Expectation	1	(11)	.229	.203	.231	.152	.146
High Expectation	2	(12)	.604	.711	.487	.381	.253
High Expectation	3	(13)	.494	.542	.396	.332	.280
Actual Expectation	1	(14)	.244	.204	.247	.177	.168
Actual Expectation	2	(15)	.606	.736	.473	.402	.264
Actual Expectation	3	(16)	.353	.335	.318	.240	----
Low Expectation	1	(17)	.271	.220	.236	.207	.179
Low Expectation	2	(18)	.523	.627	.406	.356	.245
Low Expectation	3	(19)	.226	.252	.117	.188	----
Aspiration-Expectation	1	(20)	.243	.249	.247	.194	.185
Aspiration-Expectation	2	(21)	.637	.722	.511	.436	.288
Aspiration-Expectation	3	(22)	.637	.692	.444	.545	.268
Univ. Grade-Point Average		(23)	.475	.430	.407	.382	.223
Qualifying Test -- Verbal		(24)	.341	.325	.335	.198	----
Qualifying Test -- Quantitative		(25)	.288	.295	.340	.154	----
			(1)	(2)	(3)	(4)	(5)

Appendix E-3: (continued)

Qualifying Test -- Total		(26)	.387	.380	.413	.215	----
Reason for Enrolling		(27)	----	----	----	----	.127
Pre-Course Attitude		(28)	----	----	----	----	.102
Post-Course Attitude		(29)	----	----	----	.135	.158
Attitude Toward Instructor		(30)	-.121	----	-.115	----	.115
Learning Set		(31)	.247	.243	.249	.112	.127
A-H Test Anxiety Scale		(32)	-.220	-.295	-.235	-.145	-.153
Test Anxiety -- Pre-Test		(33)	----	----	----	----	----
Test Anxiety -- Mid-Term		(34)	-.154	-.148	-.148	-.118	----
Test Anxiety -- Final		(35)	-.155	-.227	-.153	----	----
Eysenck Extraversion Scale		(36)	----	----	----	----	----
Eysenck Neuroticism Scale		(37)	----	----	----	----	----
Eysenck Lie Scale		(38)	----	----	----	----	----
Commitment to Enter Prof.	1	(39)	----	.106	----	----	----
Commitment to Enter Prof.	2	(40)	.123	.181	.141	----	----
Commitment to Enter Prof.	3	(41)	-.105	----	----	-.122	-.121
Suitability for Teaching	1	(42)	.148	.165	.169	----	----
Suitability for Teaching	2	(43)	----	.150	.132	----	----
Suitability for Teaching	3	(44)	----	.134	.109	----	----
Importance of Theory	1	(45)	----	----	----	----	----
Importance of Theory	2	(46)	-.109	----	----	-.143	-.122
Importance of Theory	3	(47)	----	----	----	----	----
Course as Preparation	1	(48)	----	----	----	----	----
Course as Preparation	2	(49)	----	----	----	----	----
Course as Preparation	3	(50)	----	.130	.121	----	----
			(1)	(2)	(3)	(4)	(5)

Appendix E-3: (continued)

Pre-Test		(6)					
Mid-Term Exam		(7)	.217				
Final Exam -- Recall Items		(8)	.247	.509			
Final Exam -- Applied Items		(9)	.208	.364	.465		
Final Exam -- Total		(10)	.241	.523	.818	.645	
High Expectation	1	(11)	.141	.140	.204	.147	.212
High Expectation	2	(12)	.247	.657	.455	.368	.502
High Expectation	3	(13)	.328	.538	.441	.178	.402
Actual Expectation	1	(14)	.157	.157	.218	.161	.227
Actual Expectation	2	(15)	.213	.689	.426	.342	.451
Actual Expectation	3	(16)	.105	.319	.255	.161	.300
Low Expectation	1	(17)	----	.160	.221	.167	.217
Low Expectation	2	(18)	.212	.626	.368	.265	.385
Low Expectation	3	(19)	----	.206	.140	----	.117
Aspiration-Expectation	1	(20)	.145	.162	.198	.171	.197
Aspiration-Expectation	2	(21)	.200	.702	.438	.351	.482
Aspiration-Expectation	3	(22)	.237	.669	.426	.221	.441
Univ. Grade-Point Average		(23)	.143	.392	.331	.274	.429
Qualifying Test -- Verbal		(24)	.350	.354	.270	.334	.377
Qualifying Test -- Quantitative		(25)	.162	.221	.262	.297	.344
Qualifying Test -- Total		(26)	.320	.332	.341	.385	.446
Reason for Enrolling		(27)	-.101	----	----	----	----
Pre-Course Attitude		(28)	----	----	----	----	----
Post-Course Attitude		(29)	.123	.108	----	----	----
Attitude Toward Instructor		(30)	----	----	----	----	-.104
			(6)	(7)	(8)	(9)	(10)

Appendix E-3: (continued)

Learning Set		(31)	.162	.229	.262	.183	.294
A-H Test Anxiety Scale		(32)	-.169	-.267	-.212	-.210	-.258
Test Anxiety -- Pre-Test		(33)	----	----	----	----	----
Test Anxiety -- Mid-Term		(34)	-.179	-.134	-.173	----	-.178
Test Anxiety -- Final		(35)	----	-.191	-.177	----	-.178
Eysenck Extraversion Scale		(36)	----	----	-.116	-.137	-.115
Eysenck Neuroticism Scale		(37)	----	----	----	----	----
Eysenck Lie Scale		(38)	----	----	----	----	----
Commitment to Enter Prof.	1	(39)	.139	----	.115	----	----
Commitment to Enter Prof.	2	(40)	.124	.161	.134	----	.121
Commitment to Enter Prof.	3	(41)	-.102	----	----	----	----
Suitability for Teaching	1	(42)	.164	.133	.161	.156	.121
Suitability for Teaching	2	(43)	----	.155	.134	.127	.110
Suitability for Teaching	3	(44)	.239	.101	.138	.105	.128
Importance of Theory	1	(45)	-.107	----	----	----	----
Importance of Theory	2	(46)	-.187	-.107	-.103	----	----
Importance of Theory	3	(47)	----	-.103	----	----	----
Course as Preparation	1	(48)	----	----	----	----	----
Course as Preparation	2	(49)	----	----	----	----	----
Course as Preparation	3	(50)	.257	.132	.125	.140	.131
			(6)	(7)	(8)	(9)	(10)

Appendix E-3: (continued)

High Expectation	1	(11)					
High Expectation	2	(12)	.493				
High Expectation	3	(13)	.427	.674			
Actual Expectation	1	(14)	.695	.479	.428		
Actual Expectation	2	(15)	.446	.820	.634	.564	
Actual Expectation	3	(16)	.298	.403	.720	.296	.442
Low Expectation	1	(17)	.377	.341	.357	.597	.488
Low Expectation	2	(18)	.287	.633	.504	.421	.769
Low Expectation	3	(19)	----	.434	.156	.172	.571
Aspiration-Expectation	1	(20)	.599	.395	.406	.802	.532
Aspiration-Expectation	2	(21)	.423	.795	.624	.551	.866
Aspiration-Expectation	3	(22)	.343	.704	.686	.428	.774
Univ. Grade-Point Average		(23)	.344	.345	.348	.395	.398
Qualifying Test -- Verbal		(24)	.363	.338	.182	.336	.350
Qualifying Test -- Quantitative		(25)	.251	.364	.312	.110	.273
Qualifying Test -- Total		(26)	.420	.435	.322	.308	.396
Reason for Enrolling		(27)	.104	.148	.102	----	.101
Pre-Course Attitude		(28)	-.108	----	----	----	----
Post-Course Attitude		(29)	-.104	----	----	----	----
Attitude Toward Instructor		(30)	----	----	----	----	-.118
Learning Set		(31)	.163	.227	.116	----	.190
A-H Test Anxiety Scale		(32)	-.331	-.329	-.242	-.252	-.350
Test Anxiety -- Pre-Test		(33)	----	----	----	----	----
Test Anxiety -- Mid-Term		(34)	-.192	-.176	-.159	-.143	-.197
Test Anxiety -- Final		(35)	-.155	-.214	-.168	-.157	-.244
			(11)	(12)	(13)	(14)	(15)

Appendix E-3: (continued)

Eysenck Extraversion Scale		(36)	-.133	----	----	-.176	----
Eysenck Neuroticism Scale		(37)	-.103	----	-.102	----	-.121
Eysenck Lie Scale		(38)	----	-.116	----	----	----
Commitment to Enter Prof.	1	(39)	----	.121	----	----	----
Commitment to Enter Prof.	2	(40)	----	.165	----	----	.117
Commitment to Enter Prof.	3	(41)	----	-.126	-.102	----	-.179
Suitability for Teaching	1	(42)	----	.147	----	----	----
Suitability for Teaching	2	(43)	----	.140	----	----	----
Suitability for Teaching	3	(44)	.113	.141	----	----	----
Importance of Theory	1	(45)	----	----	----	----	----
Importance of Theory	2	(46)	----	----	----	----	----
Importance of Theory	3	(47)	----	----	----	----	-.110
Course as Preparation	1	(48)	----	----	.143	----	----
Course as Preparation	2	(49)	----	----	----	----	----
Course as Preparation	3	(50)	----	.114	----	----	----
			(11)	(12)	(13)	(14)	(15)

Actual Expectation	3	(16)					
Low Expectation	1	(17)	.234				
Low Expectation	2	(18)	.331	.526			
Low Expectation	3	(19)	.430	.192	.605		
Aspiration-Expectation	1	(20)	.311	.637	.450	.179	
			(16)	(17)	(18)	(19)	(20)

Appendix E-3: (continued)

Aspiration-Expectation	2	(21)	.449	.527	.798	.553	.533
Aspiration-Expectation	3	(22)	.766	.440	.671	.418	.455
Univ. Grade-Point Average		(23)	.254	.425	.366	----	.403
Qualifying Test -- Verbal		(24)	.206	.243	.302	-.149	.274
Qualifying Test -- Quantitative		(25)	----	----	.207	-.105	.114
Qualifying Test -- Total		(26)	.174	.213	.314	-.170	.273
Reason for Enrolling		(27)	----	----	----	.170	----
Pre-Course Attitude		(28)	----	----	----	.116	----
Post-Course Attitude		(29)	----	-.109	.113	.149	----
Attitude Toward Instructor		(30)	----	-.118	-.141	----	----
Learning Set		(31)	----	----	.140	-.102	.109
A-H Test Anxiety Scale		(32)	-.242	-.230	-.295	----	-.261
Test Anxiety -- Pre-Test		(33)	----	----	----	----	----
Test Anxiety -- Mid-Term		(34)	----	-.106	-.207	-.158	-.137
Test Anxiety -- Final		(35)	----	-.133	-.232	-.149	-.186
Eysenck Extraversion Scale		(36)	----	-.149	----	----	-.153
Eysenck Neuroticism Scale		(37)	-.108	----	-.117	----	----
Eysenck Lie Scale		(38)	----	----	----	----	----
Commitment to Enter Prof.	1	(39)	----	----	----	-.121	----
Commitment to Enter Prof.	2	(40)	----	----	----	----	----
Commitment to Enter Prof.	3	(41)	----	----	-.128	----	----
Suitability for Teaching	1	(42)	----	----	----	-.101	----
Suitability for Teaching	2	(43)	----	----	----	-.104	----
Suitability for Teaching	3	(44)	----	.110	----	----	.119
Importance of Theory	1	(45)	----	----	----	----	----
			(16)	(17)	(18)	(19)	(20)

Appendix E-3: (continued)

Importance of Theory	2	(46)	----	----	----	----	----
Importance of Theory	3	(47)	----	----	----	-.123	----
Course as Preparation	1	(48)	----	----	----	----	----
Course as Preparation	2	(49)	----	----	----	----	----
Course as Preparation	3	(50)	----	----	----	----	----
			(16)	(17)	(18)	(19)	(20)

Aspiration-Expectation	2	(21)					
Aspiration-Expectation	3	(22)	.779				
Univ. Grade-Point Average		(23)	.468	.412			
Qualifying Test -- Verbal		(24)	.339	.236	.423		
Qualifying Test -- Quantitative		(25)	.253	.239	.324	.253	
Qualifying Test -- Total		(26)	.371	.299	.465	.792	.714
Reason for Enrolling		(27)	----	----	----	-.102	----
Pre-Course Attitude		(28)	.111	----	----	-.158	----
Post-Course Attitude		(29)	.103	----	----	----	-.135
Attitude Toward Instructor		(30)	-.145	----	-.128	-.236	----
Learning Set		(31)	.197	----	.208	.287	.261
A-H Test Anxiety Scale		(32)	-.355	-.296	-.345	-.476	-.297
Test Anxiety -- Pre-Test		(33)	----	----	-.100	----	----
Test Anxiety -- Mid-Term		(34)	-.197	-.264	-.134	-.216	-.144
Test Anxiety -- Final		(35)	-.227	-.261	-.191	-.171	-.100
			(21)	(22)	(23)	(24)	(25)

Appendix E-3: (continued)

Eysenck Extraversion Scale		(36)	----	-.132	-.208	-.231	-.111
Eysenck Neuroticism Scale		(37)	----	-.103	----	----	----
Eysenck Lie Scale		(38)	----	----	-.101	----	----
Commitment to Enter Prof.	1	(39)	----	----	----	.123	.113
Commitment to Enter Prof.	2	(40)	----	----	.121	----	.138
Commitment to Enter Prof.	3	(41)	-.189	-.165	----	----	-.104
Suitability for Teaching	1	(42)	----	----	----	.163	.175
Suitability for Teaching	2	(43)	----	----	----	----	.172
Suitability for Teaching	3	(44)	----	----	.127	.144	.127
Importance of Theory	1	(45)	----	----	----	----	----
Importance of Theory	2	(46)	-.137	----	----	----	----
Importance of Theory	3	(47)	----	----	----	----	----
Course as Preparation	1	(48)	----	----	----	.126	.108
Course as Preparation	2	(49)	----	----	----	.148	.117
Course as Preparation	3	(50)	----	----	----	.172	.110
			(21)	(22)	(23)	(24)	(25)

Qualifying Test -- Total		(26)					
Reason for Enrolling		(27)	----				
Pre-Course Attitude		(28)	-.188	.413			
Post-Course Attitude		(29)	-.109	.310	.684		
Attitude Toward Instructor		(30)	-.210	.204	.229	.163	
			(26)	(27)	(28)	(29)	(30)

Appendix E-3: (continued)

Learning Set	(31)	.338	----	----	----	-.196
A-H Test Anxiety Scale	(32)	-.511	----	----	----	.151
Test Anxiety -- Pre-Test	(33)	----	----	----	----	----
Test Anxiety -- Mid-Term	(34)	-.245	----	----	----	----
Test Anxiety -- Final	(35)	-.227	----	----	----	----
Eysenck Extraversion Scale	(36)	-.225	----	----	----	----
Eysenck Neuroticism Scale	(37)	----	-.156	-.112	----	----
Eysenck Lie Scale	(38)	----	----	----	----	----
Commitment to Enter Prof. 1	(39)	.175	.103	-.179	----	----
Commitment to Enter Prof. 2	(40)	.196	.109	-.192	----	----
Commitment to Enter Prof. 3	(41)	----	-.145	-.230	-.337	----
Suitability for Teaching 1	(42)	.238	----	-.246	----	----
Suitability for Teaching 2	(43)	.215	----	-.177	----	.105
Suitability for Teaching 3	(44)	.194	----	-.212	----	----
Importance of Theory 1	(45)	----	----	-.248	-.175	----
Importance of Theory 2	(46)	----	-.158	-.331	-.378	----
Importance of Theory 3	(47)	----	-.159	-.213	-.324	-.253
Course as Preparation 1	(48)	.152	----	-.365	-.277	----
Course as Preparation 2	(49)	.209	-.196	-.367	-.515	-.226
Course as Preparation 3	(50)	.219	----	-.242	----	----
		(26)	(27)	(28)	(29)	(30)

Appendix E-3: (continued)

Learning Set		(31)					
A-H Test Anxiety Scale		(32)	-.212				
Test Anxiety -- Pre-Test		(33)	----	.105			
Test Anxiety -- Mid-Term		(34)	-.181	.364	.224		
Test Anxiety -- Final		(35)	-.117	.314	.193	.589	
Eysenck Extraversion Scale		(36)	----	.111	----	----	.112
Eysenck Neuroticism Scale		(37)	----	.261	.108	.184	.184
Eysenck Lie Scale		(38)	----	----	----	----	----
Commitment to Enter Prof.	1	(39)	----	----	----	----	----
Commitment to Enter Prof.	2	(40)	----	-.108	----	-.117	----
Commitment to Enter Prof.	3	(41)	----	----	----	----	----
Suitability for Teaching	1	(42)	----	----	----	-.114	----
Suitability for Teaching	2	(43)	----	----	----	-.114	-.104
Suitability for Teaching	3	(44)	----	----	----	-.100	----
Importance of Theory	1	(45)	----	----	----	----	----
Importance of Theory	2	(46)	----	.114	----	----	----
Importance of Theory	3	(47)	----	----	----	-.153	-.156
Course as Preparation	1	(48)	----	----	----	----	----
Course as Preparation	2	(49)	----	----	----	-.141	-.202
Course as Preparation	3	(50)	----	-.119	----	----	----
			(31)	(32)	(33)	(34)	(35)

Appendix E-3: (continued)

Eysenck Extraversion Scale		(36)					
Eysenck Neuroticism Scale		(37)	----				
Eysenck Lie Scale		(38)	-.218	-.210			
Commitment to Enter Prof.	1	(39)	----	----	-.122		
Commitment to Enter Prof.	2	(40)	-.114	----	-.129	.720	
Commitment to Enter Prof.	3	(41)	----	----	-.125	----	.114
Suitability for Teaching	1	(42)	-.111	----	-.150	.736	.637
Suitability for Teaching	2	(43)	-.151	----	-.179	.592	.780
Suitability for Teaching	3	(44)	-.114	----	----	.685	.796
Importance of Theory	1	(45)	----	.100	-.106	.144	.136
Importance of Theory	2	(46)	----	----	----	----	----
Importance of Theory	3	(47)	----	----	-.146	----	----
Course as Preparation	1	(48)	-.110	----	----	.148	.163
Course as Preparation	2	(49)	----	----	----	----	.120
Course as Preparation	3	(50)	-.149	.105	-.138	.575	.712
			(36)	(37)	(38)	(39)	(40)

Commitment to Enter Prof.	3	(41)					
Suitability for Teaching	1	(42)	----				
Suitability for Teaching	2	(43)	.157	.716			
Suitability for Teaching	3	(44)	----	.612	.713		
Importance of Theory	1	(45)	.357	.175	.204	.160	
			(41)	(42)	(43)	(44)	(45)

Appendix E-3: (continued)

Importance of Theory	2	(46)	.451	----	----	----	.380
Importance of Theory	3	(47)	.423	.108	.142	.175	.147
Course as Preparation	1	(48)	.197	.168	.160	.181	.331
Course as Preparation	2	(49)	.366	.120	.189	.198	.232
Course as Preparation	3	(50)	.201	.627	.776	.790	.202
			(41)	(42)	(43)	(44)	(45)

Importance of Theory	2	(46)					
Importance of Theory	3	(47)	.273				
Course as Preparation	1	(48)	.377	.241			
Course as Preparation	2	(49)	.403	.535	.292		
Course as Preparation	3	(50)	.118	.238	.173	.198	
			(46)	(47)	(48)	(49)	(50)

APPENDIX F

Correlations of all Student Variables with Instructor Grade by Discussion Section

Appendix F-1: Correlations of all Student Variables with Instructor Grade for Instructor 1

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Course Grade	(1)	.680	.748	.628	.668	.644
Mid-Term Grade	(2)	.581	.442	.332	.427	.371
Final Exam Grade	(3)	.362	.362	.278	.304	.289
Course Project Rank	(5)	.609	.483	.610	.545	.585
Pre-Test	(6)	.428	----	.137	.108	.124
Mid-Term Exam	(7)	.605	.443	.351	.412	.374
Final Exam -- Recall Items	(8)	.331	.237	.288	.331	.305
Final Exam -- Applied Items	(9)	.240	.267	.268	.204	.239
Final Exam -- Total	(10)	.342	.302	.317	.307	.313
High Expectation 1	(11)	----	----	.174	.152	.165
High Expectation 2	(12)	.512	.227	.312	.382	.339
High Expectation 3	(13)	.300	----	.259	.333	.285
Actual Expectation 1	(14)	----	----	.213	.177	.199
Actual Expectation 2	(15)	.337	.243	.306	.402	.342
Actual Expectation 3	(16)	.479	----	.323	.240	.279
Low Expectation 1	(17)	----	.205	.154	.207	.174
Low Expectation 2	(18)	.547	.459	.276	.356	.308
Low Expectation 3	(19)	.301	----	.274	.188	.235
Aspiration-Expectation 1	(20)	.219	.228	.161	.194	.174
Aspiration-Expectation 2	(21)	.499	.576	.337	.436	.308
Aspiration-Expectation 3	(22)	.643	----	.431	.545	.235
Univ. Grade-Point Average	(23)	.523	.359	.355	.337	.382
Qualifying Test -- Verbal	(24)	----	----	.101	.039	.198
Qualifying Test -- Quantitative	(25)	.218	----	.117	.092	.154

Appendix F-1: (continued)

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Qualifying Test -- Total	(26)	----	----	.063	.154	.122
Reason for Enrolling	(27)	----	----	.051	.069	.058
Pre-Course Attitude	(28)	.359	----	.000	.021	.009
Post-Course Attitude	(29)	-.269	.241	-.078	.135	-.003
Attitude Toward Instructor	(30)	----	----	.082	-.038	.032
Learning Set	(31)	----	----	.045	.112	.072
A-H Test Anxiety Scale	(32)	----	.296	-.067	-.145	-.098
Test Anxiety -- Pre-Test	(33)	.294	----	.004	-.025	-.014
Test Anxiety -- Mid-Term	(34)	----	----	-.055	-.118	-.080
Test Anxiety -- Final	(35)	-.292	----	-.090	-.061	-.078
Eysenck Extraversion Scale	(36)	-.428	----	-.022	-.049	-.031
Eysenck Neuroticism Scale	(37)	----	----	.022	-.097	-.026
Eysenck Lie Scale	(38)	.222	-.349	-.004	-.081	-.035
Commitment to Enter Prof. 1	(39)	----	.416	-.009	.022	.004
Commitment to Enter Prof. 2	(40)	-.254	----	-.047	.042	-.011
Commitment to Enter Prof. 3	(41)	----	----	-.001	-.122	-.052
Suitability for Teaching 1	(42)	----	.618	-.010	.094	.034
Suitability for Teaching 2	(43)	----	.265	-.028	-.043	-.009
Suitability for Teaching 3	(44)	----	----	-.062	-.145	-.057
Importance of Theory 1	(45)	-.282	----	.015	-.035	-.005
Importance of Theory 2	(46)	-.421	----	-.053	-.143	-.089
Importance of Theory 3	(47)	----	----	-.072	-.079	-.074
Course as Preparation 1	(48)	----	----	.041	.027	.036
Course as Preparation 2	(49)	----	----	.028	-.043	-.001
Course as Preparation 3	(50)	----	----	-.086	-.066	-.077

Appendix F-2: Correlations of all Student Variables with Instructor Grade for Instructor 2

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Course Grade	(1)	.702	.830	.628	.668	.644
Mid-Term Grade	(2)	.466	.637	.332	.427	.371
Final Exam Grade	(3)	.471	.559	.278	.304	.289
Course Project Rank	(5)	.756	.870	.610	.545	.585
Pre-Test	(6)	----	.562	.137	.108	.124
Mid-Term Exam	(7)	.469	.733	.351	.412	.374
Final Exam -- Recall Items	(8)	.551	.714	.288	.331	.305
Final Exam -- Applied Items	(9)	.456	----	.268	.204	.239
Final Exam -- Total	(10)	.559	.678	.317	.307	.313
High Expectation 1	(11)	.300	.509	.174	.152	.165
High Expectation 2	(12)	.491	.411	.312	.382	.339
High Expectation 3	(13)	----	.648	.259	.333	.285
Actual Expectation 1	(14)	----	.526	.213	.177	.199
Actual Expectation 2	(15)	.409	.316	.306	.402	.342
Actual Expectation 3	(16)	.289	.563	.323	.240	.279
Low Expectation 1	(17)	.387	.269	.154	.207	.174
Low Expectation 2	(18)	.420	.287	.276	.356	.308
Low Expectation 3	(19)	----	----	.274	.188	.235
Aspiration-Expectation 1	(20)	.379	.451	.161	.194	.174
Aspiration-Expectation 2	(21)	.472	.597	.337	.436	.308
Aspiration-Expectation 3	(22)	----	.563	.431	.545	.235
Univ. Grade-Point Average	(23)	.442	.653	.355	.337	.382
Qualifying Test -- Verbal	(24)	----	.664	.101	.039	.198
Qualifying Test -- Quantitative	(25)	----	----	.117	.092	.154

Appendix F-2: (continued)

			Instructor AM	Instructor PM	Total AM	Total PM	Total
Qualifying Test -- Total		(26)	----	.569	.063	.154	.122
Reason for Enrolling		(27)	----	----	.051	.069	.058
Pre-Course Attitude		(28)	----	-.258	.000	.021	.009
Post-Course Attitude		(29)	----	-.282	-.078	.135	-.003
Attitude Toward Instructor		(30)	.214	.323	.082	-.038	.032
Learning Set		(31)	----	-.328	.045	.112	.072
A-H Test Anxiety Scale		(32)	----	-.425	-.067	-.145	-.098
Test Anxiety -- Pre-Test		(33)	----	----	.004	-.025	-.014
Test Anxiety -- Mid-Term		(34)	.206	-.549	-.055	-.118	-.080
Test Anxiety -- Final		(35)	----	-.299	-.090	-.061	-.078
Eysenck Extraversion Scale		(36)	.328	----	-.022	-.049	-.031
Eysenck Neuroticism Scale		(37)	-.222	.220	.022	-.097	-.026
Eysenck Lie Scale		(38)	----	----	-.004	-.081	-.035
Commitment to Enter Prof.	1	(39)	-.223	----	-.009	.022	.004
Commitment to Enter Prof.	2	(40)	----	.594	-.047	.042	-.011
Commitment to Enter Prof.	3	(41)	----	----	-.001	-.122	-.052
Suitability for Teaching	1	(42)	----	.233	-.010	.094	.034
Suitability for Teaching	2	(43)	----	.254	-.028	-.043	-.009
Suitability for Teaching	3	(44)	-.200	.391	-.062	-.145	-.057
Importance of Theory	1	(45)	----	----	.015	-.035	-.005
Importance of Theory	2	(46)	----	-.274	-.053	-.143	-.089
Importance of Theory	3	(47)	----	.246	-.072	-.079	-.074
Course as Preparation	1	(48)	----	----	.041	.027	.036
Course as Preparation	2	(49)	----	----	.028	-.043	-.001
Course as Preparation	3	(50)	-.233	----	-.086	-.066	-.077

Appendix F-3: Correlations of all Student Variables with Instructor Grade for Instructor 3

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Course Grade	(1)	.766	.632	.628	.668	.644
Mid-Term Grade	(2)	.460	.505	.332	.427	.371
Final Exam Grade	(3)	.450	.496	.278	.304	.289
Course Project Rank	(5)	.432	.385	.610	.545	.585
Pre-Test	(6)	----	.493	.137	.108	.124
Mid-Term Exam	(7)	.485	.592	.351	.412	.374
Final Exam -- Recall Items	(8)	.443	.357	.288	.331	.305
Final Exam -- Applied Items	(9)	.358	.637	.268	.204	.239
Final Exam -- Total	(10)	.468	.555	.317	.307	.313
High Expectation 1	(11)	.395	----	.174	.152	.165
High Expectation 2	(12)	.474	.401	.312	.382	.339
High Expectation 3	(13)	----	.929	.259	.333	.285
Actual Expectation 1	(14)	----	----	.213	.177	.199
Actual Expectation 2	(15)	.438	.380	.306	.402	.342
Actual Expectation 3	(16)	.710	.588	.323	.240	.279
Low Expectation 1	(17)	----	----	.154	.207	.174
Low Expectation 2	(18)	.441	----	.276	.356	.308
Low Expectation 3	(19)	.388	.529	.274	.188	.235
Aspiration-Expectation 1	(20)	.315	----	.161	.194	.174
Aspiration-Expectation 2	(21)	.466	.391	.337	.436	.308
Aspiration-Expectation 3	(22)	.416	.750	.431	.545	.235
Univ. Grade-Point Average	(23)	.350	.309	.355	.337	.382
Qualifying Test -- Verbal	(24)	-.278	.245	.101	.039	.198
Qualifying Test -- Quantitative	(25)	-.202	----	.117	.092	.154

Appendix F-3: (continued)

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Qualifying Test -- Total	(26)	-.300	.303	.063	.154	.122
Reason for Enrolling	(27)	----	.385	.051	.069	.058
Pre-Course Attitude	(28)	.180	----	.000	.021	.009
Post-Course Attitude	(29)	-.211	.308	-.078	.135	-.003
Attitude Toward Instructor	(30)	-.176	-.636	.082	-.038	.032
Learning Set	(31)	-.204	.629	.045	.112	.072
A-H Test Anxiety Scale	(32)	----	----	-.067	-.145	-.098
Test Anxiety -- Pre-Test	(33)	----	----	.004	-.025	-.014
Test Anxiety -- Mid-Term	(34)	----	----	-.055	-.118	-.080
Test Anxiety -- Final	(35)	----	----	-.090	-.061	-.078
Eysenck Extraversion Scale	(36)	----	----	-.022	-.049	-.031
Eysenck Neuroticism Scale	(37)	-.223	-.250	.022	-.097	-.026
Eysenck Lie Scale	(38)	----	----	-.004	-.081	-.035
Commitment to Enter Prof. 1	(39)	----	.205	-.009	.022	.004
Commitment to Enter Prof. 2	(40)	-.469	----	-.047	.042	-.011
Commitment to Enter Prof. 3	(41)	----	-.241	-.001	-.122	-.052
Suitability for Teaching 1	(42)	----	----	-.010	.094	.034
Suitability for Teaching 2	(43)	-.386	----	-.028	-.043	-.009
Suitability for Teaching 3	(44)	-.397	.273	-.062	-.145	-.057
Importance of Theory 1	(45)	----	----	.015	-.035	-.005
Importance of Theory 2	(46)	-.170	----	-.053	-.143	-.089
Importance of Theory 3	(47)	-.501	----	-.072	-.079	-.074
Course as Preparation 1	(48)	-.384	----	.041	.027	.036
Course as Preparation 2	(49)	-.276	----	.028	-.043	-.001
Course as Preparation 3	(50)	-.261	.215	-.086	-.066	-.077

Appendix F-4: Correlations of all Student Variables with Instructor Grade by Instructor 4

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Course Grade	(1)	.677	.780	.628	.668	.644
Mid-Term Grade	(2)	.366	.563	.332	.427	.371
Final Exam Grade	(3)	.254	.458	.278	.304	.289
Course Project Rank	(5)	.698	.522	.610	.545	.585
Pre-Test	(6)	----	----	.137	.108	.124
Mid-Term Exam	(7)	.266	.339	.351	.412	.374
Final Exam -- Recall Items	(8)	----	.541	.288	.331	.305
Final Exam -- Applied Items	(9)	.327	.434	.268	.204	.239
Final Exam -- Total	(10)	.290	.557	.317	.307	.313
High Expectation 1	(11)	----	----	.174	.152	.165
High Expectation 2	(12)	----	.561	.312	.382	.339
High Expectation 3	(13)	-.230	----	.259	.333	.285
Actual Expectation 1	(14)	-.245	.294	.213	.177	.199
Actual Expectation 2	(15)	----	.527	.306	.402	.342
Actual Expectation 3	(16)	----	.631	.323	.240	.279
Low Expectation 1	(17)	-.246	----	.154	.207	.174
Low Expectation 2	(18)	----	.609	.276	.356	.308
Low Expectation 3	(19)	----	.530	.274	.188	.235
Aspiration-Expectation 1	(20)	-.426	.269	.161	.194	.174
Aspiration-Expectation 2	(21)	----	.551	.337	.436	.308
Aspiration-Expectation 3	(22)	----	.708	.431	.545	.235
Univ. Grade-Point Average	(23)	----	.536	.355	.337	.382
Qualifying Test -- Verbal	(24)	.339	.542	.101	.039	.198
Qualifying Test -- Quantitative	(25)	----	.445	.117	.092	.154

Appendix F-4: (continued)

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Qualifying Test -- Total	(26)	----	.547	.063	.154	.122
Reason for Enrolling	(27)	-.223	----	.051	.069	.058
Pre-Course Attitude	(28)	----	----	.000	.021	.009
Post-Course Attitude	(29)	-.331	.656	-.078	.135	-.003
Attitude Toward Instructor	(30)	.283	-.389	.082	-.038	.032
Learning Set	(31)	----	.464	.045	.112	.072
A-H Test Anxiety Scale	(32)	----	-.260	-.067	-.145	-.098
Test Anxiety -- Pre-Test	(33)	----	----	.004	-.025	-.014
Test Anxiety -- Mid-Term	(34)	----	-.263	-.055	-.118	-.080
Test Anxiety -- Final	(35)	.349	----	-.090	-.061	-.078
Eysenck Extraversion Scale	(36)	-.210	-.230	-.022	-.049	-.031
Eysenck Neuroticism Scale	(37)	----	.238	.022	-.097	-.026
Eysenck Lie Scale	(38)	----	----	-.004	-.081	-.035
Commitment to Enter Prof. 1	(39)	----	.208	-.009	.022	.004
Commitment to Enter Prof. 2	(40)	----	.206	-.047	.042	-.011
Commitment to Enter Prof. 3	(41)	----	.219	-.001	-.122	-.052
Suitability for Teaching 1	(42)	-.257	----	-.010	.094	.034
Suitability for Teaching 2	(43)	----	----	-.028	-.043	-.009
Suitability for Teaching 3	(44)	----	----	-.062	-.145	-.057
Importance of Theory 1	(45)	----	----	.015	-.035	-.005
Importance of Theory 2	(46)	----	----	-.053	-.143	-.089
Importance of Theory 3	(47)	----	----	-.072	-.079	-.074
Course as Preparation 1	(48)	-.367	----	.041	.027	.036
Course as Preparation 2	(49)	-.205	----	.028	-.043	-.001
Course as Preparation 3	(50)	----	----	-.086	-.066	-.077

Appendix F-5: Correlations of all Student Variables with Instructor Grade for Instructor 5

			Instructor AM	Instructor PM	Total AM	Total PM	Total
Course Grade		(1)	.416	.671	.628	.668	.644
Mid-Term Grade		(2)	----	.408	.332	.427	.371
Final Exam Grade		(3)	----	.428	.278	.304	.289
Course Project Rank		(5)	.518	.605	.610	.545	.585
Pre-Test		(6)	.297	.401	.137	.108	.124
Mid-Term Exam		(7)	----	.458	.351	.412	.374
Final Exam -- Recall Items		(8)	.322	.313	.288	.331	.305
Final Exam -- Applied Items		(9)	----	.485	.268	.204	.239
Final Exam -- Total		(10)	.280	.500	.317	.307	.313
High Expectation	1	(11)	.251	----	.174	.152	.165
High Expectation	2	(12)	.293	.359	.312	.382	.339
High Expectation	3	(13)	----	----	.259	.333	.285
Actual Expectation	1	(14)	.463	----	.213	.177	.199
Actual Expectation	2	(15)	.342	.237	.306	.402	.342
Actual Expectation	3	(16)	----	----	.323	.240	.279
Low Expectation	1	(17)	.385	----	.154	.207	.174
Low Expectation	2	(18)	.309	----	.276	.356	.308
Low Expectation	3	(19)	.200	----	.274	.188	.235
Aspiration-Expectation	1	(20)	.333	----	.161	.194	.174
Aspiration-Expectation	2	(21)	.453	.244	.337	.436	.308
Aspiration-Expectation	3	(22)	.362	.204	.431	.545	.235
Univ. Grade-Point Average		(23)	.572	.239	.355	.337	.382
Qualifying Test -- Verbal		(24)	----	.228	.101	.039	.198
Qualifying Test -- Quantitative		(25)	----	----	.117	.092	.154

Appendix F-5: (continued)

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Qualifying Test -- Total	(26)	----	.248	.063	.154	.122
Reason for Enrolling	(27)	----	.388	.051	.069	.058
Pre-Course Attitude	(28)	----	.377	.000	.021	.009
Post-Course Attitude	(29)	-.303	.347	-.078	.135	-.003
Attitude Toward Instructor	(30)	----	----	.082	-.038	.032
Learning Set	(31)	----	.203	.045	.112	.072
A-H Test Anxiety Scale	(32)	----	----	-.067	-.145	-.098
Test Anxiety -- Pre-Test	(33)	----	----	.004	-.025	-.014
Test Anxiety -- Mid-Term	(34)	----	----	-.055	-.118	-.080
Test Anxiety -- Final	(35)	----	----	-.090	-.061	-.078
Eysenck Extraversion Scale	(36)	-.235	----	-.022	-.049	-.031
Eysenck Neuroticism Scale	(37)	----	----	.022	-.097	-.026
Eysenck Lie Scale	(38)	----	----	-.004	-.081	-.035
Commitment to Enter Prof. 1	(39)	----	----	-.009	.022	.004
Commitment to Enter Prof. 2	(40)	----	-.367	-.047	.042	-.011
Commitment to Enter Prof. 3	(41)	----	-.301	-.001	-.122	-.052
Suitability for Teaching 1	(42)	.382	-.274	-.010	.094	.034
Suitability for Teaching 2	(43)	.287	-.447	-.028	-.043	-.009
Suitability for Teaching 3	(44)	.225	-.333	-.062	-.145	-.057
Importance of Theory 1	(45)	----	----	.015	-.035	-.005
Importance of Theory 2	(46)	----	----	-.053	-.143	-.089
Importance of Theory 3	(47)	.308	-.338	-.072	-.079	-.074
Course as Preparation 1	(48)	----	-.236	.041	.027	.036
Course as Preparation 2	(49)	----	----	.028	-.043	-.001
Course as Preparation 3	(50)	.229	-.367	-.086	-.066	-.077

Appendix F-6: Correlations of all Student Variables with Instructor Grade for Instructor 6

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Course Grade	(1)	.505	.592	.628	.668	.644
Mid-Term Grade	(2)	----	.405	.332	.427	.371
Final Exam Grade	(3)	.251	----	.278	.304	.289
Course Project Rank	(5)	.687	.731	.610	.545	.585
Pre-Test	(6)	.274	----	.137	.108	.124
Mid-Term Exam	(7)	----	.387	.351	.412	.374
Final Exam -- Recall Items	(8)	.211	----	.288	.331	.305
Final Exam -- Applied Items	(9)	.375	----	.268	.204	.239
Final Exam -- Total	(10)	.340	----	.317	.307	.313
High Expectation 1	(11)	----	----	.174	.152	.165
High Expectation 2	(12)	----	.483	.312	.382	.339
High Expectation 3	(13)	----	.401	.259	.333	.285
Actual Expectation 1	(14)	----	----	.213	.177	.199
Actual Expectation 2	(15)	.323	.425	.306	.402	.342
Actual Expectation 3	(16)	.297	.714	.323	.240	.279
Low Expectation 1	(17)	----	.238	.154	.207	.174
Low Expectation 2	(18)	----	.453	.276	.356	.308
Low Expectation 3	(19)	.383	.612	.274	.188	.235
Aspiration-Expectation 1	(20)	----	----	.161	.194	.174
Aspiration-Expectation 2	(21)	.289	.522	.337	.436	.308
Aspiration-Expectation 3	(22)	----	.830	.431	.545	.235
Univ. Grade-Point Average	(23)	.356	.265	.355	.337	.382
Qualifying Test -- Verbal	(24)	.281	-.269	.101	.039	.198
Qualifying Test -- Quantitative	(25)	----	----	.117	.092	.154

Appendix F-6: (continued)

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Qualifying Test -- Total	(26)	----	----	.063	.154	.122
Reason for Enrolling	(27)	.467	----	.051	.069	.058
Pre-Course Attitude	(28)	----	.451	.000	.021	.009
Post-Course Attitude	(29)	----	.515	-.078	.135	-.003
Attitude Toward Instructor	(30)	----	.596	.082	-.038	.032
Learning Set	(31)	----	----	.045	.112	.072
A-H Test Anxiety Scale	(32)	----	----	-.067	-.145	-.098
Test Anxiety -- Pre-Test	(33)	----	----	.004	-.025	-.014
Test Anxiety -- Mid-Term	(34)	----	----	-.055	-.118	-.080
Test Anxiety -- Final	(35)	----	----	-.090	-.061	-.078
Eysenck Extraversion Scale	(36)	----	.280	-.022	-.049	-.031
Eysenck Neuroticism Scale	(37)	----	----	.022	-.097	-.026
Eysenck Lie Scale	(38)	-.379	-.389	-.004	-.081	-.035
Commitment to Enter Prof. 1	(39)	----	-.379	-.009	.022	.004
Commitment to Enter Prof. 2	(40)	----	----	-.047	.042	-.011
Commitment to Enter Prof. 3	(41)	----	-.379	-.001	-.122	-.052
Suitability for Teaching 1	(42)	.244	-.257	-.010	.094	.034
Suitability for Teaching 2	(43)	----	----	-.028	-.043	-.009
Suitability for Teaching 3	(44)	----	-.287	-.062	-.145	-.057
Importance of Theory 1	(45)	-.410	-.255	.015	-.035	-.005
Importance of Theory 2	(46)	----	-.249	-.053	-.143	-.089
Importance of Theory 3	(47)	----	-.313	-.072	-.079	-.074
Course as Preparation 1	(48)	----	----	.041	.027	.036
Course as Preparation 2	(49)	.305	-.579	.028	-.043	-.001
Course as Preparation 3	(50)	----	-.265	-.086	-.066	-.077

Appendix F-7: Correlations of all Student Variables with Instructor Grade for Instructor 7

			Instructor AM	Instructor PM	Total AM	Total PM	Total
Course Grade		(1)	.773	.830	.628	.668	.644
Mid-Term Grade		(2)	.595	.729	.332	.427	.371
Final Exam Grade		(3)	.617	.599	.278	.304	.289
Course Project Rank		(5)	.620	.668	.610	.545	.585
Pre-Test		(6)	----	.575	.137	.108	.124
Mid-Term Exam		(7)	.547	.752	.351	.412	.374
Final Exam -- Recall Items		(8)	.607	.404	.288	.331	.305
Final Exam -- Applied Items		(9)	.581	.498	.268	.204	.239
Final Exam -- Total		(10)	.679	.211	.317	.307	.313
High Expectation	1	(11)	.279	.420	.174	.152	.165
High Expectation	2	(12)	.341	.582	.312	.382	.339
High Expectation	3	(13)	.534	.406	.259	.333	.285
Actual Expectation	1	(14)	.523	.516	.213	.177	.199
Actual Expectation	2	(15)	.447	.554	.306	.402	.342
Actual Expectation	3	(16)	.570	.216	.323	.240	.279
Low Expectation	1	(17)	.350	.330	.154	.207	.174
Low Expectation	2	(18)	.441	.424	.276	.356	.308
Low Expectation	3	(19)	.609	----	.274	.188	.235
Aspiration-Expectation	1	(20)	.269	.505	.161	.194	.174
Aspiration-Expectation	2	(21)	.553	.526	.337	.436	.308
Aspiration-Expectation	3	(22)	.780	.443	.431	.545	.235
Univ. Grade-Point Average		(23)	.355	.552	.355	.337	.382
Qualifying Test -- Verbal		(24)	----	.596	.101	.039	.198
Qualifying Test -- Quantitative		(25)	----	.738	.117	.092	.154

Appendix F-7: (continued)

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Qualifying Test -- Total	(26)	----	.722	.063	.154	.122
Reason for Enrolling	(27)	----	----	.051	.069	.058
Pre-Course Attitude	(28)	.322	----	.000	.021	.009
Post-Course Attitude	(29)	----	----	-.078	.135	-.003
Attitude Toward Instructor	(30)	.241	-.253	.082	-.038	.032
Learning Set	(31)	----	----	.045	.112	.072
A-H Test Anxiety Scale	(32)	----	-.200	-.067	-.145	-.098
Test Anxiety -- Pre-Test	(33)	----	----	.004	-.025	-.014
Test Anxiety -- Mid-Term	(34)	----	----	-.055	-.118	-.080
Test Anxiety -- Final	(35)	----	-.217	-.090	-.061	-.078
Eysenck Extraversion Scale	(36)	----	----	-.022	-.049	-.031
Eysenck Neuroticism Scale	(37)	----	-.255	.022	-.097	-.026
Eysenck Lie Scale	(38)	-.225	-.384	-.004	-.081	-.035
Commitment to Enter Prof. 1	(39)	----	----	-.009	.022	.004
Commitment to Enter Prof. 2	(40)	----	----	-.047	.042	-.011
Commitment to Enter Prof. 3	(41)	-.217	-.421	-.001	-.122	-.052
Suitability for Teaching 1	(42)	----	.391	-.010	.094	.034
Suitability for Teaching 2	(43)	----	.214	-.028	-.043	-.009
Suitability for Teaching 3	(44)	----	----	-.062	-.145	-.057
Importance of Theory 1	(45)	-.331	----	.015	-.035	-.005
Importance of Theory 2	(46)	----	----	-.053	-.143	-.089
Importance of Theory 3	(47)	----	----	-.072	-.079	-.074
Course as Preparation 1	(48)	----	----	.041	.027	.036
Course as Preparation 2	(49)	----	----	.028	-.043	-.001
Course as Preparation 3	(50)	----	----	-.086	-.066	-.077

Conformance to Theory	1	(29)	.381	.015	.033	.003
Importance of Theory	2	(30)	.000	.033	.193	.088
Importance of Theory	3	(31)	.000	.072	.019	.014
Theory as Preparation	1	(32)	.000	.021	.027	.036
Theory as Preparation	2	(33)	.000	.038	.043	.001
Theory as Preparation	3	(34)	.000	.056	.060	.022

Appendix F-8: Correlations of all Student Variables with Instructor Grade for Instructor 8

			Instructor AM	Instructor PM	Total AM	Total PM	Total
Course Grade		(1)	----	.412	.628	.668	.644
Mid-Term Grade		(2)	-.241	.550	.332	.427	.371
Final Exam Grade		(3)	----	.287	.278	.304	.289
Course Project Rank		(5)	****	****	.610	.545	.585
Pre-Test		(6)	----	-.285	.137	.108	.124
Mid-Term Exam		(7)	----	.631	.351	.412	.374
Final Exam -- Recall Items		(8)	----	.393	.288	.331	.305
Final Exam -- Applied Items		(9)	----	.262	.268	.204	.239
Final Exam -- Total		(10)	----	.344	.317	.307	.313
High Expectation	1	(11)	----	----	.174	.152	.165
High Expectation	2	(12)	----	.304	.312	.382	.339
High Expectation	3	(13)	.689	.692	.259	.333	.285
Actual Expectation	1	(14)	----	----	.213	.177	.199
Actual Expectation	2	(15)	----	.409	.306	.402	.342
Actual Expectation	3	(16)	.659	.710	.323	.240	.279
Low Expectation	1	(17)	----	----	.154	.207	.174
Low Expectation	2	(18)	----	.381	.276	.356	.308
Low Expectation	3	(19)	.454	.535	.274	.188	.235
Aspiration-Expectation	1	(20)	----	----	.161	.194	.174
Aspiration-Expectation	2	(21)	----	.367	.337	.436	.308
Aspiration-Expectation	3	(22)	.748	.538	.431	.545	.235
Univ. Grade-Point Average		(23)	----	----	.355	.337	.382
Qualifying Test -- Verbal		(24)	----	----	.101	.039	.198
Qualifying Test -- Quantitative		(25)	----	----	.117	.092	.154

**** Course Project Rankings unavailable.

Appendix F-8: (continued)

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Qualifying Test -- Total	(26)	----	----	.063	.154	.122
Reason for Enrolling	(27)	.222	----	.051	.069	.058
Pre-Course Attitude	(28)	.435	-.328	.000	.021	.009
Post-Course Attitude	(29)	.468	.615	-.078	.135	-.003
Attitude Toward Instructor	(30)	.473	----	.082	-.038	.032
Learning Set	(31)	----	----	.045	.112	.072
A-H Test Anxiety Scale	(32)	----	-.311	-.067	-.145	-.098
Test Anxiety -- Pre-Test	(33)	----	----	.004	-.025	-.014
Test Anxiety -- Mid-Term	(34)	----	----	-.055	-.118	-.080
Test Anxiety -- Final	(35)	----	-.322	-.090	-.061	-.078
Eysenck Extraversion Scale	(36)	----	----	-.022	-.049	-.031
Eysenck Neuroticism Scale	(37)	----	-.208	.022	-.097	-.026
Eysenck Lie Scale	(38)	----	----	-.004	-.081	-.035
Commitment to Enter Prof. 1	(39)	.323	----	-.009	.022	.004
Commitment to Enter Prof. 2	(40)	----	.203	-.047	.042	-.011
Commitment to Enter Prof. 3	(41)	-.205	----	-.001	-.122	-.052
Suitability for Teaching 1	(42)	.222	----	-.010	.094	.034
Suitability for Teaching 2	(43)	----	.243	-.028	-.043	-.009
Suitability for Teaching 3	(44)	----	----	-.062	-.145	-.057
Importance of Theory 1	(45)	-.272	----	.015	-.035	-.005
Importance of Theory 2	(46)	-.325	----	-.053	-.143	-.089
Importance of Theory 3	(47)	-.248	----	-.072	-.079	-.074
Course as Preparation 1	(48)	----	.376	.041	.027	.036
Course as Preparation 2	(49)	-.429	----	.028	-.043	-.001
Course as Preparation 3	(50)	----	----	-.086	-.066	-.077

Appendix F-9: Correlations of all Student Variables with Instructor Grade for Instructor 9

			Instructor AM	Instructor PM	Total AM	Total PM	Total
Course Grade		(1)	.580	.685	.628	.668	.644
Mid-Term Grade		(2)	----	.210	.332	.427	.371
Final Exam Grade		(3)	----	----	.278	.304	.289
Course Project Rank		(5)	.717	.412	.610	.545	.585
Pre-Test		(6)	----	----	.137	.108	.124
Mid-Term Exam		(7)	----	.213	.351	.412	.374
Final Exam -- Recall Items		(8)	.206	.358	.288	.331	.305
Final Exam -- Applied Items		(9)	----	.232	.268	.204	.239
Final Exam -- Total		(10)	----	.313	.317	.307	.313
High Expectation	1	(11)	.297	----	.174	.152	.165
High Expectation	2	(12)	.345	.422	.312	.382	.339
High Expectation	3	(13)	.328	----	.259	.333	.285
Actual Expectation	1	(14)	.384	.244	.213	.177	.199
Actual Expectation	2	(15)	.440	.547	.306	.402	.342
Actual Expectation	3	(16)	.465	.297	.323	.240	.279
Low Expectation	1	(17)	----	----	.154	.207	.174
Low Expectation	2	(18)	.484	----	.276	.356	.308
Low Expectation	3	(19)	.399	----	.274	.188	.235
Aspiration-Expectation	1	(20)	.255	----	.161	.194	.174
Aspiration-Expectation	2	(21)	.425	.365	.337	.436	.308
Aspiration-Expectation	3	(22)	.634	.709	.431	.545	.235
Univ. Grade-Point Average		(23)	.281	----	.355	.337	.382
Qualifying Test -- Verbal		(24)	----	.374	.101	.039	.198
Qualifying Test -- Quantitative		(25)	----	.460	.117	.092	.154

Appendix F-9: (continued)

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Qualifying Test -- Total	(26)	----	.592	.063	.154	.122
Reason for Enrolling	(27)	----	-.286	.051	.069	.058
Pre-Course Attitude	(28)	----	-.226	.000	.021	.009
Post-Course Attitude	(29)	-.233	----	-.078	.135	-.003
Attitude Toward Instructor	(30)	-.314	.400	.082	-.038	.032
Learning Set	(31)	----	----	.045	.112	.072
A-H Test Anxiety Scale	(32)	----	----	-.067	-.145	-.098
Test Anxiety -- Pre-Test	(33)	----	----	.004	-.025	-.014
Test Anxiety -- Mid-Term	(34)	----	-.206	-.055	-.118	-.080
Test Anxiety -- Final	(35)	-.264	----	-.090	-.061	-.078
Eysenck Extraversion Scale	(36)	----	-.231	-.022	-.049	-.031
Eysenck Neuroticism Scale	(37)	----	-.282	.022	-.097	-.026
Eysenck Lie Scale	(38)	.311	.377	-.004	-.081	-.035
Commitment to Enter Prof. 1	(39)	----	-.267	-.009	.022	.004
Commitment to Enter Prof. 2	(40)	----	----	-.047	.042	-.011
Commitment to Enter Prof. 3	(41)	----	.247	-.001	-.122	-.052
Suitability for Teaching 1	(42)	----	----	-.010	.094	.034
Suitability for Teaching 2	(43)	----	-.251	-.028	-.043	-.009
Suitability for Teaching 3	(44)	----	-.215	-.062	-.145	-.057
Importance of Theory 1	(45)	----	----	.015	-.035	-.005
Importance of Theory 2	(46)	----	-.301	-.053	-.143	-.089
Importance of Theory 3	(47)	-.204	----	-.072	-.079	-.074
Course as Preparation 1	(48)	----	----	.041	.027	.036
Course as Preparation 2	(49)	.212	----	.028	-.043	-.001
Course as Preparation 3	(50)	-.250	-.219	-.086	-.066	-.077

Appendix F-10: Correlations of all Student Variables with Instructor Grade for Instructor 10

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Course Grade	(1)	.597	.750	.628	.668	.644
Mid-Term Grade	(2)	.521	.202	.332	.427	.371
Final Exam Grade	(3)	.323	.468	.278	.304	.289
Course Project Rank	(5)	.710	.464	.610	.545	.585
Pre-Test	(6)	.515	----	.137	.108	.124
Mid-Term Exam	(7)	.402	.295	.351	.412	.374
Final Exam -- Recall Items	(8)	.309	.612	.288	.331	.305
Final Exam -- Applied Items	(9)	----	----	.268	.204	.239
Final Exam -- Total	(10)	.282	.469	.317	.307	.313
High Expectation 1	(11)	----	.382	.174	.152	.165
High Expectation 2	(12)	.477	.237	.312	.382	.339
High Expectation 3	(13)	----	.218	.259	.333	.285
Actual Expectation 1	(14)	----	.406	.213	.177	.199
Actual Expectation 2	(15)	.561	.483	.306	.402	.342
Actual Expectation 3	(16)	.476	----	.323	.240	.279
Low Expectation 1	(17)	----	.448	.154	.207	.174
Low Expectation 2	(18)	----	.389	.276	.356	.308
Low Expectation 3	(19)	.375	----	.274	.188	.235
Aspiration-Expectation 1	(20)	----	.568	.161	.194	.174
Aspiration-Expectation 2	(21)	.303	.576	.337	.436	.308
Aspiration-Expectation 3	(22)	.571	.513	.431	.545	.235
Univ. Grade-Point Average	(23)	----	.663	.355	.337	.382
Qualifying Test -- Verbal	(24)	-.396	.219	.101	.039	.198
Qualifying Test -- Quantitative	(25)	----	-.208	.117	.092	.154

Appendix F-10: (continued)

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Qualifying Test -- Total	(26)	-.203	----	.063	.154	.122
Reason for Enrolling	(27)	----	----	.051	.069	.058
Pre-Course Attitude	(28)	----	.210	.000	.021	.009
Post-Course Attitude	(29)	----	.270	-.078	.135	-.003
Attitude Toward Instructor	(30)	----	----	.082	-.038	.032
Learning Set	(31)	----	----	.045	.112	.072
A-H Test Anxiety Scale	(32)	----	-.292	-.067	-.145	-.098
Test Anxiety -- Pre-Test	(33)	----	----	.004	-.025	-.014
Test Anxiety -- Mid-Term	(34)	----	-.241	-.055	-.118	-.080
Test Anxiety -- Final	(35)	-.227	----	-.090	-.061	-.078
Eysenck Extraversion Scale	(36)	----	----	-.022	-.049	-.031
Eysenck Neuroticism Scale	(37)	----	.256	.022	-.097	-.026
Eysenck Lie Scale	(38)	----	----	-.004	-.081	-.035
Commitment to Enter Prof. 1	(39)	----	----	-.009	.022	.004
Commitment to Enter Prof. 2	(40)	----	----	-.047	.042	-.011
Commitment to Enter Prof. 3	(41)	----	----	-.001	-.122	-.052
Suitability for Teaching 1	(42)	----	----	-.010	.094	.034
Suitability for Teaching 2	(43)	----	----	-.028	-.043	-.009
Suitability for Teaching 3	(44)	----	----	-.062	-.145	-.057
Importance of Theory 1	(45)	.270	----	.015	-.035	-.005
Importance of Theory 2	(46)	-.431	----	-.053	-.143	-.089
Importance of Theory 3	(47)	----	----	-.072	-.079	-.074
Course as Preparation 1	(48)	----	----	.041	.027	.036
Course as Preparation 2	(49)	-.368	-.270	.028	-.043	-.001
Course as Preparation 3	(50)	----	-.246	-.086	-.066	-.077

Appendix F-11: Correlations of all Student Variables with Instructor Grade for Instructor 11

			Instructor AM	Instructor PM	Total AM	Total PM	Total
Course Grade		(1)	.767	.605	.628	.668	.644
Mid-Term Grade		(2)	.563	.706	.332	.427	.371
Final Exam Grade		(3)	.500	.254	.278	.304	.289
Course Project Rank		(5)	.645	.363	.610	.545	.585
Pre-Test		(6)	----	-.366	.137	.108	.124
Mid-Term Exam		(7)	.559	.601	.351	.412	.374
Final Exam -- Recall Items		(8)	.458	.349	.288	.331	.305
Final Exam -- Applied Items		(9)	.526	----	.268	.204	.239
Final Exam -- Total		(10)	.537	.283	.317	.307	.313
High Expectation	1	(11)	.406	-.262	.174	.152	.165
High Expectation	2	(12)	.406	.693	.312	.382	.339
High Expectation	3	(13)	----	----	.259	.333	.285
Actual Expectation	1	(14)	.223	----	.213	.177	.199
Actual Expectation	2	(15)	.519	.693	.306	.402	.342
Actual Expectation	3	(16)	-.438	----	.323	.240	.279
Low Expectation	1	(17)	----	----	.154	.207	.174
Low Expectation	2	(18)	.489	.714	.276	.356	.308
Low Expectation	3	(19)	----	.674	.274	.188	.235
Aspiration-Expectation	1	(20)	.367	.222	.161	.194	.174
Aspiration-Expectation	2	(21)	.499	.637	.337	.436	.308
Aspiration-Expectation	3	(22)	----	.736	.431	.545	.235
Univ. Grade-Point Average		(23)	.403	.528	.355	.337	.382
Qualifying Test -- Verbal		(24)	----	----	.101	.039	.198
Qualifying Test -- Quantitative		(25)	----	-.287	.117	.092	.154

Appendix F-11: (continued)

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Qualifying Test -- Total	(26)	----	-.383	.063	.154	.122
Reason for Enrolling	(27)	----	----	.051	.069	.058
Pre-Course Attitude	(28)	----	.301	.000	.021	.009
Post-Course Attitude	(29)	----	----	-.078	.135	-.003
Attitude Toward Instructor	(30)	-.282	----	.082	-.038	.032
Learning Set	(31)	----	----	.045	.112	.072
A-H Test Anxiety Scale	(32)	----	----	-.067	-.145	-.098
Test Anxiety -- Pre-Test	(33)	----	----	.004	-.025	-.014
Test Anxiety -- Mid-Term	(34)	-.501	----	-.055	-.118	-.080
Test Anxiety -- Final	(35)	----	----	-.090	-.061	-.078
Eysenck Extraversion Scale	(36)	.285	----	-.022	-.049	-.031
Eysenck Neuroticism Scale	(37)	.228	----	.022	-.097	-.026
Eysenck Lie Scale	(38)	----	----	-.004	-.081	-.035
Commitment to Enter Prof. 1	(39)	----	-.255	-.009	.022	.004
Commitment to Enter Prof. 2	(40)	.221	-.209	-.047	.042	-.011
Commitment to Enter Prof. 3	(41)	----	----	-.001	-.122	-.052
Suitability for Teaching 1	(42)	.317	----	-.010	.094	.034
Suitability for Teaching 2	(43)	.228	----	-.028	-.043	-.009
Suitability for Teaching 3	(44)	----	----	-.062	-.145	-.057
Importance of Theory 1	(45)	----	-.417	.015	-.035	-.005
Importance of Theory 2	(46)	-.208	-.485	-.053	-.143	-.089
Importance of Theory 3	(47)	-.303	-.201	-.072	-.079	-.074
Course as Preparation 1	(48)	----	----	.041	.027	.036
Course as Preparation 2	(49)	-.240	-.420	.028	-.043	-.001
Course as Preparation 3	(50)	----	-.203	-.086	-.066	-.077

Appendix F-12: Correlations of all Student Variables with Instructor Grade for Instructor 12

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Course Grade	(1)	.629	----	.628	.668	.644
Mid-Term Grade	(2)	----	----	.332	.427	.371
Final Exam Grade	(3)	.258	----	.278	.304	.289
Course Project Rank	(5)	.668	.427	.610	.545	.585
Pre-Test	(6)	----	.370	.137	.108	.124
Mid-Term Exam	(7)	----	----	.351	.412	.374
Final Exam -- Recall Items	(8)	.413	----	.288	.331	.305
Final Exam -- Applied Items	(9)	----	----	.268	.204	.239
Final Exam -- Total	(10)	.238	----	.317	.307	.313
High Expectation 1	(11)	.312	.354	.174	.152	.165
High Expectation 2	(12)	----	----	.312	.382	.339
High Expectation 3	(13)	.318	.699	.259	.333	.285
Actual Expectation 1	(14)	.235	.389	.213	.177	.199
Actual Expectation 2	(15)	----	.236	.306	.402	.342
Actual Expectation 3	(16)	.278	----	.323	.240	.279
Low Expectation 1	(17)	----	.274	.154	.207	.174
Low Expectation 2	(18)	----	.228	.276	.356	.308
Low Expectation 3	(19)	.522	.619	.274	.188	.235
Aspiration-Expectation 1	(20)	----	.408	.161	.194	.174
Aspiration-Expectation 2	(21)	----	.229	.337	.436	.308
Aspiration-Expectation 3	(22)	.326	.818	.431	.545	.235
Univ. Grade-Point Average	(23)	.340	.248	.355	.337	.382
Qualifying Test -- Verbal	(24)	----	.288	.101	.039	.198
Qualifying Test -- Quantitative	(25)	----	.250	.117	.092	.154

Appendix F-12: (continued)

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Qualifying Test -- Total	(26)	----	.220	.063	.154	.122
Reason for Enrolling	(27)	.249	----	.051	.069	.058
Pre-Course Attitude	(28)	----	----	.000	.021	.009
Post-Course Attitude	(29)	----	.286	-.078	.135	-.003
Attitude Toward Instructor	(30)	.267	----	.082	-.038	.032
Learning Set	(31)	.299	----	.045	.112	.072
A-H Test Anxiety Scale	(32)	----	-.307	-.067	-.145	-.098
Test Anxiety -- Pre-Test	(33)	----	----	.004	-.025	-.014
Test Anxiety -- Mid-Term	(34)	----	.272	-.055	-.118	-.080
Test Anxiety -- Final	(35)	----	.362	-.090	-.061	-.078
Eysenck Extraversion Scale	(36)	-.256	.391	-.022	-.049	-.031
Eysenck Neuroticism Scale	(37)	----	----	.022	-.097	-.026
Eysenck Lie Scale	(38)	.221	-.543	-.004	-.081	-.035
Commitment to Enter Prof. 1	(39)	----	----	-.009	.022	.004
Commitment to Enter Prof. 2	(40)	----	-.229	-.047	.042	-.011
Commitment to Enter Prof. 3	(41)	----	----	-.001	-.122	-.052
Suitability for Teaching 1	(42)	-.210	-.219	-.010	.094	.034
Suitability for Teaching 2	(43)	----	-.237	-.028	-.043	-.009
Suitability for Teaching 3	(44)	-.304	-.484	-.062	-.145	-.057
Importance of Theory 1	(45)	----	----	.015	-.035	-.005
Importance of Theory 2	(46)	-.341	-.220	-.053	-.143	-.089
Importance of Theory 3	(47)	----	----	-.072	-.079	-.074
Course as Preparation 1	(48)	.228	----	.041	.027	.036
Course as Preparation 2	(49)	----	.432	.028	-.043	-.001
Course as Preparation 3	(50)	-.236	-.467	-.086	-.066	-.077

Appendix F-13: Correlations of all Student Variables with Instructor Grade for Instructor 13

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Qualifying Test -- Total	(26)	----	----	.063	.154	.122
Reason for Enrolling	(27)	.219	----	.051	.069	.058
Pre-Course Attitude	(28)	----	----	.000	.021	.009
Post-Course Attitude	(29)	.202	----	-.078	.135	-.003
Attitude Toward Instructor	(30)	.407	-.318	.082	-.038	.032
Learning Set	(31)	----	.310	.045	.112	.072
A-H Test Anxiety Scale	(32)	----	----	-.067	-.145	-.098
Test Anxiety -- Pre-Test	(33)	----	----	.004	-.025	-.014
Test Anxiety -- Mid-Term	(34)	----	-.357	-.055	-.118	-.080
Test Anxiety -- Final	(35)	----	-.363	-.090	-.061	-.078
Eysenck Extraversion Scale	(36)	-.417	-.228	-.022	-.049	-.031
Eysenck Neuroticism Scale	(37)	.289	----	.022	-.097	-.026
Eysenck Lie Scale	(38)	----	----	-.004	-.081	-.035
Commitment to Enter Prof. 1	(39)	----	----	-.009	.022	.004
Commitment to Enter Prof. 2	(40)	----	----	-.047	.042	-.011
Commitment to Enter Prof. 3	(41)	.235	----	-.001	-.122	-.052
Suitability for Teaching 1	(42)	----	----	-.010	.094	.034
Suitability for Teaching 2	(43)	----	----	-.028	-.043	-.009
Suitability for Teaching 3	(44)	----	----	-.062	-.145	-.057
Importance of Theory 1	(45)	.216	----	.015	-.035	-.005
Importance of Theory 2	(46)	----	-.387	-.053	-.143	-.089
Importance of Theory 3	(47)	----	----	-.072	-.079	-.074
Course as Preparation 1	(48)	----	.325	.041	.027	.036
Course as Preparation 2	(49)	-.201	----	.028	-.043	-.001
Course as Preparation 3	(50)	----	----	-.086	-.066	-.077

Appendix F-13: (continued)

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Course Grade	(1)	.579	.805	.628	.668	.644
Mid-Term Grade	(2)	----	.521	.332	.427	.371
Final Exam Grade	(3)	.289	.430	.278	.304	.289
Course Project Rank	(5)	.727	.790	.610	.545	.585
Pre-Test	(6)	----	.220	.137	.108	.124
Mid-Term Exam	(7)	.309	.438	.351	.412	.374
Final Exam -- Recall Items	(8)	.265	.405	.288	.331	.305
Final Exam -- Applied Items	(9)	.330	.299	.268	.204	.239
Final Exam -- Total	(10)	.335	.386	.317	.307	.313
High Expectation 1	(11)	----	----	.174	.152	.165
High Expectation 2	(12)	----	.238	.312	.382	.339
High Expectation 3	(13)	----	.258	.259	.333	.285
Actual Expectation 1	(14)	----	.202	.213	.177	.199
Actual Expectation 2	(15)	----	.303	.306	.402	.342
Actual Expectation 3	(16)	----	----	.323	.240	.279
Low Expectation 1	(17)	----	----	.154	.207	.174
Low Expectation 2	(18)	----	----	.276	.356	.308
Low Expectation 3	(19)	.237	.321	.274	.188	.235
Aspiration-Expectation 1	(20)	----	----	.161	.194	.174
Aspiration-Expectation 2	(21)	----	.313	.337	.436	.308
Aspiration-Expectation 3	(22)	.260	.562	.431	.545	.235
Univ. Grade-Point Average	(23)	.393	.366	.355	.337	.382
Qualifying Test -- Verbal	(24)	----	----	.101	.039	.198
Qualifying Test -- Quantitative	(25)	.254	----	.117	.092	.154

Appendix F-13: [illegible]

Course Grade	(1)						
Midterm Grade	(2)						
Final Exam Grade	(3)						
Course Project Rank	(4)						
Test/Quiz	(5)						
Mid-Term Exam	(6)						
Final Exam -- Recall Items	(7)						
Final Exam -- Applied Items	(8)						
Final Exam -- Total	(9)						
Logic Explanation	1	(10)	----				
Logic Explanation	2	(11)	----				
Logic Explanation	3	(12)	----				
Verbal Explanation	1	(13)	----				
Verbal Explanation	2	(14)	----				
Verbal Explanation	3	(15)	----				
Use Explanation	1	(16)	----	----			
Use Explanation	2	(17)	----	----			
Use Explanation	3	(18)	----	----			
Application-Explanation	1	(19)	.237	.321	.374	.188	.233
Application-Explanation	2	(20)	----	----	.161	.396	.134
Application-Explanation	3	(21)	----	.313	.337	.436	.308
Total Exam Grade-Total Average		(22)	.280	.362	.431	.345	.335
Total Exam Grade-Total Average		(23)	.393	.366	.355	.337	.302
Quantifying Test -- Verbal		(24)	----	----	.101	.039	.198
Quantifying Test -- Quantitative		(25)	.294	----	.117	.040	.154

Appendix F-14: Correlations of all Student Variables with Instructor Grade for Instructor 14

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Course Grade	(1)	.655	.670	.628	.668	.644
Mid-Term Grade	(2)	----	.481	.332	.427	.371
Final Exam Grade	(3)	----	.200	.278	.304	.289
Course Project Rank	(5)	.605	.737	.610	.545	.585
Pre-Test	(6)	----	-.395	.137	.108	.124
Mid-Term Exam	(7)	.274	.471	.351	.412	.374
Final Exam -- Recall Items	(8)	----	----	.288	.331	.305
Final Exam -- Applied Items	(9)	----	.291	.268	.204	.239
Final Exam -- Total	(10)	----	.224	.317	.307	.313
High Expectation 1	(11)	.358	.461	.174	.152	.165
High Expectation 2	(12)	.569	.547	.312	.382	.339
High Expectation 3	(13)	.668	.611	.259	.333	.285
Actual Expectation 1	(14)	.526	.485	.213	.177	.199
Actual Expectation 2	(15)	.645	.483	.306	.402	.342
Actual Expectation 3	(16)	.625	.461	.323	.240	.279
Low Expectation 1	(17)	.408	.382	.154	.207	.174
Low Expectation 2	(18)	.423	.481	.276	.356	.308
Low Expectation 3	(19)	.661	.424	.274	.188	.235
Aspiration-Expectation 1	(20)	.363	.671	.161	.194	.174
Aspiration-Expectation 2	(21)	.632	.596	.337	.436	.308
Aspiration-Expectation 3	(22)	.734	.449	.431	.545	.235
Univ. Grade-Point Average	(23)	.335	.371	.355	.337	.382
Qualifying Test -- Verbal	(24)	----	.220	.101	.039	.198
Qualifying Test -- Quantitative	(25)	----	-.275	.117	.092	.154

Appendix F-14: (continued)

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Qualifying Test -- Total	(26)	----	----	.063	.154	.122
Reason for Enrolling	(27)	----	.243	.051	.069	.058
Pre-Course Attitude	(28)	-.345	.296	.000	.021	.009
Post-Course Attitude	(29)	----	.248	-.078	.135	-.003
Attitude Toward Instructor	(30)	.464	----	.082	-.038	.032
Learning Set	(31)	----	----	.045	.112	.072
A-H Test Anxiety Scale	(32)	----	-.252	-.067	-.145	-.098
Test Anxiety -- Pre-Test	(33)	----	----	.004	-.025	-.014
Test Anxiety -- Mid-Term	(34)	----	----	-.055	-.118	-.080
Test Anxiety -- Final	(35)	----	----	-.090	-.061	-.078
Eysenck Extraversion Scale	(36)	.336	.206	-.022	-.049	-.031
Eysenck Neuroticism Scale	(37)	----	-.516	.022	-.097	-.026
Eysenck Lie Scale	(38)	----	----	-.004	-.081	-.035
Commitment to Enter Prof. 1	(39)	----	----	-.009	.022	.004
Commitment to Enter Prof. 2	(40)	----	----	-.047	.042	-.011
Commitment to Enter Prof. 3	(41)	----	-.380	-.001	-.122	-.052
Suitability for Teaching 1	(42)	----	-.240	-.010	.094	.034
Suitability for Teaching 2	(43)	----	-.518	-.028	-.043	-.009
Suitability for Teaching 3	(44)	-.314	----	-.062	-.145	-.057
Importance of Theory 1	(45)	----	----	.015	-.035	-.005
Importance of Theory 2	(46)	----	----	-.053	-.143	-.089
Importance of Theory 3	(47)	----	----	-.072	-.079	-.074
Course as Preparation 1	(48)	.343	-.270	.041	.027	.036
Course as Preparation 2	(49)	.252	-.359	.028	-.043	-.001
Course as Preparation 3	(50)	-.423	-.321	-.086	-.066	-.077

Appendix F-15: Correlations of all Student Variables with Instructor Grade for Instructor 15

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Course Grade	(1)	.604	.287	.628	.668	.644
Mid-Term Grade	(2)	.429	----	.332	.427	.371
Final Exam Grade	(3)	----	----	.278	.304	.289
Course Project Rank	(5)	.494	.381	.610	.545	.585
Pre-Test	(6)	----	.216	.137	.108	.124
Mid-Term Exam	(7)	.432	----	.351	.412	.374
Final Exam -- Recall Items	(8)	----	----	.288	.331	.305
Final Exam -- Applied Items	(9)	.346	----	.268	.204	.239
Final Exam -- Total	(10)	.221	----	.317	.307	.313
High Expectation 1	(11)	----	----	.174	.152	.165
High Expectation 2	(12)	.274	----	.312	.382	.339
High Expectation 3	(13)	.401	----	.259	.333	.285
Actual Expectation 1	(14)	.312	----	.213	.177	.199
Actual Expectation 2	(15)	.251	----	.306	.402	.342
Actual Expectation 3	(16)	----	-.308	.323	.240	.279
Low Expectation 1	(17)	.247	.491	.154	.207	.174
Low Expectation 2	(18)	----	.278	.276	.356	.308
Low Expectation 3	(19)	.374	-.403	.274	.188	.235
Aspiration-Expectation 1	(20)	.308	----	.161	.194	.174
Aspiration-Expectation 2	(21)	.228	.216	.337	.436	.308
Aspiration-Expectation 3	(22)	.330	-.299	.431	.545	.235
Univ. Grade-Point Average	(23)	.368	----	.355	.337	.382
Qualifying Test -- Verbal	(24)	.324	-.214	.101	.039	.198
Qualifying Test -- Quantitative	(25)	.214	----	.117	.092	.154

Appendix F-15: (continued)

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Qualifying Test -- Total	(26)	.331	----	.063	.154	.122
Reason for Enrolling	(27)	----	-.218	.051	.069	.058
Pre-Course Attitude	(28)	-.217	----	.000	.021	.009
Post-Course Attitude	(29)	----	----	-.078	.135	-.003
Attitude Toward Instructor	(30)	-.590	.208	.082	-.038	.032
Learning Set	(31)	.251	----	.045	.112	.072
A-H Test Anxiety Scale	(32)	-.294	-.292	-.067	-.145	-.098
Test Anxiety -- Pre-Test	(33)	----	----	.004	-.025	-.014
Test Anxiety -- Mid-Term	(34)	----	-.323	-.055	-.118	-.080
Test Anxiety -- Final	(35)	-.244	----	-.090	-.061	-.078
Eysenck Extraversion Scale	(36)	----	-.215	-.022	-.049	-.031
Eysenck Neuroticism Scale	(37)	-.202	----	.022	-.097	-.026
Eysenck Lie Scale	(38)	----	.239	-.004	-.081	-.035
Commitment to Enter Prof. 1	(39)	----	.263	-.009	.022	.004
Commitment to Enter Prof. 2	(40)	-.278	.500	-.047	.042	-.011
Commitment to Enter Prof. 3	(41)	.280	----	-.001	-.122	-.052
Suitability for Teaching 1	(42)	-.354	----	-.010	.094	.034
Suitability for Teaching 2	(43)	-.386	.201	-.028	-.043	-.009
Suitability for Teaching 3	(44)	-.305	----	-.062	-.145	-.057
Importance of Theory 1	(45)	----	----	.015	-.035	-.005
Importance of Theory 2	(46)	.442	----	-.053	-.143	-.089
Importance of Theory 3	(47)	.251	----	-.072	-.079	-.074
Course as Preparation 1	(48)	----	----	.041	.027	.036
Course as Preparation 2	(49)	.560	----	.028	-.043	-.001
Course as Preparation 3	(50)	-.529	.213	-.086	-.066	-.077

Appendix F-16: Correlations of all Student Variables with Instructor Grade for Instructor 16

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Course Grade	(1)	.540	.745	.628	.668	.644
Mid-Term Grade	(2)	.507	.508	.332	.427	.371
Final Exam Grade	(3)	.378	.413	.278	.304	.289
Course Project Rank	(5)	.496	.859	.610	.545	.585
Pre-Test	(6)	----	.252	.137	.108	.124
Mid-Term Exam	(7)	.523	.620	.351	.412	.374
Final Exam -- Recall Items	(8)	.255	.516	.288	.331	.305
Final Exam -- Applied Items	(9)	.292	.366	.268	.204	.239
Final Exam -- Total	(10)	.333	.469	.317	.307	.313
High Expectation 1	(11)	.364	----	.174	.152	.165
High Expectation 2	(12)	.398	----	.312	.382	.339
High Expectation 3	(13)	.557	.612	.259	.333	.285
Actual Expectation 1	(14)	.324	----	.213	.177	.199
Actual Expectation 2	(15)	.509	.392	.306	.402	.342
Actual Expectation 3	(16)	.611	.616	.323	.240	.279
Low Expectation 1	(17)	.323	----	.154	.207	.174
Low Expectation 2	(18)	.310	----	.276	.356	.308
Low Expectation 3	(19)	.539	.725	.274	.188	.235
Aspiration-Expectation 1	(20)	.422	----	.161	.194	.174
Aspiration-Expectation 2	(21)	.484	.255	.337	.436	.308
Aspiration-Expectation 3	(22)	.639	.489	.431	.545	.235
Univ. Grade-Point Average	(23)	.343	.504	.355	.337	.382
Qualifying Test -- Verbal	(24)	----	.442	.101	.039	.198
Qualifying Test -- Quantitative	(25)	----	.497	.117	.092	.154

Appendix F-16: (continued)

		Instructor AM	Instructor PM	Total AM	Total PM	Total
Qualifying Test -- Total	(26)	----	.387	.063	.154	.122
Reason for Enrolling	(27)	----	----	.051	.069	.058
Pre-Course Attitude	(28)	----	-.573	.000	.021	.009
Post-Course Attitude	(29)	----	----	-.078	.135	-.003
Attitude Toward Instructor	(30)	-.493	.413	.082	-.038	.032
Learning Set	(31)	.263	.378	.045	.112	.072
A-H Test Anxiety Scale	(32)	----	-.598	-.067	-.145	-.098
Test Anxiety -- Pre-Test	(33)	----	----	.004	-.025	-.014
Test Anxiety -- Mid-Term	(34)	----	-.434	-.055	-.118	-.080
Test Anxiety -- Final	(35)	-.239	----	-.090	-.061	-.078
Eysenck Extraversion Scale	(36)	----	-.385	-.022	-.049	-.031
Eysenck Neuroticism Scale	(37)	-.267	-.416	.022	-.097	-.026
Eysenck Lie Scale	(38)	----	.209	-.004	-.081	-.035
Commitment to Enter Prof. 1	(39)	----	.335	-.009	.022	.004
Commitment to Enter Prof. 2	(40)	----	-.255	-.047	.042	-.011
Commitment to Enter Prof. 3	(41)	----	-.281	-.001	-.122	-.052
Suitability for Teaching 1	(42)	----	.297	-.010	.094	.034
Suitability for Teaching 2	(43)	----	.296	-.028	-.043	-.009
Suitability for Teaching 3	(44)	----	-.326	-.062	-.145	-.057
Importance of Theory 1	(45)	----	.225	.015	-.035	-.005
Importance of Theory 2	(46)	.252	----	-.053	-.143	-.089
Importance of Theory 3	(47)	----	-.452	-.072	-.079	-.074
Course as Preparation 1	(48)	----	.230	.041	.027	.036
Course as Preparation 2	(49)	.276	----	.028	-.043	-.001
Course as Preparation 3	(50)	----	----	-.086	-.066	-.077

APPENDIX G

Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Selected Student Variables

Appendix G-1: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Course Grade

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	3.744	3.649	3.567	3.421	3.579	3.514	3.718	3.781
PM	3.704	3.762	3.520	3.321	3.655	3.652	3.654	4.000
Inst. Total	3.727	3.690	3.545	3.379	3.612	3.567	3.692	3.879

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	3.444	3.343	3.806	3.743	3.590	3.211	3.091	3.571
PM	3.400	3.520	3.440	3.600	3.417	3.190	3.167	3.429
Inst. Total	3.426	3.417	3.656	3.683	3.524	3.203	3.123	3.518
Totals	AM Mean = 3.549			PM Mean = 3.532			Course Mean = 3.542	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	.075	1	.075	-----	n.s.
instructors	34.307	15	2.287	3.492	.001
interaction	4.982	15	.332	-----	n.s.
within subjects	615.907	940	.655		
total	655.271	971			

Appendix G-2: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Mid-Term Grade

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	3.744	3.486	3.767	3.447	3.579	3.486	3.538	3.750
PM	3.704	3.810	3.600	3.481	3.586	4.043	3.885	4.000
Inst. Total	3.727	3.603	3.691	3.462	3.582	3.700	3.677	3.862

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	3.000	3.286	3.861	3.743	3.538	3.316	3.394	3.686
PM	3.320	3.560	3.400	3.880	3.625	3.429	3.208	3.524
Inst. Total	3.131	3.400	3.672	3.800	3.571	3.356	3.316	3.625
Totals	AM Mean = 3.536			PM Mean = 3.629			Course Mean = 3.574	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	2.065	1	2.065	2.065	n.s.
instructors	33.816	15	2.254	2.353	.01
interaction	14.047	15	.936	-----	n.s.
within subjects	899.557	939	.958		
total	949.485	970			

Appendix G-3: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Final Exam Grade

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	3.462	3.351	3.367	2.946	3.447	3.135	3.487	3.313
PM	3.556	3.333	3.160	3.107	3.345	3.435	3.423	3.462
Inst. Total	3.500	3.345	3.273	3.015	3.403	3.250	3.462	3.379

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	3.111	2.800	3.472	3.686	3.179	3.026	2.545	3.486
PM	3.000	3.160	3.040	3.040	2.958	3.286	2.875	3.333
Inst. Total	3.066	2.950	3.295	3.417	3.095	3.119	2.684	3.429
Totals	AM Mean = 3.241			PM Mean = 3.220			Course Mean = 3.233	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	.104	1	.104	-----	n.s.
instructors	45.236	15	3.016	2.934	.01
interaction	27.220	15	1.815	1.765	.05
within subjects	964.839	939	1.028		
total	1037.399	970			

Appendix G-4: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Course Project Rank

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	2.872	3.622	3.867	3.541	3.421	3.865	3.667	-----*
PM	2.963	3.714	3.640	3.630	3.724	3.870	3.520	-----*
Inst. Total	2.909	3.655	3.764	3.578	3.552	3.867	3.609	-----*

* individual scores unreported by instructor

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	3.694	3.343	4.083	3.114	4.103	3.105	3.091	3.714
PM	3.720	3.120	4.200	3.125	3.750	3.190	2.750	3.650
Inst. Total	3.705	3.250	4.131	3.119	3.968	3.136	2.947	3.691
Totals	AM Mean = 3.539			PM Mean = 3.504			Course Mean = 3.525	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	.260	1	.260	-----	n.s.
instructors	117.367	14	8.383	11.162	.001
interaction	7.196	14	.514	-----	n.s.
within subjects	659.870	879	.751		
total	784.693	908			

Appendix G-5: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Pre-Test

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	21.061	23.057	22.519	22.056	22.188	21.118	21.865	21.793
PM	23.435	22.250	22.318	22.143	22.545	22.579	22.818	23.105
Inst. Total	22.036	22.804	22.429	22.088	22.333	21.642	22.220	22.313

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	20.063	21.636	23.300	21.464	22.613	21.906	20.531	22.710
PM	22.333	22.650	22.722	22.313	20.900	22.500	22.810	24.474
Inst. Total	20.962	22.019	23.083	21.773	21.941	22.104	21.434	23.380

Totals	AM Mean = 21.859	PM Mean = 22.625	Course Mean = 22.151

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	114.434	1	114.434	9.255	.001
instructors	272.540	15	18.169	1.469	n.s.
interaction	260.872	15	17.391	1.406	n.s.
within subjects	9830.26	795	12.365		
total	10,478.106	826			

Appendix G-6: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Mid-Term Exam

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	31.132	30.162	31.778	30.094	30.389	30.250	30.649	31.700
PM	30.846	31.190	30.292	31.154	29.724	32.087	32.174	32.714
Inst. Total	31.016	30.534	31.078	30.400	30.092	30.966	31.233	32.023

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	27.912	29.545	31.686	31.303	30.865	28.806	29.759	31.057
PM	30.565	30.708	29.958	31.773	30.130	30.900	28.217	29.900
Inst. Total	28.930	30.035	30.983	31.491	30.583	29.554	29.077	30.636
Totals	AM Mean = 30.422			PM Mean = 30.690			Course Mean = 30.527	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	15.398	1	15.398	1.052	n.s.
instructors	569.374	15	37.958	2.594	.01
interaction	764.971	15	50.998	3.485	.001
within subjects	12,656.838	865	14.632		
total	14,006.581	896			

Appendix G-7: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Final Exam -- Recall Items

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	29.821	28.649	30.267	27.973	29.553	28.757	30.103	29.688
PM	30.111	29.000	27.917	27.036	28.897	29.304	29.880	29.769
Inst. Total	29.939	28.775	29.222	27.569	29.269	28.967	30.017	29.724

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	28.944	27.543	29.611	30.457	29.158	28.342	25.970	29.686
PM	27.880	28.320	28.240	29.000	27.333	28.524	27.333	28.429
Inst. Total	28.508	27.867	29.049	29.864	28.452	28.407	26.544	29.214
Totals	AM Mean = 29.037			PM Mean = 28.564			Course Mean = 28.845	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	52.093	1	52.093	3.116	.10
instructors	780.448	15	52.030	3.112	.001
interaction	245.429	15	16.362	.979	n.s.
within subjects	15,632.762	935	16.720		
total	16,710.732	966			

Appendix G-8: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Final Exam -- Applied Items

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	24.821	25.000	23.833	23.784	24.895	24.135	25.179	24.500
PM	25.222	26.905	24.292	24.750	24.690	25.478	25.640	24.923
Inst. Total	24.985	25.690	24.037	24.200	24.806	24.650	25.359	24.690

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	23.417	23.086	25.138	26.257	24.474	23.237	23.364	25.343
PM	22.760	23.920	23.640	23.792	23.417	24.619	23.708	25.048
Inst. Total	23.148	23.433	24.525	25.254	24.065	23.729	23.509	25.232

Totals	AM Mean = 24.416	PM Mean = 24.531	Course Mean = 24.462

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	3.080	1	3.080	-----	n.s.
instructors	516.937	15	34.462	2.095	.025
interaction	279.128	15	18.609	1.132	n.s.
within subjects	15,377.227	935	16.446		
total	16,176.372	966			

Appendix G-9: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Final Exam -- Total

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	54.641	53.757	54.100	51.757	54.447	52.892	55.282	54.188
PM	55.333	53.095	52.208	51.786	53.586	54.783	57.520	54.923
Inst. Total	54.924	53.448	53.259	51.769	54.075	53.617	56.156	54.517

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	52.361	50.800	54.750	56.657	53.632	51.579	49.091	55.029
PM	50.640	52.240	51.080	52.792	50.833	53.190	51.042	53.476
Inst. Total	51.656	51.400	53.246	55.085	52.548	52.153	49.912	54.446
Totals	AM Mean = 53.452			PM Mean = 53.043			Course Mean = 53.286	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	73.738	1	73.738	1.489	n.s.
instructors	2393.472	15	159.565	3.224	.001
interaction	1088.000	15	72.533	1.465	n.s.
within subjects	46,278.443	935	49.496		
total	49,833.653	966			

Appendix G-10: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Aspiration-Expectation 1

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	8.118	8.182	8.037	7.667	8.242	8.000	8.132	8.643
PM	7.750	8.556	8.391	8.619	8.500	8.286	8.708	8.375
Inst. Total	7.966	8.314	8.200	8.018	8.351	8.107	8.355	8.519

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	7.818	7.900	8.625	8.233	8.286	8.111	7.968	8.212
PM	8.208	7.737	7.947	9.048	8.455	8.313	8.100	8.563
Inst. Total	7.982	7.837	8.373	8.569	8.351	8.173	8.020	8.327
Totals	AM Mean = 8.130			PM Mean = 8.348			Course Mean = 8.215	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	9.768	1	9.768	4.707	.05
instructors	35.508	15	2.367	1.141	n.s.
interaction	33.623	15	2.242	1.081	n.s.
within subjects	1718.304	828	2.075		
total	1797.203	859			

Appendix G-11: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Aspiration-Expectation 2

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	8.097	8.200	8.263	8.000	8.367	8.036	8.087	8.478
PM	7.800	8.647	8.059	8.526	8.772	8.500	8.947	8.706
Inst. Total	7.980	8.381	8.167	8.208	8.538	8.205	8.476	8.575

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	7.417	7.920	8.923	8.296	8.483	8.037	7.960	8.640
PM	7.750	7.308	7.462	8.250	8.353	7.615	7.667	8.500
Inst. Total	7.568	7.711	8.436	8.279	8.435	7.900	7.850	8.590
Totals	AM Mean = 8.202			PM Mean = 8.220			Course Mean = 8.209	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	.055	1	.055	-----	n.s.
instructors	64.677	15	4.312	1.858	.05
interaction	44.767	15	2.984	1.286	n.s.
within subjects	1513.605	652	2.321		
total	1623.104	683			

Appendix G-12: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Aspiration-Expectation 3

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	8.222	8.824	8.400	8.353	8.000	8.188	8.176	8.643
PM	8.533	9.231	8.667	8.250	8.412	8.778	9.357	9.000
Inst. Total	8.364	9.000	8.526	8.310	8.179	8.400	8.710	8.783

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	7.438	8.000	9.615	8.917	8.706	8.000	7.900	8.250
PM	8.429	7.800	7.500	8.750	8.923	7.750	7.700	8.727
Inst. Total	7.900	7.905	8.696	8.850	8.800	7.933	7.800	8.444

Totals	AM Mean = 8.327	PM Mean = 8.522	Course Mean = 8.409

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	4.007	1	4.007	1.648	n.s.
instructors	56.875	15	3.792	1.559	.10
interaction	48.822	15	3.255	1.338	n.s.
within subjects	968.259	398	2.432		
total	1077.963	429			

Appendix G-13: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Grade-Point-Average

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	2.536	2.497	2.444	2.417	2.490	2.447	2.432	2.704
PM	2.304	2.694	2.558	2.690	2.667	2.500	2.719	2.704
Inst. Total	2.441	2.560	2.491	2.514	2.570	2.465	2.534	2.704

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	2.509	2.383	2.523	2.645	2.474	2.415	2.368	2.642
PM	2.591	2.565	2.428	2.571	2.582	2.488	2.381	2.525
Inst. Total	2.544	2.451	2.488	2.614	2.516	2.439	2.369	2.596
Totals	AM Mean = 2.491			PM Mean = 2.563			Course Mean = 2.519	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	.988	1	.988	3.80	.05
instructors	4.816	15	.321	1.235	n.s.
interaction	3.900	15	.260	1.097	n.s.
within subjects	189.191	799	.237		
total	198.895	830			

Appendix G-14: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Qualifying Test -- Verbal

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	24.333	24.379	26.478	18.893	19.480	22.464	25.552	24.350
PM	30.842	24.308	30.375	24.840	17.952	25.778	27.714	21.263
Inst. Total	27.022	24.357	28.077	21.698	18.783	23.761	26.256	22.846

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	21.296	23.607	25.103	27.300	20.710	22.250	21.880	24.963
PM	24.000	23.000	26.647	23.632	17.000	16.417	25.048	24.788
Inst. Total	22.302	23.370	25.674	25.878	19.300	20.659	23.326	24.902
Totals	AM Mean = 23.297			PM Mean = 23.968			Course Mean = 23.559	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	77.110	1	77.110	-----	n.s.
instructors	4833.953	15	322.268	1.558	.10
interaction	2123.174	15	141.535	-----	n.s.
within subjects	142,097.001	687	206.837		
total	149,131.238	718			

Appendix G-15: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Qualifying Test -- Quantitative

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	24.148	24.172	17.957	19.821	19.960	22.286	20.276	19.850
PM	19.789	20.846	24.063	21.160	23.667	21.111	28.643	26.895
Inst. Total	22.348	23.143	20.462	20.453	21.653	21.826	23.000	23.282

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	20.963	21.143	21.897	23.200	22.323	15.281	19.680	23.000
PM	15.563	20.167	23.471	23.632	18.000	18.417	18.476	29.357
Inst. Total	18.953	20.761	22.478	23.367	20.680	16.136	19.130	25.171
Totals	AM Mean = 21.032			PM Mean = 21.964			Course Mean = 21.396	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	148.834	1	148.834	-----	n.s.
instructors	3094.461	15	206.297	-----	n.s.
interaction	2881.528	15	192.102	-----	n.s.
within subjects	149,821.248	687	218.080		
total	155,946.071	718			

Appendix G-16: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Qualifying Test -- Total

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	24.148	22.724	23.304	16.464	17.480	20.571	22.138	21.650
PM	26.368	20.462	28.938	21.920	20.000	22.111	26.500	23.105
Inst. Total	25.065	22.024	25.615	19.038	18.630	21.174	23.558	22.359

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	20.074	22.929	24.000	24.567	17.968	17.750	19.680	24.111
PM	17.875	19.944	24.824	22.421	15.579	11.333	22.000	27.286
Inst. Total	19.256	21.761	24.304	23.735	17.060	16.000	20.739	25.195

Totals	AM Mean = 21.189	PM Mean = 21.975	Course Mean = 21.497

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	105.643	1	105.643	-----	n.s.
instructors	5901.925	15	393.462	1.889	.025
interaction	1774.443	15	118.296	-----	n.s.
within subjects	143,095.73	687	208.291		
total	150,877.74	718			

Appendix G-17: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Reason for Enrolling

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	3.143	2.909	3.296	3.353	3.419	3.469	3.105	3.333
PM	3.292	3.737	3.304	3.050	3.208	3.182	3.208	3.333
Inst. Total	3.203	3.216	3.300	3.241	3.327	3.352	3.145	3.333

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	3.152	3.464	3.469	3.103	3.212	3.457	3.182	3.273
PM	2.875	3.053	3.684	3.429	3.500	3.250	3.045	3.389
Inst. Total	3.035	3.298	3.549	3.240	3.321	3.392	3.127	3.314
Totals	AM Mean = 3.267			PM Mean = 3.274			Course Mean = 3.270	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	.011	1	.011	-----	n.s.
instructors	11.558	15	.771	-----	n.s.
interaction	18.281	15	1.219	1.002	n.s.
within subjects	998.061	820	1.217		
total	1027.911	851			

Appendix G-18: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Pre-Course Attitude

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	27.455	26.758	27.043	27.514	27.667	28.912	26.641	28.185
PM	27.000	27.450	26.667	25.238	27.083	27.238	27.667	25.522
Inst. Total	27.268	27.019	26.864	26.661	27.421	28.273	27.000	26.960

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	26.091	27.931	27.258	27.296	27.091	28.114	26.097	27.424
PM	25.913	26.200	29.833	27.714	27.409	27.714	23.826	27.250
Inst. Total	26.018	27.224	28.204	27.479	27.218	28.000	25.130	27.358
Totals	AM Mean = 27.338			PM Mean = 26.785			Course Mean = 27.118	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	61.749	1	61.749	2.51	n.s.
instructors	484.614	15	32.308	1.313	n.s.
interaction	345.018	15	23.001	-----	n.s.
within subjects	19,974.771	812	24.599		
total	20,866.152	843			

Appendix G-19: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Post-Course Attitude

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	27.941	28.591	29.313	29.365	28.571	27.231	26.474	24.368
PM	29.071	28.364	24.000	27.375	27.667	28.308	26.533	23.700
Inst. Total	28.452	28.515	27.542	28.833	28.194	27.590	26.500	24.138

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	27.278	30.105	28.941	29.174	29.091	27.347	27.950	29.688
PM	24.071	25.000	32.923	27.636	26.125	25.600	25.714	28.846
Inst. Total	25.875	28.464	30.667	28.676	27.842	26.818	27.029	29.310

Totals	AM Mean = 28.194	PM Mean = 27.067	Course Mean = 27.768

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	153.333	1	153.333	2.848	.10
instructors	1038.67	15	69.245	1.286	n.s.
interaction	574.296	15	38.286	-----	n.s.
within subjects	25,951.150	482	53.840		
total	27,717.449	513			

Appendix G-20: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Attitude Toward Instructor

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	16.842	20.882	14.900	18.765	16.920	17.278	19.667	15.071
PM	16.600	20.500	17.222	20.917	19.176	20.222	19.000	10.000
Inst. Total	16.735	20.710	16.000	19.655	17.833	18.259	19.364	13.087

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	13.125	20.917	17.933	17.250	15.526	19.087	20.091	16.625
PM	10.143	18.455	19.000	20.778	20.533	18.250	17.700	19.364
Inst. Total	11.733	19.739	18.385	18.762	17.735	18.871	18.952	17.741

Totals	AM Mean = 17.557	PM Mean = 18.042	Course Mean = 17.761

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	25.835	1	25.835	-----	n.s.
instructors	2341.595	15	156.106	5.285	.001
interaction	747.530	15	49.835	1.687	.05
within subjects	12,377.177	419	29.54		
total	15,492.137	450			

Appendix G-21: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Learning Set

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	21.353	19.533	22.680	20.156	20.139	20.486	20.588	20.250
PM	20.682	12.438	20.895	20.231	21.333	22.429	22.217	20.381
Inst. Total	21.089	17.065	21.909	20.190	20.651	21.214	21.246	20.306

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	19.794	19.148	22.344	21.808	20.059	21.032	16.042	22.960
PM	19.571	20.619	19.455	20.950	18.810	20.188	19.556	22.556
Inst. Total	19.709	19.792	21.167	21.435	19.582	20.745	17.548	22.791
Totals	AM Mean = 20.530			PM Mean = 20.271			Course Mean = 20.425	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	13.212	1	13.212	-----	n.s.
instructors	1477.604	15	98.507	2.620	.01
interaction	960.715	15	64.048	1.704	.05
within subjects	29,588.601	787	37.597		
total	32,040.132	818			

Appendix G-22: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student A-H Anxiety Scale

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	36.844	38.152	41.087	39.914	37.563	35.121	35.615	36.962
PM	35.727	33.150	36.190	37.238	35.125	36.400	36.714	38.696
Inst. Total	36.389	36.264	38.750	38.911	36.518	35.604	36.000	37.776

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	41.091	37.897	36.129	37.269	40.576	39.029	38.000	36.455
PM	38.609	39.850	39.176	40.400	39.091	34.462	37.810	32.450
Inst. Total	40.071	38.694	37.208	38.630	39.982	37.792	37.923	34.943
Totals	AM Mean = 37.938			PM Mean = 36.991			Course Mean = 37.565	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	178.429	1	178.429	2.089	n.s.
instructors	1909.187	15	127.279	1.490	n.s.
interaction	1429.957	15	95.330	1.116	n.s.
within subjects	68,330.922	800	85.414		
total	71,848.495	831			

Appendix G-23: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Eysenck Extraversion Scale

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	13.389	14.355	12.577	12.939	13.595	14.235	12.765	12.889
PM	12.318	9.158	11.611	14.038	12.222	13.545	12.885	14.238
Inst. Total	12.983	12.380	12.182	13.424	13.016	13.964	12.817	13.479

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	14.182	14.464	12.258	13.333	12.914	13.226	14.923	13.000
PM	12.619	13.381	13.000	12.150	13.727	14.250	13.105	13.500
Inst. Total	13.574	14.000	12.566	12.830	13.228	13.574	14.156	13.200
Totals	AM Mean = 13.435			PM Mean = 12.876			Course Mean = 13.208	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	63.038	1	63.038	4.254	.05
instructors	246.699	15	16.446	1.110	n.s.
interaction	483.250	15	32.217	2.174	.01
within subjects	11,914.798	804	14.819		
total	12,707.785	835			

Appendix G-24: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Eysenck Neuroticism Scale

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	10.778	11.258	11.346	10.121	10.757	9.765	11.176	11.148
PM	11.227	7.368	10.944	10.731	9.593	10.227	11.577	11.238
Inst. Total	10.948	9.780	11.182	10.390	10.266	9.946	11.350	11.188

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	10.691	9.607	10.129	10.926	11.114	10.290	9.885	10.630
PM	12.524	8.810	12.409	8.650	10.773	10.875	10.421	10.278
Inst. Total	11.037	9.265	11.075	9.957	10.982	10.489	10.111	10.489
Totals	AM Mean = 10.565			PM Mean = 10.506			Course Mean = 10.541	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	.694	1	.694	-----	n.s.
instructors	285.823	15	19.055	-----	n.s.
interaction	433.560	15	28.904	1.372	n.s.
within subjects	16,939.540	804	21.069		
total	17,659.617	835			

Appendix G-25: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Eysenck Lie Scale

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	1.889	3.226	2.231	3.091	2.270	2.824	2.588	2.667
PM	2.818	2.842	2.111	2.808	2.630	3.273	2.346	2.571
Inst. Total	2.241	3.080	2.182	2.966	2.422	3.000	2.483	2.625

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	2.454	2.857	2.129	2.409	2.543	3.161	1.923	3.111
PM	2.524	1.905	2.318	3.150	2.500	2.750	2.211	1.833
Inst. Total	2.481	2.449	2.208	2.723	2.526	3.021	2.044	2.600
Totals	AM Mean = 2.583			PM Mean = 2.547			Course Mean = 2.568	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	.256	1	.256	-----	n.s.
instructors	78.869	15	5.258	2.146	.01
interaction	58.360	15	3.891	1.588	n.s.
within subjects	1969.629	804	2.450		
total	2107.114	835			

Appendix G-26: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Commitment to Enter Teaching Profession - 1

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	2.147	2.060	2.222	2.088	2.065	2.206	2.105	1.926
PM	2.583	2.211	2.348	2.200	2.083	2.091	1.958	2.227
Inst. Total	2.328	2.115	2.280	2.130	2.073	2.161	2.048	2.061

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	2.121	2.207	2.281	2.103	2.441	2.114	2.242	2.212
PM	2.042	2.158	2.737	2.571	2.182	1.688	2.636	2.389
Inst. Total	2.088	2.188	2.451	2.300	2.339	1.980	2.400	2.275
Totals	AM Mean = 2.161			PM Mean = 2.260			Course Mean = 2.200	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	2.175	1	2.175	2.147	n.s.
instructors	15.718	15	1.048	1.035	n.s.
interaction	13.289	15	.886	-----	n.s.
within subjects	833.618	823	1.013		
total	864.800	854			

Appendix G-27: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Commitment to Enter Teaching Profession = 2

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	2.258	2.200	1.950	2.138	2.200	2.286	2.217	2.391
PM	2.500	2.250	1.944	1.950	2.091	2.133	2.368	2.059
Inst. Total	2.347	2.220	1.947	2.061	2.154	2.233	2.286	2.250

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	2.083	2.160	2.417	2.222	2.548	2.036	2.000	2.077
PM	1.950	2.462	2.067	2.500	2.000	1.538	2.250	2.538
Inst. Total	2.023	2.263	2.282	2.326	2.354	1.878	2.095	2.231
Totals	AM Mean = 2.205			PM Mean = 2.157			Course Mean = 2.186	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	.378	1	.378	-----	n.s.
instructors	13.240	15	.883	-----	n.s.
interaction	13.267	15	.884	-----	n.s.
within subjects	581.301	656	.886		
total	608.186	687			

Appendix G-28: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Commitment to Enter Teaching Profession - 3

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	2.222	1.778	1.967	1.944	2.057	2.030	1.972	2.000
PM	2.120	1.800	1.783	2.111	1.897	2.048	2.261	2.120
Inst. Total	2.180	1.786	1.887	2.016	1.984	2.037	2.085	2.053

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	2.059	2.030	1.829	2.118	2.114	1.886	2.065	1.800
PM	2.375	2.348	2.167	1.818	1.917	2.050	2.000	1.952
Inst. Total	2.190	2.161	1.966	2.000	2.034	1.945	2.036	1.857
Totals	AM Mean = 1.991			PM Mean = 2.051			Course Mean = 2.015	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	.796	1	.796	1.213	n.s.
instructors	10.757	15	.717	1.093	n.s.
interaction	8.877	15	.592	-----	n.s.
within subjects	583.357	889	.656		
total	603.787	920			

Appendix G-29: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Suitability for Teaching - 1

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	2.257	2.152	2.259	2.382	2.194	2.469	2.237	2.148
PM	2.667	2.474	2.609	2.250	2.217	2.143	2.292	2.708
Inst. Total	2.424	2.269	2.420	2.333	2.204	2.340	2.258	2.412

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	2.242	2.250	2.438	2.207	2.455	2.143	2.212	2.273
PM	2.292	2.421	2.842	2.524	2.400	1.875	2.818	2.556
Inst. Total	2.263	2.319	2.588	2.340	2.434	2.059	2.455	2.373

Totals	AM Mean = 2.271	PM Mean = 2.451	Course Mean = 2.342

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	6.596	1	6.596	6.252	.01
instructors	11.447	15	.763	-----	n.s.
interaction	14.315	15	.954	-----	n.s.
within subjects	863.017	818	1.055		
total	895.375	849			

Appendix G-30: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Suitability for Teaching - 2

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	2.333	2.250	2.053	2.276	2.276	2.357	2.318	2.500
PM	2.647	2.438	2.000	2.050	2.000	2.000	2.632	2.500
Inst. Total	2.447	2.325	2.029	2.184	2.157	2.233	2.463	2.500

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	2.190	1.917	2.476	2.593	2.452	2.115	2.043	2.231
PM	2.111	2.769	2.429	2.625	2.176	1.769	2.438	2.750
Inst. Total	2.154	2.216	2.457	2.605	2.354	2.000	2.205	2.395
Totals	AM Mean = 2.281			PM Mean = 2.319			Course Mean = 2.296	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	.230	1	.230	-----	n.s.
instructors	18.417	15	1.228	1.254	n.s.
interaction	16.769	15	1.118	1.142	n.s.
within subjects	616.554	630	.979		
total	651.970	661			

Appendix G-32: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Importance of Theory - 1

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	1.912	1.697	1.889	1.647	1.677	1.559	1.579	1.519
PM	1.708	1.737	1.478	1.600	1.708	1.682	1.792	1.750
Inst. Total	1.828	1.712	1.700	1.630	1.691	1.607	1.661	1.627

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	1.758	1.690	1.594	1.552	1.912	1.343	1.970	1.364
PM	1.958	1.778	1.789	1.667	1.773	1.625	1.905	1.889
Inst. Total	1.842	1.723	1.667	1.600	1.857	1.431	1.944	1.549
Totals	AM Mean = 1.665			PM Mean = 1.740			Course Mean = 1.695	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	1.172	1	1.172	1.729	n.s.
instructors	13.230	15	.882	1.301	n.s.
interaction	8.775	15	.585	-----	n.s.
within subjects	558.149	823	.678		
total	581.326	854			

Appendix G-33: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Importance of Theory - 2

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	2.067	1.750	1.684	1.931	1.655	1.750	1.739	1.773
PM	1.529	1.688	2.063	1.900	1.727	1.688	2.000	1.824
Inst. Total	1.872	1.725	1.857	1.918	1.686	1.727	1.857	1.795

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	1.682	1.875	1.524	1.889	2.097	1.815	2.130	1.769
PM	1.947	1.750	1.643	1.813	2.059	1.846	2.000	1.917
Inst. Total	1.805	1.833	1.571	1.860	2.083	1.825	2.077	1.816
Totals	AM Mean = 1.832			PM Mean = 1.840			Course Mean = 1.835	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	.009	1	.009	-----	n.s.
instructors	10.387	15	.692	1.080	n.s.
interaction	4.638	15	.309	-----	n.s.
within subjects	406.825	635	.641		
total	421.859	666			

Appendix G-34: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Importance of Theory = 3

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	2.472	2.361	2.500	2.389	2.371	2.242	2.306	2.375
PM	2.500	2.100	2.478	2.630	2.379	2.571	2.478	2.760
Inst. Total	2.483	2.268	2.491	2.492	2.375	2.370	2.373	2.544

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	2.544	2.333	2.429	2.471	2.600	2.514	2.258	2.314
PM	2.583	2.870	2.625	2.364	2.625	2.600	2.375	2.476
Inst. Total	2.561	2.554	2.508	2.429	2.610	2.545	2.309	2.375

Totals	AM Mean = 2.406	PM Mean = 2.529	Course Mean = 2.456

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	3.406	1	3.406	6.652	.01
instructors	8.605	15	.574	1.121	n.s.
interaction	7.520	15	.501	-----	n.s.
within subjects	454.434	887	.512		
total	473.965	918			

Appendix G-35: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Course as Preparation 1

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	2.600	2.273	2.259	2.676	2.387	2.469	2.447	2.370
PM	2.417	2.421	2.261	2.700	2.500	2.409	2.208	2.667
Inst. Total	2.525	2.327	2.260	2.685	2.436	2.444	2.355	2.510

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	2.424	2.393	2.484	2.483	2.364	2.257	2.455	2.394
PM	2.417	2.500	2.316	2.476	2.150	2.313	2.714	2.556
Inst. Total	2.421	2.435	2.420	2.480	2.283	2.275	2.556	2.451

Totals	AM Mean = 2.424	PM Mean = 2.439	Course Mean = 2.430

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	.048	1	.048	-----	n.s.
instructors	10.128	15	.675	1.257	n.s.
interaction	5.110	15	.341	-----	n.s.
within subjects	438.794	817	.537		
total	454.080	848			

Appendix G-36: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Course as Preparation 2

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	2.467	2.458	2.316	2.414	2.069	2.179	2.783	2.545
PM	2.176	2.313	2.688	2.650	2.364	2.400	2.684	2.625
Inst. Total	2.362	2.400	2.486	2.510	2.196	2.256	2.738	2.579

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	2.619	2.458	2.381	2.385	2.871	2.667	2.391	2.077
PM	2.889	2.333	2.357	2.250	2.353	2.308	2.438	2.667
Inst. Total	2.744	2.417	2.371	2.333	2.688	2.550	2.410	2.263
Totals	AM Mean = 2.442			PM Mean = 2.475			Course Mean = 2.455	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	.173	1	.173	-----	n.s.
instructors	18.388	15	1.226	2.037	.025
interaction	12.499	15	.833	1.384	n.s.
within subjects	379.080	630	.602		
total	410.140	661			

Appendix G-37: Cell, Factor, and Total Means and Complex Analysis of Variance Summaries for Student Course as Preparation 3

Summary of Means

Time	Instructors							
	1	2	3	4	5	6	7	8
AM	2.278	2.194	2.267	2.194	2.114	2.485	2.250	2.250
PM	2.720	2.450	2.348	2.077	1.966	2.333	2.435	2.400
Inst. Total	2.459	2.286	2.302	2.145	2.047	2.426	2.322	2.316

Time	Instructors							
	9	10	11	12	13	14	15	16
AM	2.206	2.242	2.514	2.441	2.229	2.057	2.129	2.057
PM	2.167	2.750	2.458	2.273	2.250	2.200	2.500	2.667
Inst. Total	2.190	2.456	2.492	2.375	2.237	2.109	2.291	2.286
Totals	AM Mean = 2.244			PM Mean = 2.368			Course Mean = 2.294	

Analysis of Variance Summary Table

Source	Sum of Squares	df	Mean Squares	f	p
time	3.441	1	3.441	2.982	.10
instructors	14.837	15	.989	-----	n.s.
interaction	13.048	15	.870	-----	n.s.
within subjects	1025.934	889	1.154		
total	1057.260	920			


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