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# The development and analysis of a clinic to improve university teaching.

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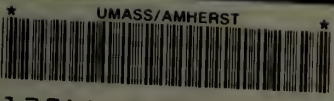
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1972

THE DEVELOPMENT AND ANALYSIS  
OF A CLINIC TO IMPROVE  
UNIVERSITY TEACHING

A dissertation Presented

By

Michael Alan Melnik

Submitted to the Graduate School of the  
University of Massachusetts in  
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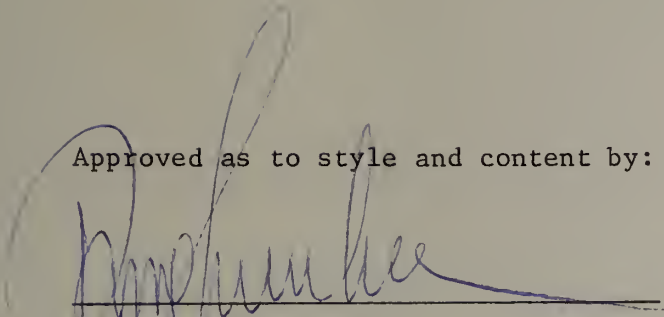
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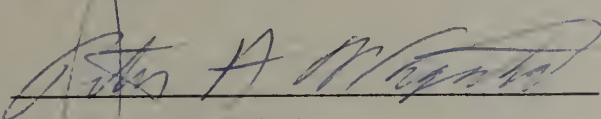
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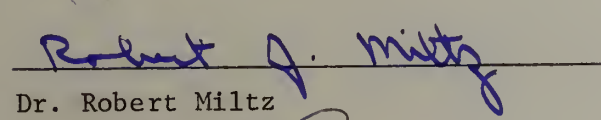
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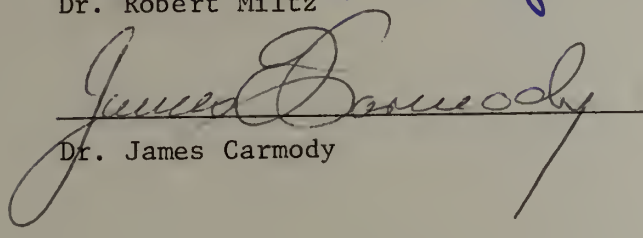
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May 1972

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The Development and Analysis

Of

A Clinic To Improve University Teaching. (May 1972)

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Directed by: Dr. Dwight W. Allen

This dissertation is a description and analysis of the development and implementation of "A Clinic To Improve University Teaching". The Clinic seeks to improve the quality of university instruction through the systematic localization of teaching problems and the remediation of said problems by applying treatment and training alternatives. The Clinic was developed during the Fall of 1971 at the School of Education of the University of Massachusetts. The initial implementation of the Clinic took place during the Spring of 1972 within the Computer Science Department at the University.

The objectives of the Clinic are: (1) To improve the quality of university teaching; (2) To localize teaching problems from a student centered perspective in combination with traditional methods of evaluation; (3) To develop a reliable variety and range of instrumentations to assess teaching competence; (4) To develop a variety of resources for teachers to use to improve their teaching; (5) To facilitate communication between the discipline of education and other disciplines; (6) To involve students in the process of teacher improvement; (7) To identify and develop effective instructional methods (skills); (8) To raise the prestige of teaching and thereby promote the development of

teaching competency as a larger factor in the reward system of colleges and universities; (9) To find ways to mature faculty members to participate in teaching improvement programs.

The clinic was operated in two phases; a localization phase and a remediation phase.

The localization phase of Clinic operation stresses the discrimination of problems delineated from a list of technical skills of teaching. The list of skills was the basis for the development of an instrument utilized in the Clinic process. The localization of teaching problems was accomplished through the combination of faculty interviews, student centered analysis of teaching, external critique (peers, former students), and analysis by a Clinic diagnostician. The data collection and diagnostic process is described for actual cases from the initial clinic including the reactions of faculty members to their problems and the steps of remediation which faculty decided upon.

The remediation phase of Clinic operation included professional consultation and the application of minimal treatment and training alternatives. The resources available for this Clinic program included video tape records of teaching performances, technical skills of teaching films and literature, and reading materials describing teaching philosophies and styles. Unfortunately, the area of treatment and training resources has not been well developed to train teachers. Consequently the major remediation services were the responsibility of the Clinic diagnostician who regularly consulted with each faculty member throughout the Clinic program.

The results of the initial Clinic to improve university teaching suggest that institutions of higher education are ready for such programs and that such a Clinic can be conducted successfully. The reports of faculty members and students to the program in a final group interview is included which describes their reaction to Clinic operation and their suggestions for future Clinic development.



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## CHAPTER I

### THE COLLEGE SETTING: WHY THE NEED FOR A CLINIC TO IMPROVE UNIVERSITY TEACHING?

Although it can be argued, and it currently is being argued, that teachers should not be as important or have as much responsibility in the educational process as they now have, the fact remains that teachers play the primary role in formal educational systems. Teachers are able to determine what is to be taught, how it is to be taught, who will participate in the learning experience, and whether or not learning objectives have been achieved. If they so choose, teachers can be masters of the educational process.

Yet, how are the masters doing? How are they fulfilling the awesome responsibilities which they must carry out? College teachers today are not exempt from these responsibilities. They are expected to be experts in all areas of instruction within their disciplines simultaneously. However, most college teachers have had little or no formal instruction in the educational process.

A study, Faculty Development Procedures in Small Colleges A Southern Survey (SREV, 1963), by W. Scott Miller

and Kenneth M. Wilson, reached the following conclusions.

First, in response to the question "Aside from departmental course-work, my department's graduate program [includes/does not include] specific preparation for college teaching," half of the professors questioned responded negatively.

Second, faculty members were asked if their college provided a specific program to improve teaching. No respondent indicated the presence of a "comprehensive program."

Ann Heise's book, Challenges to Graduate Schools (Jossey-Bass, 1970), closely examines doctoral programs at ten graduate schools and reports the following information about the existence of teaching programs:

A review of graduate programs in fifty institutions in 1967 indicated that in 75 percent of these the teaching assistant was the primary means for preparing future college teachers. And, though 95 percent of these institutions described the assistantship as an opportunity for teaching under supervision and guidance, further studies suggest that fewer than half of those who held such appointments were likely to receive adequate, systematic and continuous guidance from a senior member of the faculty. Few programs designed to prepare graduates for teaching are interdisciplinary, and few graduate students take coursework in any aspect of teaching.

The messages here are quite clear. Higher educational institutions simply do not consider teaching to be a prestigious part of their programs or they think that teaching is a "natural" ability which does not depend upon

specific training. Whether or not graduate students and/or graduate faculty members share this pejorative view (or, have in fact been the causative agents) is unclear. Yet the fact remains that these attitudes exist.

A more careful study of the current situation of colleges in regard to the question of effective teaching has provided the outline for the development of the Clinic to Improve University Teaching.

#### The System's View of Teaching

Colleges and higher educational institutions have long believed that the most effective preparation for teaching is scholarship. In other words, they have confused the development of subject matter competency with the development of "good" teaching. After all, it is argued, the most effective way to prepare yourself to be a teacher is to, in fact, develop an ability within one's chosen profession. Teaching is considered to be a skill which is gained as a result of experience. Therefore, to prepare teachers at the expense of developing scholarship is viewed as non-professional.

The reward system is another inhibitor in the process of developing teaching proficiency. Currently the reward system favors the development of research at the expense of the development of teaching competency within departments. Graduate work has been heavily influenced

by the development of specialized scholarly study, either for the capture of grant money or for the prestigious development of particular departments. Under the influence of this type of reward system, faculty members have obviously placed teaching at a lower priority and opted to contribute to research efforts to enhance careers as well as knowledge.

The problem of "publish or perish" has been an inhibiting factor within higher educational institutions for the development of effective college teaching. It is obvious that the reward system is slanted in favor of research and publication at the expense of teaching. Faculty loyalties are oriented to their national or international community of scholars not to their institution and the students they serve. Indeed, what can a professor do if, in fact, his department chairman has little regard for teaching. Even if he is an able teacher, he is not encouraged to teach, and sometimes, he is judged by standards of excellence which do not measure his teaching ability.

The system of higher education, partly because of its own action, and partly because of circumstances beyond its control, has not held teaching to be as important as many graduate students and faculty members would believe it to be. As a result, individuals have been neglected if their desire has been to develop as effective professional

scholars and teachers. The situation of graduate students, and consequently the undergraduate students which they teach, has reflected the disability of the educational system to grapple with the problem of effective college teaching.

### Graduate Students

The system of higher education encourages graduate students to develop within their profession at the expense of becoming professional teachers. From the time a graduate student attempts to enter graduate school until the time he receives his degree and leaves graduate school, the attention which the system of higher education pays to the development of teaching competency is inadequate. Graduate students are told implicitly through the actions of their college professors and the administration of their departments that they must develop their competency in the areas of research and in the areas of knowledge discovery within their fields.

This process leads graduate students away from the development of teaching competency, much to the loss of the various disciplines in which the graduate students are engaged, and much to the dismay of the graduate students themselves.

Yet graduate students do seem to realize that teaching is, in fact, an important part of their future

career development:

In a recent study of eleven graduate departments at Stanford, a high percentage of graduate students in the social sciences, humanities, and languages gave "becoming a college or university teacher" as a very important reason for undertaking graduate work. In only two of the science departments was "becoming a research worker" given by a larger percentage of the students, though "acquiring scholarly competence in the discipline" was judged very important by a high percentage of students in departments in both science and mathematics and the social sciences.<sup>1</sup>

When the graduate student first applies to enter graduate school, he is judged primarily on the basis of his grades and on the basis of tests, such as the Graduate Record Examination. It seems as though his teaching potential is considered to be unimportant for his success as a graduate student. Ironically enough, it may be through the competency that a graduate student has to teach that he is in fact capable of being an effective learner. However, the fact remains that graduate students are not chosen for graduate school based upon their competency to teach or their potential to become effective college teachers.

The present situation of graduate schools is described in detail by Ann Heise in her book Challenges to Graduate Schools. She provides a useful summary for

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<sup>1</sup>Kenneth Eble, Career Development of the Effective College Teacher, p. 16.



the situation in which graduate school find themselves regarding teaching competency:

Those who plan doctoral programs are faced with the dilemma of whether to educate scholar-teachers, teacher-scholars, or both. Usually they start with the basic question, Is any distinction necessary or desirable at this level? Until quite recently, most planners rejected Newman's contention that to discover and to teach are distinct functions and distinct gifts rarely found in the same person in favor of Huxley's view that research informs teaching. In either case, most graduate faculties have operated on the assumption that the process of becoming a researcher requires rigorous exposure to theory and practice, but the art and skill of teaching comes naturally or develops gratuitously when one is educated for research. Thus the emphasis in most Ph. D. programs has been heavily weighted in favor of preparing students to discover knowledge and only incidentally, if at all, on how to impart to others the nature and value of that knowledge. As a result the American college teacher is the only high-level professional person who enters his career with no practice and with no experience in using the tools of his profession.

The Clinic to Improve University Teaching has been developed to specifically address itself to the needs of those graduate students and faculty members who believe that teaching competency should be a part of their professional expertise. The college setting today clearly does not offer alternatives for individuals who wish to develop this competency. The system of higher education has been built upon a base of the acquisition of knowledge and the discovery and development of new knowledge at the expense of a respect for the worthiness of teaching. As stated before, the ironic nature of a discrediting of teaching

competency may be contradictory to the process of education itself. What if, in fact, the efficient learner is a product of the efficient teacher, and vice versa. If this hypothesis is even partially correct, then the present college setting is actually working against effective learning.

I believe that teaching is important and as such it merits greater prestige within the field of higher education. For individuals who wish to develop as teachers, it is inappropriate for higher educational institutions not to offer these individuals the chance to develop their chosen competency.

The Clinic to Improve University Teaching has been developed for those individuals who view teaching as important and wish to develop their competency as teachers. If successful, it might point out to others, who have not viewed teaching as important, that the fulfillment which a good teacher experiences is as rewarding and important as the most far-reaching exploration and discovery which a researcher can experience.

## CHAPTER II

### THE BACKGROUND OF THE CLINIC TO IMPROVE UNIVERSITY TEACHING AND ITS INITIAL DEVELOPMENT

The major conceptualization of the Clinic to Improve University Teaching occurred during a week-long seminar with Dr. Dwight Allen. This seminar focused on a current survey of the educational innovations being employed in the country, a historical background of teacher education and, in general, to a wide range of educational projects with which Dr. Allen has been involved either in development or implementation. These talks were not only a key to the development of the Clinic to Improve University Teaching, but also a landmark for my professional development. I am indeed indebted to Dr. Allen for this opportunity.

I believe that it is important here to relate my general attitudes and beliefs about the field of education and, in particular, teacher education to provide a background for the direction of our conversations during this week-long period. My central premise is that the discipline of education or pedagogy suffers from a lack of scientific technique.

This term must be explained, for it holds a key to understanding the Clinic. Presently the discipline of education is an amorphous conglomeration of categories which have been abstracted from other disciplines. The discipline of education seems to be fragmented into diverse sub-disciplines with few common threads. For example, the School of Education at the University of Massachusetts is composed of thirteen distinct learning centers, all housed within the building of the School of Education. These learning centers range from evaluation and measurement to early childhood education, to aesthetics, to reading programs, to international education, to humanistic education. It would appear that the discipline of education is really composed of a number of distinct sub-categories which are in effect disciplines of their own.

During my discussions with Dr. Allen, I continually pointed out the fact that I was critical of the sub-categorizations which have robbed the field of education of a systematic coordinated ideology. When we discussed the field of teacher education, this fragmentation and lack of coordination became even more apparent. Again the School of Education at the University of Massachusetts has over sixteen different programs to prepare teachers for elementary and secondary teaching positions in the state of Massachusetts. It is clear that there is no one set of principals or guidelines which can lead to the

development of an effective teacher. The overall result of this fragmentation has been to leave the area of teacher education in a state of constant flux. Professional educators often suggest that, "We really don't know how to prepare an effective teacher because we really don't know how an effective learner learns."

Dr. Allen has a more sophisticated view. He believes that part of the confusion is that we don't know enough, but part of the lack of orthodoxy reflects the positive reality of the diversity of man--that different men learn in different ways--that a common pedagogical ideology is both impossible and undesirable.

The Clinic to Improve University Teaching was created from the juxtaposition of my concern with the fragmentation of the discipline of education and the lack of what I considered to be a clear definition and direction for the area of teacher education. My discussions with Dr. Allen were of paramount importance in the conceptualization of a program which would utilize the sub-categorizations within the discipline of education to effectively promote the training of teachers.

The concept of the Clinic can best be described as a process of localizing teaching problems through systematic diagnosis with remedial treatment and training alternatives designed to solve problems.

I have always marveled at the aura which surrounds the men who are in the field of medicine. Their science is based upon the recognition of symptoms and a cure based upon experience which has been documented through past experimentation. The confidence in physicians which is generated within those who have had extreme problems cured is remarkable. Doctors are able to diagnose illnesses and prescribe cures which, even if unsuccessful or inaccurate, do not undermine the confidence of patients. Unfortunately, the men in the field of education do not share in this aura of controlled power. The localization of educational problems seems to be a haphazard and sketchy process at best. Localization is an important dimension of the concept of the Clinic to Improve University Teaching because this process involves educators with the use of a proven scientific technique. I wanted to be able to localize one or more of a teacher's problems so that when he came to the Clinic for help he could be confident that the Clinic would offer at least the potential for specific improvement.

Teaching diagnosis has always been hampered by the interaction of multiple factors simultaneously. In fact whole theories of teaching have been developed to reflect this reality. Some conclude that the complexity is so necessarily interdependent that the process of localization and diagnosis is both impossible and

inappropriate. This Clinic is one effort to develop strategies of diagnosis which can be at the same time specific and not simplistic. This is what I mean by localization. The concept of localization was a key factor if the Clinic was to achieve any success at all.

During the week-long seminar, Dr. Allen and I discussed at length the idea of microteaching, a program which Dr. Allen developed while at Stanford University. The concept is currently held to be one of the most promising training procedures within the field of teacher education. Microteaching helps teachers identify and train for the development of specific technical skills of teaching. These skills of teaching were the departure point for the identification and development of the technical skills of teaching identified by the Clinic to Improve University Teaching.

Students were chosen as the source of information for the localization of teaching problems. The decision was based upon the previous experience of watching supervisors and other teacher education personnel perform their duties. I had asked how it was possible for an individual really to rate another individual's performance as a teacher if he was not a student of that teacher. I did believe that it was possible for a supervisor to rate the behaviors of an individual, but at the same time I did not believe that it was possible for a supervisor to rate

definitively the effectiveness of these various behaviors. It is obvious that a supervisor can tell a teacher whether he is going through the various behaviors which constitute some conception of the optimal performance of a technical skill of teaching. Yet it seems just as clear that an individual supervisor has no way of determining how effective an individual is when he performs as a teacher. The ultimate source of clear analysis for this measurement of effect seems to be with students. Even this relatively obvious conclusion is confounded by the fact that "students may not know that is good for them." It is confounded by the fact that the results of a particular teaching strategy or behavior may not be realized immediately. It is confounded by the fact that cause and effect relationships may be misperceived. In spite of these difficulties and others, a student-centered analysis of teaching component was decided upon as the most promising initial source of diagnosis of teaching performance. At the same time, student-centered analysis of teaching was not the only source of analysis of teacher performance that was included within the Clinic concept.

Dr. Allen's input here was crucial, for it was his experience that students were, in fact, the best source of analysis of teaching performance, but at the same time they were extremely poor interpreters of their perceptions. On the basis of Dr. Allen's advice, the Clinic utilizes



external sources of teaching analysis and professional diagnosticians who rate teacher performance and interpret all Clinic data.

The word "remediation" refers to the solution of problems which have been previously localized through a student-centered analysis of teaching and professional diagnosis. If the concept of a clinic was to be valid, it was necessary not only for there to be an accurate and efficient localization process, but it was extremely critical that there be a follow-up treatment and training process which could alleviate problems. To not offer a remediation capability within the Clinic was to, in effect, suggest that a doctor's success would not be imperiled if a patient told the doctor that he had a broken arm and then the doctor was not able to mend the arm. It was decided that a remediation program with a list of treatment and training alternatives was of paramount importance for the overall success of the Clinic program. Remediation became a function of a professional diagnostician and the teacher himself in the interpretation of all Clinic data and in the prescription based upon that data. Remediation in the Clinic to Improve University Teaching is, in effect, the responsibility of both the "patient" and the "doctor." This shared responsibility is an effort to involve the teacher with professional help in the solution of his own problems. For, just as the student could

perhaps best judge the effectiveness of the utilization of various technical skills of teaching, the teacher could perhaps best judge the most appropriate source of help once his problem had been localized. The input of a professional diagnostician is important if only to help an individual teacher interpret the data and its meaning.

The last term in the concept of the Clinic to Improve University Teaching is "treatment and training alternatives." If we were to offer an extensive service for teachers to improve their teaching, then it was necessary to have a bank of sources which we could draw upon and the teacher could draw upon to develop his teaching competency. Dr. Allen's advice was again critical for identifying an initial group of appropriate methods and resources for the improvement of teaching.

The Microteaching program which Dr. Allen had developed became a most important source for the development of teaching skills in combination with various videotape protocols and other media. A variety of professional perspectives were available from the thirteen different learning centers of the School of Education to provide individual assistance to faculty members who required help within the area of the learning center. For example, if one of a teacher's problems was localized to related to testing and measurement, then professional advice from the Center for Educational Research could be sought. The

Clinic began to identify a variety of written materials to which a clinic participant could be referred.

The opportunity for self analysis of data on teaching--from students--from video and other mediated records was very important, but it was anticipated that such analysis would be more powerful if the participant had an opportunity to share his perceptions with Clinic personnel and perhaps his students.

All of the areas of the Clinic, the aspects of localization, technical skills of teaching, student-centered analysis of teaching, remediation, and treatment and training alternatives, were initially grouped together in an experimental manner to formulate a Clinic process. Yet the Clinic itself was not formulated, nor would it be formulated, until the individual areas of the Clinic were developed to a point where they could be combined reasonably to offer services which the Clinic purported to be able to offer.

During a two-month period, from September to the end of October, the individual aspects of the Clinic were developed. This testing and retesting of materials and ideas was possible only with the help of many individuals who lent their time and their efforts in the conceptualization and the actual material development of the necessary components of the Clinic.

The culmination of all efforts was the development of a working Clinic which was first implemented with the Department of Computer Science at the University of Massachusetts at Amherst.

### CHAPTER III

#### THE DESCRIPTION OF THE CLINIC TO IMPROVE UNIVERSITY TEACHING

The objectives of the Clinic to Improve University Teaching are as follows: (1) To improve the quality of university teaching; (2) To localize teaching problems from a student-centered perspective in combination with traditional methods of evaluation; (3) To develop a reliable variety and range of instrumentations to assess teaching competence; (4) To develop a variety of resources for teachers to use to improve their teaching; (5) To facilitate communication between the discipline of education and other disciplines; (6) To involve students in the process of teacher improvement; (7) To identify and develop effective instructional methods (skills); (8) To raise the prestige of teaching and thereby promote the development of teaching competency as a larger factor in the reward system of colleges and universities; (9) To find ways to motivate faculty members to participate in teaching improvement programs.

The Clinic to Improve University Teaching was developed to further each use of these objectives in the hope that the Clinic would serve to develop knowledge

within the discipline of education and at the same time offer a service for the improvement of university teaching. A discussion of the three component areas of the Clinic to Improve University Teaching will serve as an introduction to the operation of the program itself.

### Skills of Teaching

The Clinic utilizes a list of technical skills of teaching which comprise a set of behaviors and thoughts which at least partially characterize the effective teacher. It is not an assumption of the Clinic staff that all teachers possess all skills or the same level of performance in different skills. Many persons may even quarrel with the list of skills which have been identified. The current list is neither final nor definitive. The skills used in the first Clinic were: planned repetition, elaboration, asking questions, setting the stage for a lesson, meeting student needs, optional instruction, charisma, verbal fluency, maturity and stability of interpretation, creativity, recognizing attending behavior, pacing, expression, tutoring, academic counseling, inspiration, level of challenge, lecturing, student participation, verbal and non-verbal reinforcement, logical organization, examples, precise statement, and levels of importance. These skills are a combination of previously identified Microteaching

skills and skills which have been developed especially for the Clinic program.

The skills of teaching which are included within the Clinic are skills which the competent learner might, as well, aspire to develop. In other words, the development of teaching skills should lead to the exploration and development of learning skills for students.

For example, it is important that a professor distinguish levels of importance during presentations since one of the skills of the effective learner might be defined as distinguishing levels of importance. The Clinic to Improve University Teaching should soon develop into a clinic to improve university teaching and learning for the two processes are interdependent and can most likely be enhanced by mutual systematic investigation and development.

#### Sources of Analysis

The Clinic focuses on multiple sources of information and analysis: the teacher himself, various external sources, and, most importantly in terms of the concept of this Clinic, student-centered analysis of teaching. All of these sources of analysis are filtered through the professional interpretation of a clinic diagnostician, who has access to all Clinic data collected for each subject.

A basic underlying precept of the Clinic is that multiple sources of analysis, when properly filtered

through competent professional interpretation, yield the most reliable measurement of a teacher's competency.

A recent article entitled "Student Ratings of College Teaching Reliability, Validity, and Usefulness," by Frank Costin, William T. Greenough, and Robert J. Menges, corroborates the importance of student-centered analysis of teaching:

In conclusion, we wish to emphasize that student ratings of undergraduate teaching fall far short of a complete assessment of an instructor's teaching contribution. Other obvious factors which should be taken into account in any overall measure of instruction include participation in thesis committees and direction of graduate research where such activities are available. (This parameter seems likely to correlate highly with the scholarly activity measure.) Teaching awards given by students, individual undergraduate instruction, and research direction, department colloquia, participation as a guest lecturer in other courses, and the development of new courses or improving the materials and methods in existing courses. Nevertheless, if teaching performance is to be evaluated, either for purposes of pay and promotion or for individual improvement, a systematic measure of student attitudes, opinions, and observations can hardly be ignored. The data which have been reviewed strongly suggests that the use of formal student ratings provides a reasonable way of measuring student reaction.

At another point in the same article, they state:

A review of empirical studies indicates that students' ratings can provide reliable and valid information on the quality of courses and instruction. Such information can be of use to academic departments in constructing normative data for the evaluation of teaching and may aid the individual instructor in improving his teaching effectiveness.



In addition to student-centered analysis of teaching, the Clinic utilizes the teacher himself in the analysis of his teaching competence. During the process of the Clinic operation, the teacher is asked to interpret the data on his own at various stages of the data-gathering and interview process so that the teacher is actively engaged in the improvement process. Various external sources of analysis include a teacher's peers, former students, and professional educators who are asked at times to evaluate either video-tapes of the teacher's performance or actually to sit in on one of his classes. Also external analyzers are utilized to review the student data and provide a diagnosis from their particular viewpoints.

The Clinic focuses on multiple sources of information and analysis with the belief that student-centered analysis of teaching provides the most reliable foundation for the measurement and interpretation of teaching competence.

#### Clinic Treatment and Training Alternatives

How do you help someone who does not want to be helped? For that matter, how do you help someone who is honestly seeking help to improve his teaching? The treatment and training alternatives in the Clinic can be viewed as either voluntary or non-voluntary.

The professor who earnestly seeks to improve his teaching has been frustrated in his efforts to discover the appropriate mechanisms. Materials have either been superfluous or non-existent. Historically, searching for a program to improve teaching, or attempting to create one, has been so fruitless that most professors do not seek or acknowledge potential external help in improving their teaching. To evaluate a professor's teaching and not to offer alternatives after initial feedback has jeopardized the validity of the entire process of teaching improvement. Schools of education have been viewed as impotent to offer real assistance, because the assistance they have offered has not been perceived to be powerful.

The treatment and training alternatives in the Clinic are designed to offer a professor an immediate and appropriate program for improvement. Professional diagnostic help is available to any professor who requests clinical assistance. This consultant may be a professor or advanced graduate student from the School of Education or outside of the School of Education. Films which portray the technical skills of teaching or innovative practices in education, slide presentations of classroom settings and videotapes of examples of both instances and non-instances of the performance of technical skills of teaching are offered to teachers to improve their teaching.

These materials are usually suggested by the Clinic diagnostician, who also may suggest various written materials either in consultation with other members of the School of Education faculty or from a list of materials which provide the core of the Clinic teaching library.

The treatment and training alternatives of the Clinic are arranged on an ad hominem basis, although there are resources which are available for immediate use. Teaching problems are diverse and, therefore, the resources which are necessary for the treatment and training of individual problems must be at least partially individually identified at the present stage of Clinic development. It is questionable whether a set of resources can ever be delineated which can offer necessary help to all individuals who have particular teaching problems. The Clinic can provide a set of resources which are basic to the development of a conceptual framework for teaching, but the Clinic is clearly not a complete resource for all of the problems of participants.

### Operation of the Clinic

#### Initial Faculty Interview

After a faculty member has expressed interest in participating in the Clinic to Improve University Teaching, an appointment is scheduled so that the potential participant

understands fully what the program is and what his responsibilities will be to carry out the program.

The interview process is based upon a conversation which allows the professor to interact with the Clinic interviewer to bring out the faculty member's needs and expectations and to bring them into focus with the services which the Clinic can offer. After the Clinic has been described by the interviewer, the faculty member is shown the forms which he must complete in order to set the Clinic operation into motion (See Appendix A-1 and B).

#### Video Records

The faculty member is asked for a day when Clinic personnel will be allowed to video-tape the class. The faculty member is also asked to make the class immediately following the video-tape date available for the administration of the student-centered analysis of teaching instrument.

It is important that the student data be collected immediately following the video-tape date so that student reactions can be closely related to the video-tape record. If student data were collected substantially before or after the video-tape date, it would be more complicated and intuitively less acceptable to related student comments to the video-tape record.

At the appointed time, Clinic personnel video-tape the teacher in his classroom. A portable one-half inch video-tape unit is used for this process because of its compactness and portability. The camera lens allows the video-tape to contain both close-up pictures of the teacher and wide-angle pictures of the classroom. Video-tape records allow Clinic personnel to refer to a teacher's actual classroom behavior whenever it is necessary and as often as it is necessary. The video-tape record is considered to be a genuine and accurate representation of a faculty member's teaching.

### Student Data

The class immediately following the video-taping is devoted to the administration of the student-centered analysis of teaching instrument. It is unclear whether telling students in advance that the instrument will occur is beneficial or not beneficial to the reliability and validity of the data. Students are given the following directions for completing the SCAT instrument.

This instrument has been designed to assess teaching competency in a number of different disciplines. Therefore, some skills and some questions may be viewed as inappropriate for this class. Skills and/or questions inappropriate for whatever reason should be crossed out and not answered. Secondly, please take note that the optimal point on each one of the scales in the instrument is in the middle of the scale, or precisely at the number 5. Thirdly, your expectation for this instrument should be that it is a long and detailed instrument. It has been

designed for the purpose of achieving different measurement results than other instrumentation which you may have used before. Your expectation should be that this instrument will take a longer time for completion and will require in-depth thought regarding the teacher's behavior.

After the students have completed the student-centered analysis of teaching instrument, they are asked to answer the following questions related to the list of twenty-four skills identified in the questions index page of the SCAT instrument: (1) What are the five most important skills which a teacher should use when he teaches this course? (2) What are the teacher's three strongest skills? (3) What are the teacher's three weakest skills? (4) What skill would you most like the professor to develop?

#### Initial Analysis of Data

After the data has been collected from the faculty member, from the students, and a video-tape record has been made of the teacher's performance in his classroom, the first phase of the analysis of the data is possible. First, all of the data is coded on punch cards and tabulated in a series of computer programs which produce three separate printouts (See Appendix D).

One printout is a conceptual map of the five most important skills for teaching particular courses, both the five strongest and weakest skills of a teacher, and the three skills a teacher should develop. Another

printout lists the composite of the students' responses to each of the questions on the SCAT instrument. The final printout combines the student response on individual questions under each skill and provides combined scores for each of the twenty-four skill areas.

### Development of Diagnosis of Localization of Teaching Problems

These three printouts allow the Clinic diagnostician to review all of the student data and compare the data with the predictions of the faculty member. The video-tape record at this time is also employed to allow the Clinic diagnostician to compare the student data responses to behaviors which the diagnostician may or may not see in the teacher's actual performance. The Clinic diagnostician may ask others to view the tape to assist in the diagnosis. On the basis of all available data, the Clinic diagnostician at this point makes an initial localization of the students' reaction to the professor's teaching competency in conjunction with the twenty-four skill dimensions of the Clinic program. This initial localization is prepared in a written form so that the faculty member may have record access to this information.

### Second Faculty Interview

A second interview with the professor is necessary at this time for the purpose of providing the professor with

raw Clinic data and allowing him to see the video-tape record of his class. At this second session with the faculty member, the Clinic diagnostician's diagnosis may or may not be given to the faculty member. The choice of whether to give this information to the faculty member is purely at the discretion of the Clinic diagnostician. If a faculty member, in reviewing his data, seems completely lost in his interpretation of the data, the Clinic diagnostician can provide guidance from his written report to aid the faculty member in analyzing his data. Usually, however, so much data is generated through the Clinic process that it is virtually impossible for the individual faculty member to formulate an interpretation of the data results during the second interview process. Moreover, since the video-tape record itself could be utilized for analysis, the combination of the video-tape record and the raw data make it virtually impossible for the professor to arrive at any exacting conclusions.

The major purpose of this second interview session is to provide the professor with all of the available data and to show him the video-tape record of his classroom, in order to initiate a further process of refinement and delineation of teaching problems. To prepare for the third interview session, the faculty member is asked to become thoroughly familiar with the data results from his



students and to arrive at an interpretation of the results before the third session.

### Third Faculty Interview

The third session provides an opportunity for a thorough and informative discussion between the Clinic diagnostician and the faculty member. It is a discussion which is informative since both the diagnostician and the faculty member have been provided with detailed information through previous Clinic steps. This session focuses on the interpretation of the data results and the identification of specific problem areas which a faculty member wishes to concentrate upon to improve his teaching. The decision of which areas to concentrate upon are entirely the faculty member's, although the Clinic diagnostician may at this time, again at his discretion, delineate what he believes to be the problems and offer his interpretation of the data. The Clinic diagnostician, if asked, will clarify exactly and forcefully what he believes to be a teacher's weaknesses and strengths. However, he will just as forcefully declare that the final interpretation is the responsibility of the individual faculty member.

### Treatment and Training Alternatives

If the faculty member decides that he would like to develop competency within certain areas, treatment and training alternatives are suggested at this time to aid

the professor in the development of competency within chosen areas. The selection of treatment and training alternatives signals the start of a second phase of the Clinic program. The first phase has been mainly devoted to the localization of teaching problems. The second phase is mainly devoted to the development of competency within specified areas which have been localized in the first phase of the program.

After the professor has been informed of the various treatment and training alternatives which are available to him, he can either choose independently which treatment and training alternative he would prefer or seek the counsel of the Clinic diagnostician, asking him to suggest which treatment and training alternative would be most appropriate. The follow-up sessions are devoted to the development of competency within the program for improvement, which could include in-depth participation in a Microteaching Clinic, further video-tapes of classroom performance, viewing films, researching literature, and continued consultancy help from Clinic personnel.

It is important to note that the procedure of the Clinic for the localization and remediation of teaching problems is not a simple one-step process. It is, in fact, a series of interrelated steps which must be taken before a final localization can take place. Each one of the steps in the program has been designed to achieve a

particular purpose. The final result of the systematic successive implementation of these steps is to arrive at a valid and reliable interpretation of a teacher's strengths and weaknesses so that his teaching can be opened up to further critical analysis.

The description of the Clinic can be perhaps best summed up by the word "process," for it is only through the successive stages of interaction between the Clinic personnel and the teacher that a trust and willingness to proceed in the Clinic program is engendered. Without this trust, and without the cooperative efforts of the teacher and the Clinic personnel, the Clinic to Improve University Teaching would not be possible.

## CHAPTER IV

### THE IMPLEMENTATION OF THE CLINIC TO IMPROVE UNIVERSITY TEACHING

The development of the Clinic to Improve University Teaching depended upon the ability of the School of Education to receive the cooperation of university faculty who would agree to be clinic participants. It was most fortunate that the Computer Science Department at the University of Massachusetts, Amherst, had developed an interest in the improvement of teaching and had been experimenting with various instruments for the rating of technique effectiveness. Dr. Dwight W. Allen met with the chairman of the Computer Science Department to discuss the Clinic to Improve University Teaching. Dr. Allen suggested that the School of Education would be prepared to implement the program in the Computer Science Department.

The chairman set up an appointment where Dr. Allen and the Clinic Director could explain to the Department what the Clinic program was about and ask for their participation.

At this meeting, Dr. Allen suggested that the program was experimental and, as such, problems which would prevent a smooth operation of the Clinic program

could be anticipated. It was explained further that the operation of the Clinic in the Computer Science Department would allow for an initial test of instruments and procedures. The Computer Science faculty was also asked to critique the Clinic's operation as a part of their participation. Of the total of nine faculty members within the Computer Science Department, seven chose to participate in the Clinic program.

What follows will be an examination of the implementation of the Clinic through each one of the successive stages that comprise the Clinic program.

After the initial meeting with the Computer Science faculty, I proceeded to telephone each one of the individuals who had decided to participate in order to arrange a meeting time for the initial interview. All of the members were cooperative, and initial interviews were set up for the following week.

The purpose of the initial meetings as explained in Chapter III was to inform each one of the participants of the scope of the program in detail and to solicit their advice for the program operation. At this point the suggestions from the faculty members proved to be invaluable to the development of the program. For example, one of the Computer Science faculty members suggested that our instrument did not have any questions which helped to evaluate the instrument itself. Therefore, on his

suggestion, we incorporated a final page into the Skills to Improve University Teaching questionnaire to solicit information regarding the usefulness of the SCAT instrument.

More generally, the faculty members tended to react to the Clinic program when it was explained to them with interest and without the undue skepticism which often describes a professor's reactions to efforts to improve teaching. It was difficult however, for the faculty members to comment on the program or its operation at the time of the initial interview since this program design is unique. It was only after they had become involved in the process that they were able to make substantive comments about the Clinic operation.

These initial interviews were mainly one-way conversations where the faculty members listened to the presentation of the program schedule.

Some faculty members did express some worry about whether the video-tapes would be seen by anyone beside themselves. At this time they were assured that, as in all phases of the Clinic, no individual information, would be given without their expressed permission.

The initial interviews, the first step in the implementation of the Clinic, were successful. They aided the Clinic staff in gaining a feeling for the manner in which the computer scientists wanted to proceed with the

operation of the Clinic; and it helped the Computer Science faculty in gaining more confidence in the Clinic staff and the Clinic program.

Video-tapes were made of each one of the professor's classes, and in two cases the faculty members requested that two classes be video-taped. The reaction to the video-tape on the part of the faculty members was generally relaxed, but there were instances when the faculty members seemed to be somewhat nervous in their presentations. The students responded with great interest to the camera and tripod and the video-taping of the class. They seemed to be more interested in the Clinic program as the result of the flare of using a sophisticated video-tape unit in their class.

The video-tape was set up ten minutes before the beginning of the class. The students were not given prior notice of the taping session. Some faculty members, did explain before the class began that the class was being video-taped for the Clinic to Improve University Teaching. Their explanations were intended to reassure students and faculty generally did not go into detail in describing the operation of the Clinic.

In the actual video-taping, the operator of the camera alternated between close-ups of the faculty member and more distant shots which included members of the class. The major attention of the camera however remained focused

on the teacher. During student/teacher interchanges whenever possible the camera was focused on both participants and individually on each participant when they talked. For example, if a student asked a question, the camera would focus on the student while he was asking the question. When the operator sensed that the question was about to end, he would change camera angles so that the faculty member's reaction could be seen. If the question were a long one, the operator would alternately focus on the faculty member to record his reaction to the question and on the person asking the question in order to record his non-verbal behaviors which could provide a measure of the comfort with which he could express the question.

The first classroom use of the SCAT instrument was in a small Computer Science class which was not forewarned that the instrumentation would be administered. The results of this initial administration seemed to warrant a quick review of the SCAT instrument. After this application, and after the written comments from the class had been analyzed, I proceeded to revise the instrument. This revised instrument was approximately twenty-five questions shorter than the first draft, since questions which were seemingly confusing upon review were eliminated. (The initial instrument is included in Appendix A-2).

Administration of the revised instrument proved to be successful in terms of the general reactions of the class.



In each class after the completion of the instrument, the class was invited to give their reactions to the instrument and to the teaching of the professor. These sessions did not prove as productive as I had hoped but they did allow me to sense the reaction of the class to the Clinic process.

The Clinic Director, who served as diagnostician for all Clinic participants in this initial trial operation of the Clinic then assembled the interview and class data for the analysis of each one of the faculty members. It should be noted that the development of the Clinic, as mentioned before, was a process of, at times, disjointed growth. In other words the program was developed around the participants. This point is especially important regarding the analysis sessions, because the computer print-outs which were used to explain the data were developed over a period of two months. During the actual operation of the Clinic, new tabulations and programs were added as suggested by the results of interviews and the nature of information desired.

As a result the analysis sessions proceeded over a long period of time and, in some cases, as many as four different meetings with a faculty member, were held. Initially the analysis sessions were devoted to the straight, uncomplicated transfer of the data collected from the students and the showing, for the faculty member, of the

video-tape which was made of his class. Initially I did not give my personal views or analysis of the data in favor of asking each one of the participants in the Clinic to give his or her reactions to the results of the data. First, faculty members were asked how they felt about the operation of the Clinic thus far. Next, they were shown the student data which had been collected. The computer print-out used at this time was a rather simple format which gave frequency of responses to each one of the questions. Faculty members were reminded that they had completed an instrument predicting the students' responses and also predicting the way in which the students would respond to additional questions asked after the instrument had been completed. They were asked about their reactions to some of the disparities which were point out between their personal prediction of the students' response and the way the students had actually responded.

A general discussion usually ensued regarding either the validity or reliability of the instrument, the way in which the students had filled out the instrument, and the reactions to the program in general.

The next step used in the initial analysis was to examine the video-tape. These video-tapes were instrumental in helping the faculty members to interpret the student data. Faculty members when shown the video-tape were asked to focus on student comments, especially those regarding

the delineations of the faculty member's weaknesses and the skills which had been suggested for development.

In all cases, faculty members were pleased with the video-tape portion of the Clinic program. None of the faculty members had previously seen themselves teaching on video-tape, and as a result the novelty of the experience proved to be of great interest to them. It remains to be seen in future clinic operations how faculty will react to video-tape analysis after the novelty has worn off.

These initial analysis sessions gave each one of the faculty members a great amount of information to digest. Usually only superficial conversations were possible as a result of the voluminous nature of the data which was made available to them. Consequently, it was decided by all of the faculty members that a follow-up analysis would be necessary. In the meantime, each one of the members agreed to carefully look over the student data and to prepare specific questions on the basis of that data.

The second round of analysis sessions proved to be more substantive with discussions focused on the various strengths and weaknesses that the faculty members had perceived in their teaching. The vital point here is that the information generated by the Clinic to Improve University Teaching is detailed and lengthy. No faculty member

can immediately comprehend all of the data. Moreover, even if faculty members can interpret parts of the data, they feel uncomfortable to make comments about their teaching performance without being informed of the entire student response. The second analysis sessions were more fruitful than the first analysis sessions because conversations of an in-depth nature were possible. This may suggest that a comprehensive overview of the Clinic data inspires confidence that specific problems addressed are appropriate and central to the development of teaching competence.

Faculty members were open to discussions which ranged from their general teaching ability to some of their personal problems (going as far back as when they were students) which interfered with their capability to teach. They expressed concern over the major areas which students had suggested for improvement. They felt as if they could proceed with the development of certain skills if they received additional help. A detailed account of each one of these interviews is included in Appendix E.

At present the diagnostic function of the Clinic, though in need of substantial refinement is at a more advanced level of development than the area of treatment and training alternatives. Since it is relatively impossible for a faculty member to digest all of the information that is made available to him at the time of the initial

analysis, it is important that he be given some time to review the information before the second analysis can take place. Research from the Microteaching program indicates that, at the time of the first showing of the video-tape, people are more concerned with their personal appearance than they are with any detailed analysis which might be the objective of the video-tape recording.

At the time of the second analysis, the video-tape is used for the localization process. At this point however, it is not certain how training and treatment alternatives can be chosen given the complexity involved. Treatment and training sessions were developed in conjunction with the wishes of each one of the faculty members. The interest in the treatment and training alternatives varied. One professor put aside an entire class period to follow-up the data and to examine the parameters of student participation. In general, the response to the treatment and training alternatives by the faculty members was one of interest in what was available and interest in the prescription of the Clinic staff for the development of teaching competency.

The application of the treatment and training alternatives of the Clinic play a vital part in the success of the entire concept of the Clinic. It could be said that the first part of the Clinic is clearly devoted to the localization of teaching problems, and the second

portion of the Clinic is devoted to the implementation of a remediation program which can help faculty members to solve whatever problems have been localized in the first portion of the Clinic. Therefore, the treatment and training alternatives must be considered the backbone of the Clinic concept.

The treatment and training alternatives which we currently have to choose from are not very systematically organized or extensive. In other words, during the implementation of the Clinic to Improve University Teaching with the members of the Computer Science faculty, it became evident that, after we were able to localize teaching problems, the process of delineating the sources to meet those problems was difficult.

The faculty members themselves responded with a great interest in pursuing the treatment and training alternatives which were made available to them, but at the same time they expressed some disenchantment with the lack of coordinated resources. The resources which were utilized in the treatment and training alternatives of the Clinic program indicate the need for a greater effort to be made in this area for future Clinic operations.

The resources which were used in the Clinic were predominantly of the consultation nature. I would analyze the data which was available, analyze the interviews which I had with each faculty member, and combining that with

my contact with the students themselves and the review of the video-tape, arrive at a conclusion regarding the problems themselves and also arrive at a conclusion regarding the most appropriate treatment program areas to pursue. This "training resource" is successful but limited, since its success probably depends upon the relatively unsophisticated knowledge that a professor has about his own teaching. I anticipate that given periodic participation in a clinic, professors will quickly reach a level of sophistication which will exhaust training alternatives currently available. The point here is that treatment and training alternatives used in the Clinic were mainly of a consultative nature. The materials which were used during this Clinic operation were restricted to the area of a discussion with faculty members of directions which they might pursue as a result of the analysis of their data. Future Clinic applications must include distinct, systematic, and categorized resources which a faculty member could pursue independently as a result of the analysis of his own data, with or without the help of the Clinic Director.

The implementation of the first Clinic to Improve University Teaching has suggested many directions for us to pursue if we are to improve the quality of teaching on college campuses. There is definitely an expressed need on the part of faculty, and on the part of students, to

actively engage in the process of improving teaching. Faculty comments suggest that the implementation of the program has led them to rethink the purposes of the teaching process and to more carefully look at their own teaching styles and competency in regard to skills delineated by the Clinic program. Whether the faculty members will benefit in the long run from this information will only be known for certain with time.



## CHAPTER V

### REVIEW, ANALYSIS, REFLECTION

The general receptivity to the Clinic by its participants, and their willingness to proceed further with the program affirm that faculty, undergraduate, and graduate students are sincerely interested in improving the quality of teaching. In view of these findings I have learned:

that faculty regard the improvement of teaching as important, and that when help, interest, and expertise is provided, this attitude is strengthened

that the generation of data by itself (a present practice of teacher evaluation) is not constructive for the improvement of teaching, and that faculty tend to regard this data as a screen that prevents them from improving their teaching. (As one faculty member states, "Anyone can generate data. The trick is to interpret the data so that it's useful.")

that video-tape is extremely useful in the process of teacher improvement, for when a faculty member observes himself teaching, he is able to see himself from his students' perspective, and can then detect more readily his strengths and weaknesses

that criticism must be constructive even when negative, for when it is negative, the defense mechanisms the participant throws up block his receptivity and stifle his ability to learn

that eventually the Clinic can be stronger if it can encourage effective self-diagnosis through self-initiated and monitored improvement of teaching

that the process of teaching is a vastly complex process which may or may not be adequately measured by a linear evaluation, and that whether or not teaching competency can be usefully reflected or compassed by linear scale is open to serious question

that student centered analysis of teaching is at once the most viable and reliable means to measure major aspects of teaching effectiveness

that students can provide powerful analyses of a teacher's strengths and weaknesses

that communication between teacher and student is essential if a teacher is to respond sincerely to his students' needs

that although students may be able to analyze teaching competency, they are not well equipped to suggest any remediation to the problems they themselves have localized

that in order to affect change in our educational system, it is necessary to develop strategies for change which act concomitantly on the three critical areas of any school system: staff, curriculum, and the organization of the school.

The Clinic to Improve University Teaching is a workable framework for the development of teaching competency, and in particular, a means to accomplish educational objectives for students, faculty, and the system itself. However, I seriously question the degree to which the Clinic, within the present framework of higher education, can be more than a superficial palliative. In referring to this fundamental incompatibility, one professor stated:

You know, when you measure and record an individual's competency as a teacher in regard to the technical skills of teaching which you have developed, it's not at all clear to me that you

will be able to help a teacher help a student. In other words, I believe that a student has to want to be in a classroom before he can learn effectively. Even if a faculty member has all of the skills in the world at his disposal, if a student who is sitting in his class would rather be sitting in another class, these skills are of no avail. Moreover, perhaps it is the educational institutions which we have--their arrangements and their predispositions to their current structures of grading and of prerequisites--which in fact are the greatest inhibitors to effective learning.

The discussion which was held to conclude the project with the Computer Science Department suggested that the strengths of the Clinic are apparent even in its experimental form. (See Appendix G.) This discussion demonstrated that faculty members were pleased with the development of the Clinic and the assistance it gave them in improving their teaching skills.

The analysis of Clinic results and suggestions for the future development and operation of the Clinic can be grouped under the following major topics:

- Localization of Teaching Problems
- Technical Skills of Teaching and Student Centered Analysis of Teaching (SCAT)
- The Role of Video Recording
- Treatment and Training Protocols
- The Development of Learning Skills (as distinct from Teaching Skills)
- Use of Clinic Experience to Influence Broader Educational Agendas
- The Extension of the Clinic to Other Disciplines and Teaching Settings
- Specific Recommendations for Immediate Clinic Development

### Localization of Teaching Problems

The localization of teaching problems holds the key to the success of the entire Clinic program. Regardless of how much data is generated, or the nature of the skill instrument used, if the data is not interpreted to encourage the teacher to in fact modify his teaching practice, any evaluation is useless.

It is clear from the initial implementation of the Clinic Program that the analysis of teaching effectiveness must be a careful and systematic process which encourages the joint participation and cooperation of the faculty with Clinic personnel. A mutual respect must develop between the faculty and the diagnostician if the ongoing process of evaluation is to succeed.

During the actual Clinic operation it became clear that faculty members were not able to predict accurately how their students would respond to basic questions regarding their teaching performance. Invariably faculty members were not able to list which skills their own students thought were weaknesses. Faced with these discrepancies, faculty members became more receptive to suggestions for improvement. If a faculty member believes he knows what his students are thinking, then he can see little need to become involved in a program to localize his teaching problems as a means to improve his teaching. There is no question that the success of the Clinic at

present depends heavily upon the initial comparative analysis procedure to stimulate faculty members to participate (See Appendix C).

The process of localization is at present ill-defined, with unknown parameters. This ambiguity exists and will persist until we can be assured that the "skills" which are identified as measuring standards are in fact valid and adequately comprehensive. Until educators can be more certain of the goals for localization, i.e., the behaviors and their combinations which determine successful teaching, then we might all be involved in a process of perceptual delusion, and not with successful teaching.

Yet localization on the basis of the skills which currently reflect our best efforts to measure teaching competency, may in fact lead to the refinement of the understanding of successful teaching. The Clinic employs the interaction of several sources of localization. Professional consultants, peers, students, and the faculty member himself. Hopefully their analyses of available data will initiate strategies for the improvement of teaching which will be useful for future Clinic operations.

The Clinic process of localization of teaching problems can be a group as well as an individual process. Following the conclusion of the Clinic with the Computer Science Department all of the participants came together to view five minute excerpts of their teaching. After

viewing these excerpts faculty members were asked to comment on items of interest. A localization process took place during these discussions. Individual faculty members were in fact offering their consultative diagnosis of each other's strengths and weaknesses, and offering comments on teaching Computer Science courses generally. (See Appendix E).

The process of localization is critical to the success of the Clinic. Faculty members appreciate the specific, direct advice associated with the localization of their teaching problems. When offered the chance for self-analysis faculty members invariably looked toward the Clinic Director for guidance. Whether this lack of initiative can be overcome, or whether it is in fact too difficult for a faculty member who is not versed in the specific skills of teaching to interpret his own teaching is unclear. Eventually, the Clinic can be stronger if it can encourage effective self-diagnosis and even self-initiated and monitored improvement of teaching. Moreover, I believe that when the participant and the Clinic Diagnostician work closely together, the success of diagnosis is enhanced. Student data alone is insufficient for the examination of relatively inconspicuous points during diagnosis which often lead to a sound diagnosis and one which is likely to be accepted and incorporated into a training program. Invariably students do accurately pick out weak

areas of teaching but unfortunately their recommended treatment of the problem is most often unacceptable, unrealistic or incomplete.

The Skills Approach and  
The Student Centered Analysis  
of Teaching Instrument

Although questions were sometimes raised regarding the validity and reliability of the SCAT instrument, surprisingly enough, faculty members were not greatly concerned with statistical characteristics. They were more concerned with their intuitive feeling for the worthiness of the instrument, a feeling which was generated and mutually held by their students, and which was compatible with the style and conceptualization of the Clinic. Except for the suggestion that we include an evaluation of the instrument itself (within the SCAT instrument), no other thoughts were offered by professors before the instrument was administered to their classes.

The reaction of the students was more pronounced than the reaction of the faculty participants. Immediately, it became clear that the instrument needed revision. The students, from their individual comments on the booklet itself, and from conversations with them both during and after class, felt that the instrument was too long. They also voiced opinions that suggest that the instrument is not suitable for different disciplines. On the whole,

they reacted favorably to the idea of measuring skills of teaching, rather than measuring the success of a particular course. The second shorter edition of the instrument was prepared and used for the remainder of the Clinic Program.

When asked if the exercise was valuable to "me, the professor, or both," (question 78 of the SCAT questionnaire), 34 per cent of those who answered thought the exercise was valuable to both the professor and themselves, and almost all agreed it would be valuable to the professor. In some cases, students actually requested that the instrument be used in other classes in which they felt their professors would benefit from its use. A minority felt the instrument was not appropriate for measuring any dimension of teaching competence, because to differentiate the art of teaching into diversified skills was impossible.

After the faculty members had an opportunity to view the SCAT instrument more carefully, and especially after the administration of the instrument with their classes, their comments were of a more substantive nature. Faculty members viewed the list of skills in the SCAT instrument as valuable to the teaching process. A few said that they had not thought of most of these skills, nor had they thought about them in the ways in which the questionnaire described them. Nevertheless, they viewed



the new interpretation of skills, and particularly the skills of charisma and inspiration as slightly exotic, but valuable.

In retrospect, it appears that the faculty members who participated in the Clinic initially viewed the skills included in the SCAT instrument as intuitively valid. The reaction of both students and faculty to the SCAT instrument indicated that it was a reasonable representation of the skills of teaching, though both suggested that the instrument was too long. It is possible to shorten the length of the instrument without losing its effectiveness.

#### Video-Tape

Video-tape records of class performance were made of each participant in the Clinic. Initially, faculty members responded to the use of the video tapes with skepticism and a slight degree of nervousness, although none objected to being video-taped in class. Only one teacher expressed a desire to be able to prevent the tape from being shown to anyone else. This particular teacher felt that a poor performance on tape would jeopardize a pending review for tenure, were it to be brought to the attention of the reviewing committee.

The purpose of the video-tape was twofold. First, it allowed faculty members to see an objective external record of their teaching. I felt that the perspective of

seeing themselves teach would in itself suggest ways for them to improve their teaching. Secondly, the video-tapes were used by the Clinic diagnostician to make the analyses of the teaching performance of each of the faculty members. Video-tape records provide the means to check student responses against the actual teaching performance of the faculty members for verification or clarification. One faculty member stated,

This way you really see things you don't see, and having Mike making observations and pointing to things on the video-tape is, in fact, more important I think than having a pile of numbers of this kind, because then you have some real data. . . . What does it really mean to my teaching style? What should I change? What's fine as it is?

#### Treatment and Training Protocols

It became evident after localizing teaching problems, that the process of delineating the resources to meet these problems was difficult. Unfortunately, it seems that the training alternatives from which we currently must choose are not systematically organized, albeit extensive.

The faculty members responded with great interest in pursuing remediation which was suggested to them, but at the same time they expressed disappointment with the lack of a coordinated program which they might pursue independently.

The resources which were used in the Clinic were of two types. One was consultative in nature where I as Clinic Director would analyze faculty interviews, student data and review the videotapes. The second type of treatment protocol in the clinic is referral to information, persons or laboratory practice (microteaching). A variety of systematic resources are available but, an exact delineation of resources for the solution of particular problems is not always possible. For example, with one member of the Computer Science faculty it was clear that student participation was a weakness. There are, not surprisingly, few materials available which describe the necessary steps to take to involve students in Computer Science Courses. Consequently I attempted to generate this type treatment and training program with students. A professor devoted a class session to a discussion of student participation. After a fifty minute discussion it became clear that students really had no idea how to improve the participation of students in the class. In fact, they almost decided that student participation was inappropriate! Although the Clinic contains a number of reasonable skills of teaching, we cannot be at all confident in our ability to relate those skills to specific suggestions for improvement.

Future Clinic Programs should include distinct, systematic and to the extent possible, comprehensive

resources for either directed or independent programs for the improvement of teaching. Moreover, the Clinic Diagnostician should be able to call upon a variety of external resources and techniques for developing competency within specified areas. The development of a systematic and reliable treatment and training resource bank of ideas, methods and materials is a most important objective of the Clinic. Until this bank is developed the Clinic Program will rely upon the consultative and diagnostic abilities of the Clinic Director. However, this process imperils the general application of the Clinic and leaves it too oriented to personality.

### Learning Skills

The Clinic approach to technical skills of teaching stresses that a teaching skill should be derived from the behaviors which characterize an efficient learner. In other words an efficient teacher might be judged by his ability to encourage the development of an efficient learner. Consequently, many of the technical skills of teaching used in the Clinic process should have parallel learning skills.

The Clinic concept should be expanded to take into account the responsibility that the learner should have to contribute to the development of successful teaching. The question of learner vs. teacher responsibilities is of

central importance for the development of an effective Clinic program. Some faculty members maintain that many of their teaching problems exist because students are not skilled at "studenting."

The Clinic Program might pursue the development of a list of technical skills of learning so that students can increase their competency as effective learners. The development of such skills of learning might provide the Clinic with a perspective on additional skills of teaching. The combination of students and teachers working together on skill developments which are mutually beneficial would be a significant step toward the development of a Clinic which could be of greater service to the academic community as well as contribute to the understanding of the teaching/learning process.

#### The Use of Clinic Perspectives To Broaden Educational Agendas

The Clinic to Improve University Teaching, although designed to fulfill specific purposes, by its very nature influences broader educational agendas.

Professors of Education have mainly been professional theoreticians who do not "practice" in the strict sense of the term. Moreover, these same professors most often do not have extensive professional relationships other than with University faculty. The possibility of encouraging educational faculty members to actually

practice as Doctors of Education is an exciting thought. Imagine what the full utilization of a School's faculty to help improve the teaching capacity of other faculties might lead to. For example the School of Education is a rich resource of individuals who are highly skilled professionals. Their skills in measurement, testing, media and in a multitude of other areas might be enlisted to help improve teaching throughout the University of Massachusetts.

The field of education seems to be fragmented into a number of sub-discipline areas. Faculty require each other's expertise to find solutions for complex educational problems. The Clinic concept may become the catalyst for combining these sub-disciplinary resources within a laboratory setting, to facilitate educational productivity, effectiveness and efficiency. The Clinic concept of a laboratory controlled environment for the solution of problems might be a valid concept for the solution of other educational problems.

The Clinic might be a valuable resource for the exploration of a variety of pre-service teacher training programs. These training programs could be geared to individual disciplines to encourage the preparation of teachers especially equipped for service within their discipline areas. The Clinic could be addressed to the question of whether tailor-made teacher training programs

are necessary and/or desirable for different disciplines. It is possible to suggest that there may be variations in emphasis on different skills and styles within different disciplines, although clearly the answers to this question are not certain. The Clinic can increase its own effectiveness by encouraging research into the pedagogical implications of such variations in teaching styles within different disciplines.

The application of the Clinic concept to out of school, non-formalized educational experiences, is another area for Clinic exploration. Alternative schools currently are being developed as a substitute to traditional school systems. To explore whether or not teachers employ traditional skills in alternative schools, or what unique skills or combination of skills is most appropriate for teacher training would be a useful project. Alternative school environments can provide a rich resource for the exploration of additional Technical Skills of Teaching and learning. The alternative school is a diverse environment for education. The challenge of developing an appropriate program for improving teaching in non-traditional schools might lead to a better understanding of the variables relevant to the success of such schools.

### Extension of the Clinic Concept

The Clinic Program could be developed to meet the requirements of different disciplines within the university structure, and perhaps the requirements of alternative school operations. To date, the Clinic Program has been implemented on a small scale in a number of departments at the University of Massachusetts including Computer Science, English, Rhetoric, and Anthropology.

Essentially all Clinic components could be adapted to meet special considerations which diverse educational disciplines or environments might require. Moreover, diverse environments often allow more perspective on the development of specific Clinic components.

The localization procedures of the Clinic are designed to be equally effective within a wide range of educational settings. Alternative schools or open classroom environments might allow students to become more involved in the process of localization. For example, students might participate with the Clinic Diagnostician in the classroom itself to discuss a teacher's performance.

The SCAT instrument itself has been acceptable to all the discipline areas of Clinic implementation. Although initially some faculty members expressed concern regarding the usefulness of a "generalized skill instrument" this skepticism has been overcome by actual



experience with the operation of the Clinic. There is no question that an instrument could be designed which specifically referred to additional skills related to different disciplines and/or educational settings. The point here is that SCAT instrument skills are an appropriate starting point to improve teaching in any educational environment. The choices of when and how the skills are used will remain with the individual faculty member.

Treatment and training alternatives may be the most flexible of the Clinic components. A defined resource bank could serve a variety of educational purposes, but perhaps materials chosen more directly in line with teaching and learning requirements would serve participant needs more exactly. Hopefully as the Clinic program expands to serve diverse disciplines and educational settings the program designs and resources generated to meet these needs will be preserved. These new Clinic protocols would contribute to the options available through the Clinic program.

#### Specific Recommendations for Clinic Development

The Clinic program at its present stage of development is capable of serving a limited number of faculty members with fairly standard and limited treatment and training options. Growth within several areas of the Clinic will be required before the Clinic will be capable

of operating at the level necessary to meet requirements projected to any large scale application. Currently several faculty members from the University of Massachusetts have expressed an interest in participating in the program. Moreover, the Clinic may be used in the teacher training program of one or more departments for teaching assistants. Several colleges have expressed an interest in developing a Clinic program. The Clinic to Improve University Teaching needs to be expanded to meet these immediate needs. In addition, if the Clinic concept is to be further refined, resources will be required to encourage this development.

Skilled personnel are required to operate video equipment, develop computer programs, to analyze data, and to serve the remedial requirements of faculty members. Although individuals are available who possess the skills necessary for Clinic operation, in most cases individuals require training before they are able to participate in the Clinic operation. To proceed further with the Clinic, several staff positions must be established. Specifically, secretarial assistance will be necessary to schedule faculty interviews, video-tape dates and times, and treatment and training sessions. Videotape operators must be available who are flexible to meet videotaping appointments which will be at odd times and sometimes on short notice. Computer programmers capable of designing print out

formats for the review of faculty members will play an important role in the development of the Clinic. Sophisticated statistical skills will be necessary in conjunction with computer skills for teaching and learning skill development. The Clinic Diagnostician holds the most important position of the Clinic program. It is his responsibility not only to analyse all data but to coordinate the entire Clinic operation. Unless adequate support services are available the Diagnostician's energies will be utilized in administrative services to a degree which renders him less effective in other vital Clinic areas. At present only the Clinic Director and one other volunteer staff member have any experience as Clinic Diagnosticians. Treatment and training staff must be available to offer remedial services to faculty participants. Not only will these staff members be responsible for the maintenance and categorization of a Clinic Treatment and Training Resource Bank, but they will be responsible for the continual up-dating of this service.

Material resources are required for the effective operation of any program. These material needs for the Clinic To Improve University Teaching include physical facilities to house the Clinic program. Space for general reception, interviews, and treatment and training programs is required. Videotape equipment is also needed for recording visual records of teaching for Clinic

analyses. This equipment includes the portable video units which are essential for classroom purposes. Editing equipment is desirable for the analysis of videotape and for research in technical skills of learning and teaching. Videotaping is used also in the Microteaching Program (a Clinic training resource). The cost of videotape itself will necessitate the allocation of financial resources, since the Clinic use of videotape is substantial.

The remediation phase of the Clinic program perhaps is the area in which the greatest expenditures of energies and resources will be immediately required. Presently the treatment and training options which the Clinic relies upon are neither systematically organized nor extensive. First, great effort must be made to search for existing programs which have been successfully utilized to train teachers. These programs then must be mined for their best parts, and these parts in turn shaped to fit the requirements of the Clinic. Second, where needs exist for which there are no satisfactory programs for remediation, it will be necessary to develop such remedial services. Films, videotapes, literature, and personal interviews will provide the research material from which these remedial options will be developed and refined to meet both programatic and individual needs. The process of developing a remedial service for Clinic operation is

absolutely necessary both in terms of improving teaching and with regard to on-going research into the teaching-learning process.

The Clinic to Improve University Teaching as a concept has been demonstrated to be valid. The reaction of those who have participated in the process has been favorable to the Clinic design and to the services which the Clinic has provided. Yet the promise of the development of a Clinic which could be responsible to needs which go beyond university teaching remains. I believe that the Clinic concept and the program which now exists might provide the answer to questions such as: What are the skills which an effective teacher should command? What are the responsibilities of students in the teaching-learning process? What are the most effective approaches and methods for both pre-service and in-service teacher training? Perhaps most importantly, questions regarding the future development of educational institutions must be anticipated. If programs to train teachers which currently exist are not as effective as we would like them to be, what are we to do with the ever increasing burden of students and their educational demands?

There can be little doubt that new institutions of education will arise which will be substantially different from those which currently exist. There can be little doubt as well that the professional educators who

maintain these institutions will be different from those of today. The Clinic To Improve University Teaching may provide one small but hopefully effective vehicle for the exploration of this new educational world. Given adequate resources of personnel and materials, the Clinic To Improve University Teaching may not only fulfill present expectations but provide an invaluable insight to the use of existing educational expertise and experience to build a new educational future.

Appendix A-1

Final Form

Student Centered Analysis of  
Teaching Instrument (SCAT)

SKILLS TO IMPROVE UNIVERSITY TEACHING

SCHOOL OF EDUCATION  
UNIVERSITY OF MASSACHUSETTS  
AMHERST, MASSACHUSETTS  
MARCH 1972



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The professor has my permission to see my individual response.

\_\_\_\_\_ Yes \_\_\_\_\_ No

Name:

Age \_\_\_\_\_ Sex \_\_\_\_\_

Student Status (circle)

Freshman      Sophomore      Junior      Senior      Graduate

Expected grade in this class \_\_\_\_\_

Approximate undergraduate grade point average \_\_\_\_\_

Major Department \_\_\_\_\_

This course for me is (circle)

Required      Elective

What did you know about the professor and/or course before you took this course?

Has this changed?

## INSTRUCTIONS

The following questions have been designed to assess specific skills involved in University teaching. You are asked to respond from your viewpoint. Do not answer for any of the other students in your class.

Mark/circle one number on the scale. Note that 1 and 9 are extremes and 5 (the middle) is the optimum point.

Since this instrument has been designed to allow for a wide range of student responses, individual students may find certain skills and/or questions to be inappropriate. Indicate any skill and/or question that you feel is inappropriate by "X"ing it out.

PLANNED REPETITION

This skill involves the repetition of main ideas, concepts, or key facts, in order to help students learn the material.

1.1 Once the professor has introduced new ideas does he repeat them during the lesson?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Prof. never repeats ideas

Prof. repeats ideas right number of times

Prof. repeats ideas too often - bores students

1.2 Does the professor use a number of different approaches to explain his concepts?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Prof. never varies his approach

Prof. always uses a variety of approaches

Prof. uses too many approaches - becomes distracting

1.3 Does the professor summarize lessons?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Prof. never summarizes

Prof. summarizes whenever necessary

Prof. summarizes in too much detail

ELABORATION

At times an important point will require in-depth explanation. The skill of elaboration occurs when a particular point is discussed in greater detail during a presentation.

- 2.1 How often does the professor ask if further elaboration is necessary for comprehension?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Never asks if further elaboration is necessary

Usually asks when elaboration is needed

Asks too often if elaboration is necessary

- 2.2 How well can the professor determine when additional information is required for student comprehension?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Is a poor judge of when to elaborate

Knows exactly when elaboration is needed

Elaborates too often

ASKING QUESTIONS

Questions often help students to clarify their thinking, to expand upon their thinking, and to coherently summarize their thoughts. Questions often aid the professor in assisting students, either by communicating basic understandings or by helping students gain a fuller perspective through directed questions.

3.1 How many questions does the professor ask during a presentation?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Not enough questions asked

About the right number of questions asked

Too many questions asked

3.2 Does the professor ask questions which require students to give more information or to clarify answers?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Short answers will suffice

Balance between short & long answers is even

Answers all must be long & detailed

3.3 Does the professor ask questions for which there are no "right" or "wrong" answers, but many responses?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Questions always have one right answer

Questions have several acceptable answers

Never sure what answer Professor believes is correct

3.4 Does the professor check to see if students understand the main points of a lesson by asking students to give examples illustrating the point?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Students aren't asked to give examples

Students often asked to give examples to demonstrate their understanding

Students asked to give examples when it is clear they understand answers

SETTING THE STAGE FOR A LESSON

Setting the stage for a lesson is a skill that measures the attempt to begin a lesson in a way that catches student attention and captures student interest.

4.1 To what extent does the professor use introductions?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

He never uses introductions

He uses introductions when appropriate

His introductions are too long

4.2 How interesting is the professor's introduction?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Introductions are dull & uninteresting

Introductions are lively & engaging

Introductions are too "showy" - don't see what introduction has to do with lesson

4.3 Would the professor's introduction be likely to help you remember the material covered in the main part of the lesson?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Introductions are not helpful in remembering lesson

Introductions make it extremely easy to remember what lesson was about

Introductions confuse students about main points of lesson

MEETING STUDENT NEEDS

A professor who anticipates student needs should organize and operate his course in conjunction with student feedback.

5.1 Is the professor genuinely interested in meeting student needs?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Prof. not interested in student needs

Prof. highly interested in student needs

Prof. can be swayed too easily by student needs

5.2 Does the professor request information from his students regarding course content?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

He never requests student feedback on course content

He is genuinely interested in student feedback about course content

He is overly concerned about how students feel - should be more independent

5.3 Does the professor make the course material relevant to the experiences of the students? (Does he take past experiences into account when he prepares lectures?)

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Prof. never takes past information about the student into account— makes same mistakes

Prof. adjusts very well whenever experience dictates change

Prof. changes course at every hint of student dissatisfaction



OPTIONAL INSTRUCTION

A professor's belief in options is reflected in this skill of identifying alternatives for students to demonstrate proficiency or satisfy requirements.

6.1 Does the professor accept the concept of options for students in his class?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Prof. does not make options available

Prof. makes exactly the right number of options available

Prof. makes too many options available

6.2 How open do you believe the professor would be if you proposed an option to his class procedure?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

He would not be open at all - probably angered

He would be open for discussion - friendly

Students could suggest anything & he would agree

6.3 In what aspects of this course are options appropriate?

	<u>APPROPRIATE</u>	<u>INAPPROPRIATE</u>
class attendance	-	-
assignments	-	-
pre-requisites	-	-
examinations	-	-
objectives	-	-
others	-	-

6.4 In what aspects of this course are options available?

	<u>TOO FEW</u>	<u>RIGHT AMOUNT</u>	<u>TOO MANY</u>
class attendance	-	-	-
assignments	-	-	-
pre-requisites	-	-	-
examinations	-	-	-
objectives	-	-	-
others	-	-	-

CHARISMA

Charismatic characteristics include respect by others, an ability and desire to make others feel important, style of living, and how orthodox or unique an individual tends to be.

7.1 What do you admire most about the professor? \_\_\_\_\_

7.2 Is the professor charismatic?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Prof. is not  
charismatic

Prof. is effect-  
ively charismatic

Prof. is trying too  
hard to be charismatic

VERBAL FLUENCY

This skill reflects an individual's ability to communicate what he intends.

- 8.1 How often did the vocabulary that the professor used lead to confusion in understanding the lecture?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Professor's vocabulary caused confusion for students.

Students always understood the words the prof. used.

Professor's words were too simple for the students.

- 8.2 Was the rate at which the professor presented his material appropriate? Did he try to cover too much too fast?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Professor's presentation rate too fast.

Professor's presentation rate about right.

Professor's presentation rate too slow.

- 8.3 Does the professor repeat attempts at explanations or directions, or is one attempt usually all that is needed?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Prof. usually needs to repeat

To communicate one explanation usually suffices for the prof.

Prof. refuses to repeat even though it is often necessary.

MATURITY AND STABILITY OF INTERPRETATION

The degree to which a professor identifies and provides appropriate access to alternative sources of interpretation and information for his students is a measure of maturity and stability of interpretation.

9.1 Does the professor cue students as to whether they are receiving facts or interpretations of facts?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Students unsure if they are receiving facts or interpretations

Professor distinguishes between facts and interpretations

Professor is too concerned about facts vs. interpretation

9.2 Does the professor ever lecture about the controversy which has surrounded the material he is dealing with?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Professor never discusses controversy

Professor often discusses controversy

Professor spends too much time discussing controversy

9.3 Does the professor provide suggestions of where to find interpretations of the material which are different from his own?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Professor doesn't cite other sources

Professor always provides suggestions for other sources

Professor creates confusion by citing too many resources - should categorize and sort them out

CREATIVITY

The creative individual is one who is able to juxtapose and combine elements in original ways to form new ideas, concepts, or solutions.

10.1 How often does the professor refer to the concept of creativity, implicitly or explicitly during class?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Prof. never refers to creativity

When appropriate prof. refers to creativity

Prof. constantly refers creativity - overly concerned with this aspect

10.2 Does the professor utilize different methods to present information?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Prof. seldom varies methods of presentation

Prof. varies methods of presentation frequently

Prof. changes methods too often - confusing and not helpful

10.3 Does the professor encourage creativity?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

He doesn't seem to care about creativity

He encourages creativity

He seems to only value creative students

10.4 How creative do you believe the professor is in teaching his academic discipline?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Prof. is not creative in his teaching

Prof. is highly creative in his teaching

He confuses his students with his creativity

RECOGNIZING ATTENDING BEHAVIOR

Recognition of overt cues of attention the professor receives is a skill which includes observing students' facial expressions, direction of gazes, posture, and body movements.

11.1 Is the professor aware of student attending behavior?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

He is not aware  
of class behavior

He is always  
aware of class  
behavior

He spends too much  
time keeping an eye  
on class behavior

11.2 How does the professor react when he senses the class is not paying attention? Does he:  ignore the inattentive  
 speak faster  
 speak louder  
 direct his presentation at other listeners?  
 request attention  
 other

PACING

Pacing is the speed of presentation, i.e. the number of new concepts introduced during the lesson and the amount of time spent upon each concept.

12.1 Was the rate at which the Professor presented his material appropriate? Did he try to cover too much too fast?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Professor's presentation rate was too fast

Professor's presentation rate was about right

Professor's presentation rate was too slow

12.2 Does the professor introduce concepts at an optimal rate?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

He introduces too few concepts per lesson

He introduces optimal number of concepts per lesson

He introduces too many concepts per lesson

12.3 Is the professor able to determine how much time he should spend discussing each concept?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

He doesn't spend enough time discussing each concept

He always determines right amount of time to discuss each concept

He spends too much time discussing each concept

EXPRESSION

This skill is a reflection of a professor's ability to convey to students his chosen class manner.

- 13.1 Does the professor convey his feelings through the words he uses and expressions and movements which he makes?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Prof. does not communicate his feelings well

Prof. communicates feelings accurately

Prof. is deceitful about his feelings

- 13.2 Is the professor aware of the image he conveys during a presentation?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Prof. unaware of his image

Prof. knows the image he is conveying

Prof. is overly concerned with his image

- 13.3 What word(s) best characterizes the professor's classroom manner?
-



TUTORING

The skill of tutoring is, in part, the extent to which a professor designs and implements individual academic assistance to students.

14.1 Is the professor responsive to student requests for tutoring?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

He is never responsive to student requests

He is always available to tutor students

He tutors students for too long each session.

Respond to the following questions only if you have had tutorial assistance from the professor.

14.2 Does the professor accurately diagnose student difficulties?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Prof. provides poor diagnosis of actual problems

Prof. provides accurate diagnosis of problems

Prof. spends too much time diagnosing - not enough tutoring to correct

14.3 Do students find tutorial sessions helpful?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Tutoring by professor not helpful

Tutoring by professor extremely helpful

Tutoring by professor more detailed than necessary

ACADEMIC COUNSELING

Academic counseling is a skill which is a reflection of the professor's ability to give academic advice to students which relates his course to present student needs and anticipates future student problems.

- 15.1 Does the professor understand how other academic requirements, including those outside his department relate to what he is teaching?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Professor not informed about student requirements.

Professor informed about student requirements

Professor believes he is informed - but he is not

- 15.2 Does the professor aid students to relate their experiences in this course to other needs?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

He does not aid students to relate course to other needs

He does aid students to relate course to other needs

He spends too much time relating course to other needs

INSPIRATION

This skill is a reflection of the professor's dedication, enjoyment, and excitement to his discipline and to the class.

16.1 Does the professor truly enjoy what he is teaching?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Doesn't enjoy  
what he is  
teaching

Professor highly  
enjoys what he is  
teaching

Professor doesn't  
seem to care what  
his students enjoy  
as long as he does

16.2 How dedicated is the professor to what he is saying and doing?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Professor has  
low dedication

Professor is  
highly dedicated

Professor is too  
zealous - overly  
dedicated - lacks  
perspective

16.3 Does the professor help the students to increase their enjoyment and appreciation of the course material?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

He is unconcerned  
with student enjoy-  
ment and apprecia-  
tion

He is concerned  
with student en-  
joyment and  
appreciation

He worries too much  
about whether  
students are happy

LEVEL OF CHALLENGE

The skill level of challenge refers to the difficulty of a professor's assignments and to the general reaction of students to the classroom material.

17.1 The professor's level of challenge in class is:

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Generally too  
low for students

About right

Generally too high  
for students

17.2 Are the assignments that the professor gives at the right level of challenge?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Professor's  
assignments  
lack challenge

Professor's  
assignments  
interesting

Professor's  
assignments too  
difficult

LECTURING

Skill in lecturing not only involves communicating information, it includes the manner in which a professor approaches the lecture, his bearing during the lecture, and the degree to which students benefit from the lecture.

18.1 Does the professor present the material in a manner which aids the student to understand the material?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Professor's  
lectures confuse  
issues

Professor's  
lectures are  
informative and  
interesting

Professor relies  
upon lecture method  
too much

18.2 Does the professor lecture in an interesting manner?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Professor's  
lectures tend  
to be ordinary

Professor's  
lectures are  
interesting and  
pleasureable

Professor's  
lectures are too  
gimmicky - not enough  
substance

STUDENT PARTICIPATION

The skill of student participation involves the ability of a professor to recognize when and to what degree students should participate during class.

19.1 Does the professor encourage student participation during class?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Student participation not encouraged

Student participation encouraged

Student participation is required - no freedom of choice

19.2 Is the level of student participation appropriate for this class?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Student participation level is too low

Student participation level is appropriate

Student participation level is too high

19.3 Does the professor encourage students to learn from each other?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

He does not encourage students to learn from each other

He does encourage students to learn from each other

He refers students to learn from each other too often

VERBAL AND NONVERBAL REINFORCEMENT

This skill involves the words and non-verbal cues (gestures, expressions, etc.) which a professor uses to indicate his reaction to student response.

20.1 How often does the professor reinforce student response?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Prof. does not reinforce

Prof. reinforces whenever necessary

Prof. reinforces every answer whether or not the answer merits reward

20.2 Does the professor use a variety of words to reinforce student response?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

He uses same words to reinforce

He varies reinforcers - uses different levels of correct answers

Students unsure of how the Prof. feels about their responses - varies reinforcement too much

20.3 Is the professor genuinely interested in how the students respond?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Prof. not genuinely interested in student response

Prof. genuinely interested in student response

Prof. places too much importance on student response

LOGICAL ORGANIZATION

This skill refers to the sequence and choice of topics which a professor uses for his presentations and the way in which these topics are related during the presentation.

21.1 Does the professor present material so that students are aware of his goals?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Students are unsure of prof. goals

Students are certain of prof. goals

Prof. devotes too much time to goals

21.2 Does the professor ensure that his students understand the concepts upon which his lessons are based?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Students rarely understand the basic concepts

Prof. always ensures that students understand the concepts

Prof. spends too much time on the basic concepts

21.3 Does the professor make the relationship between topics in his lecture clear to the students?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Students don't see how topics in lecture are related

Lecture topics are clearly related

Lecture is too highly organized - no room for discussion on anything besides lecture topics

21.4 Is the professor systematic, i.e., well ordered during class?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Prof. not systematic during class - appears confused

Prof. appears well ordered and calm

Prof. is too unconcerned and too collected

21.5 Does the professor use a number of different approaches to explain his concepts?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Prof. never varies his approach

Prof. always uses a variety of approaches

Prof. uses so many varied approaches that it becomes distracting



EXAMPLES

An example chosen by the professor which is related to the student's experience can aid the student to more fully grasp the concept or idea at hand.

- 22.1 Does the professor use examples which are within the range of student knowledge and experience?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Prof.'s examples are usually unfamiliar to the students	Prof.'s examples are familiar and useful	Prof.'s examples are clear but too simplified
---	--	---

- 22.2 Does the professor relate the examples he uses to the points which he is illustrating?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Prof.'s examples aren't well related to points	Prof.'s examples are well related and aid students to understand	Prof. spends too much time relating the example to points
--	--	---

- 22.3 Does the professor check to see if students understand the main points of a lesson by asking students to give examples illustrating the point?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Students aren't asked to give examples	Students often asked to give examples to demonstrate their understanding	Students asked to give examples when it is clear they understand answers
--	--	--

PRECISE STATEMENTS

Using precise statements is a skill that measures a professor's ability to be clear and concise at appropriate junctures of a presentation.

- 23.1 If the professor were forced to use fewer words to explain a concept, would the explanation be likely to be clear or confused?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Professor's explanation would be more confused

Professor's explanation would be clear & students would understand

Professor's explanation would be too precise - if at too high a level to understand

- 23.2 Does the professor use the right number of precise statements during class, or should he use more?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Professor doesn't use enough precise statements

Professor uses just right number of precise statements

Professor uses precise statements too often

LEVELS OF IMPORTANCE

This skill requires the professor to clearly distinguish for the student what facts or concepts are more important in his estimation.

24.1 Does the professor distinguish between the more important and the less important points in his lecture?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Prof. doesn't  
distinguish levels  
of importance

Prof. distinguishes  
levels of  
importance

Prof. too often makes  
distinctions of level of  
importance

A-1 Are the skills represented in this booklet about right for providing teacher guidance?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Insufficient

About right

Too much

A-2 Is the range of the scales sufficient for indicating variations you have observed in the professor's performance?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Too narrow

About right

Too wide

A-3 The length of the booklet is:

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Too long

About right

Too short

A-4 This exercise is valuable for me, the professor, or both?

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Valuable to me

Both

Valuable to professor

Not valuable

GENERAL COMMENTS

(about the professor or the booklet)

SKILLS TO IMPROVE UNIVERSITY TEACHING

SCHOOL OF EDUCATION  
UNIVERSITY OF MASSACHUSETTS  
AMHERST, MASSACHUSETTS  
MARCH 1972

Appendix A-2

Preliminary Form

Student Centered Analysis of  
Teaching Instrument (SCAT)

The following skills have been designed to assess specific skills involved in University teaching. You are asked to respond from your viewpoint. Do not answer for any of the other students in the class

. Circle one of the number on the scales following the questions. Circle the one number which best approximates what you feel is your position on the continuum. PLEASE NOTE that the optimal point on the scale is always in the middle of the scale.

Planned Repetition	1
Elaboration	2
Asking Questions	3
Setting The Stage For A Lesson	4
Anticipation Of Student Needs	5
Optional Instruction	6
Charisma	7
Verbal Fluency	8
Maturity And Stability Of Interpretation	9
Creativity	11
Recognizing Attending Behavior	12
Summary	13
Ability Of Teacher To Express Feelings	14
Tutoring	15
Academic Counseling	16
Inspiration	18
Level of Challenge	19
Lecturing	20
Student Participation	21
Verbal & Non-Verbal Reinforcement	22
Logical Organization	23
Examples	24
Precise Statements	25
Levels of Importance	26
General Comments.	27

PLANNED REPETITION

This skill involves the repetition of main ideas, concepts, or key facts, in order to help students learn the material.

1. Once the professor has introduced new ideas does he repeat them during the lesson?

1     2     3  
Professor never  
repeats ideas

4     5     6  
Professor repeats  
ideas right num-  
ber of times

7     8     9  
Professor repeats  
ideas too often -  
bores Students

2. If so, does this repetition aid you to remember the facts or concepts?

1     2     3  
His repetition  
is not useful

4     5     6  
His repetition  
is extremely  
useful

7     8     9  
His repetition  
inhibits my  
learning

3. Does the professor summarize the main ideas at times during the lecture?

1     2     3  
Professor never  
summarizes  
during lesson

4     5     6  
Professor sum-  
marizes at  
right times  
during lesson

7     8     9  
Professor sum-  
marizes too  
often during  
the lesson



ELABORATION

At times an important point, i.e., some element of a presentation will require a more in-depth explanation. Elaboration occurs when a particular point is discussed in greater detail during a presentation.

1. Does the professor vary elaborations or are they routine and standardized in timing and degree?

1      2      3	4      5      6	7      8      9
Elaborations are routine and predictable - not interesting	Elaborations always different and worthwhile	Elaborations tend to be flashy - not helpful

2. How often does the professor ask if further elaboration is necessary for comprehension?

1      2      3	4      5      6	7      8      9
Never asks if further elaboration is necessary	Usually asks when elaboration is needed	Asks too often if elaboration is necessary

3. How well can the professor determine when additional information is required for student comprehension?

1      2      3	4      5      6	7      8      9
Is a poor judge of when to elaborate	Knows exactly when elaboration is needed	Elaborates too often

Questions help students to clarify their thinking, expand upon their thinking, and coherently summarize their thoughts. Questions aid the professor to be of assistance to students either by communicating basic understandings or by helping students to gain a fuller perspective through directed questions.

1. How many questions does the professor ask during a presentation?

1	2	3	4	5	6	7	8	9
Not enough questions asked			About the right number of questions asked			Too many questions asked		

2. Does the professor ask questions which require students to give more information or to clarify answers?

1	2	3	4	5	6	7	8	9
Short answers will suffice			Balance between short & long answers is even			Answers all must be long & detailed		

3. Does the professor ask questions that bring students into the discussion by encouraging them to respond to other student's answers?

1	2	3	4	5	6	7	8	9
Students never respond to other students' questions			Students answer each other's questions regularly			Professor seldom answers students' questions		

4. Could students answer the professor's questions by just remembering facts or details?

1	2	3	4	5	6	7	8	9
Facts & details are sufficient			Usually in-depth analysis is required to answer the question			Professor is never satisfied with short responses		

5. Does the professor ask questions that require the students to use previously learned knowledge in order to solve a problem they have not faced before?

1	2	3	4	5	6	7	8	9
Questions involving previously learned material never asked			Professor asks questions concerning previously learned material			All questions are concerned with past material		

6. Does the professor ask questions for which there are no "right" or "wrong" answers, but many responses?

1	2	3	4	5	6	7	8	9
Questions always have one right answer			Questions have several acceptable answers			Never sure what answer Professor believes is correct		

SETTING THE STAGE FOR A LESSON

This skill is a measure of the professor's attempt to begin the lesson in a way which catches student attention and captures student interest.

1. How interesting is the professor's introduction?

1      2      3	4      5      6	7      8      9
1. Introductions are dull & uninteresting	Introductions are lively & engaging	Introductions are too "showy" - don't see what introduction has to do with lesson

2. To what extent does the professor's introduction inspire you to study the main part of the lesson?

1      2      3	4      5      6	7      8      9
Introductions do not inspire study of main part of lesson	Introduction inspires students to study main part of lesson	Introductions are more inspiring than the class lesson

3. Would the professor's introduction be likely to help you remember the material covered in the main part of the lesson?

1      2      3	4      5      6	7      8      9
Introductions are helpful in remembering lesson	Introductions make it extremely easy to remember what lesson was about	Introductions confuse students about main points of lesson

ANTICIPATION OF STUDENT NEEDS

A Professor who anticipates student needs should organize and operate his course in conjunction with student feedback.

1. Is the professor genuinely interested in meeting student needs?

1	2	3	4	5	6	7	8	9
Professor not interested in student needs			Professor highly interested in student needs			Professor can be swayed too easily by student needs		

2. Does the professor request information from his student regarding course content?

1	2	3	4	5	6	7	8	9
He never requests student feedback on course content			He is genuinely interested in student feedback about course content			He is overly concerned about how students feel - should be more independent		

3. Does the professor make the course material relevant to the experiences of the students? (Does he take past experiences into account when he prepares lectures?)

1	2	3	4	5	6	7	8	9
Professor never takes past information about the student into account - makes same mistakes			Professor adjusts very well whenever experience dictates change			Professor changes course at every hint of student dissatisfaction		

OPTIONAL INSTRUCTION

A professor's belief in options is reflected in this identification of alternatives whereby students demonstrate proficiency or satisfy requirement, and the degree to which he makes these options available to students.

1. Does the professor accept the concept of options for students in his class?

1	2	3	4	5	6	7	8	9
Professor does not make options available			Professors make exactly the right number of options available			Professor makes too many options available		

2. Does the professor provide options for students to:

	NO	YES	TOO MANY
class attendance	-	-	-
reading assignments	-	-	-
pre-requisites	-	-	-
examinations	-	-	-
objectives	-	-	-

3. How open do you believe the professor would be if you proposed an option to his class procedure?

1	2	3	4	5	6	7	8	9
He would not be open at all - probably angered			He would be open for discussion - friendly			Students could suggest anything & he would agree		

CHARISMA

Charismatic characteristics includes respect by others, an ability and desire to make others feel important, style of living, and how orthodox or unique an individual tends to be.

1. Do you believe the professor is a truly extraordinary individual?

1 2 3  
Professor is  
Ordinary

4 5 6  
Professor is  
Extraordinary

7 8 9  
Professor is  
Too Far Out

2. How committed do you believe the professor is to his objectives?

1 2 3  
He is  
wishy - washy  
about his objectives

4 5 6  
He  
stands up for  
his objectives

7 8 9  
He  
defends his objectives  
with no compromise -  
too dogmatic

3. What do you admire most about the professor?

4. Is the professor trying to be charismatic but just not succeeding?

1 2 3  
Professor is  
not succeeding  
at gaining  
charisma

4 5 6  
Professor is  
naturally  
charismatic

7 8 9  
Professor is  
trying too hard  
to be charismatic

VERBAL FLUENCY

This skill is the reflection of an individual's ability to communicate what he intends, i.e., what he thinks would be appropriate given a situation. Ability in the skill is measured by the facility of expression or how smoothly (without hesitation) an individual is able to communicate what he intends.

1. Do the words the professor uses give you confidence you know what he is actually thinking?

1 2 3  
His words do  
not convey what  
he seems to think

4 5 6  
His words do  
convey what he  
seems to think

7 8 9  
He uses words  
which really  
aren't appropriate -  
too involved

2. Do the words the professor uses give you confidence you know what he is actually feeling?

1 2 3  
His  
words and feeling  
don't match

4 5 6  
He is able  
to say what  
he is feeling

7 8 9  
He uses words  
which aren't really  
appropriate - too  
involved

3. Does the professor repeat attempts at explanations or directions, or is one attempt usually all that is needed?

1 2 3  
Professor  
usually needs  
to repeat

4 5 6  
To communicate  
one explanation  
usually suffices  
for the professor

7 8 9  
Professor  
refuses to repeat  
even though it is  
often necessary

The degree to which a professor identified and provides access to alternative sources of interpretation and information for his students is a measure of maturity and stability of interpretation.

Does the professor cue students as to whether they are receiving facts or interpretations of facts?

1	2	3	4	5	6	7	8	9
Students unsure if they are receiving facts or interpretations			Professor tells students they are receiving facts and which they are receiving interpretations			Professor is too concerned about facts vs. interpretation		

Does the professor inform students of the times when he is giving his own personal interpretations and when it is that of some other authority?

1	2	3	4	5	6	7	8	9
Students are unsure of whether interpretation is professor's or that of another authority			Professor always informs student which interpretations are his own			Professor never gives his own interpretation - too many outside interpretations		

Does the professor ever lecture about the controversy which has surrounded the material he was dealing with?

1	2	3	4	5	6	7	8	9
Professor never discussed controversy			Professor often discusses controversy			Professor spends too much time discussing controversy		

Does the professor provide suggestions of where to find interpretations of the material which are different from his own?

1	2	3	4	5	6	7	8	9
Professor doesn't cite other resources			Professor always provides suggestions for other sources			Professor creates, confuses by citing - too many resources - should categorize and sort them out		

How much attention does the professor give to the future of the topics he discusses?

1	2	3	4	5	6	7	8	9
Professor never discusses future in relation to present topics			Professor often discusses future applications to present topics			Professor too concerned with future applications - should be more concerned with present		



Does the professor encourage the formation of student interpretations?

1 2 3  
Students don't  
feel free to  
form interpretation

4 5 6  
Students feel free  
to form their own  
interpretations

7 8 9  
Students are allowed  
too much freedom to  
form their own  
interpretations

CREATIVITY

The creative individual is one who is able to juxtapose and combine elements in new ways to form new ideas, concepts, or solutions.

1. How often does the professor refer to the concept of creativity, implicitly or explicitly during class?

1 2 3  
Professor  
never refers  
to creativity

4 5 6  
When appropriate  
professor refers to  
creativity

7 8 9  
Professor  
constantly refers  
creativity - overly  
concerned with this  
aspect

2. Does the professor utilize different methods to present information?

1 2 3  
Professor  
seldom varies  
methods of  
presentation

4 5 6  
Professor  
varies methods of  
presentation  
frequently

7 8 9  
Professor  
changes methods  
too often - confusing  
and not helpful

3. Does the professor encourage independent thought by acknowledging or rewarding attempts at creativity?

1 2 3  
He  
doesn't seem  
to care about  
creativity - no  
reward

4 5 6  
He encourages  
independent thought  
with praise or other  
reward

7 8 9  
He seems to  
only value and  
reward creative  
students

4. How creative do you believe the professor is in his academic discipline?

1 2 3  
Professor is  
not creative

4 5 6  
Professor is  
highly creative

7 8 9  
He confuses  
himself with his  
creativity

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RECOGNIZING ATTENDING BEHAVIOR

A recognition of the overt cues of attention the professor receives from his students. Cues include facial expressions, the direction of gazes, posture, and their body movement.

1. Does the professor ever request that the class "pay more attention"?

1 2 3  
Professor  
never asks  
class to "pay  
attention"

4 5 6  
Professor  
asks class to  
pay attention  
when necessary

7 8 9  
Professor is  
constantly asking  
class to pay  
attention

2. Is the professor aware of student attending behavior?

1 2 3  
He is  
not aware of  
class behavior

4 5 6  
He is  
always aware  
of class behavior

7 8 9  
He  
spends too much  
time keeping an eye  
on class behavior

3. How does the professor react when he senses the class is not paying attention? Does he: ignore the inattention  
speak faster  
speak louder  
direct his presentation at other listeners?  
other

SUMMARY

Review of the main points of the lesson periodically at the end of a lesson. To emphasize important relationships in the lesson.

1. Does the professor review major points throughout the lesson?

1 2 3  
Professor  
never reviews  
main points  
during lesson

4 5 6  
Professor  
reviews when  
necessary

7 8 9  
Professor  
reviews too often

2. Does the professor connect the lesson material with previously learned material and with future learning?

1 2 3  
He is only  
concerned  
with immediate  
material

4 5 6  
He often relates  
present classes to  
past classes or  
discusses future  
material - good  
mixture

7 8 9  
He doesn't  
concentrate  
enough discussing  
present material -  
skips around too  
much

3. Does the professor provide a summary frequently enough?

1 2 3  
Professor  
never summarizes

4 5 6  
Professor  
summarizes whenever  
necessary

7 8 9  
Professor  
summarizes too often

4. Does the professor summarize in sufficient highlight and detail?

1 2 3  
Summaries  
are too simple -  
should be more  
involved

4 5 6  
Summaries perfect  
just enough detail

7 8 9  
Summaries too  
involved with  
detail - don't  
discuss basics

ABILITY OF TEACHER TO EXPRESS FEELINGS

Does the professor accurately communicate his real feelings and emotions verbally and non-verbally.

1. Does the professor accurately convey emotions through the words he uses and expressions and movements which he makes?

1   2   3	4   5   6	7   8   9
Professor is not able to communicate his feelings	Professor always communicates feelings accurately	Professor is deceitful about his feelings

2. Is the professor aware of the emotions he conveys during a presentation?

1   2   3	4   5   6	7   8   9
Professor unaware of the emotions he shows	Professor knows precisely how to convey all emotions	Professor has no control - displays too many emotions

3. Are the verbal and non-verbal cues of professor's feelings consistent?

1   2   3	4   5   6	7   8   9
Professor is really feeling something else but he tries to hide it	His words and gestures are well matched	Professors gestures and words over- dramatize what he is feeling

TUTORING

The extent to which a professor designs and implements individual academic assistance to students.

1. How frequently does the professor work with students on a tutorial basis?

1 2 3  
Professor never works with students on tutorial basis

1 2 3  
Professor is always open for tutoring - often

1 2 3  
Professor coerces students into tutorial sessions.

2. Does the professor initiate tutoring?      yes \_\_\_\_\_ no \_\_\_\_\_

3. Is the professor responsive to student requests for tutoring?

1 2 3  
He is never responsive to student requests.

4 5 6  
He is always available to tutor students.

7 8 9  
He tutors students for too long each session.

4. Does the professor accurately diagnose student difficulties?

1 2 3  
Professor provides poor diagnosis of actual problems

4 5 6  
Professor provides accurate diagnosis of problems.

7 8 9  
Professor spends too much time diagnosing - not enough tutoring to correct.

5. Do students find tutorial sessions helpful?

1 2 3  
Tutoring by professor not helpful.

4 5 6  
Tutoring by professor extremely helpful.

7 8 9  
Tutoring by professor more interesting than his class.

Professors aid students to improve academic advice to students which meets present needs and anticipates future problems.

1. Does the professor encourage students to come to him for academic counseling?

1 2 3  
Professor never encourages students to come to him for academic counseling.

4 5 6  
Students feel free to approach him for academic counseling.

7 8 9  
Professor coerces students to come to him for academic counseling - no choice.

2. How often do students receive advice from the professor regarding some aspect to academic work?

1 2 3  
Students never receive academic advice.

4 5 6  
Students receive academic advice when necessary.

7 8 9  
Students receive academic advice too often - not necessary.

3. Does the professor understand the full range of student requirements, including those outside his department?

1 2 3  
Professor not informed about student requirements.

4 5 6  
Professor informed about student requirements.

7 8 9  
Professor believes he is informed - but he is not.

4. Does the professor make an honest attempt to ascertain what students questions actually are?

1 2 3  
Professor doesn't ask students what problems are.

4 5 6  
Professor always discusses with student to ascertain problems.

7 8 9  
Professor spends too much time discussing problem - not enough on solving problems.

5. Does the professor understand student needs?

1 2 3  
He doesn't understand student needs.

4 5 6  
He understands student needs.

7 8 9  
He is too secure that he understands all the needs of students.

ACADEMIC COUNSELING (Continued)

6. Is the professors' advice usually helpful?

1 2 3  
Professor's advice  
usually not helpful.

4 5 6  
Professor's advice  
extremely helpful.

7 8 9  
Professor's advice  
too involved - should  
be simpler more direct.

7. Do students seek more than initial academic counseling from the professor?

1 2 3  
Students only go  
once.

4 5 6  
Students go as  
often as necessary.

7 8 9  
Students go too  
often - don't get  
answers in class.



The dedication, enjoyment, and excitement which a professor displays during class encourage students to be inspired about the class.

1. Does the professor truly enjoy what he is teaching?

1 2 3  
Doesn't enjoy  
what he is teaching.

4 5 6  
Professor highly  
enjoys what he is  
teaching.

7 8 9  
Professor doesn't  
seem to care what  
his students enjoy  
as long as he does.

2. How dedicated is the professor to what he is saying and doing?

1 2 3  
Professor has  
low dedication.

4 5 6  
Professor is  
highly dedicated.

7 8 9  
Professor is too  
zealous - overly  
dedicated - lacks  
perspective.

3. Does the professor help the students to increase their enjoyment and appreciation of the course material?

1 2 3  
He is unconcerned  
with student enjoy-  
ment.

4 5 6  
He is highly  
concerned with  
student enjoyment.

7 8 9  
He worries too much  
about whether students  
are happy.

4. Does the professor share with the students the reasons for his dedication to his discipline?

1 2 3  
Students don't  
know why he is  
dedicated.

4 5 6  
Professor talks  
with students  
about his  
committment.

7 8 9  
Professor tells students  
they should be as committed  
as he is or as certain  
other students.

The difficulty of the class in terms of the professor's vocabulary level, the intensity of his presentation, the examples he used, and his out of class assignments.

1. How often did the vocabulary that the professor used lead to confusion in understanding the lecture?

1 2 3  
Professor's  
vocabulary caused  
confusion for students

4 5 6  
Students  
always understood  
the words the pro-  
fessor used

7 8 9  
Professor's  
words were  
too simple for  
the students

2. Were the professor's explanations of concepts at a level appropriate to student knowledge and background in the subject?

1 2 3  
His explanations  
were too simplistic

4 5 6  
His explanations  
were perfect

7 8 9  
His explanations  
were too long

3. Was the rate at which the professor presented his material appropriate? Did he try to cover too much too fast?

1 2 3  
Professor's  
presentation rate  
was too fast

4 5 6  
Professor's  
presentation rate  
was perfect

7 8 9  
Professor's  
presentation rate  
was too slow

4. Were the examples that the professor used in explaining his materials in class appropriate?

1 2 3  
Professor's  
examples simple-  
minded turned off  
students

4 5 6  
Professor's  
examples were  
about right

7 8 9  
Professor's  
examples were too  
abstract-students found  
them confusing

5. Were the assignments that the professor gave at the right level of challenge?

1 2 3  
Professor's  
assignments lack  
challenge

4 5 6  
Professor's  
assignments inter-  
esting and aid in

7 8 9  
Professor's  
assignments too  
difficult

6. The professor's level of challenge in class was:

1 2 3  
Professor's  
level of challenge  
generally too low  
for students

4 5 6  
Professor's  
level of challenge  
just about right

7 8 9  
Professor's  
level of challenge  
generally too high  
for students

## LECTURING

Skill in learning involves more than communicating information, it includes the manner in which a professor approaches the lecture, his bearing during the lecture, and the degree to which students benefit from the lecture.

1. Does the professor present the material in a manner which aided the student to understand the material?

1 2 3  
Professor's  
lectures confuse  
issues

4 5 6  
Professor's  
lectures are  
informative and  
interesting

7 8 9  
Professor relies  
upon lecture method  
too much

2. Do lectures encourage student involvement?

1 2 3  
Students not  
involved during  
lecture

4 5 6  
Students highly  
involved during  
lecture

7 8 9  
Students only involved  
during lecture - out-  
side of class course is  
uninteresting

3. Does the professor lecture in an interesting manner?

1 2 3  
Professor's  
lectures tend  
to be ordinary

4 5 6  
Professor's  
lectures are  
interesting and  
pleasureable

7 8 9  
Professor's  
lectures are too  
gimmicky - not enough  
substance

## STUDENT PARTICIPATION

Student participation refers both to in class and out of class involvement on the part of students in determining course content and changes, informing the professor to when they require clarification, repetition, or additional information.

1. Does the professor encourage participation during class - outside of class?

1            2            3  
Student participation  
not encouraged

4            5            6  
Student participation  
encouraged

7            8            9  
Student participation  
is required - no freedom  
of choice

2. How often do students participate in classroom interaction with the professor?

1            2            3  
Students don't  
participate during  
class

4            5            6  
Student eagerly  
participate during  
class

7            8            9  
Students take up too  
much time - professor  
should be more in  
charge

3. Is the level of student participation appropriate?

1            2            3  
Student participation  
level is too low

4            5            6  
Student participation  
level is perfect

7            8            9  
Student participation  
level is too high

4. Is student participation encouraged concerning course design and change, lesson content assignments?            YES    NO    SOMETIMES

## VERBAL AND NONVERBAL REINFORCEMENT

Refers to the words and non-verbal cue (gestures, expressions, etc.) which a professor uses to indicate his reaction to student response.

1. How often does the professor reinforce student response?

1	2	3	4	5	6	7	8	9
Professor does not reinforce			Professor reinforces whenever necessary			Professor reinforces every answer whether or not the answer merits reward		

2. Does the professor use a variety of words to reinforce student response?

1	2	3	4	5	6	7	8	9
He uses same words to reinforce			He varies reinforcers - uses different levels of correct answers			Students unsure of how the professor feels about their responses - varies reinforcement too much		

3. Does the professor use a variety of non-verbal cues to his students?

1	2	3	4	5	6	7	8	9
His gestures & expressions usually same regardless of answer			He uses a wide variety of gestures & expressions			He is too lively during class - humorous to watch		

4. Is the professor genuinely interested in how the students respond?

1	2	3	4	5	6	7	8	9
Professor not genuinely interested in student response			Professor genuinely interested in student response			Professor places too much importance on student response		

5. Does the professor encourage a student response which is not completely correct?

1	2	3	4	5	6	7	8	9
Students don't feel free to respond unless they know the "right" answer			Student feel free to respond even if they are not completely certain they are "right"			Professor allows students to waste class time with wrong answers		

## LOGICAL ORGANIZATION

This skill refers to the sequence and choice of topics which a professor chooses for his presentations and the way in which these topics are related during the presentation.

1. Does the professor make the relationship between topics in his lecture clear to the students?

1    2    3  
Students don't see  
how topics in lecture  
are related

4    5    6  
Lecture topics are  
clearly related

7    8    9  
Lecture is too highly  
organized - no room for  
discussion on anything  
beside lecture topics

2. Is the professor systematic i.e., well ordered during class?

1    2    3  
Professor not  
systematic during  
class - appears  
confused

4    5    6  
Professor appears  
well ordered and  
calm

7    8    9  
Professor is too  
unconcerned and too  
collected

3. Would the professor be a person to help students who were having difficulty organizing the course material?

1    2    3  
Professor could  
not help students  
organize course  
material

4    5    6  
Professor could  
certainly help students  
to organize course  
material

7    8    9  
Professor would  
overorganize course  
material

EXAMPLES

An example chosen by the professor which is related to the student's experience can aid the student to more fully grasp the concept or idea at hand.

- 1. Does the professor use examples which are within the range of student knowledge and experience?

1 2 3  
 Professor's examples are usually unfamiliar to the students

4 5 6  
 Professor's examples are familiar and useful

7 8 9  
 Professor's examples are clear but too simplified

- 2. Does the professor relate the examples he uses to the points which he is illustrating?

1 2 3  
 Professor's examples aren't well related to points

4 5 6  
 Professor's examples are well related and aid students to under-

7 8 9  
 Professor spends too much time relating the example to point

- 3. Does the professor check to see if students understand the main point of a lesson by asking students to give examples illustrating the point?

1 2 3  
 Students aren't asked to give examples

4 5 6  
 Students often asked to give examples Demonstrate understand

7 8 9  
 Students asked to give examples when it is clear they understand answers

PRECISE STATEMENTS

This skill is a measure of a professor's capability to be clear and brief at appropriate junctures of a presentation.

1. Does the professor successfully anticipate when a precise statement would be useful?

1 2 3  
Professor  
doesn't know when  
to be precise

4 5 6  
Professor  
knows exactly when  
to be precise

7 8 9  
Professor is too  
precise - he is almost  
mechanistic in his  
precision

2. If the professor were forced to use fewer words to explain a concept would the explanation be likely to be clear or confused?

1 2 3  
Professor's  
explanation would  
be more confused

4 5 6  
Professor's  
explanation would  
be clear & students  
would understand

7 8 9  
Professor's  
explanation would  
be too precise - if  
at too high a level to  
understand

3. Does the professor use the right number of precise statements during class, or should he use more?

1 2 3  
Professor doesn't  
use enough precise  
statements

4 5 6  
Professor uses just  
right number of  
precise statements

7 8 9  
Professor uses  
precise statements  
too often



This skill requires the professor to clearly distinguish for the student what facts or concepts are more important in his estimation.

Does the professor distinguish between the more important and the less important points in his lecture?

1	2	3	4	5	6	7	8	9
Professor doesn't distinguish levels of importance			Professor distinguish levels of importance			Professor too often makes distinctions of level of importance		

Does the professor distinguish professional competence requirements in his lectures?

1	2	3	4	5	6	7	8	9
Professor never distinguishes professional competence requirement for students			Professor always distinguishes professional competence requirement for students			Professor cites everything as a professional requirement for students		

Does the professor make students feel certain regarding their understanding of what he feels is important?

1	2	3	4	5	6	7	8	9
Students are uncertain of what professor feels is important			Students are well-informed by professor about levels of importance			Professor is too dogmatic about levels importance - every point is assigned an exact level of importance		

## GENERAL COMMENTS

Appendix B

Interview Materials

Initial Interview

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

Name: \_\_\_\_\_

Class Number  
& Description

Meeting Days  
& Time

Meeting  
Place

No. of  
Students

_____	_____	_____	_____
_____	_____	_____	_____

Interview:

Special Considerations:

Faculty Self-Analysis

- |    |  |    |                                   |
|----|--|----|-----------------------------------|
| 1  | Planned Repetition                     | 13 | Expression                        |
| 2  | Elaboration                            | 14 | Tutoring                          |
| 3  | Asking Questions                       | 15 | Academic Counseling               |
| 4  | Setting the Stage for a Lesson         | 16 | Inspiration                       |
| 5  | Meeting Student Needs                  | 17 | Level of Challenge                |
| 6  | Optional Instruction                   | 18 | Lecturing                         |
| 7  | Charisma                               | 19 | Students Participation            |
| 8  | Verbal Fluency                         | 20 | Verbal & Non-Verbal Reinforcement |
| 9  | Maturity & Stability of Interpretation | 21 | Logical Organization              |
| 10 | Creativity                             | 22 | Examples                          |
| 11 | Recognizing Attending Behavior         | 23 | Precise Statements                |
| 12 | Pacing                                 | 24 | Level of Importance               |

Five (5) most important skills in my discipline

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

My three (3) strongest skills

\_\_\_\_\_

\_\_\_\_\_

My three (3) weakest skills

\_\_\_\_\_

\_\_\_\_\_

Skill I am most interested in developing

\_\_\_\_\_

NAME \_\_\_\_\_

DATE \_\_\_\_\_

Faculty Analysis of Student Response

- |    |  |    |                                   |
|----|--|----|-----------------------------------|
| 1  | Planned Repetition                     | 13 | Expression                        |
| 2  | Elaboration                            | 14 | Tutoring                          |
| 3  | Asking Questions                       | 15 | Academic Counseling               |
| 4  | Setting the Stage for a Lesson         | 16 | Inspiration                       |
| 5  | Meeting Student Needs                  | 17 | Level of Challenge                |
| 6  | Optional Instruction                   | 18 | Lecturing                         |
| 7  | Charisma                               | 19 | Students Participation            |
| 8  | Verbal Fluency                         | 20 | Verbal & Non-Verbal Reinforcement |
| 9  | Maturity & Stability of Interpretation | 21 | Logical Organization              |
| 10 | Creativity                             | 22 | Examples                          |
| 11 | Recognizing Attending Behavior         | 23 | Precise Statements                |
| 12 | Pacing                                 | 24 | Level of Importance               |

Five (5) most important skills selected by my students

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---

---

Three (3) skills my students selected as my strongest

---

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Three (3) skills my students selected as my weakest

---

---

Skill my students would most like me to develop

---

NAME \_\_\_\_\_

DATE \_\_\_\_\_

Appendix C

Summary Data

Faculty-Student Agreement of Perceptions  
of Teaching Performance





Faculty Member 1

Artificial Intelligence

What do you admire most about the professor?

openness, friendliness  
 knows more than I do  
 inane question  
 both try to give their best  
 feeling for subject and students  
 informality  
 no response (7)

Fortran IV

What do you admire most about the professor?

he is real, doesn't place himself on a pedestal  
 such a friendly person to talk to  
 easy-going  
 uses good examples  
 his ability to get up for this class  
 attitude  
 friendliness  
 easy manner (2)  
 talking loudly enough in such a large class, let everybody  
     hear clearly  
 his free youthful style, different from typical Zool. prof.  
 that he can get up for an 8:00 A.M.  
 the way he lectures  
 moustache  
 his attitude toward the students--making them feel that he's  
     glad where he is  
 eagerness at 8:00 A.M.  
 good teacher  
 computer science knowledge  
 communicative ability  
 style  
 on our level  
 classroom processes  
 he identifies with us  
 ability to communicate in a friendly manner  
 very good instructor--presents material clearly  
 willingness to help (2)  
 he plays squash  
 concern for students  
 relaxed  
 ability to make a point clear  
 casualness

Fortran IV (continued)

What do you admire most about the professor? (continued)

sharpness  
 personality  
 fair, friendly, willing to help  
 straight-forward  
 well-prepared  
 ease and friendliness in front of such a large lecture  
 does his job well  
 his knowledge of the fact that experience and making  
 mistakes is a learning process itself  
 he makes mistakes like everyone else  
 flamboyant style of teaching (2)  
 helpfulness in explanation, thoroughness attitude  
 ability, attitude  
 his suave atmosphere and moustache  
 attempt to get his point across  
 he's human  
 attitude and friendliness  
 manner of speaking  
 he keeps your attention through his lecture  
 sense of humor and ability to be relaxed while listening  
 no response (25)

What word(s) best characterizes the professor's classroom  
 manner?

relaxed and calm (2)  
 direct, forceful  
 routine but a good routine  
 "um"  
 super  
 helpfulness, patience, dedication  
 communicate effectively  
 informal (3)  
 casual but alert  
 computer talk  
 knowledgeable  
 easy-going (3)  
 confident (3)  
 excellent in view of hour (2)  
 very casual (4)  
 capable clear  
 business-like  
 a bit dis-organized  
 personal  
 relaxed (4)  
 spaghetti  
 casual but direct

Fortran IV (continued)

What word(s) best characterizes the professor's classroom manner? (continued)

friendly easy-going  
spastic  
adequate  
lively  
cheerful  
relaxed, informal  
calm but he seems well-adjusted to any audience  
good but there is nothing dramatic in it  
easy  
talks clearly  
interesting (2)  
carefree  
casual but effective  
doing a job he may like  
knowledgeable and cool  
aware  
loose  
collected  
in control  
lively, engaging, interesting  
prepared, informal  
he limps  
his manner is okay but he does not speak with smooth  
transition between words and sentences  
very personal for such a large class--interested in what  
he's doing  
straightforward  
relaxed, friendly, helpful  
good, considering nature of material  
no response (33)

Comparative Analysis

Name: Faculty Member 2

Class Number & Description	Class Type	Number of Students
<hr/>	<u>Classroom</u>	<u>28</u>
<hr/>	<u>Classroom</u>	<u>13</u>

Data Report

	Faculty Self-Analysis	Faculty Analysis of Student Response	Student Response
5 Most Important Skills of Discipline (Course)	<u>Logical Organization</u>	<u>Inspiration</u>	<u>Logical Organization</u>
	<u>Precise Statements</u>	<u>Lecturing</u>	<u>Lecturing</u>
	<u>Level of Importance</u>	<u>Level of Challenge</u>	<u>Examples</u>
	<u>Lecturing</u>	<u>Tutoring</u>	<u>Pacing</u>
	<u>Tutoring</u>	<u>Meeting Student Needs</u>	<u>Level of Challenge</u> <u>Meeting Student Needs</u> <u>Elaboration</u>
Prof.'s 3 Strongest Skills	<u>Logical Organization</u>	<u>Level of Importance</u>	<u>Pacing</u>
	<u>Level of Importance</u>	<u>Logical Organization</u>	<u>Logical Organization</u>
	<u>Pacing</u>	<u>Tutoring</u>	<u>Examples</u>
Prof.'s 3 Weakest Skills	<u>Student Participation</u>	<u>Inspiration</u>	<u>Elaboration</u>
	<u>Inspiration</u>	<u>Asking Questions</u>	<u>Asking Questions</u>
	<u>Asking Questions</u>	<u>Student Participation</u>	<u>Level of Challenge</u>
Skill Chosen for Development	<u>Level of Challenge</u>	<u>Pacing</u>	<u>Inspiration</u> <u>Lecturing</u>

Faculty Member 2

Computer Architecture

What do you admire most about the professor?

a solid midwesterner  
 his knowledge  
 selected topics to teach  
 openness but with sense of purpose  
 easyness of style  
 his preparation  
 no response (3)

What word(s) best characterizes the professor's classroom manner?

functional  
 nervous  
 not always as comfortable as would like  
 interested in getting across basic concepts in neither too simple nor too complex a frame  
 relaxed  
 no response (4)

Data Structures

What do you admire most about the professor?

his competence in the material covered and his honesty  
 his wide range of scientific knowledge  
 informal  
 his preparation  
 he is an expert programmer which I am not  
 his attempt to teach a course which he knows little about  
 experience  
 easy-going nature, knowledgeable attribute  
 unaffected  
 no response (4)

What word(s) best characterizes the professor's classroom manner?

subtle  
 enthusiastic and interested  
 knowledge  
 methodical and planned

Data Structures (continued)

What word(s) best characterizes the professor's classroom  
manner? (continued)

not confident enough

fine

shy

"If it's to your liking, partake of my knowledge--if not,  
don't"

somewhat ill at ease

no response (4)

Comparative Analysis

Name: Faculty Member 3

Class Number & Description	Class Type	Number of Students
_____	<u>Classroom</u>	<u>25</u>
_____	_____	_____

Data Report

Faculty Self-Analysis

Faculty Analysis of Student Response

Student Response

5 Most Important Skills of Discipline (Course)	<u>Logical Organization</u>	_____	<u>Logical Organization</u>
	<u>Level of Challenge</u>	_____	<u>Meeting Student Needs</u>
	<u>Planned Repetition</u>	_____	<u>Examples</u>
	<u>Precise Statements</u>	_____	<u>Level of Challenge</u>
	<u>Student Participation</u>	_____	<u>Planned Repetition</u>
Prof.'s 3 Strongest Skills	<u>Lecturing</u>	_____	<u>Tutoring</u>
	<u>Charisma</u>	_____	<u>Meeting Student Needs</u>
	<u>Logical Organization</u>	_____	<u>Elaboration</u>
Prof.'s 3 Weakest Skills	<u>Elaboration</u>	_____	<u>Asking Questions</u>
	<u>Rec. Attend. Behavior</u>	_____	<u>Student Participation</u>
	<u>Inspiration</u>	_____	<u>Pacing</u>
Skill Chosen for Development	<u>Logical Organization</u>	_____	<u>Logical Organization</u>

Faculty Member 3

What do you admire most about the professor?

he sits and works out the problems with you--not up on a  
pedestal handing down information  
always available for extra help and/or questions in and  
out of class  
his tremendous ability to relate the course material to  
things individually relevant to the student  
personality  
willingness to help and is available when problems arise  
knowledge of subject  
friendly attitude  
constant vitality  
interest in students  
busy man  
friendly and understanding  
energy  
he knows his subject  
knowledge of subject  
cares about students  
impressiveness  
his flexibility  
5 blanks

What word(s) best characterizes the professor's classroom  
manner?

captivating--he is fascinated by his subject matter and it  
is hard not to get caught up with his excitement  
enthusiastic  
relaxed and open to suggestion  
cool  
easy-going  
interested  
fast moving, helpful  
competent  
his mind is on other things simultaneously  
poised  
quickness--mind and body  
brisk  
informal  
mature  
witty  
7 blanks



Comparative Analysis

Name: Faculty Member 4

Class Number & Description	Class Type	Number of Students
_____	<u>Classroom</u>	<u>12</u>
_____	_____	_____

Data Report

	Faculty Self-Analysis	Faculty Analysis of Student Response	Student Response
	<u>Logical Organization</u>	<u>Setting Stage</u>	<u>Level of Challenge</u>
5 Most Important Skills of Discipline (Course)	<u>Precise Statements</u>	<u>Student Participation</u>	<u>Logical Organization</u>
	<u>Level of Importance</u>	<u>Examples</u>	<u>Creativity</u>
	<u>Mat. &amp; Stability Int.</u>	<u>Logical Organization</u>	<u>Lecturing</u>
	<u>Student Participation</u>	<u>Level of Challenge</u>	_____
Prof.'s 3 Strongest Skills	<u>Meeting Student Needs</u>	<u>Tutoring</u>	<u>Setting Stage</u>
	<u>Tutoring</u>	<u>Optional Instruction</u>	<u>Inspiration</u>
	<u>Optional Instruction</u>	<u>Charisma</u>	<u>Level of Challenge</u>
Prof.'s 3 Weakest Skills	<u>Mat. &amp; Stability Int.</u>	<u>Expression</u>	<u>Planned Repetition</u>
	<u>Expression</u>	<u>Elaboration</u>	<u>Expression</u>
	<u>Examples</u>	<u>Verbal &amp; Non-verbal</u>	<u>Logical Organization</u>
Skill Chosen for Development	<u>Expression</u>	<u>Mat. &amp; Stability Int.</u>	<u>Logical Organization</u>

Faculty Member 4

Artificial Intelligence

What do you admire most about the professor?

openness, friendliness

knows more than I do

inane question

both try to give their best

feeling for students and subject

sincerity

no response (7)

Comparative Analysis

12

Name: Faculty Member 5

Class Number & Description	Class Type	Number of Students
_____	<u>Classroom</u>	<u>32</u>
_____	_____	_____

Data Report

	Faculty Self-Analysis	Faculty Analysis of Student Response	Student Response
	<u>Elaboration</u>	<u>Planned Repetition</u>	<u>Pacing</u>
5 Most Important Skills of Discipline (Course)	<u>Optional Instruction</u>	<u>Charisma</u>	<u>Examples</u>
	<u>Precise Statements</u>	<u>Level of Challenge</u>	<u>Lecturing</u>
	<u>Level of Importance</u>	<u>Precise Statements</u>	<u>Logical Organization</u>
	<u>Pacing</u>	<u>Level of Importance</u>	<u>Level of Challenge</u>
Prof.'s 3 Strongest Skills	<u>Mat. &amp; Stability Int.</u>	<u>Level of Challenge</u>	<u>Verbal Fluency</u>
	<u>Tutoring</u>	<u>Logical Organization</u>	<u>Lecturing</u>
	<u>Logical Organization</u>	<u>Examples</u>	<u>Logical Organization</u>
Prof.'s 3 Weakest Skills	<u>Setting Stage</u>	<u>Optional Instruction</u>	<u>Student Participation</u>
	<u>Charisma</u>	<u>Precise Statements</u>	<u>Asking Questions</u>
	<u>Inspiration</u>	<u>Level of Importance</u>	<u>Rec. Attend. Behavior</u>
Skill Chosen for Development	<u>Level of Importance</u>	<u>Testing</u>	<u>Student Participation</u> <u>Asking Questions</u>

Faculty Member 5

What do you admire most about the professor?

knows his stuff  
 lecture technique  
 his knowledge of the subject matter (4)  
 his desire to help the students learn  
 in depth knowledge of subject and ability to teach  
 clear teaching methods  
 likes people  
 smart and clear  
 he keeps me awake and interested at 9:05  
 yes  
 thoroughness of presentation of material  
 friendliness  
 humor  
 intelligence  
 he can teach  
 ability  
 command of subject--can give extremely interesting overview  
 his smile  
 no response (2)

What word(s) best characterize the professor's classroom manner?

in control  
 ok  
 an interesting person  
 friendly but business like  
 cocky (at times)  
 light  
 writes all important concepts on board  
 confident  
 loose and comfortable  
 excellent  
 at ease  
 motivating  
 a straight forward, fast lecturer in class, interesting  
 voice  
 gentle  
 good natured  
 easy, casual  
 dynamic  
 enthusiastic  
 "John Wayne"  
 no response (3)

Comparative Analysis

Name: Faculty Member 6

Class Number & Description	Class Type	Number of Students
_____	<u>Seminar</u>	<u>10</u>
_____	_____	_____

Data Report

	Faculty Self-Analysis	Faculty Analysis of Student Response	Student Response
	<u>Logical Organization</u>	<u>Setting Stage</u>	<u>Elaboration</u>
5 Most Important Skills of Discipline (Course)	<u>Examples</u>	<u>Meeting Student Needs</u>	<u>Level of Challenge</u>
	<u>Mat. &amp; Stability Int.</u>	<u>Mat. &amp; Stability Int.</u>	<u>Logical Organization</u>
	<u>Student Participation</u>	<u>Tutoring</u>	<u>Planned Repetition</u>
	<u>Asking Questions</u>	_____	<u>Precise Statements</u> <u>Creativity</u>
Prof.'s 3 Strongest Skills	<u>Charisma</u>	<u>Charisma</u>	<u>Logical Organization</u>
	<u>Verbal Fluency</u>	<u>Mat. &amp; Stability Int.</u>	<u>Verbal Fluency</u>
	<u>Mat. &amp; Stability Int.</u>	<u>Expression</u>	<u>Charisma</u> <u>Creativity</u> <u>Level of Challenge</u> <u>Lecturing</u>
Prof.'s 3 Weakest Skills	<u>Rec. Attend. Behavior</u>	<u>Optional Instruction</u>	<u>Pacing</u>
	<u>Academic Counsel</u>	<u>Academic Counsel</u>	<u>Asking Questions</u>
	<u>Level of Importance</u>	<u>Examples</u>	<u>Elaboration</u> <u>Examples</u> <u>Tutoring</u>
Skill Chosen for Development	<u>Level of Importance</u>	<u>Academic Counsel</u>	<u>Elaboration</u> <u>Tutoring</u> <u>Level of Challenge</u>

Faculty Member 6

What do you admire most about the professor?

his enthusiasm and understanding of course material  
extemporaneousness  
his vast knowledge (2)  
intelligence  
personality  
verbal skill  
great amount of work he does  
no response (2)

What word(s) best characterize the professor's classroom manner?

often brilliant, sometimes bullish, sometimes perfunctory  
witty  
rigidly relaxed  
"conductor of the orchestra"  
entertaining  
no response (5)

Comparative Analysis

16

Name: Faculty Member 7

Class Number & Description	Class Type	Number of Students
_____	<u>Lecture</u>	<u>132</u>
_____	_____	_____

Data Report

	<u>Faculty Self-Analysis</u>	<u>Faculty Analysis of Student Response</u>	<u>Student Response</u>
5 Most Important Skills of Discipline (Course)	<u>Level of Challenge</u>	<u>Inspiration</u>	<u>Lecturing</u>
	<u>Logical Organization</u>	<u>Student Participation</u>	<u>Planned Repetition</u>
	<u>Meeting Student Needs</u>	<u>Optional Instruction</u>	<u>Logical Organization</u>
	<u>Lecturing</u>	<u>Logical Organization</u>	<u>Meeting Student Needs</u>
	<u>Planned Repetition</u>	<u>Lecturing</u>	<u>Examples</u>
Prof.'s 3 Strongest Skills	<u>Logical Organization</u>	<u>Logical Organization</u>	<u>Lecturing</u>
	<u>Planned Repetition</u>	<u>Planned Repetition</u>	<u>Logical Organization</u>
	<u>Tutoring</u>	<u>Examples</u>	<u>Meeting Student Needs</u>
Prof.'s 3 Weakest Skills	<u>Lecturing</u>	<u>Pacing</u>	<u>Verbal Fluency</u>
	<u>Pacing</u>	<u>Level of Challenge</u>	<u>Tutoring</u>
	<u>Level of Challenge</u>	<u>Lecturing</u>	<u>Planned Repetition</u>
Skill Chosen for Development	<u>Lecturing</u>	<u>Pacing</u>	<u>Level of Challenge</u>
		<u>Inspiration</u>	<u>Pacing</u>

Faculty Member 7

What do you admire most about the professor?

her mind  
 knowledge  
 knowledge of subject  
 extraordinary dressing habits  
 friendliness  
 complete and prompt answering of student needs  
 aggressiveness  
 her ability to make an introductory course interesting  
 organization  
 sensitivity to people's wants and needs  
 her "no smoking" signs in different languages  
 willingness to help  
 sense of humor and intelligence  
 approachability  
 knowledge  
 ease at handling fairly large lectures  
 ability to come across at 8:00  
 she is competent and teaches well  
 interest in students  
 readiness to help students out of class  
 pizzazz and enthusiasm  
 her ability to get up for an 8:00 lecture  
 knowledge of material  
 humor  
 always willing to listen to a student and help him  
 vivacity  
 dedication  
 capability and knowledge of subject  
 interest in student learning  
 genuine interest in students  
 very well natured for an 8:00 class  
 technique  
 readiness to help  
 ability to make information interesting  
 concern for students  
 friendliness  
 straightforwardness, not pretentious  
 her total enjoyment in teaching  
 the fact that she can keep me coming to an 8:00 class  
 orange overcoat  
 enthusiasm  
 makes class lively and good sense of humor  
 knows subject and can teach it too  
 she wants me to learn  
 doesn't act like a Doctor  
 easy to talk with



What do you admire most about the professor? (continued)

intelligence

interest

sincerity

cheeriness and interest in course, exuberance when  
lecturing

relaxed discussion which encourages talk

nothing

organization

down to earth feeling

her ability to communicate ideas and respond to class

interest in subject

Appendix D

Student Centered Data for  
Each Faculty Member

QUESTION NO. 1 N= 94

DOES PROF REPEAT NEW IDEAS INTRODUCED DURING LESSON

1-----2-----3-----4-----5-----6-----7-----8-----9  
 13 30 32 9 4  
 S S S  
 13.83 31.91 34.04 9.57 6.138 4.26

↓ MEAN = 4.7553  
 STD DEV = 1.2503  
 MISSING = 5

QUESTION NO. 2 N= 95

DOES PROF USE DIFFERENT APPROACHES TO EXPLAIN CONCEPTS

1-----2-----3-----4-----5-----6-----7-----8-----9  
 6 19 24 3 1  
 S S S  
 6.32 20.00 44.21 25.26 3.16 1.05

↓ MEAN = 4.0211  
 STD DEV = 0.9673  
 MISSING = 4

QUESTION NO. 3 N= 92

DOES PROF SUMMARIZE LESSONS

2 8 24 26 5 1  
 S S S  
 2.17 8.70 26.09 28.26 5.43 1.09

↓ MEAN = 3.9239  
 STD DEV = 1.1882  
 MISSING = 7

QUESTION NO. 4 N= 94

HOW OFTEN DOES PROF ASK FOR FURTHER ELABORATION IF STUDENT'S ANSWERS NEEDED

1-----2-----3-----4-----5-----6-----7-----8-----9  
 15 19 52 5 3  
 S S S  
 15.96 20.21 55.32 5.32 3.19

↓ MEAN = 4.5957  
 STD DEV = 0.9512  
 MISSING = 5

QUESTION NO. 5 N= 94

HOW OFTEN DOES PROF DETERMINE WHEN MORE INFORMATION NEEDED FOR STUDENT'S COMPREHENSION

1 3 16 47 14 11 2  
 S S S  
 1.06 3.19 17.02 50.00 14.89 11.70 2.13

↓ MEAN = 4.1809  
 STD DEV = 1.0872  
 MISSING = 5

QUESTION NO. 6 N= 84

HOW MANY QUESTIONS DOES PROF ASK DURING PRESENTATION

4 10 10 29 28 3  
 S S S  
 4.76 11.90 11.90 34.52 33.33 3.57

↓ MEAN = 3.9048  
 STD DEV = 1.2284  
 MISSING = 15

QUESTION NO. 7 N= 73  
DOES PROF ASK QUESTIONS WHICH REQUIRE MORE INFORMATION OR CLARIFICATION

13	17	19	8	14	2
1	2	3	4	5	6
17,81	23,29	26,03	10,96	19,18	2,74

MEAN = 2,9863  
STD DEV = 1,4481  
MISSING = 26

QUESTION NO. 8 N= 72  
DOES PROF ASK QUESTIONS FOR WHICH THERE ARE NO RIGHT OR WRONG ANSWERS

5	12	12	20	20	2	1
1	2	3	4	5	6	7
6,94	16,67	16,67	27,78	27,78	2,78	1,39

MEAN = 3,6667  
STD DEV = 1,3736  
MISSING = 27

QUESTION NO. 9 N= 74  
DOES PROF ASK STUDENTS TO GIVE EXAMPLES ILLUSTRATING LESSON POINTS

29	16	17	6	5	1
1	2	3	4	5	6
39,19	21,62	22,97	8,11	6,76	1,35

MEAN = 2,2703  
STD DEV = 1,3579  
MISSING = 25

QUESTION NO. 10 N= 92  
TO WHAT EXTENT DOES PROF USE INTRODUCTIONS

8	12	24	22	26	1
1	2	3	4	5	6
8,70	13,04	26,09	23,91	28,26	1,33

MEAN = 3,5000  
STD DEV = 1,2710  
MISSING = 7

QUESTION NO. 11 N= 75  
HOW INTERESTING IS THE INTRODUCTION

1	11	28	24	10	1
1	2	3	4	5	6
1,33	14,67	37,33	32,00	13,33	1,33

MEAN = 3,4667  
STD DEV = 1,0310  
MISSING = 24

QUESTION NO. 12 N= 72  
WOULD INTRODUCTION AID STUDENTS TO REMEMBER MAIN LESSON POINTS

8	3	24	20	15	2
1	2	3	4	5	6
11,11	4,17	53,33	27,78	20,83	2,78

MEAN = 3,5139  
STD DEV = 1,2671  
MISSING = 27

QUESTION NO. 13 N= 91

IS PROF GENUINELY INTERESTED IN MEETING STUDENT NEEDS

1	1	9	26	52	1	1
1	2	3	4	5	6	7
1.10	1.10	9.89	28.57	57.14	1.10	1.10

MEAN = 4.4722  
STD DEV = 0.18609  
MISSING = 8

QUESTION NO. 14 N= 92

DOES PROF REQUEST STUDENT INFORMATION ABOUT COURSE CONTENT

4	7	16	15	48	2	2
1	2	3	4	5	6	7
4.35	7.61	17.39	16.30	52.17	2.17	2.17

MEAN = 4.1097  
STD DEV = 1.12176  
MISSING = 7

QUESTION NO. 15 N= 80

DOES PROF MAKE COURSE MATERIAL RELEVANT TO STUDENT EXPERIENCES

1	4	14	25	35	1	1
1	2	3	4	5	6	7
5.00	17.50	31.25	43.75	1.25	1.25	1.25

MEAN = 4.2375  
STD DEV = 1.0094  
MISSING = 19

QUESTION NO. 16 N= 77

DOES PROF ACCEPT CONCEPT OF OPTIONS FOR STUDENTS

8	9	15	10	32	3	3
1	2	3	4	5	6	7
10.39	11.69	19.48	12.99	41.56	3.90	3.90

MEAN = 3.7532  
STD DEV = 1.4614  
MISSING = 22

QUESTION NO. 17 N= 88

HOW OPEN WOULD PROF BE IF AN OPTION TO CLASS PROCEDURE WAS SUGGESTED

1	2	12	20	51	2	2
1	2	3	4	5	6	7
1.14	2.27	13.64	22.73	57.95	2.27	2.27

MEAN = 4.4091  
STD DEV = 0.1917  
MISSING = 11

QUESTION NO. 18 N= 82

IS CLASS ATTENDANCE AN APPROPRIATE OPTION FOR THIS CLASS

69	13	10	4	5	6	7
84.15	15.85	84.15	15.85	84.15	15.85	84.15

MEAN = 1.1589  
STD DEV = 0.3675  
MISSING = 17

ESTION NO. 19 N= 81

50 31  
 S ↓ S  
 1-0-2-3-4-5-6-7-8-9  
 S ↓ S  
 61.73 38.27

↓ MEAN = 1,3827  
 STD DEV = 0,4891  
 MISSING = 18

ESTION NO. 20 N= 74

41 32 1  
 S ↓ S  
 1-0-2-3-4-5-6-7-8-9  
 S ↓ S  
 55.41 43.24 1,35

↓ MEAN = 1,4592  
 STD DEV = 0,5284  
 MISSING = 25

ESTION NO. 21 N= 67

37 30  
 S ↓ S  
 1-0-2-3-4-5-6-7-8-9  
 S ↓ S  
 55.22 44.78

↓ MEAN = 1,4478  
 STD DEV = 0,5030  
 MISSING = 32

ESTION NO. 22 N= 66

47 19  
 S ↓ S  
 1-0-2-3-4-5-6-7-8-9  
 S ↓ S  
 71.21 28.79

↓ MEAN = 1,2879  
 STD DEV = 0,4562  
 MISSING = 33

ESTION NO. 23 N= 76

5 69 2  
 S ↓ S  
 1-0-2-3-4-5-6-7-8-9  
 S ↓ S  
 6.58 90.79 2,63

↓ MEAN = 1,9602  
 STD DEV = 0,5029  
 MISSING = 23

ESTION NO. 24 N= 77

22 50 5  
 S ↓ S  
 1-0-2-3-4-5-6-7-8-9  
 S ↓ S  
 28.57 64.94 6,49

↓ MEAN = 1,7792  
 STD DEV = 0,5531  
 MISSING = 22

QUESTION NO. 25 N= 62  
ARE OPTIONS AVAILABLE  
TO PRE-REQUISITES

1	S	52	2
1	S	83.07	3.23

MEAN = 1,9032  
STD DEV = 0,3330  
MISSING = 37

QUESTION NO. 26 N= 52  
ARE OPTIONS AVAILABLE  
TO EXAMINATIONS

1	S	34	4
1	S	65.38	7.69

MEAN = 1,8077  
STD DEV = 0,15215  
MISSING = 47

QUESTION NO. 27 N= 53  
ARE OPTIONS AVAILABLE  
TO OBJECTIVES

1	S	41	2
1	S	77.36	3.77

MEAN = 1,8491  
STD DEV = 0,14556  
MISSING = 49

QUESTION NO. 28 N= 80  
IS THE PROF CHARISMATIC

1	S	1	13	23	34	3	2	1
1	S	1.25	16.25	28.75	42.50	3.75	2.50	1.25

MEAN = 4,3250  
STD DEV = 1,12094  
MISSING = 19

QUESTION NO. 29 N= 95  
HOW OFTEN DID PROF  
VOCABULARY LEAD TO  
CONFUSION

1	S	1	10	22	58	3	1
1	S	1.05	10.53	23.16	61.05	3.16	1.05

MEAN = 4,5789  
STD DEV = 0,8066  
MISSING = 1

QUESTION NO. 30 N= 95  
WAS RATE OF PRESENTA  
TION APPROPRIATE

1	S	5	8	16	41	9	10	3	2
1	S	5.26	8.42	16.84	43.16	9.47	10.53	3.16	2.11

MEAN = 4,9474  
STD DEV = 1,5185  
MISSING = 4

QUESTION NO. 31 N= 95

DOES PROF REPEAT HIS ATTEMPTS AT EXPLANATIONS

4	5	26	42	17	1
1	2	3	4	5	6
4.21	5.26	27.37	44.21	17.89	1.05

MEAN = 3.6947  
 STD DEV = 1.0000  
 MISSING = 4

QUESTION NO. 32 N= 47

DOES PROF CUE STUDENTS TO RECEIVE FACTS OR INTERPRETATIONS

1	2	5	10	28	1
1	2	3	4	5	6
2.13	4.26	10.64	21.28	59.57	2.13

MEAN = 4.3630  
 STD DEV = 1.0120  
 MISSING = 52

QUESTION NO. 33 N= 32

DOES PROF LECTURE ABOUT CONTROVERSY WHICH SURROUNDS COURSE MATERIAL

6	5	11	4	6	
1	2	3	4	5	6
18.75	15.63	34.38	12.50	18.75	

MEAN = 2.9688  
 STD DEV = 1.3556  
 MISSING = 67

QUESTION NO. 34 N= 52

DOES PROF SUGGEST ALTERNATIVES TO HIS INTERPRETATIONS

3	5	11	11	20	2
1	2	3	4	5	6
5.77	9.62	21.15	21.15	38.46	3.85

MEAN = 3.8846  
 STD DEV = 1.2933  
 MISSING = 47

QUESTION NO. 35 N= 71

HOW OFTEN DOES PROF REFER TO CONCEPT OF CREATIVITY IN CLASS

6	4	14	13	31	1
1	2	3	4	5	6
8.45	5.63	19.72	18.31	43.66	2.82

MEAN = 3.9715  
 STD DEV = 1.3729  
 MISSING = 25

QUESTION NO. 36 N= 83

DOES PROF UTILIZE DIFFERENT PRESENTATION METHODS

8	14	22	19	17	3
1	2	3	4	5	6
9.64	16.87	26.51	22.89	20.48	3.61

MEAN = 3.3855  
 STD DEV = 1.3419  
 MISSING = 16



QUESTION NO. 37 N= 76

DOES PROF ENCOURAGE  
CREATIVITY

3	6	11	17	37	2
1	2	3	4	5	6
3.95	7.89	14.47	22.37	48.68	2.63

↓ MEAN = 4.11184  
 STD DEV = 1.11885  
 MISSING = 29

QUESTION NO. 38 N= 81

HOW CREATIVE DO YOU BE-  
LIEVE PROF IS IN TEACH-  
ING HIS DISCIPLINE

3	7	26	29	16
1	2	3	4	5
3.70	8.64	32.10	35.80	19.75

↓ MEAN = 3.59226  
 STD DEV = 1.10220  
 MISSING = 19

QUESTION NO. 39 N= 80

DOES THE PROF AWARE OF  
STUDENT ATTENDING  
BEHAVIOR

6	19	27	26	1	4
1	2	3	4	5	6
7.50	23.75	33.75	32.50	1.25	1.25

↓ MEAN = 4.0000  
 STD DEV = 1.0188  
 MISSING = 19

QUESTION NO. 40 N= 67

HOW DOES PROF REACT WHEN  
CLASS IS NOT PAYING  
ATTENTION

20	2	5	7	11	22
1	2	3	4	5	6
29.85	2.99	7.46	10.45	16.42	32.84

↓ MEAN = 3.7910  
 STD DEV = 2.0929  
 MISSING = 32

QUESTION NO. 41 N= 94

AS RATE OF PRESENTA-  
TION APPROPRIATE

1	5	12	19	29	10	12	3	3
1	2	3	4	5	6	7	8	9
1.06	5.32	12.77	20.21	30.85	10.64	12.77	3.19	3.19

↓ MEAN = 4.9259  
 STD DEV = 1.6736  
 MISSING = 5

QUESTION NO. 42 N= 94

DOES PROF INTRODUCE CON-  
CEPTS AT AN OPTIMAL RATE

2	4	15	21	34	14	1		
1	2	3	4	5	6	7	8	9
2.13	4.26	15.96	22.34	36.17	14.89	3.19	1.06	1.06

↓ MEAN = 4.5000  
 STD DEV = 1.3420  
 MISSING = 5

QUESTION NO. 43 N= 93  
DOES PROF ABLE TO DETER-  
MINE TIME NEEDED TO  
DISCUSS EACH CONCEPT

1	2	6	32	16	23	10	2	1
1	2	3	4	5	6	7	8	9
1,08	2,15	6,45	34,41	17,20	24,73	10,75	2,15	1,08

MEAN = 4,9892  
STD DEV = 1,4257  
MISSING = 6

QUESTION NO. 44 N= 76  
DOES PROF CONVEY HIS  
FEELINGS BY HIS WORDS,  
EXPRESSIONS, MOVEMENTS.

1	2	7	18	47	1	1	1	
1	2	3	4	5	6	7	8	9
1,43	4,29	8,57	37,14	41,43	5,71	1,43	1,43	1,43

MEAN = 4,5395  
STD DEV = 0,8397  
MISSING = 29

QUESTION NO. 45 N= 70  
DOES PROF AWARE OF IMAGE  
HE CONVEYS DURING A  
PRESENTATION

1	3	6	26	29	4	1		
1	2	3	4	5	6	7	8	9
1,43	4,29	8,57	37,14	41,43	5,71	1,43	1,43	1,43

MEAN = 4,3714  
STD DEV = 1,0556  
MISSING = 29

QUESTION NO. 46 N= 57  
DOES PROF RESPONSIVE TO  
STUDENT REQUESTS FOR  
TUTORING

2	1	12	25	17				
1	2	3	4	5	6	7	8	9
3,51	1,75	21,05	43,86	29,82				

MEAN = 3,9474  
STD DEV = 0,9528  
MISSING = 42

QUESTION NO. 47 N= 22  
DOES PROF ACCURATELY  
DIAGNOSE STUDENT  
DIFFICULTIES

1	2	1	7	11				
1	2	3	4	5	6	7	8	9
4,55	9,09	4,55	31,82	50,00				

MEAN = 4,1364  
STD DEV = 1,1666  
MISSING = 77

QUESTION NO. 48 N= 20  
DO STUDENTS FIND TUTOR-  
ING SESSIONS HELPFUL

1	1	1	5	12				
1	2	3	4	5	6	7	8	9
5,00	5,00	5,00	25,00	60,00				

MEAN = 4,3000  
STD DEV = 1,1286  
MISSING = 79

QUESTION NO. 49 N= 51  
DOES PROF UNDERSTAND HOW  
ACADEMIC REQUIREMENTS RE  
ATE TO WHAT HE TEACHES

1-----2-----3-----4-----5-----6-----7-----8-----9  
1-----2-----3-----4-----5-----6-----7-----8-----9  
1,89 7,55 35,85 32,08 22,64  
3,92 21,57 39,22 31,37 1,96 1,96  
2 11 S 20 16 S 1  
16 S  
31,37 1,96

MEAN = 4,1176  
STD DEV = 0,9726  
MISSING = 49

QUESTION NO. 50 N= 53  
DOES PROF AID STUDENTS  
O RELATE HIS COURSE TO  
HEIR OTHER NEEDS

1-----2-----3-----4-----5-----6-----7-----8-----9  
1-----2-----3-----4-----5-----6-----7-----8-----9  
1,09 7,55 35,85 32,08 22,64  
3,92 21,57 39,22 31,37 1,96 1,96  
2 11 S 20 16 S 1  
16 S  
31,37 1,96

MEAN = 3,6604  
STD DEV = 0,9795  
MISSING = 40

QUESTION NO. 51 N= 88  
DOES PROF TRULY ENJOY  
HAT HE IS TEACHING

1-----2-----3-----4-----5-----6-----7-----8-----9  
1-----2-----3-----4-----5-----6-----7-----8-----9  
1,09 7,55 35,85 32,08 22,64  
3,92 21,57 39,22 31,37 1,96 1,96  
2 11 S 20 16 S 1  
16 S  
31,37 1,96

MEAN = 4,6136  
STD DEV = 0,6330  
MISSING = 11

QUESTION NO. 52 N= 87  
HOW DEDICATED IS PROF  
O WHAT HE IS SAYING  
ND DOING

1-----2-----3-----4-----5-----6-----7-----8-----9  
1-----2-----3-----4-----5-----6-----7-----8-----9  
1,09 7,55 35,85 32,08 22,64  
3,92 21,57 39,22 31,37 1,96 1,96  
2 11 S 20 16 S 1  
16 S  
31,37 1,96

MEAN = 4,0920  
STD DEV = 0,9479  
MISSING = 12

QUESTION NO. 53 N= 92  
DOES PROF AID STUDENTS  
O INCREASE COURSE  
NJOYMENT/APPRECIATION

1-----2-----3-----4-----5-----6-----7-----8-----9  
1-----2-----3-----4-----5-----6-----7-----8-----9  
1,09 7,55 35,85 32,08 22,64  
3,92 21,57 39,22 31,37 1,96 1,96  
2 11 S 20 16 S 1  
16 S  
31,37 1,96

MEAN = 4,8804  
STD DEV = 1,4207  
MISSING = 7

QUESTION NO. 54 N= 94  
HAT IS THE LEVEL OF  
N-CLASS CHALLENGE

1-----2-----3-----4-----5-----6-----7-----8-----9  
1-----2-----3-----4-----5-----6-----7-----8-----9  
1,06 1,06 2,13 8,51 39,36 31,91 10,64 3,19 2,13  
3,92 21,57 39,22 31,37 1,96 1,96  
2 11 S 20 16 S 1  
16 S  
31,37 1,96

MEAN = 5,5106  
STD DEV = 1,2506  
MISSING = 5

QUESTION NO. 55 N= 93

WHAT IS THE LEVEL OF CHALLENGE FOR ASSIGNMENTS

1	4	7	20	30	18	9	2
1	2	3	4	0	6	7	8
1.08	4.30	7.53	21.51	32.26	19.35	9.68	2.15

MEAN = 5.0000  
STD DEV = 1.4891  
MISSING =

QUESTION NO. 56 N= 90

DOES PROF PRESENT MATERIAL TO AID STUDENT COMPREHENSION

1	9	25	45	9	2		
1	2	3	4	5	6	7	8
1	10.00	27.78	50.00	10.00	2.22		

MEAN = 4.6667  
STD DEV = 0.8741  
MISSING =

QUESTION NO. 57 N= 91

DOES PROF LECTURE IN AN INTERESTING MANNER

2	12	23	23	28	2	1	
1	2	3	4	5	6	7	8
2.20	13.19	25.27	25.27	30.77	2.20	1.10	

MEAN = 3.8022  
STD DEV = 1.2039  
MISSING =

QUESTION NO. 58 N= 85

DOES PROF ENCOURAGE STUDENT PARTICIPATION DURING CLASS

3	11	16	27	27	1		
1	2	3	4	5	6	7	8
3.53	12.94	18.82	31.76	31.76	1.18		

MEAN = 3.7882  
STD DEV = 1.1659  
MISSING =

QUESTION NO. 59 N= 87

IS LEVEL OF STUDENT PARTICIPATION APPROPRIATE FOR THIS CLASS

2	3	11	16	53	2		
1	2	3	4	5	6	7	8
2.30	3.45	12.64	18.39	60.92	2.30		

MEAN = 4.3908  
STD DEV = 1.0156  
MISSING =

QUESTION NO. 60 N= 77

DOES PROF ENCOURAGE STUDENTS TO LEARN FROM EACH OTHER

7	13	19	13	24	1		
1	2	3	4	5	6	7	8
9.09	16.88	24.68	16.88	31.17	1.30		

MEAN = 3.4809  
STD DEV = 1.3631  
MISSING =

QUESTION NO. 61 N= 75

HOW OFTEN DOES PROF REINFORCE STUDENT RESPONSES

2	3	9	21	39	1
1	2	3	4	5	6
2.67	4.00	12.00	28.00	52.00	1.33

↓ MEAN = 4.2667  
 STD DEV = 1.0179  
 MISSING = 24

QUESTION NO. 62 N= 64

DOES PROF USE VARIETY OF WORDS TO REINFORCE STUDENT RESPONSE

4	9	21	25	4	1
1	2	3	4	5	6
1	6.25	14.06	32.81	39.06	6.25
					1.56

↓ MEAN = 4.2969  
 STD DEV = 1.0493  
 MISSING = 35

QUESTION NO. 63 N= 76

IS PROF GENUINELY INTERESTED IN HOW STUDENTS RESPOND

2	7	22	43	2	
1	2	3	4	5	6
1	2.63	9.21	28.95	56.58	2.63

↓ MEAN = 4.4737  
 STD DEV = 0.8079  
 MISSING = 23

QUESTION NO. 64 N= 93

DOES PROF PRESENT MATERIAL SO THAT STUDENTS ARE AWARE OF HIS GOALS

6	23	37	26		
1	2	3	4	5	6
1.08	6.45	24.73	39.78	27.96	

↓ MEAN = 3.8710  
 STD DEV = 0.9351  
 MISSING = 6

QUESTION NO. 65 N= 92

DOES PROF ENSURE UNDERSTANDING OF CONCEPTS ON WHICH LESSON IS BASED

4	10	31	35	7	1
1	2	3	4	5	6
1.09	4.35	10.87	33.70	38.04	7.61
					3.26
					1.09

↓ MEAN = 4.4565  
 STD DEV = 1.1990  
 MISSING = 7

QUESTION NO. 66 N= 92

DOES PROF MAKE THE RELATIONSHIPS BETWEEN TOPICS CLEAR

3	12	28	45	3	
1	2	3	4	5	6
1.09	3.26	13.04	30.43	48.91	3.26

↓ MEAN = 4.3261  
 STD DEV = 0.9389  
 MISSING = 7

QUESTION NO. 67 N= 93

IS PROF SYSTEMATIC I.E. WELL-ORDERED DURING CLASS

2	6	16	27	40	1	1
1	2	3	4	5	6	7
2.15	6.45	17.20	29.03	43.01	1.08	1.08

MEAN = 4.1183  
STD DEV = 1.0920  
MISSING = 6

QUESTION NO. 68 N= 89

DOES PROF USE DIFFERENT APPROACHES TO EXPLAIN HIS CONCEPTS.

1	6	18	43	16	4	1
1	2	3	4	5	6	7
1.12	6.74	20.22	48.31	17.98	4.49	1.12

MEAN = 3.9329  
STD DEV = 1.0202  
MISSING = 10

QUESTION NO. 69 N= 92

DOES PROF USE EXAMPLES WITHIN RANGE OF STUDENT KNOWLEDGE/EXPERIENCE

1	2	3	23	53	10	4
1	2	3	4	5	6	7
3.26	25.00	57.61	10.87	3.26		

MEAN = 4.8587  
STD DEV = 0.7786  
MISSING = 7

QUESTION NO. 70 N= 92

DOES PROF RELATE HIS EX- AMPLES TO POINTS HE IS ILLUSTRATING

1	2	3	21	64	2	1
1	2	3	4	5	6	7
1.09	3.26	22.83	69.57	2.17	1.09	

MEAN = 4.7065  
STD DEV = 0.7192  
MISSING = 7

QUESTION NO. 71 N= 68

DOES PROF ASK STUDENTS TO GIVE EXAMPLES ILLUS- TRATING LESSON POINTS

21	11	18	13	4	1	1
1	2	3	4	5	6	7
30.88	16.10	26.47	19.12	5.88	1.47	

MEAN = 2.5882  
STD DEV = 1.3647  
MISSING = 31

QUESTION NO. 72 N= 88

IF PROF FORCED TO USE FEWER WORDS WOULD EXPLAN BE CLEAR OR CONFUSED

5	12	10	32	18	5	4	2
1	2	3	4	5	6	7	8
5.68	13.64	11.36	36.36	20.45	5.68	4.55	2.27

MEAN = 3.9886  
STD DEV = 1.5499  
MISSING = 11

QUESTION NO. 73 N= 88

DOES PROF USE RIGHT NUMBER OF PRECISE STATEMENTS DURING CLASS

1	2	3	21	31	26	4	3
1	2	3	4	5	6	7	8
3,41	23,86	35,23	29,55	4,55	3,41		

MEAN = 4,1818  
STD DEV = 1,00722  
MISSING = 11

QUESTION NO. 74 N= 88

DOES PROF DISTINGUISH LEVELS OF IMPORTANCE IN HIS CLASS LECTURES

1	2	6	15	26	39	2
1	2	3	4	5	6	7
6,82	17,05	29,55	44,32	2,27		

MEAN = 4,1818  
STD DEV = 0,9773  
MISSING = 11

QUESTION NO. 75 N= 92

ARE SKILLS REPRESENTED IN BOOKLET RIGHT FOR TEACHER GUIDANCE

4	5	10	17	29	7	13	5	2
4	5	6	7	8	9	10	11	12
4,35	5,43	10,87	18,48	31,52	7,61	14,13	5,43	2,17

MEAN = 4,8096  
STD DEV = 1,18170  
MISSING = 7

QUESTION NO. 76 N= 91

IS RANGE SUFFICIENT FOR INDICATING VARIATIONS IN TEACHER PERFORMANCE

1	2	1	6	62	5	7	4	4
1	2	3	4	5	6	7	8	9
2,20	1,10	6,59	68,13	5,49	7,69	4,40		

MEAN = 5,3620  
STD DEV = 1,2866  
MISSING = 8

QUESTION NO. 77 N= 92

THE LENGTH OF BOOKLET IS

28	14	18	13	18	1
28	14	18	13	18	1
30,43	15,22	19,57	14,13	19,57	1,09

MEAN = 2,8043  
STD DEV = 1,5424  
MISSING = 7

QUESTION NO. 78 N= 79

THIS EXERCISE VALUABLE TO ME, PROF, OR BOTH

1	2	1	22	14	8	20
1	2	3	4	5	6	7
2,53	1,27	27,85	15,19	17,72	10,13	25,32

MEAN = 6,7599  
STD DEV = 1,6963  
MISSING = 20

SUBSCALE NO. 1 N= 281  
 PLANNED REPETITION  
 1-----2-----3-----4-----5-----6-----7-----8-----9  
 0.71 4.98 19.93 34.88 29.18 6.05 2.85 1.42

↓ MEAN = 4,2349  
 STD DEV = 1,11960  
 MISSING = 16

SUBSCALE NO. 2 N= 188  
 ELABORATION  
 1-----2-----3-----4-----5-----6-----7-----8-----9  
 0.53 1.60 16.49 35.11 35.11 8.51 2.66

↓ MEAN = 4,3888  
 STD DEV = 1,10307  
 MISSING = 10

SUBSCALE NO. 3 N= 303  
 ASKING QUESTIONS  
 1-----2-----3-----4-----5-----6-----7-----8-----9  
 16.83 18.15 19.14 20.79 22.11 2.31 0.66

↓ MEAN = 3,2277  
 STD DEV = 1,14887  
 MISSING = 93

SUBSCALE NO. 4 N= 239  
 SETTING THE STAGE  
 FOR A LESSON  
 1-----2-----3-----4-----5-----6-----7-----8-----9  
 7.11 10.08 31.80 27.62 21.34 0.84 0.42

↓ MEAN = 3,4937  
 STD DEV = 1,11948  
 MISSING = 52

SUBSCALE NO. 5 N= 263  
 MEETING STUDENT NEEDS  
 1-----2-----3-----4-----5-----6-----7-----8-----9  
 1.90 4.56 14.83 25.10 51.33 1.52 0.38 0.38

↓ MEAN = 4,2738  
 STD DEV = 1,10490  
 MISSING = 34

SUBSCALE NO. 6 N= 165  
 OPTIONAL INSTRUCTION  
 1-----2-----3-----4-----5-----6-----7-----8-----9  
 5.45 6.67 16.36 18.18 50.30 3.03

↓ MEAN = 4,1030  
 STD DEV = 1,12427  
 MISSING = 33



SUBSCALE NO. 7 N= 80

CHARISMA

3	1	13	23	34	3	2	1
1	2	3	4	5	S	7	8
3,75	1,25	16,25	28,75	42,50	3,75	2,50	1,25

↓ MEAN = 4,3250  
 STD DEV = 1,2094  
 MISSING = 19

SUBSCALE NO. 8 N= 265

VERBAL FLUENCY

5	11	44	80	116	13	11	3	2
1	2	3	4	5	S	7	8	9
1,75	3,86	15,44	28,07	40,70	4,56	3,86	1,05	0,70

↓ MEAN = 4,4070  
 STD DEV = 1,2599  
 MISSING = 12

SUBSCALE NO. 9 N= 131

MATURITY AND STABILITY OF INTERPRETATION

10	12	27	25	54	3		
1	2	3	4	5	S	7	8
7,63	9,16	20,61	19,08	41,22	2,29		

↓ MEAN = 3,8397  
 STD DEV = 1,3233  
 MISSING = 166

SUBSCALE NO. 10 N= 311

CREATIVITY

20	31	73	78	101	7	1	
1	2	3	4	5	S	7	8
6,43	9,97	23,47	25,08	32,48	2,25	0,32	

↓ MEAN = 3,7524  
 STD DEV = 1,2645  
 MISSING = 85

SUBSCALE NO. 11 N= 60

RECOGNIZING ATTENDING BEHAVIOR

6	19	27	26	1	1		
1	2	3	5	6	7	8	9
7,50	23,75	33,75	32,50	1,25	1,25		

↓ MEAN = 4,0000  
 STD DEV = 1,0188  
 MISSING = 19

SUBSCALE NO. 12 N= 281

PACING

4	11	33	72	79	47	25	5	5
1	2	3	4	5	S	7	8	9
1,42	3,91	11,74	25,62	28,11	16,73	8,90	1,78	1,78

↓ MEAN = 4,8043  
 STD DEV = 1,4979  
 MISSING = 10

SUBSCALE NO. 13 N= 146  
 EXPRESSION  
 1-----2-----3-----4-----5-----6-----7-----8-----9  
 1-----2-----3-----4-----5-----6-----7-----8-----9  
 0.68 3.42 8.90 30.14 52.05 76 87 101 115 129 143 157 171 185 199 213 227 241 255 269 283 297 311 325 339 353 367 381 395 409 423 437 451 465 479 493 507 521 535 549 563 577 591 605 619 633 647 661 675 689 703 717 731 745 759 773 787 801 815 829 843 857 871 885 899 913 927 941 955 969 983 997 1011 1025 1039 1053 1067 1081 1095 1109 1123 1137 1151 1165 1179 1193 1207 1221 1235 1249 1263 1277 1291 1305 1319 1333 1347 1361 1375 1389 1403 1417 1431 1445 1459 1473 1487 1501 1515 1529 1543 1557 1571 1585 1599 1613 1627 1641 1655 1669 1683 1697 1711 1725 1739 1753 1767 1781 1795 1809 1823 1837 1851 1865 1879 1893 1907 1921 1935 1949 1963 1977 1991 2005 2019 2033 2047 2061 2075 2089 2103 2117 2131 2145 2159 2173 2187 2201 2215 2229 2243 2257 2271 2285 2299 2313 2327 2341 2355 2369 2383 2397 2411 2425 2439 2453 2467 2481 2495 2509 2523 2537 2551 2565 2579 2593 2607 2621 2635 2649 2663 2677 2691 2705 2719 2733 2747 2761 2775 2789 2803 2817 2831 2845 2859 2873 2887 2901 2915 2929 2943 2957 2971 2985 2999 3013 3027 3041 3055 3069 3083 3097 3111 3125 3139 3153 3167 3181 3195 3209 3223 3237 3251 3265 3279 3293 3307 3321 3335 3349 3363 3377 3391 3405 3419 3433 3447 3461 3475 3489 3503 3517 3531 3545 3559 3573 3587 3601 3615 3629 3643 3657 3671 3685 3699 3713 3727 3741 3755 3769 3783 3797 3811 3825 3839 3853 3867 3881 3895 3909 3923 3937 3951 3965 3979 3993 4007 4021 4035 4049 4063 4077 4091 4105 4119 4133 4147 4161 4175 4189 4203 4217 4231 4245 4259 4273 4287 4301 4315 4329 4343 4357 4371 4385 4399 4413 4427 4441 4455 4469 4483 4497 4511 4525 4539 4553 4567 4581 4595 4609 4623 4637 4651 4665 4679 4693 4707 4721 4735 4749 4763 4777 4791 4805 4819 4833 4847 4861 4875 4889 4903 4917 4931 4945 4959 4973 4987 5001 5015 5029 5043 5057 5071 5085 5099 5113 5127 5141 5155 5169 5183 5197 5211 5225 5239 5253 5267 5281 5295 5309 5323 5337 5351 5365 5379 5393 5407 5421 5435 5449 5463 5477 5491 5505 5519 5533 5547 5561 5575 5589 5603 5617 5631 5645 5659 5673 5687 5701 5715 5729 5743 5757 5771 5785 5799 5813 5827 5841 5855 5869 5883 5897 5911 5925 5939 5953 5967 5981 5995 6009 6023 6037 6051 6065 6079 6093 6107 6121 6135 6149 6163 6177 6191 6205 6219 6233 6247 6261 6275 6289 6303 6317 6331 6345 6359 6373 6387 6401 6415 6429 6443 6457 6471 6485 6499 6513 6527 6541 6555 6569 6583 6597 6611 6625 6639 6653 6667 6681 6695 6709 6723 6737 6751 6765 6779 6793 6807 6821 6835 6849 6863 6877 6891 6905 6919 6933 6947 6961 6975 6989 7003 7017 7031 7045 7059 7073 7087 7101 7115 7129 7143 7157 7171 7185 7199 7213 7227 7241 7255 7269 7283 7297 7311 7325 7339 7353 7367 7381 7395 7409 7423 7437 7451 7465 7479 7493 7507 7521 7535 7549 7563 7577 7591 7605 7619 7633 7647 7661 7675 7689 7703 7717 7731 7745 7759 7773 7787 7801 7815 7829 7843 7857 7871 7885 7899 7913 7927 7941 7955 7969 7983 7997 8011 8025 8039 8053 8067 8081 8095 8109 8123 8137 8151 8165 8179 8193 8207 8221 8235 8249 8263 8277 8291 8305 8319 8333 8347 8361 8375 8389 8403 8417 8431 8445 8459 8473 8487 8501 8515 8529 8543 8557 8571 8585 8599 8613 8627 8641 8655 8669 8683 8697 8711 8725 8739 8753 8767 8781 8795 8809 8823 8837 8851 8865 8879 8893 8907 8921 8935 8949 8963 8977 8991 9005 9019 9033 9047 9061 9075 9089 9103 9117 9131 9145 9159 9173 9187 9201 9215 9229 9243 9257 9271 9285 9299 9313 9327 9341 9355 9369 9383 9397 9411 9425 9439 9453 9467 9481 9495 9509 9523 9537 9551 9565 9579 9593 9607 9621 9635 9649 9663 9677 9691 9705 9719 9733 9747 9761 9775 9789 9803 9817 9831 9845 9859 9873 9887 9901 9915 9929 9943 9957 9971 9985 1000

MEAN = 4.4589  
 STD DEV = 0.19550  
 MISSING = 52

SUBSCALE NO. 14 N= 99  
 TUTORING  
 1-----2-----3-----4-----5-----6-----7-----8-----9  
 1-----2-----3-----4-----5-----6-----7-----8-----9  
 4.04 4.04 14.14 37.37 40.40

MEAN = 4.0600  
 STD DEV = 1.0382  
 MISSING = 198

SUBSCALE NO. 15 N= 104  
 ACADEMIC COUNSELING  
 1-----2-----3-----4-----5-----6-----7-----8-----9  
 1-----2-----3-----4-----5-----6-----7-----8-----9  
 0.96 5.77 28.05 35.58 26.92 0.96 0.96

MEAN = 3.8840  
 STD DEV = 0.19981  
 MISSING = 94

SUBSCALE NO. 16 N= 267  
 INSPIRATION  
 1-----2-----3-----4-----5-----6-----7-----8-----9  
 1-----2-----3-----4-----5-----6-----7-----8-----9  
 0.37 3.75 8.99 31.84 45.32 5.99 1.87 1.12 0.75

MEAN = 4.5356  
 STD DEV = 1.1042  
 MISSING = 30

SUBSCALE NO. 17 N= 187  
 LEVEL OF CHALLENGE  
 1-----2-----3-----4-----5-----6-----7-----8-----9  
 1-----2-----3-----4-----5-----6-----7-----8-----9  
 1.07 2.67 4.81 14.97 35.83 25.67 10.16 2.57 2.14

MEAN = 5.2567  
 STD DEV = 1.3945  
 MISSING = 11

SUBSCALE NO. 18 N= 181  
 LECTURING  
 1-----2-----3-----4-----5-----6-----7-----8-----9  
 1-----2-----3-----4-----5-----6-----7-----8-----9  
 1.10 6.63 17.68 26.52 40.33 6.08 1.66

MEAN = 4.2320  
 STD DEV = 1.1354  
 MISSING = 17

UBSCALE NO. 19 N= 249  
STUDENT PARTICIPATION

12 27 46 56 104 4  
1-----2-----3-----4-----5-----6-----7-----8-----9  
4.82 10.84 18.47 22.49 41.77 1.61

↓ MEAN = 3.9036  
STD DEV = 1.2373  
MISSING = 48

UBSCALE NO. 20 N= 215  
ERRAL AND NON VERBAL ENFORCEMENT

2 9 25 64 107 7 1  
1-----2-----3-----4-----5-----6-----7-----8-----9  
0.93 4.19 11.63 29.77 49.77 3.26 0.47

↓ MEAN = 4.3488  
STD DEV = 0.9591  
MISSING = 82

UBSCALE NO. 21 N= 459  
LOGICAL ORGANIZATION

6 25 79 166 162 15 5 1  
1-----2-----3-----4-----5-----6-----7-----8-----9  
1.31 5.45 17.21 36.17 35.29 3.27 1.09 0.22

↓ MEAN = 4.1416  
STD DEV = 1.0612  
MISSING = 36

UBSCALE NO. 22 N= 252  
EXAMPLES

22 11 24 57 121 12 5  
1-----2-----3-----4-----5-----6-----7-----8-----9  
8.73 4.37 9.52 22.62 48.02 4.76 1.98

↓ MEAN = 4.1905  
STD DEV = 1.3696  
MISSING = 45

UBSCALE NO. 23 N= 176  
PRECISE STATEMENTS

5 15 31 63 44 9 7 2  
1-----2-----3-----4-----5-----6-----7-----8-----9  
2.84 8.52 17.61 35.80 25.00 5.11 3.98 1.14

↓ MEAN = 4.0652  
STD DEV = 1.3304  
MISSING = 22

UBSCALE NO. 24 N= 88  
LEVELS OF IMPORTANCE

1-----2-----3-----4-----5-----6-----7-----8-----9  
6.82 17.05 29.55 44.32 2.27

↓ MEAN = 4.1819  
STD DEV = 0.9773  
MISSING = 11

Appendix E

SCAT Instrument Summation - Computer Science



QUESTION NO. 1 N= 276  
 HOW MANY QUESTIONS DUES OF PROF ASK DURING PRE ENTATION

1	6	44	68	104	34	12	6	1
1	2	3	4	5	6	7	8	9
0.36	2.17	15.94	24.64	37.68	12.32	4.35	2.17	0.36

↓ MEAN = 4.6449  
 STD DEV = 1.2522  
 MISSING = 7

QUESTION NO. 2 N= 168  
 HOW MANY QUESTIONS DUES OF PROF ASK DURING PRE ENTATION

1	10	33	65	46	11	2		
1	2	3	4	5	6	7	8	9
0.60	5.95	19.64	38.69	27.38	6.55	1.19		

↓ MEAN = 4.1071  
 STD DEV = 1.0612  
 MISSING = 112

QUESTION NO. 3 N= 168  
 HOW MANY QUESTIONS DUES OF PROF ASK DURING PRE ENTATION

2	15	36	43	60	10	2		
1	2	3	4	5	6	7	8	9
1.19	8.93	21.43	25.60	35.71	5.95	1.19		

↓ MEAN = 4.0833  
 STD DEV = 1.1757  
 MISSING = 112

QUESTION NO. 4 N= 275  
 HOW MANY QUESTIONS DUES OF PROF ASK DURING PRE ENTATION

2	6	32	54	152	21	6	1	1
1	2	3	4	5	6	7	8	9
0.73	2.18	11.64	19.64	55.27	7.64	2.18	0.36	0.36

↓ MEAN = 4.6218  
 STD DEV = 1.1044  
 MISSING = 8

QUESTION NO. 5 N= 275  
 HOW MANY QUESTIONS DUES OF PROF ASK DURING PRE ENTATION

2	10	48	110	58	36	11		
1	2	3	4	5	6	7	8	9
0.73	3.64	17.45	40.00	21.09	13.09	4.00		

↓ MEAN = 4.3230  
 STD DEV = 1.1749  
 MISSING = 8

QUESTION NO. 6 N= 257  
 HOW MANY QUESTIONS DUES OF PROF ASK DURING PRE ENTATION

11	21	42	69	94	18	2		
1	2	3	4	5	6	7	8	9
4.28	8.17	16.34	26.85	36.58	7.00	0.178		

↓ MEAN = 4.0739  
 STD DEV = 1.2018  
 MISSING = 28

QUESTION NO. 7 N= 222

DOES PROF ASK QUESTIONS WHICH REQUIRE MORE INFORMATION OR CLARIFICATION

33	35	60	38	51	5
1	2	3	4	5	6
14,86	15,77	27,03	17,12	22,97	2,25

MEAN = 3,2432  
STD DEV = 1,4124  
MISSING = 61

QUESTION NO. 8 N= 213

DOES PROF ASK QUESTIONS FOR WHICH THERE ARE NO RIGHT OR WRONG ANSWERS

8	23	41	45	77	16	2	1
1	2	3	4	5	6	7	8
3,76	10,80	19,25	21,13	36,15	7,51	0,94	0,47

MEAN = 4,0423  
STD DEV = 1,3533  
MISSING = 70

QUESTION NO. 9 N= 134

DOES PROF ASK STUDENTS TO GIVE EXAMPLES ILLUSTRATING LESSON POINTS

44	33	31	14	10	1	1	
1	2	3	4	5	6	7	8
32,84	24,63	23,13	10,45	7,46	0,75	0,75	

MEAN = 2,4030  
STD DEV = 1,3440  
MISSING = 149

QUESTION NO. 10 N= 167

TO WHAT EXTENT DOES PROF USE INTRODUCTIONS

9	16	34	39	65	4		
1	2	3	4	5	6	7	8
5,39	9,58	20,36	23,35	38,92	2,40		

MEAN = 3,8802  
STD DEV = 1,2457  
MISSING = 116

QUESTION NO. 11 N= 245

HOW INTERESTING IS THE INTRODUCTION

7	18	64	76	70	9	1	
1	2	3	4	5	6	7	8
2,86	7,35	26,12	31,02	28,57	3,67	0,41	

MEAN = 3,8776  
STD DEV = 1,1276  
MISSING = 36

QUESTION NO. 12 N= 235

WOULD INTRODUCTION AID STUDENTS TO REMEMBER MAIN LESSON POINTS

10	18	45	79	65	12	5	1
1	2	3	4	5	6	7	8
4,26	7,66	19,15	33,62	27,66	5,11	2,13	0,43

MEAN = 3,9872  
STD DEV = 1,2759  
MISSING = 46

QUESTION NO. 13 N= 272  
 DOES PROF GENUINELY INTERESTED IN MEETING STUDENT NEEDS

MEAN = 4,6618  
 STD DEV = 0,8215  
 MISSING = 11

1	6	19	48	184	12	2
0,37	2,21	6,99	17,65	67,65	4,41	0,174

QUESTION NO. 14 N= 264  
 DOES PROF REQUEST STUDENT INFORMATION ABOUT COURSE CONTENT

MEAN = 4,1780  
 STD DEV = 1,1480  
 MISSING = 19

10	15	41	58	132	8
3,79	5,68	15,53	21,97	50,00	3,03

QUESTION NO. 15 N= 242  
 DOES PROF MAKE COURSE MATERIAL RELEVANT TO STUDENT EXPERIENCES

MEAN = 4,4421  
 STD DEV = 1,0260  
 MISSING = 41

3	7	28	69	118	12	4	1
1,24	2,89	11,57	28,51	48,76	4,96	1,65	0,41

QUESTION NO. 16 N= 222  
 DOES PROF ACCEPT CONCEPT IF OPTIONS FOR STUDENTS

MEAN = 3,8919  
 STD DEV = 1,4260  
 MISSING = 61

18	26	33	47	83	13	2
8,11	11,71	14,86	21,17	37,39	5,86	0,190

QUESTION NO. 17 N= 248  
 HOW OPEN WOULD PROF BE IF AN OPTION TO CLASS PROCEDURE WAS SUGGESTED

MEAN = 4,6089  
 STD DEV = 0,9331  
 MISSING = 35

3	4	22	50	152	14	2	1
1,21	1,61	8,87	20,16	61,29	5,65	0,181	0,40

QUESTION NO. 18 N= 146  
 IS CLASS ATTENDANCE AN APPROPRIATE OPTION OR THIS CLASS

MEAN = 1,1849  
 STD DEV = 0,3696  
 MISSING = 137

119	27
81,51	18,49



QUESTION NO. 19 N= 145

ARE ASSIGNMENTS AN APPROPRIATE OPTION FOR THIS CLASS

94 S 51  
1--0 S  
S S  
64.83 35.17

MEAN = 1.3517  
STD DEV = 0.14792  
MISSING = 138

QUESTION NO. 20 N= 133

ARE PRE-REQUISITES AN APPROPRIATE OPTION FOR THIS CLASS

84 S 48 1  
1--0 S  
S S  
63.16 36.09 0.75

MEAN = 1.3759  
STD DEV = 0.15015  
MISSING = 150

QUESTION NO. 21 N= 120

ARE EXAMINATIONS AN APPROPRIATE OPTION FOR THIS CLASS

71 S 49  
1--0 S  
S S  
59.17 40.83

MEAN = 1.4083  
STD DEV = 0.14936  
MISSING = 163

QUESTION NO. 22 N= 122

ARE OBJECTIVES AN APPROPRIATE OPTION FOR THIS CLASS

85 S 37  
1--0 S  
S S  
69.67 30.33

MEAN = 1.3033  
STD DEV = 0.14616  
MISSING = 161

QUESTION NO. 23 N= 135

ARE OPTIONS AVAILABLE TO CLASS ATTENDANCE

8 S 124 3  
S S  
1--0 S  
S S  
5.93 91.85 2.22

MEAN = 1.9630  
STD DEV = 0.12641  
MISSING = 148

QUESTION NO. 24 N= 133

ARE OPTIONS AVAILABLE TO ASSIGNMENTS

33 S 93 7  
1--0 S  
S S  
24.81 69.92 5.26

MEAN = 1.8047  
STD DEV = 0.15143  
MISSING = 150

QUESTION NO. 25 N= 112

PRE OPTIONS AVAILABLE  
O PRE-REQUISITES

16	S	92	4
1	S	0-2	3
14,29	S	82,14	3,97
			5
			6
			7
			8
			9

MEAN = 1,8929  
 STD DEV = 0,4106  
 MISSING = 171

QUESTION NO. 26 N= 98

PRE OPTIONS AVAILABLE  
O EXAMINATIONS

21	S	71	6
1	S	0-2	3
21,43	S	72,45	6,12
			5
			6
			7
			8
			9

MEAN = 1,8469  
 STD DEV = 0,15047  
 MISSING = 185

QUESTION NO. 27 N= 103

PRE OPTIONS AVAILABLE  
O OBJECTIVES

16	S	84	3
1	S	0-2	3
15,53	S	81,55	2,91
			4
			5
			6
			7
			8
			9

MEAN = 1,8739  
 STD DEV = 0,14125  
 MISSING = 180

QUESTION NO. 28 N= 151

IS THE PROF CHARISMATIC

3	S	6	19	41	68	10	3	1
1	S	2	3	4	5	6	7	8
1,97	S	3,97	12,98	27,15	45,03	6,62	1,99	0,66

MEAN = 4,4040  
 STD DEV = 1,1441  
 MISSING = 132

QUESTION NO. 29 N= 170

HOW OFTEN DID PROF  
OCULARARY LEAD TO  
CONFUSION

1	S	2	15	43	101	6	3	
1	S	2	3	4	5	6	7	8
1,18	S	8,82	25,29	59,41	3,53	1,76		

MEAN = 4,6059  
 STD DEV = 0,8162  
 MISSING = 113

QUESTION NO. 30 N= 170

AS RATE OF PRESENTA  
ION APPROPRIATE

1	S	8	17	37	76	12	3	4
1	S	2	3	4	5	6	7	8
0,59	S	4,71	10,00	21,76	44,71	7,06	1,76	2,35

MEAN = 4,7765  
 STD DEV = 1,4090  
 MISSING = 113

QUESTION NO. 31 N= 266

DOES PROF REPEAT HIS ATTEMPTS AT EXPLANATIONS

6	8	63	105	77	5	1
1	2	3	4	5	6	7
2,26	3,01	23,68	39,47	28,95	1,88	0,38

↓ MEAN = 3,988  
 STD DEV = 1,011  
 MISSING = 1

QUESTION NO. 32 N= 173

DOES PROF CUE STUDENTS TO RECEIVE FACTS OR INTERPRETATIONS

3	7	20	38	100	5
1	2	3	4	5	6
1,73	4,05	11,56	21,97	57,80	2,89

↓ MEAN = 4,387  
 STD DEV = 0,991  
 MISSING = 110

QUESTION NO. 33 N= 134

DOES PROF LECTURE ABOUT CONTROVERSY WHICH SURROUNDS COURSE MATERIAL

16	24	23	32	38	1
1	2	3	4	5	6
11,94	17,91	17,16	23,88	28,36	0,75

↓ MEAN = 3,410  
 STD DEV = 1,393  
 MISSING = 149

QUESTION NO. 34 N= 168

DOES PROF SUGGEST ALTERNATIVES TO HIS INTERPRETATIONS

11	12	37	41	62	5
1	2	3	4	5	6
6,55	7,14	22,02	24,40	36,90	2,98

↓ MEAN = 3,869  
 STD DEV = 1,255  
 MISSING = 115

QUESTION NO. 35 N= 224

HOW OFTEN DOES PROF REFER TO CONCEPT OF CREATIVITY IN CLASS

12	10	34	32	115	19	1
1	2	3	4	5	6	7
5,36	4,46	15,18	14,29	51,34	8,48	0,45

↓ MEAN = 4,312  
 STD DEV = 1,298  
 MISSING = 59

QUESTION NO. 36 N= 252

DOES PROF UTILIZE DIFFERENT PRESENTATION METHODS

17	33	73	70	48	11
1	2	3	4	5	6
6,75	13,10	28,97	27,78	19,05	4,37

↓ MEAN = 3,523  
 STD DEV = 1,251  
 MISSING = 31

QUESTION NO. 37 N= 140

DOES PROF ENCOURAGE CREATIVITY

5	9	17	31	68	7	3
1	2	3	4	5	6	7
3.57	6.43	12.14	22.14	48.57	5.00	2.14

MEAN = 4.2929  
 STD DEV = 1.2262  
 MISSING = 143

QUESTION NO. 38 N= 148

HOW CREATIVE DO YOU BELIEVE PROF IS IN TEACHING HIS DISCIPLINE

4	13	35	49	38	7	1
1	2	3	4	5	6	7
2.70	8.78	23.65	33.11	25.68	4.73	0.68

MEAN = 3.9054  
 STD DEV = 1.12028  
 MISSING = 135

QUESTION NO. 39 N= 238

IS THE PROF AWARE OF STUDENT ATTENDING BEHAVIOR

2	11	48	95	77	3	2
1	2	3	4	5	6	7
0.84	4.62	20.17	39.92	32.35	1.26	0.84

MEAN = 4.0546  
 STD DEV = 0.9553  
 MISSING = 45

QUESTION NO. 40 N= 118

HOW DOES PROF REACT WHEN CLASS IS NOT PAYING ATTENTION

37	2	10	14	13	42	
1	2	3	4	5	6	7
31.36	1.69	8.47	11.86	11.02	35.59	

MEAN = 3.7627  
 STD DEV = 2.1190  
 MISSING = 165

QUESTION NO. 41 N= 168

WAS RATE OF PRESENTATION APPROPRIATE

2	8	25	37	58	18	3	4
1	2	3	4	5	6	7	8
1.19	4.76	14.88	22.02	34.52	10.71	7.74	1.79
							2.38

MEAN = 4.7024  
 STD DEV = 1.5225  
 MISSING = 115

QUESTION NO. 42 N= 267

DOES PROF INTRODUCE CONCEPTS AT AN OPTIMAL RATE

3	6	34	50	109	43	19	2	1
1	2	3	4	5	6	7	8	9
1.12	2.25	12.73	18.73	40.82	16.10	7.12	0.75	0.37

MEAN = 4.7865  
 STD DEV = 1.2697  
 MISSING = 16

QUESTION NO. 43 N= 260

IS PROF ABLE TO DETER-  
MINE TIME NEEDED TO  
DISCUSS EACH CONCEPT

5	1.92	5	1.92	30	11.54	35.77	22.31	17.69	6.54	1.54	0.77
1	2	3	4	5	6	7	8	9	10	11	12

MEAN = 4,6615  
STD DEV = 1,3758  
MISSING = 23

QUESTION NO. 44 N= 223

DOES PROF CONVEY HIS  
FEELINGS BY HIS WORDS,  
EXPRESSIONS, MOVEMENTS

1	1.79	4	1.79	23	10.31	23.32	57.40	5.83	0.45	0.45	0.15
1	2	3	4	5	6	7	8	9	10	11	12

MEAN = 4,5695  
STD DEV = 0,9021  
MISSING = 60

QUESTION NO. 45 N= 129

IS PROF AWARE OF IMAGE  
HE CONVEYS DURING A  
PRESENTATION

1	3.10	4	3.10	6	4.65	35.66	48.06	5.43	1.55	0.78	0.78
1	2	3	4	5	6	7	8	9	10	11	12

MEAN = 4,5349  
STD DEV = 0,9605  
MISSING = 154

QUESTION NO. 46 N= 212

IS PROF RESPONSIVE TO  
STUDENT REQUESTS FOR  
TUTORING

3	1.42	3	1.42	22	10.38	27.36	54.72	4.25	0.47	1.42	1.42
1	2	3	4	5	6	7	8	9	10	11	12

MEAN = 4,4717  
STD DEV = 0,9103  
MISSING = 71

QUESTION NO. 47 N= 148

DOES PROF ACCURATELY  
DIAGNOSE STUDENT  
DIFFICULTIES

2	4.73	7	4.73	15	10.14	28.38	51.35	4.05	6.25	2.34	2.34
1	2	3	4	5	6	7	8	9	10	11	12

MEAN = 4,3581  
STD DEV = 0,9824  
MISSING = 132

QUESTION NO. 48 N= 128

DO STUDENTS FIND TUTOR-  
IAL SESSIONS HELPFUL

2	2.34	3	2.34	8	6.25	21.09	61.72	7.03	7.03	1.56	1.56
1	2	3	4	5	6	7	8	9	10	11	12

MEAN = 4,6016  
STD DEV = 0,9165  
MISSING = 155



QUESTION NO. 55 N= 258

WHAT IS THE LEVEL OF CHALLENGE FOR ASSIGNMENTS

5	9	15	48	100	60	16	3	2
1	2	3	4	5	6	7	8	9
1,94	3,49	5,81	18,60	38,76	23,26	6,20	1,16	0,78

MEAN = 4,9380  
STD DEV = 1,3247  
MISSING = 25

QUESTION NO. 55 N= 268

DOES PROF PRESENT MATERIAL TO AID STUDENT COMPREHENSION

1	2	28	55	147	29	5	1	
1	2	3	4	5	6	7	8	9
0,37	0,75	10,45	20,52	54,85	10,82	1,87	0,37	

MEAN = 4,7052  
STD DEV = 0,9399  
MISSING = 15

QUESTION NO. 57 N= 268

DOES PROF LECTURE IN AN INTERESTING MANNER

8	18	48	76	103	14	1		
1	2	3	4	5	6	7	8	9
2,99	6,72	17,91	28,36	38,43	5,22	0,37		

MEAN = 4,0970  
STD DEV = 1,1571  
MISSING = 15

QUESTION NO. 58 N= 256

DOES PROF ENCOURAGE STUDENT PARTICIPATION DURING CLASS

5	15	46	79	95	12	3	1	
1	2	3	4	5	6	7	8	9
1,95	5,86	17,97	30,86	37,11	4,69	1,17	0,39	

MEAN = 4,1641  
STD DEV = 1,1532  
MISSING = 27

QUESTION NO. 59 N= 160

IS LEVEL OF STUDENT PARTICIPATION APPROPRIATE FOR THIS CLASS

2	6	26	32	90	3	1		
1	2	3	4	5	6	7	8	9
1,25	3,75	16,25	20,00	56,25	1,88	0,63		

MEAN = 4,3562  
STD DEV = 1,0482  
MISSING = 129

QUESTION NO. 60 N= 140

DOES PROF ENCOURAGE STUDENTS TO LEARN FROM EACH OTHER

8	18	31	30	49	4			
1	2	3	4	5	6	7	8	9
5,71	12,86	22,14	21,43	35,00	2,86			

MEAN = 3,7571  
STD DEV = 1,2912  
MISSING = 149

QUESTION NO. 61 N= 226

HOW OFTEN DOES PROF REINFORCE STUDENT RESPONSES

4	7	24	57	110	20	2	1	1
1	2	3	4	5	6	7	8	9
1.77	3.10	10.62	25.22	48.67	8.85	0.188	0.44	0.44

↓ MEAN = 4.5088  
STD DEV = 1.1125  
MISSING = 57

QUESTION NO. 62 N= 209

DOES PROF USE VARIETY OF WORDS TO REINFORCE STUDENT RESPONSE

2	8	22	70	92	11	4		
1	2	3	4	5	6	7	8	9
0.96	3.83	10.53	33.49	44.02	5.26	1.91		

↓ MEAN = 4.3923  
STD DEV = 1.0092  
MISSING = 74

QUESTION NO. 63 N= 235

IS PROF GENUINELY INTERESTED IN HOW STUDENTS RESPOND

5	10	18	56	146	9	1		
1	2	3	4	5	6	7	8	9
1.77	2.13	7.66	23.83	62.13	3.83	0.143		

↓ MEAN = 4.5915  
STD DEV = 0.7920  
MISSING = 49

QUESTION NO. 64 N= 261

DOES PROF PRESENT MATERIAL SO THAT STUDENTS ARE AWARE OF HIS GOALS

5	10	47	88	107	4			
1	2	3	4	5	6	7	8	9
1.92	3.83	18.01	33.72	41.00	1.53			

↓ MEAN = 4.1264  
STD DEV = 0.9222  
MISSING = 22

QUESTION NO. 65 N= 262

DOES PROF ENSURE UNDERSTANDING OF CONCEPTS ON WHICH LESSON IS BASED

3	9	25	104	94	18	7	2	
1	2	3	4	5	6	7	8	9
1.15	3.44	9.54	39.69	35.88	6.87	2.67	0.76	

↓ MEAN = 4.4160  
STD DEV = 1.1101  
MISSING = 21

QUESTION NO. 66 N= 258

DOES PROF MAKE THE RELATIONSHIPS BETWEEN TOPICS CLEAR

3	4	26	65	142	16	1	1	
1	2	3	4	5	6	7	8	9
1.16	1.55	10.08	25.19	55.04	6.20	0.139	0.139	

↓ MEAN = 4.5349  
STD DEV = 0.9381  
MISSING = 25



QUESTION NO. 67 N= 265

DOES PROF SYSTEMATIC I.E.,  
WELL-ORDERED DURING  
CLASS

4	11	30	71	134	13	2
1	2	3	4	5	6	7
1.51	4.15	11.32	26.79	50.57	4.91	0.175

↓ MEAN = 4.3849  
STD DEV = 1.0201  
MISSING = 19

QUESTION NO. 68 N= 251

DOES PROF USE DIFFERENT  
APPROACHES TO EXPLAIN  
HIS CONCEPTS

5	15	52	100	66	8	4	1
1	2	3	4	5	6	7	8
1.99	5.98	20.72	39.84	26.29	3.19	1.59	0.40

↓ MEAN = 4.0080  
STD DEV = 1.1242  
MISSING = 32

QUESTION NO. 69 N= 267

DOES PROF USE EXAMPLES  
WITHIN RANGE OF STUDENT  
KNOWLEDGE/EXPERIENCE

1	2	8	63	159	24	6	1	3
1	2	3	4	5	6	7	8	9
0.37	0.75	3.00	23.60	59.55	8.99	2.25	0.37	1.12

↓ MEAN = 4.8577  
STD DEV = 0.9270  
MISSING = 19

QUESTION NO. 70 N= 265

DOES PROF RELATE HIS EX-  
AMPLES TO POINTS HE IS  
ILLUSTRATING

2	7	53	185	13	3	1		
1	2	3	4	5	6	7	8	9
0.75	2.64	20.00	69.81	4.91	1.13	0.38	0.38	0.38

↓ MEAN = 4.8151  
STD DEV = 0.7636  
MISSING = 19

QUESTION NO. 71 N= 217

DOES PROF ASK STUDENTS  
TO GIVE EXAMPLES ILLU-  
STRATING LESSON POINTS

48	38	55	38	36	1	1		
1	2	3	4	5	6	7	8	9
22.12	17.51	25.35	17.51	16.59	0.46	0.46	0.46	0.46

↓ MEAN = 2.9217  
STD DEV = 1.4202  
MISSING = 69

QUESTION NO. 72 N= 244

IF PROF FORCED TO USE  
FEWER WORDS WOULD EXPLAN  
BE CLEAR OR CONFUSED

16	25	40	58	65	15	18	7	
1	2	3	4	5	6	7	8	9
6.56	10.25	16.39	23.77	26.64	6.15	7.38	2.87	2.87

↓ MEAN = 4.1599  
STD DEV = 1.6688  
MISSING = 39

QUESTION NO. 73 N= 243  
 DOES PROF USE RIGHT  
 NUMBER OF PRECISE STATE-  
 MENTS DURING CLASS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
3.70	20.58	29.22	36.21	7.41	1.65	0.82	0.41																																	

MEAN = 4.3333  
 STD DEV = 1.1355  
 MISSING = 40

QUESTION NO. 74 N= 250  
 DOES PROF DISTINGUISH  
 LEVELS OF IMPORTANCE IN  
 HIS CLASS LECTURES

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
2.00	4.00	19.60	26.40	45.20	2.00	0.80																																	

MEAN = 4.1800  
 STD DEV = 1.0545  
 MISSING = 33

QUESTION NO. 75 N= 158  
 ARE SKILLS REPRESENTED  
 IN BOOKLET RIGHT FOR  
 TEACHER GUIDANCE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
4.43	7.59	9.49	18.99	32.28	7.59	10.76	5.70																																

MEAN = 4.8038  
 STD DEV = 1.8630  
 MISSING = 12

QUESTION NO. 76 N= 157  
 IS RANGE SUFFICIENT FOR  
 INDICATING VARIATIONS IN  
 TEACHER PERFORMANCE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
0.64	1.91	1.91	7.01	64.97	4.46	7.64	5.73																																

MEAN = 5.4076  
 STD DEV = 1.4320  
 MISSING = 126

QUESTION NO. 77 N= 163  
 THE LENGTH OF BOOKLET IS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
26.38	12.88	20.86	15.34	23.31	0.61	0.61																																	

MEAN = 3.0184  
 STD DEV = 1.6007  
 MISSING = 120

QUESTION NO. 78 N= 134  
 THIS EXERCISE VALUABLE  
 TO ME, PROF, OR BOTH

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	1.49	3.73	34.33	14.18	17.16	9.70	19.40																																

MEAN = 6.4851  
 STD DEV = 1.6486  
 MISSING = 149

↓ MEAN = 4,3431  
 STD DEV = 1,2109  
 MISSING = 237

SUBSCALE NO. 1 N= 612

4	31	113	176	210	55	16	6	1
1	2	3	4	5	6	7	8	9
0,65	5,07	13,46	28,76	34,31	8,99	2,61	0,98	0,16

↓ MEAN = 4,4727  
 STD DEV = 1,1203  
 MISSING = 16

SUBSCALE NO. 2 N= 550

4	16	80	164	210	57	17	1	1
1	2	3	4	5	6	7	8	9
0,73	2,91	14,55	29,82	38,18	10,36	3,09	0,18	0,18

↓ MEAN = 3,5714  
 STD DEV = 1,4756  
 MISSING = 306

SUBSCALE NO. 3 N= 826

96	112	174	166	232	40	5	1	
1	2	3	4	5	6	7	8	9
11,62	13,56	21,07	20,10	28,09	4,84	0,61	0,12	

↓ MEAN = 3,9181  
 STD DEV = 1,2131  
 MISSING = 202

SUBSCALE NO. 4 N= 647

26	52	143	194	200	25	6	1	
1	2	3	4	5	6	7	8	9
4,02	8,04	22,10	29,98	30,91	3,86	0,93	0,15	

↓ MEAN = 4,4293  
 STD DEV = 1,0239  
 MISSING = 71

SUBSCALE NO. 5 N= 778

14	28	88	175	434	32	6	1	
1	2	3	4	5	6	7	8	9
1,80	3,60	11,31	22,49	55,78	4,11	0,77	0,13	

↓ MEAN = 4,2702  
 STD DEV = 1,1243  
 MISSING = 96

SUBSCALE NO. 6 N= 470

21	30	55	97	235	27	4	1	
1	2	3	4	5	6	7	8	9
4,47	6,38	11,70	20,64	50,00	5,74	0,85	0,21	

MEETING STUDENT NEEDS

OPTIONAL INSTRUCTION

UBSCALE NO. 7 N= 151  
MEAN = 4,4040  
STD DEV = 1,1441  
MISSING = 132

UBSCALE NO. 7	N= 151	3	6	19	41	68	10	3	1
1	1.99	3.97	12.58	27.15	45.03	6.62	1.99	0.66	

UBSCALE NO. 8 N= 606  
MEAN = 4,3628  
STD DEV = 1,1665  
MISSING = 243

UBSCALE NO. 8	N= 606	7	18	95	185	254	23	16	4
1	1.16	2.97	15.68	30.53	41.91	3.80	2.64	0.66	0.66

UBSCALE NO. 9 N= 475  
MEAN = 3,9284  
STD DEV = 1,2692  
MISSING = 374

UBSCALE NO. 9	N= 475	30	43	80	111	200	11		
1	6.32	9.05	16.84	23.37	42.11	2.32			

UBSCALE NO. 10 N= 764  
MEAN = 3,9699  
STD DEV = 1,2964  
MISSING = 368

UBSCALE NO. 10	N= 764	38	65	159	182	269	44	5	2
1	4.97	8.51	20.81	23.82	35.21	5.76	0.65	0.26	

UBSCALE NO. 11 N= 238  
MEAN = 4,0540  
STD DEV = 0,9553  
MISSING = 45

UBSCALE NO. 11	N= 238	2	11	48	95	77	3	2	
1	0.84	4.62	20.17	39.92	32.35	1.26	0.84		

UBSCALE NO. 12 N= 695  
MEAN = 4,7194  
STD DEV = 1,3730  
MISSING = 154

UBSCALE NO. 12	N= 695	10	19	89	180	225	107	49	9
1	1.44	2.73	12.81	25.90	32.37	15.40	7.05	1.29	1.01

CHARISMA

ERBAL FLUENCY

MATURITY AND STABILITY  
OF INTERPRETATION

CREATIVITY

RECOGNIZING ATTENDING  
BEHAVIOR

RACING

MEAN = 4,5568  
 STD DEV = 0,9227  
 MISSING = 215

SUBSCALE NO. 13	N= 352	2	8	29	98	190	20	3	2
EXPRESSION		1	2	3	4	5	6	7	8
		0,57	2,27	8,24	27,84	53,98	5,68	0,85	0,57

MEAN = 4,4713  
 STD DEV = 0,9370  
 MISSING = 361

SUBSCALE NO. 14	N= 488	7	13	45	127	271	24	1
TUTORING		1	2	3	4	5	6	7
		1,43	2,66	9,22	26,02	55,53	4,92	0,20

MEAN = 4,2651  
 STD DEV = 1,0090  
 MISSING = 351

SUBSCALE NO. 15	N= 215	2	10	35	59	102	5	2
ACADEMIC COUNSELING		1	2	3	4	5	6	7
		0,93	4,65	16,28	27,44	47,44	2,33	0,93

MEAN = 4,6453  
 STD DEV = 0,9168  
 MISSING = 76

SUBSCALE NO. 16	N= 773	7	15	47	100	471	40	8	3	2
INSPIRATION		1	2	3	4	5	6	7	8	9
		0,91	1,94	6,08	23,29	60,93	5,17	1,03	0,39	0,26

MEAN = 5,1117  
 STD DEV = 1,3086  
 MISSING = 38

SUBSCALE NO. 17	N= 528	8	14	24	84	211	130	42	9	6
LEVEL OF CHALLENGE		1	2	3	4	5	6	7	8	9
		1,52	2,65	4,55	15,91	39,96	24,62	7,95	1,70	1,14

MEAN = 4,4011  
 STD DEV = 1,0961  
 MISSING = 30

SUBSCALE NO. 18	N= 536	9	20	76	131	250	43	6	1	
LECTURING		1	2	3	4	5	6	7	8	9
		1,68	3,73	14,10	24,44	46,64	8,02	1,12	0,19	

SUBSCALE NO. 19 N= 556  
 STUDENT PARTICIPATION  
 15 39 103 141 234 19 3 2  
 1-----2-----3-----4-----5-----6-----7-----8-----9  
 2,70 7,01 18,53 25,36 42,09 3,42 .0,54 0,36

MEAN = 4,1169  
 STD DEV = 1,1805  
 MISSING = 293

SUBSCALE NO. 20 N= 670  
 VERBAL AND NON VERBAL REINFORCEMENT  
 6 20 64 183 348 40 7 1 1  
 1-----2-----3-----4-----5-----6-----7-----8-----9  
 0,90 2,99 9,55 27,31 51,94 5,97 1,04 0,15 0,15

MEAN = 4,5015  
 STD DEV = 0,9792  
 MISSING = 179

SUBSCALE NO. 21 N= 1297  
 LOGICAL ORGANIZATION  
 20 49 180 428 543 59 14 1 3  
 1-----2-----3-----4-----5-----6-----7-----8-----9  
 1,54 3,78 13,88 33,00 41,87 4,55 1,08 0,08 0,23

MEAN = 4,2961  
 STD DEV = 1,0535  
 MISSING = 118

SUBSCALE NO. 22 N= 749  
 EXAMPLES  
 51 40 70 154 380 38 10 2 4  
 1-----2-----3-----4-----5-----6-----7-----8-----9  
 6,81 5,34 9,35 20,56 50,73 5,07 1,34 0,27 0,53

MEAN = 4,2817  
 STD DEV = 1,3500  
 MISSING = 100

SUBSCALE NO. 23 N= 487  
 PRECISE STATEMENTS  
 16 34 90 129 153 33 22 9 1  
 1-----2-----3-----4-----5-----6-----7-----8-----9  
 3,29 6,98 18,48 26,49 31,42 6,78 4,52 1,85 0,21

MEAN = 4,2464  
 STD DEV = 1,4290  
 MISSING = 79

SUBSCALE NO. 24 N= 250  
 LEVELS OF IMPORTANCE  
 5 10 49 66 113 5 2 2  
 1-----2-----3-----4-----5-----6-----7-----8-----9  
 2,00 4,00 19,60 26,40 45,20 2,00 0,80

MEAN = 4,1800  
 STD DEV = 1,0242  
 MISSING = 33

Appendix F

Clinical Report for Computer  
Science Faculty Members

## Faculty Member 1

The analysis of this participant's data was one of the most interesting of the Clinic program because he asked that two of his classes' responses be obtained. One of the classes was a large lecture class; the other class was a smaller class more geared to discussion. His hypothesis was that he had two different styles of teaching and that the needs of teaching were, in fact, different because of the different class environments.

He suggested that in his large lecture class students would think that he was not particularly exciting and that he was weak in his ability to inspire the students. However, he maintained that in the smaller class students would perceive him as creative and inspirational.

Whether or not a professor should utilize different skills with different classroom environments is a question which should be investigated. This professor believed without question that he should utilize different skills or, perhaps more accurately, utilize skills in different ways in direct correlation with environmental settings.

The visual printout was particularly helpful in the analysis of this faculty member's teaching. Students from both of his classes suggested that the most important skills for the courses were logical organization, examples, meeting student needs, lecturing, and pacing. These skills are predominantly toward the disciplinary area on the



visualization. Final analysis has suggested that this professor should develop the skills of precise statements, distinguishing levels of importance, and maturity and stability of interpretation to utilize with large lecture classes. When this same faculty member teaches small groups, he should concentrate on the skills of asking questions, creativity, and academic counseling as well as student participation.

The question, however, of which skills are most appropriate for what purposes still remains. Further research of the technical skills of teaching will be required before this question can be answered.

## Faculty Member 2

The students in the professor's Computer Architecture and Data Structures courses responded typically in the following ways to the question "What word best characterizes the professor's classroom manner?" They responded, "Functional, nervous, not always as comfortable as would like, shy, not confident enough." Students suggested his weakest skills were elaboration, asking questions, and determining the correct level of challenge. The skills they chose for his development were inspiration and lecturing. At the same time, the professor suggested that his weakest skills were student participation, inspiration, asking questions; and the skill he chose for development was determining the right level of challenge.

The key to developing a higher level of teaching competency for this professor might be in the area of elaboration. His students have suggested that he is open, but with a sense of purpose; they admire his vast knowledge, and they believe that he is competent in the material which he covers. In fact, one student suggested that "his wide range of scientific knowledge" was what he admired most about the professor. In other words, this professor does know his subject area, and he is able to give examples. Students suggested that using examples, in fact, was one of his strongest skills. It would seem that his content ability within his field in conjunction

with the use of the skills of elaboration, and examples might improve his ability to encourage student participation, inspiration, and questions.

The skill which he believed he should develop, level of challenge, might not be difficult with individual responses to student questions on the basis of elaboration. Students might be more inspired by this lecture technique.

## Faculty Member 3

The responsibilities of this faculty member are split between his role as teacher and his responsibilities as an administrator. During the initial interview with this faculty member, he suggested that this split responsibility did not allow him enough time to provide as much logical structure to his course as he believed necessary. He suggested, consequently, that his students would perceive this lack of logical organization, and he wanted me to know that he knew about this problem but found it impossible to solve.

Furthermore, he suggested that teaching was difficult to measure and that perhaps it was appropriate that there be a wide range of teaching styles and abilities so that students would be exposed in a positive manner to the different way individuals actually operate. It sounded as if this faculty member were setting the stage for a poor rating from his students.

When the data was summarized, this faculty member was extremely interested in how the students had responded. They responded by suggesting that he was weak in the areas of summarization of lessons, asking students to give examples illustrating lesson points, repeating attempts at explanations, lecturing about the controversy which surrounded course material, suggesting alternatives to his own interpretations, encouraging student participation,

and presenting material so that students were aware of his goals.

The participation of this faculty member raised an important question for the future operation of the Clinic. If a professor perceives himself to be a poor teacher and is, in fact, extremely defensive about this perception, a radically different Clinic approach to analysis might be necessary. For example, an approach might be appropriate based more directly upon the strengths of the professor. This concentration on strengths might encourage him to eventually become less defensive about his weaknesses and consequently to participate more fully in their remediation.

## Faculty Member 4

This individual inspired students to become more interested in the course material. Students suggested that he made them feel important and that he "really did want me to learn this material." Students perceived that he was devoted to his discipline and that this devotion led to his greater involvement with the development of course material which would aid students to learn.

The skill which this professor suggested he would be most interested in developing was expression. Students did respond that expression was one of this individual's weakest skills. The development of expression is, perhaps, one of the most difficult skills to undertake.

It seemed that this professor was indeed extremely devoted to students, but, ironically enough, this devotion stopped short of actual involvement. In other words, this professor does not know how to go beyond an academic (precise) involvement with students. Students suggested that they would be more comfortable in class if this professional involvement led to a more personal interaction.

The professor, on the basis of this information, has decided to become less precise in his bearing in order to encourage students to feel more comfortable with him as an individual. He has indicated that Clinic involvement

on his part would be helpful in providing constant feedback as he undertakes this process.

## Faculty Member 5

This faculty member was a most active participant in the Clinic program. His interest extended beyond his actual participation in the Clinic program to suggesting a mutual exploration of skills of studenting which might be utilized by computer science students. Since this faculty member was obviously interested in the process of teacher education, the analysis of his data was more involved than that of any of the other participants.

The teaching style of this professor could best be described as "lecturing." He is logical in his presentation, material is chosen at the right level of challenge, and he paces his lessons at an optimal rate. Unfortunately, this style of teaching could be described as machine-like. In an effort to present material clearly and precisely, this professor had unconsciously developed a teaching style which was neither creative nor exciting. In fact, one student suggested, "This class is like watching television. You come in, the teacher gets turned on, you write for fifty minutes, the program ends, and you leave."

The skill that students suggested this professor develop was student participation. This response by students seems to validate the reliability of student-centered analysis of teaching. The professor agreed that there should be more student participation in class and



subsequently agreed to a class discussion devoted to exploring how students might participate in his class. Unfortunately, this discussion only verified the fact that students are adept at localizing teaching problems but are not capable of prescribing remediation. However, this professor is now cognizant of the fact that students would like to participate more in his classes, and, therefore, he will make an effort to discover ways to encourage their participation.

## Faculty Member 6

This faculty member was the most powerful teacher who participated in the Clinic program. His power lies both in his teaching ability and in the fact that he is regarded as one of the foremost experts in his field of Computer Science.

Perhaps this individual, more than any other participant, contributed to the development of the Clinic to Improve University Teaching. After several meetings with this faculty member, the following conclusions were reached regarding both his teaching style and the direction that he might pursue in order to improve his teaching competency.

This faculty member commands great respect from peers and students. However, this respect on the part of his students seems to turn into reticence on their part to participate in class. The faculty member himself suggested that the skills which he would like to develop were tutoring and academic counseling. The students responded that his pacing was too fast, his level of challenge was too high, that his tutoring ability required improvement.

After viewing the video-tape in conjunction with the student-centered analysis of teaching feedback, it became obvious that the professor was operating without enough concern for the capacity of the students to keep

up. He overpowered the students both in terms of his reputation and in terms of his speed of presentation--the amount of material he presented during a single lecture and the recall which he expected of his students.

The conclusions of this analysis would suggest that this professor should respect the fact that his students are not as capable as he might like them to be. He should consider that it is his responsibility to contribute not only to the academic development of his students but to make them comfortable enough in his presence to meaningfully interact with him when the students feel it is necessary.

## Faculty Member 7

This professor was one of the most difficult teachers to analyze of the entire Clinic operation. My first meeting with her proved to be relatively interesting but, from any other comparative analytical standpoint, not very productive. She saw that her students believe that her weakest skills were planned repetition, pacing, and determining the level of challenge. She also saw the skill they would like her to develop was pacing.

This is information which is useful but, out of context, not very helpful. After continued attempts at analysis, I was able to develop what I believe to be a more appropriate analysis prior to our second meeting.

For the first time, I looked at the faculty self-analysis before I looked at the student response. Lecturing proved to be the key to this analysis. I immediately went to the teaching skills outlined in the Micro-teaching booklets and under presentation skills found lecturing. Lecturing skills are based upon several important points, which should be used "for an effective lecture technique." They are in order: the personality of the lecturer, consideration of the audience, preparation of the audience, planning and organization, vocabulary, repetition, varied stimuli, time length, and illustrative devices.

With this information, I then interpreted the student response. The students had said that, in fact, lecturing was a strong point. But they said her weak points were planned repetition, pacing, and level of challenge. The skill they would like her to develop was pacing. Viewed from this context, it became clear that the skills that the professor ought to work on to become a more effective lecturer were, first, repeating main ideas more often and, second, developing the correct level of challenge (which is to say, a more accurate pacing).

The important point here is that it may be necessary to start from the faculty self-analysis when analyzing a professor's teaching competency. If student response does not immediately lead to a context within which to suggest improvement, perhaps looking at what the faculty members believe are their weakest skills leads to the more accurate interpretation of student response. In the case of this professor, she believed that lecturing was a weak point; and her students were responding by telling her how they would like her to improve her lecture technique.

Appendix G

Transcript of Computer Science Meeting  
To Discuss  
The Clinic To Improve University Teaching

Dr. Allen: One of the things that we wanted to do was to show you the tapes, perhaps of the English Department, because we thought that after you had seen yourselves teach, you would see someone teach a completely different discipline and see how that worked. Incidentally, I am taping this, again for our purposes. If you have any objection, why . . . The intuitive level of the Clinic seems to be pretty good in terms of the kinds of guesses that you'd make looking at the video-tape. I looked at some of your video-tapes and made guesses about the student responses, and those guesses turned out pretty good, which again has only the boldest, grossest kind of validity. I guess the big question I'd like to come out with, or the big statement, before we go into a more detailed analysis, is, "In your professional judgment, where ought we go from here?" You know, all the way from saying, "Well, it's been a nice ride, but you now have the data that your chairman sought; namely, that the School of Education really doesn't have anything to say about the improvement of teaching, or at least as a hypothesis that can be verified," on to some more refined judgments, both about the way in which we ran it this time and the way in which we might participate, either with you or with others, next fall; because, unless it is worthless, it shouldn't be a one-shot arrangement. We're committed to going on with the program.

My own reaction is that the thing that has distinguished it is having someone like Mike who seems to care. It's one thing to get a piece of paper like this out of a questionnaire, which we just sort of look through and say, "Oh, I didn't do too badly against the mean. Oh God, how could they have rated me that badly!" and then forget it. But if this is tied to something like video-taping and an individual who has taken the attention to look at the tapes, look at the data, and who can then do something like point out to you your strengths and weaknesses, then I think you have to pay attention; and it helps. I would think that if the University is really concerned with improving the faculty's teaching rather than simply with getting a lot of data to store in Whitmore, then I think it would be much more efficient to do a thing like this for each faculty member once every two or three years rather than to process a whole lot of garbage on every single course the person teaches. Because this way you really see things you just don't see otherwise; and having Mike making observations and pointing to things on the video-tape is even more important, I think, than having a pile of numbers of this kind. Because then you have some real helps; and you can ask yourself, "What does it really mean to my teaching style? What should I change? What's fine as it is?" So I think this idea of having an individual involved, rather than finding some faceless, mass-production system



for grinding out deciles at you, is the thing that has been most impressive about it.

I think it is other things, too. I certainly would say I didn't quite know how to use the scales, which are the important factors. In a way there was a little bit of coin-flipping in my mind: What did you mean by that? Or what would I mean by it? Or how would other people interpret this sort of thing? One shot at this sort of thing can't be very illuminating. And I can think of other questions. How would I have reacted to this twenty years ago versus now? Obviously I'm going to rationalize all kinds of things now, because I'm not about to change. Twenty years ago I might have been quite different about my reaction to it. But you certainly want to see what effect this has on an older person like me who is rather caste in concrete versus younger people and how they will respond to it. I think I agree with you: It really doesn't mean a thing, but you've got to keep on. And, also, I would take the whole thing a bit tongue in cheek, because I didn't know how to use this thing at this time. I didn't know how to really decide what the important skills are. I never thought about some of these skills. Are these skills that I thought about before? I wasn't really aware that I'd ever given them any thought. Probably I will now. Or think of . . .

Allen: But if you do this, you're not caste in concrete; so that's either good or bad; I'm not sure which.

A lot of things to think about but nothing to help us. (Laughter.)

Allen: Oh, all is well then.

Well, I'm just thinking in general. I'm sure that the first shot at this sort of thing involves both learning how to be evaluated as well as learning how to evaluate. And the learning how to be evaluated is probably the most significant thing that you could be doing, if you can do a good job at it. If I can't learn how to be evaluated and get something out of it, then there's really no point in your doing this. If all you're doing is preparing something for my folder that other people are going to judge me on, then you're going to replace me with someone else exactly like me; you're going to put numbers in folders that you can replace later.

Allen: That's not useful, you see.

Right. That's totally useless. So it would seem to be that your first shot is partly learning how to be evaluated. At this point you're going to have to make some assumptions. It may be a bad one and it may be a good one. We've got plenty still in the casting process.

Allen: You see, one of the things that I'm looking forward to is finding out how significant the sharing of the five-minute video segments may be, because that may turn out to be a good opportunity. As far as I know, one of the things that we said might happen during this semester, that you might observe each other's teaching, in fact didn't happen. Is that right? Because, you see, as usually happens, everybody gets busy; and even when they have a license to do so, unless there's some sort of an external press on the process, it doesn't happen. So in some ways, one of the interesting things about looking at the video-tape is that you'll actually be seeing for the first time some examples of some of your colleagues teaching. Now again, trying to keep the focus of this as a teacher improvement process rather than an evaluative process--obviously there's going to be a personal thread involved--but I think that one of the things that I get the sense of is that the way Mike went about it mostly kept the image and the feel that it was a teacher-improvement process rather than any kind of an insidious or side-ways evaluation process. Am I accurate in that perception?

Yes, but I'm not sure you can maintain that he started doing this. I think there's a difference in what you're doing now with, say introducing this as a standard process in the University. You asked us if we would cooperate.

Allen: One question is the extent to which Mike, as an individual, is unique. Now I have already made my position on this clear; and I think that he is a unique individual in terms of his ability to have a level of poise and maturity willing to take on full professors. And I'm not sure, in terms of the future development of the Clinic, that you can either find many students that are willing to take on full professors or, on the other hand, many students that full professors are willing to listen to with any sense of confidence. I'd be interested in your comments on that one.

My third point, the one I was trying to make, is that I'm not sure, in regards to who you have, if you can really inject that person on a full professor with any kind of success. Now you ask, "Would you take part?" Sure, I always take part in experiments. But, you know, making it a regular process and saying, "All right, this young man," I don't care who he is, "is going to come in and evaluate you," might cause a problem. No matter what.

What about an older person, a faculty member or research associate?

That is frightening. Here is an old guy, he obviously hasn't made the grade, and they've put him in a secondary slot. That's even worse.

I guess it is. But it has a lot to do with your viewing of your interaction with that person. If you find someone coming to you and saying, "I'm here to help you in any way; I'm on your side," as opposed to, you know, the other . . .

Even if it's an older man?

. . . you're going to expose me just like an assistant dean.

If we could just step back a bit. At Stanford they used the Washington questionnaire, which had all the defects of other standard questionnaires. But the point was that it was only given to the individual and that it was up to him whether he would pass it on to his chairman for use in promotion considerations, which gave the chairman a pretty good message if someone didn't hand in a good report--it meant that he wasn't an exceptionally good teacher. But, on the other hand, if he didn't hand in a report, at least it didn't discriminate against the guy who is terribly bad; and he might, therefore, be quite happy to have that information available to him in trying to bring himself up to the stage at which he would want to give the report. Another thing which I think is really important is that what we really want to do is improve our ability as teachers rather than just have an extra bit

of ammunition when it comes to tenure and promotion. Then I think having it at that level at which it is only going to the individual to give him feedback to use as he will is quite sufficient. It will become clearer from that by mutually making use of it. The chairman will have sufficient input when it comes to personnel action time. And this will certainly help the individual who wants to improve.

Allen: You see, one of the things is that the video-tape automatically is a good prop for someone to come in with and use as sort of a discussion tool. Also a good prop, it turns out, is that this is almost a reverse of most kinds of validity and reliability questions. I mean, the more disparity between the professor's perception and the perception of his students, the more willingness there is for a conversation to take place. So, in some ways, the disparity becomes almost an excuse for the validity of the conversation rather than anything else, when you're at one level. But it has to be intuitively not so disjointed as rejected. Now I think, from what I've seen, this pretty well functioned at that level.

Yes, I think having us fill in the instrument first was useful. The one thing I would have liked, perhaps, is not to have an unbiased look at the video-tape. And I'm not sure that the standard operating procedure of the thing

wouldn't be to sit down with, say, a twenty-minute clip, with which you try to point out some of the worst discrepancies in the rating, saying now this is why the students would rate you low on this, or this is why students are worried about that, so that you can really see it.

Allen: Was Mike directive enough in the suggestions that he made?

I think so.

I felt this was an important point. I found that interpreting the results was the most difficult thing. And, therefore, I needed some direction. I may have some feeling that what they're saying isn't what they mean and, therefore, I need some objectivity to try and dig out what it is they really mean and are incapable of saying. In a certain sense I'm disappointed still, because we did do that, and the results were not particularly gratifying--gratifying in the sense that we could make any improvement in teaching.

Allen: Well, one of the generalizations that I have from working with teacher improvement now for fifteen years is that students are excellent in pointing out difficulties but are absolutely useless in helping to identify ways of dealing with them.

That's what I was going to say--there are some things I found out, but I don't know how to very easily integrate that into my natural mode of interaction. I can say, "This is what I want to improve on," but you get in front of a group of people, and, unless you have very careful awareness at all times of how you're acting, you fall into your natural mode, which is exactly what led to the discrepancy; and you don't want a person to continuously think about how he wants to act, because then he's not acting naturally either. So I think it's the problem of saying, "You're weak here," and making it part of your natural routine to improve.

Allen: But you have to condition. If things are going to have any permanent effect, then there has to be some sort of a conditioning process in which you go through the unnatural part of it in order to reach a more routine and habituated response.

But that's a very difficult process.

Allen: Sure.

Why not have your lecture notes written on pages which have your three worst faults written on the top of the page?



Allen: One way of cueing would be to have Mike or someone like Mike (but I think more usefully the same person) come back maybe periodically once or twice a semester to deep the press on you. Nothing happens unless you have the desire to change; nothing happens because he doesn't have authority over you. But if you have the desire, which goes by default unless somebody keeps at you about it, you then have the desire also to sort of play the game with yourself in terms of seeing if you can get students to change their perceptions about you; and ultimately you are there to try to serve and please your students. I mean, that's what teaching is all about. And if there can be a way so that the press can be kept on you both to find out whether that is happening and to give you a rather specific agenda to address, then that might help.

There's one important aspect that we raised in our preliminary discussions which has not been addressed at all here, except in just some of the informal discussions with Mike, and which still worries me greatly. And that is the converse fact of getting a suggestion of what it is that the students could change in themselves to get more from a teacher. In discussing some of the problems I was having, I felt that, if the students realized that they should in some sense change their study habits from those

they had for other professors, they might well have gotten more out of the course than they did.

Mike: Speaking now directly, we did go into one class and, in fact, spent that entire class session trying to have the students isolate what they meant when they said there was a weakness in student participation. And that classtime was spent going around and around and around trying to figure out what they meant by that. They couldn't delineate what they meant, or clarify themselves. On the other hand, in one of the English classes that we did, we went into that class with relatively the same weakness delineated, student participation; and, before we started in on a conversation, we showed them the video-tape. And their reaction to seeing themselves was something like this: "Well, it's not his fault that we're not participating; it's our fault that we're not participating. We never realized how much time we just spend sitting and absolutely saying nothing. And we never realized what a dull class is." So that the next time around, whenever we initiate a conversation like that, it might be important to show the students the video-tape as well as to have the teacher see the video-tape.

I think this also comes into the question: some of the questions in the instrument do not apply. I think practically everybody found that for a particular course.

True.

I think on the instrument there perhaps ought to be another block that says, "I do not feel that this question is pertinent to this course" that the student can check. . .

Allen: We did have that.

In all cases?

Allen: Students were invited to X out any questions they felt didn't pertain.

Okay, I didn't. . . .

But they didn't.

Allen: In fact, they did not X out questions. In fact, they behaved like sheep, or should I say much like professors behave, because you were also invited to X our questions, but you did not.

I don't think I even read that page.

Well, I didn't X them out, but I wrote "Does not apply" against this. But I noticed that the same questions . . .

Allen: But that was very infrequent behavior. I mean-- again I'm not being perjorative about it--but I mean the

fact is that when it comes to the improvement of teaching, somehow there's a mystique about it that leaves people not wanting to tamper with some externally defying process. And that's all wrong. I mean, over in Germany at a Microteaching conference, I presented this instrument and a discussion of it. And some of the people at the conference were absolutely exorcised, thinking that I was actually putting them on to call that an instrument. Because it was cast in such global terms; and then you ask someone to scale a response of something that is sort of very fuzzy and nebulous and abstract, and this offended all of the measurement intuitions. But, in fact, if you're trying to get at some of the important ingredients of teaching, some of those very important ingredients, like inspiration and charisma, which everybody agrees is important, the fact that you can't scale it, in my judgment, doesn't mean that you should leave it out, but rather you attempt to deal with it at whatever level you can deal with it, even though imprecisely. And perhaps by developing a history of dealing with it, you'll then develop some strategies to make the process a little bit better defined or more precise.

I really don't accept some of the things here. One is that charisma is important. I can conceive of deciding that the way I'm going to handle this class is

that charisma is not important. It really doesn't make any difference whether they have any relation to me at all. What they ought to know is this. And that's the way I'm going to approach it. Now in the total experience of going through a university, a student is going to see all kinds of people, and the total effect is this combined effect, not really the individual reaction. And, in a sense, it would be a shame if they went through the University and never faced a man who said, "I don't care what you think of me at all. I don't care whether you like my lectures. What you've got to do is learn like this." Bingo, right? And they should be exposed at least once to this certain thing; and if they go without it, they've lost something.

That affects the communication channel of accepting information though.

Allen: That's right. That's the point. I treat your statement as a hypothesis. I mean, the part that I would accept . . .

Treat it as hypothesis--I'll treat your statement of charisma as hypothesis the same way.

Allen: Absolutely. I don't go beyond that. But you see, one . . .

But you said everybody accepts this. I reject it.

Allen: All right. I withdraw my statement and make it more cautious. But I'll stick by my guns in the sense that I would stand by equally to the part of your statement that talks about the variation of individual styles. The last thing in the world I would seek to do is to try to get everybody reduced to some sort of common denominator.

Mike: Again, there's a small anecdote here. One of the members of the English department whom we did is about to retire next year, and he was a little bit hesitant about getting the information. But at the same time he was interested enough to have a final evaluation before he walked out the door for the last time. And so we showed him the data, and, believe it or not, two of the strengths on the instrumentation, or two of the strengths that his students said he had, were charisma and inspiration. And he took one look at that, and he took one look at the tape that showed his teaching, and he said, "You know, when I was younger, I used to have them. But I thought I was losing them as I got older." And he said, "You know, maybe I won't retire next year." (Laughter)

Allen: I'm not sure whether that's good or bad. At least it was an influence.

Mike: I think it was good because the students said, in fact, they were inspired and that he was charismatic.

From the point of view of mathematics, what is the significance of carrying something out to so many decimal places?

Allen: No significance. In fact, I suggested that there be the maximum of two decimal places shown here, but . . .

That's okay, we have them forty-eight places.

(Laughter)

But worse than that, then, it strikes me that that can relate back to the number of levels you have in this questionnaire. You're not going to be able to point out really great differences. You'll find a few students who check maybe one or two, but . . .

Allen: It says that. Except, if you look here, the statistics aren't worth doing with precision, because it's not that kind of a thing. But I do get some differences that intuitively would appear to be significant. I mean in terms of their differences. When you look at the total size at the end here--it's, what, about 350 or 300?

Mike: Between 300 and 350.

Allen: I mean, that's the size in the end. And you do get some rather large differences, both in terms of standard deviation and in terms of means. Of course, to really have this mean anything, you have to look at the standard deviation as well as the mean, because some of these are all over the lot. Also, in my judgment, the mathematics aren't as significant here as they are for the individual question items, because two or three questions combined in a sub-scale may actually obscure some of the variation. So really, again, I haven't yet decided how to interpret all of this data. One of the things, for example . . .

It's interesting to me that you took, what, the individual's data and projected this into the department?

Allen: Summed it.

Why didn't you at the same time take the students and have them do this sort of as a department level thing, and see if what you got through the individuals projected the department evaluation? And another way is to ask them to evaluate the department on these scales.

Allen: The only problem is that I don't know how to improve the teaching of the department. I have enough of a time trying to improve the teaching of the individual.



Also these questions are impossible for a department.

Are they?

O yes. Departments' vocabulary cause confusion for students. Students always understood the words the department used--these words were too simple for the students. I don't think . . .

I think I can have an impression . . .

I think that has a lot of significance. For example, if I . . .

Not in your first year in the department. That's only for people in the department two or three years.

Allen: I think that one of the things that I choose to think is significant as a department, using Connie's point but in a different way, is that the one place in which you tipped over into too much, or too high, is level of challenge. And the students said that you need to work on that, that it's a weakness, and that there's too much of it there. Now . . .

What's this mean? That we're too challenging?

Allen: No, but you see, when you say "too challenging" that makes it pejorative. You're unreasonably challenging,

it's too difficult for them to cope with, rather than simply being highly challenging. One of the things that we're going to do to this data that we have not yet done . . .

Let's hang on to one like that, can we, for just a minute?

Allen: Okay.

. . . And let me just pursue this kind of evaluation against that kind of an interpretation of result. Now, I think if I were to take, let me just put forth a couple--chemistry, mathematics, physics, and most of engineering--I might end up with this kind of a number, this kind of a result, because if you look at what happens to students, they tend to drop out of those disciplines. They're known as the "hard" disciplines on campus, always have been. And there is a going back into things which aren't quite so difficult. So one would really expect that's the case.

Allen: Handy argument.

Right. Now the reasons these disciplines are difficult is that it is generally interpreted by the faculties that they want them to be difficult. They really take

it as a plus if people will drop out of these disciplines. They want these to be a weeding out.

Allen: I would make a distinction between having a level of challenge which succeeds, namely which pushes the students beyond what they thought they could be pushed, and pushing them so hard that they give up, when if you'd gone about it differently, they wouldn't have given up and would have succeeded more. And that's the distinction . . .

The point is that people want them, the mathematicians want people to drop out. They want people to see how difficult this is so that only the really bright people want to go on in mathematics.

But those who rated were not drop-outs. Those who rated were the students who go on and still think that . . .

Oh yes, but everybody's going to see that the general approach to it is to make it very difficult and to get other people to see it's being difficult.

Allen: This gets to one of our breakdowns which we have not yet done. I would like to see how the difference on that particular question would be from your graduate students and your undergraduates, for the people who are taking it as a required course and the people who are

taking it as elective. Now we have that data, and in another couple of weeks we'll have that data for you.

What's level of challenge for the English group?

Mike: Whether it's important or not?

No, what came out as the figure for challenge across the English group.

Mike: 5.288.

Oh, so much for that theory. (Laughter.)

Mike: It was also listed as an important skill.

Which is higher than ours.

Okay, if all the University's work is too challenging . . .

Allen: But I don't know that all is.

No, but let me pursue something else. Or let's suppose that we didn't find it too challenging, then we'd be working not to have dropouts. Rhetoric . . .

Allen: We're working to find it 5.0.

Rhetoric's lower, good.

Allen: Rhetoric's is lower? I'd expect that, as a matter of fact, as between Rhetoric and English I would think that the literary criticism part would be the place where you'd tend to get the kind of comment that it's too tough. And Rhetoric is the place where you'd get the comment that it needed to be tougher. Again, you see, the useful part of that is that I think it sets in motion some pretty good conversations. Not that I have any faith in the numbers, but I do think that one of the useful things for a professor to ask himself is, "Am I just being tough for the sake of being tough, or do students perceive me as just being tough for the sake of being tough, rather than being usefully tough." Now you've got a very important distinction, because my experience with students is that if they see professors as being usefully tough they appreciate it, but if they see professors as being needlessly tough they resent it.

Can I support him in two different ways. First of all, this is one of the first universities I've ever been to which swing-shifts freshmen, and obviously there is some purpose behind that which must be that there are going to be some who don't make it, and they figure they've got to have more from the start.

By definition of a university . . .

But second of all, one thing which I pointed out to Mike, and I'm not sure that I ever got the information correctly, is that one thing that's badly structure, and there's no way within the university system and the students don't necessarily follow it, is prerequisites. And, therefore, the level of challenge is going to be all wrong if the students haven't got the prerequisites for the course.

Allen: We have that data, and we can do that breakdown, too. If we can be given a little bit of time and, even more importantly, after we get the time, if we can figure out--you see what Mike isn't is a computer scientist--and so these breakdowns are not nearly as easily obtained as if we had someone that could do the programming.

Is there any breakdown by size of class? It seems like there are going to be completely different things that people are going to be concerned about, and the faculty members concerned about. I had a small class and a large class taped. And what I was trying to do when he showed them--whether or not the goals and the way I was handling those classes was very different because of their size. And it might be that there should be different kinds of Clinic for those two.

You've made a good point. Part of the evaluation I see is, at least in some courses, a result of a poor curriculum plan in some way, or something that isn't jibing well in the curriculum; and there it reflects into the teaching in one course and the evaluation of the other course. Rather than what this individual is doing, it has to do with other things that have brought people to this point and goals that have been set by the department as a whole, and so on. And it's going to show up.

END SIDE ONE

Allen: It's something that needs to be worked on. And it's also interesting that two of the three that they think are most important to work on are weaknesses; the third one that they think is also important to work on they also think is a strength. Now I don't see anything inconsistent in that because . . .

They say pacing is a weakness, and yet the department as a whole came out with a 4.7 rating. Is that consistent?

Allen: I don't know how to deal with the numerical means as compared with the . . .

When they finally come down to rating the actual person, they say it's a weakness in general in the Gestalt

fashion, then they rate it and they say, "Well, this falls exactly where you should be."

A number of interesting things here. There was I, star, S. and W.

Allen: Star means something that they consider needs working on. I is important, for skill that they chose to be important. S is a strength, and W is a weakness. If we look up pacing . . .

Actually this is confusing when you lump, because the second scale is in the opposite direction to the other two scales.

Allen: All right, for example, the thing that they appear to be unhappy about in pacing was the appropriate rate of presentation. The mean was 4.8. "Does the professor cue students to receive facts or interpretation?"--4.4. But "Does the professor repeat his attempts at explanation?"--in other words does he repeat often enough--3.98. I see this as part of a constellation with challenge, repetition, questions, examples, elaboration. If I were to pick one constellation that I thought the department needed to work on, or the individuals needed to work on, it was the way in which you use examples, the way in which you pace the material which you present, the way in which you allow students to give you feedback in terms of whether or not



they've had a sufficient amount of that before you go on to something else. That's the constellation that seems to me to show up almost consistently as weak--that there's too much of a preset agenda on the part of the faculty, that they sort of carry out regardless of the feedback they're getting from students. Indeed, they don't even bother to get the feedback.

Isn't some of that a function of the department as a whole saying, "This material should be taught in this course." Okay, depending on how much has been said to people, of course, the person teaching it is very severely concerned if it's a little too much. You know you're not going to finish the last quarter of the course if you teach it the way the students might want to and, indeed, the way you might want to.

Allen: In which case then one of the things the department ought to look at if there are courses like that . . .

It's important to separate what is required in the course and what is the professor . . .

But it doesn't matter. I think you're getting confused now. If we insist that this be used as an information for feedback to the professor rather than as an instrument for getting some magic number that gets on all your personnel forms, then it doesn't matter, because you

can make that discrimination. You can look at a thing like this and see for yourself. So that doesn't matter. It's good feedback either way, and then you can either say, "Well, I think it was that I was going too fast, and therefore I'm going to try to slow down," or you can say, "No, I just had too much material and the next time we discuss curriculum I'm going to suggest that we try and scale that course down." So it's still useful information even as a professor.

Yes, but I think the person who's evaluating this should . . .

I think this is just another argument why a magic number is not useful.

Michael makes a very good point, and I think most of our comments ought to be reasonably related . . .

Yes, I agree.

There's another factor that goes into this last point which you are making, Mike, and that is that there may be some reasons of pacing that, say, have to do with training for the profession. One sees that, when you get out into the field, people will be laying down time constraints, and you have to listen to this, to build this into the classroom, and the students feel this . . .

You use the right method book when you're getting out into the field, because if an athlete only went at what was a comfortable pace for him he'd never win a race. So in a sense, a good professor is one who goes somewhat too fast.

Allen: You have to go fast enough so that the students are always panting, but not so fast as to discourage them or immobilize them. That's exactly the balance.

I guess I'm getting back to something like a 6 on some of these things, which means too much of it. If it got to be 8, we'd know we're going too far . . .

Allen: Here's another kind of thing though, and that is that we don't know how students are defining just right. Are they defining just right as this panting level, or are they defining just right as a leisurely level? This is where the whole scaling bit and the magic number becomes nonsense. Because, you see, you don't know, and I don't know, how to interpret the results in terms of what the students are internalizing. But I do know that the extent to which they can . . .

You start learning this over several years of application. I think you start refining your mistakes. You can't know them this year, but next year you'll

know them a little bit better, and the following year a little bit better.

I think you can't avoid a certain amount of ego involvement with the student with the form. If he thinks that maybe he's not going to get an A in the course, maybe he says, "Well, it's a little bit too challenging for me to get an A, so it's too challenging."

Mike: Incidentally, however, we did build some consistency checks in here. And one of the things that we built in as a check is, "Does the professor ask students to give examples illustrating the lesson points?" That question was asked twice, in two different places. Interestingly enough, in one point the mean came out 2.4--that's hugely off one end--and on the other it came out 2.9. Now that's not perfect agreement, but it sure is consistently way over at the end, where students are consistent. It says that students weren't simply, in some sort of random way, filling out the scale. I think that's amply demonstrated. Because this is now the mean of some 300 students participating. But it also overwhelmingly shows that one of the things that the students are saying is that they don't feel the professors ask students to give examples illustrating lesson points.

Which is to say we teach lecture courses mostly.

No, it's saying that you never give the students an opportunity to test for themselves whether they understand the points you are making.

That's only appropriate in some . . .

No, it says if we ask questions, by implication in class . . .

By implications, in class, yes.

Which is a different point than saying we give them an opportunity to understand . . .

To demonstrate.

. . . to demonstrate whether they understood the points of the lesson; namely, for instance, developing computer programs outside of class.

True.

So, my point is the fact that we get a low on the scale isn't necessarily a black mark.

It's a black mark from one point of view only.

Back to what Michael said. There you see the number, and if we can find out that, yes, this really is consistent with the way you do things because it follows this hypothesis, you may not do anything about it. Or,

you may say, "Well, this is significant; we want to do something about it." It isn't whether that's good or bad, but what does this mean in relation to all the other things.

Allen: But there is one dimension on which you can say it's bad. Namely, if it's your intention to accomplish that in another way, then you haven't succeeded in convincing your students that that intention has been realized. Because if they . . .

And you haven't succeeded in asking questions.

Allen: . . . or we haven't succeeded in asking the question right. I mean there are a whole lot of things, but the point is, the students are the ones that define what is ideal. Namely, they define ideal in terms of the expectation which they have negotiated with you. That's where their expectation comes from. And one of the things it may say very simply is that you say, "Look, students, in this course"--maybe it's as simple as this--"In this course, the way that you're going to find out whether the lecture is taken or not is the way in which you actually deal with your computer programming skills outside of the class," and that's where your feedback will come. And maybe as simple a statement as that will change their expectations about what ought to go on in class. It may

or may not. Now another kind of thing that gets back to one of Mike's individual interests in developing the Clinic next year is to deal with the skills of students. Can we train students to shape up professors, in a constructive sense of the word? Now I think that's something worth undertaking, because I think that if that again is a constructive process, then I would fault students for sitting there semester after semester after semester having things done with, to, and for them--and most particularly when things are being done for them, and with good will--and to have that process mis-take--there's a whole lot of wasted energy in the system that ought to somehow be channeled.

Mike: If I could, I was going to explain sometime just some of the background of the way this was developed. If a person is ever open for pot-shots, I guess I would be open for pot-shots, as well as anyone else who had anything to do with the development of this, because what we said was that we broke down the skills into three distinct areas. We said that there were disciplinary skills in which we were interested in straight transfer of information, and that we could care less whether or not there was another individual in the room. In other words, if a person could be on a closed-circuit television, the important skills that you would be interested in would be precise statements,

distinguishing levels of importance, and worrying about the maturity and stability of his interpretation. The other end of that is the case in which a person's interested in tutoring on a one-to-one basis. And the skills we used to measure that competency were academic counselling, tutoring, and options. Some place in the middle we said there was presentation and interaction. And notice that by implication we put lecturing directly in the middle of the presentation and interaction skills. I guess I've made two points. One is that, as far as lectures are concerned, there are two lecture classes in this department that we measured which are huge lecture classes. The other classes which are labeled lecture classes are classes of twenty to thirty students. Now whether or not you can have a lecture situation that also encourages some interaction is, I guess, the question I would raise. The other question I would raise is this: The purpose, or maybe the whole program, is to look at the different skills. We don't know whether these skills are the right skills or not, but it may be important to say that at least it opens up some new dimensions to consider when you teach. Outside of that, the interpretation of the data is really an individual item for people's agendas; and, secondly clarification of what students mean also should be an individual item.



One thing, in trying to develop this, is that you've been making the assumption that the people rating this are going to rate the skills of teaching independently of their interest in the subject. Some students go to a class because they have to, and I think that's going to very strongly bias how we deal with their reactions to the class. Some bias is seen, as opposed to the situation in which they come to class because they're interested.

Allen: But one of the breakdowns that we get will be those that are there because it's required and those that are there because it's elective.

Was there something in there that said, "How interested are you?"

Oh yes, it's on the first page, or, rather the second page of the brochure.

I see; I guess I didn't look at this carefully.

Actually, I should report some overall feedback about the department which a friend of mine got from having coffee down in the coffee shop with a number of our students. They made complaint, apparently, because we don't have beer with them enough, and that we're much too serious, and that they feel there's not enough comradery and back-slapping and things of this kind.

Allen: One thing that I would ask you, if you'd be willing, which would be useful in my point of view, is whether or not you'd be willing to simply spend time to write a paragraph or two on your perception of the Clinic and what you found to be useful and what things you might like us to do differently. That would be something of use to me. And, if that's agreeable to you, then I would presume to apply just a bit of pressure and suggest that if I don't get them within a week I might remind you without being offensive. I would, again, maybe at the time that we view the video-tape, at that point, if you can think of ways. . . . I view your participation this spring as a bona fide on your part; and then if we get some money to continue the Clinic--and it looks like we might--I would view this as putting you in a favored position to then command the resources of the Clinic for your further benefit. I think that would be only a fair return, if it were desirable. One thing we also found out was that about the sixth time one of your students fills out that blasted booklet they develop a certain residual contempt for the process. And if you look at one of the final questions in which we ask them to evaluate the booklet--this was, I believe, courtesy of our good friend Mr. Eckhouse--first of all, they have no hesitancy in saying that they feel this whole process is much more useful for the professor than for themselves. The mean turns out to be 6.5. They also agreed that the

booklet is too long. Also, in terms of whether or not the scales represented in the booklet are the right scales for teacher guidance, it turns out that it's 4.8. Intuitively the range of skills for computer science is the right range. And on the question, "Is there sufficient opportunity to indicate variations in teaching performance?" they say 5.4, and, if I remember . . .

But in the range of skills you didn't leave anything. There was no alternative. I couldn't invent another skill that you hadn't covered. You see, the range had to be all right.

Allen: We have in our computer bank appraisal guide 12,000 skills of teaching. (Laughter.) So I wouldn't want you to think . . .

Of which between us we only possess 17. (Laughter.)

Allen: I wouldn't want to pretend that all 12,000 were discreet, however. The process of teaching is simply an incredibly difficult process. I envy you your computer, which is at least, if nothing else, unambiguous.

Oh yeah?

Allen: Yeah . . . (Laughter.) Well, I guess that I wouldn't mind having my daughter have her teaching evaluated by a computer. (More laughter.)

END SIDE TWO



