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ABSTRACT

To discover how courses are planned and taught, faculty and their students at three community colleges, two liberal arts colleges, two comprehensive universities, and one doctoral university were interviewed with a protocol based on current theories of course design. Their candid responses indicate that academic content, materials, student characteristics, and faculty beliefs are the strongest influences on course planning. Nine chapters provide the following information: (1) background; (2) study purposes; (3) guiding models for the study; (4) study method; (5) overview of study results; (6) special topics of current interest (curricular issues, faculty perceptions of students and their learning needs, and faculty and student interaction); (7) results of student interviews; (8) how course designs are expressed in syllabi; and (9) summaries, implications, and next steps. It is concluded that course level planning strategies are important in student learning; that more specific focus is needed on the effect of clarity of plans on student learning, and this model can be used to approach improvement of course planning from many vantage points. Seven appendices provide: the faculty interview protocol; the student on the effect of clarity of plans on student learning; and that this model can be used to interview protocol; student experimental questionnaires; syllabus checklist; profiles of each of the eight fictionally named cooperating institutions; an outline of exploratory regression variables; and a coding sheet for determining levels of course planning. Contains approximately 90 references and 85 tables. (SM)

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Reflections on Course Planning

Faculty and Students Consider Influences and Goals

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1.0 Background

A primary goal of college is to foster student intellectual development through formal teaching and learning. While other learning settings, such as the home, the workplace, and the social scene, also are important, the structure for much academic learning is provided in the classroom. To this end, faculty members plan and teach courses in ways that they believe help students learn facts, principles, ideas, attitudes, skills, and ways of thinking. Yet, little is known about how faculty members plan the courses they teach.

Nationally, educators are discussing ways of ensuring an overall plan of "coherence" and "integrity" in the college curriculum (Association of American Colleges, 1985). Various recent reports have suggested useful strategies. For example, a report from the National Institute of Education (NIE) has stated that clarifying expectations for students will help them become more involved in their learning and, thus, enable them to learn more (NIE, 1984). Other national reports have implied that certain patterns of college coursework help students achieve desired outcomes more effectively than others (Adelman, 1985; Association of American Colleges (AAC), 1985; Bennett, 1984). Finally, there is widespread belief among policy makers that measuring student outcomes will encourage colleges to improve learning for students as well as help states allocate funds to colleges more effectively. Some of these suggestions have engendered controversy, partly because the expectations instructors have for their students, the patterns of coursework taken by students, and the outcomes that might be measured are all closely linked with academic plans constructed by faculty members in ways not well understood by others. Accordingly, the issues of instructional quality raised by recent national reports may be better resolved as we learn more about how faculty design their courses.

Independent of national curriculum discussions, new knowledge about how students learn also reveals the importance of understanding how courses are planned. Cognitive psychologists tell us that students possess knowledge structures into which new information must be integrated during the learning process if it is to become meaningful (McKeachie, Pintrich, Lin, & Smith, 1986). Such psychological theories have spawned the idea that the way course content is arranged by the instructor may influence student learning (Posner & Rudnitsky, 1982). Thus, advice is available supporting the assertion that courses as well as entire programs should be planned to possess "coherence" and "integrity" (Stark & Lowther, 1986). Could students learn more, learn more effectively, or learn more efficiently if course content were arranged differently? Although the question has intuitive appeal, little research evidence exists about how course content is selected and arranged by college instructors or, indeed, about the rationale for these decisions. As a result, it is difficult to judge the merit of various proposals for improvement.

Finally, learning theorists indicate that students who understand the learning tasks facing them and who consciously select appropriate learning strategies learn more effectively (McKeachie et al., 1986). Such a conscious selection of ways to learn implies that the teacher and student should have similar understandings of the learning objectives. From a different perspective, this notion reiterates the idea that "expectations" should be clear for students. Surprisingly, we know little about whether students have a clear sense of what the faculty hope they are learning. Even on instruments colleges provide for students to evaluate their teachers, students typically are not asked questions that would compare their views of course intent with those of instructors. Do faculty convey their intentions and plans clearly to students? Could some aspects of intellectual growth be enhanced if faculty made their importance more explicit? The answers to these important questions will not be clear until we understand more about

both what faculty members hope students will learn and how they design their courses to help students learn it.

2.0 Study Purpose

We designed this exploratory study to increase our understanding of college course planning. First, we conducted interviews to identify factors that influence faculty members from diverse fields in designing introductory courses. Second, through a limited set of student interviews, we explored ways to ascertain whether students recognize their instructor's overall plan. Finally, we explored the way in which faculty members' course designs are expressed in syllabi and other course materials to communicate the faculty members' intentions to students. Thus, the broad questions of the study were:

- What decisions do faculty members make as they plan courses and what factors influence them as they do so?
- What beliefs about their disciplines, their students, and the learning process determine how they go about the task?
- Do students correctly perceive what their instructors want them to learn?
- How do instructors communicate their course intentions to students?

2.1 Study Boundaries

In each aspect of the study, our intent was to gather initial information needed to pursue these issues more systematically. Thus, after interviewing faculty members about their course planning, we held group discussions with them about the results. We wanted to take advantage of their ideas about our important findings and omissions. Data from the interviews and subsequent discussions helped us to develop a questionnaire about course planning. A survey of a broader and more representative faculty sample is now in progress.

To delimit the questions to be asked and to distinguish course planning from other teaching activities, we defined course planning as follows:

> College course planning is the decision-making process in which instructors select content to be taught, consider various factors affecting the teaching and learning process, and choose from among alternative strategies for engaging students with the content. Planning also includes the selection of methods to obtain feedback about student learning in order to improve the decision-making process in the future. In this context, course planning is assumed to mean primarily those decisions that instructors undertake *before* the first class of each term and the explicit or implicit statements of objectives and strategies that result. In keeping with our definition of curriculum as an academic plan (Stark & Lowther, 1986), objectives and strategies can include content selection, development of statements of goals and objectives, patterns of sequencing of selected content, decisions about student or faculty control of the learning process and instructional mode, as well as the methods by which any of these are communicated to students.

This definition of course planning is consistent with the terms "preactive planning" and "postactive planning" used by precollegiate education researchers (Clark & Peterson, 1986) as distinguished from "interactive" decision making that occurs while the course is being taught. Focusing on the planning process that occurs before the course begins and as the feedback is used in later iterations is helpful for at least three reasons.

First, a focus on the teaching process itself involves the study of so many variables that it is best considered separately. Studies of "instructional strategies" in use, defined as

both teaching methods and materials, indicate the great variety of variables to be considered (Weston & Cranton, 1986).

Second, the college teaching schedule, rightly or wrongly, allows only minimal interactive teacher decision making of the type studied in K-12 settings. Studies of K-12 teachers' daily adjustments, or "fine-tuning" (Clark & Peterson, 1986), involve prolonged daily student contact and classroom management problems infrequently found at the college level. In contrast, college teachers who typically meet students for one hour only two or three times a week often develop course plans, textbook orders, laboratory supplies, and library lists well in advance. While some adjustments are made from session to session (Andresen, Barrett, Powell, and Wieneke, 1985), most extensive revisions await the next course cycle.

Third, a focus on specific interactive teaching behaviors may fail to reveal disciplinary variations that are so important in collegiate teaching. For example, discipline differences seemed not to be reflected in a study of characteristics of effective teaching emerging from student course evaluation instruments or observations of specific teacher behaviors (Erdle & Murray, 1986). Yet, we know that college teachers who are dedicated experts in their subject fields have an image of those fields that they hope to convey to students. Through both experience and information sources, they also have images of their students' interests, stage of intellectual development, and engagement in the learning task. These images of discipline and student characteristics, which surely influence how teachers plan courses, may be understood more clearly by studying the planning process than by observing actual teaching behavior. Possibly the usefulness of literature on college teaching has been limited by studying specific teaching methods (e.g., independent study, the Keller plan and other self-paced methods, interdisciplinary seminars, computer-assisted instruction) separately from the planning assumptions of faculty.

2.2 Prior Research

Prior research supports the intuitively appealing idea that the course planning of college teachers is related closely to their assumptions and beliefs. These beliefs are presumed to be based on the structure of the disciplines and on the socialization of faculty members in the varied fields (Gamson, 1966; Snow, 1959; Stark & Morstain, 1978). The degree to which other influences play a part is much more speculative. For example, some faculty members will be influenced in planning their courses by campus resources and the availability of campus experts ranging from computer specialists and architectural designers to instructional development specialists. Others may pay particular attention to the mission and goals stressed by their college and program, or important external groups, such as professional associations, accreditors, or employers. Along with perceptions of these many influences, faculty members, building on their own educational experiences and training, bring certain assumptions, beliefs, and inclinations to their course planning. Which of these influences are the most potent? How do the influences interact with each other? How do these influences vary from field to field?

As indicated earlier, there have been several recent studies of how precollege teachers think both as they plan and as they teach. While conducted in a setting where disciplinary influence is less influential and classroom autonomy less essential, these studies provide some methodological guidance regarding the use of interviews, questionnaires, self-reports, journal writing, policy-capturing analyses, policy tracing analyses, and videotaped laboratory strategies to study how teachers plan and execute their teaching (Clark & Peterson, 1986; Clark & Yinger, 1979; Peterson, Marx, & Clark, 1978; Morine-Dershimer, 1978-79; Shavelson & Stern, 1981; Yinger & Clark, 1983,

1985; Zahorik, 1975). The usefulness of specific methods in studying college instructional planning cannot be weighed, however, until initial explorations with college teachers have established a base of knowledge about which dimensions of the college situation most strongly influence course design.

Systematic studies of teacher planning at the K-12 level are relatively few and began less than a decade ago (Clark & Peterson, 1986); studies of teacher planning at the college level are even fewer. Only one set of researchers seems to have pursued such studies, and in quite a limited way (Andresen, Barrett, Powell, & Wieneke, 1985; Andresen, Powell, & Wieneke, 1984; Powell & Shanker, 1982). These researchers at the University of New South Wales conducted content analyses of the factors which university instructors recalled in open-ended interviews immediately following a class. In our view, a basic flaw of these studies is that researchers discouraged the instructors from discussing course content, focusing instead on teaching tasks. Thus, these studies are more closely allied with "interactive teacher thinking" studies. Possibly, as a result of this focus, the authors found that instructors mention students and their activities in the class more frequently than they mention the underlying beliefs, theories, and assumptions that led to their teaching behaviors and concerns. Recognizing the difficulties with this approach, the University of New South Wales' researchers recommend that future studies consider more systematically the nature of the discipline as well as the instructor's teaching experience.

Additional studies of college instructors have begun recently, and we designed our project to link with and complement those studies. One researcher is interviewing instructors in varied disciplines both in the United States and abroad, to ascertain the types of learning they hope students will achieve (Donald, 1983, and personal discussion, October 1986). The interviews concentrate on specific aspects of (1) knowledge structures, (2) intellectual (cognitive) skill development, and (3) attitudes. Another researcher, K. Patricia Cross, is exploring mechanisms faculty use to do "research on classroom learning." That is, how do faculty obtain feedback on what students are learning and on the effectiveness of their teaching methods?

In part, the scarcity of research on course planning among college teachers may result from hesitation among researchers to explore questions that involve the dimensions of academic disciplines with which they are unfamiliar. Yet, there are many theoretical discussions about the dimensions of disciplinary difference that provide a starting place for research (Confrey, 1981; Dressel, 1980; Dressel & Marcus, 1982; King & Brownell, 1966; Phenix, 1964; Schwab, 1964). Rather than abandoning the task as too complex, it is possible to ask college teachers from various disciplines to collaborate with researchers in exploring influences on course planning that are pertinent to their own teaching endeavors. We have found that because college instructors consider the teaching role and course planning important, they have participated with interest.

3.0 Guiding Models for the Study

No general model of college course planning currently exists. Thus, before conducting interviews with faculty, we devised our protocols by drawing on several conceptualizations of curriculum planning found in both the precollegiate and postsecondary education literature. We explored four broad questions:

1. What factors influence faculty members in designing an introductory course?
2. What appears to be the relative strength of these factors?
3. Do course planning processes and the final form of the plans differ for faculty members in various disciplines and with various backgrounds?
4. In what ways do faculty members try to make clear to students (a) the overall design for their courses, and (b) the specific objectives they hope students will achieve?

One model of curriculum and instruction that influenced our thinking, shown in Figure 1, was set forth by Posner and Rudnitsky (1982) who adapted it from the work of Johnson (1967).

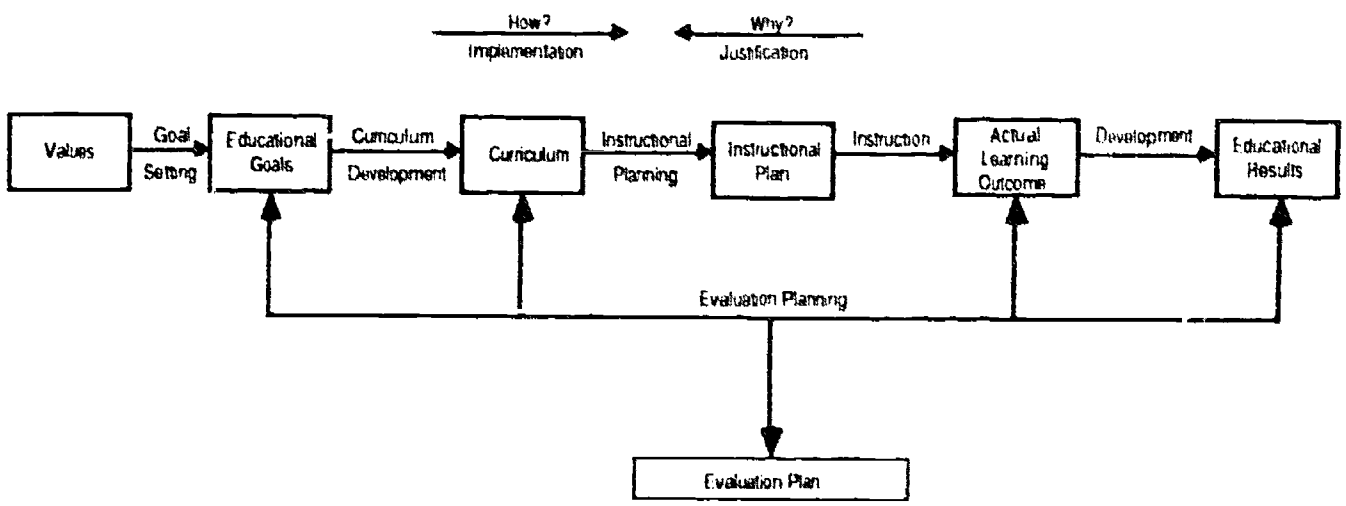

Figure 1. A curriculum instruction model (adapted from Johnson, 1967) by Posner and Rudnitsky.

The Posner and Rudnitsky model deals with generalized curriculum planning at the K-12 level rather than design of a single course. Consequently, it assumes that the broad scope of the curriculum or program is devised externally and that the individual instructor's goals and values come into play primarily when devising a specific instructional plan. At the college level a faculty member more typically creates, designs, and teaches the course. Consequently, our initial adaptation of this model, the tentative Course Design Model shown in Figure 2 (Stark & Lowther, 1986), assumes that the starting point for planning a collegiate course may be the values and structure of the academic discipline as they are perceived by the individual faculty member. As appropriate to a college setting, two questions then emerge. To what extent does the structure of the discipline (or academic field) determine the instructional approach? And what other factors mediate this relationship?

In establishing this model, we believed that discipline characteristics interact with program goals and individual faculty characteristics to structure faculty members' assumptions about the educational purposes guiding a particular course. Other

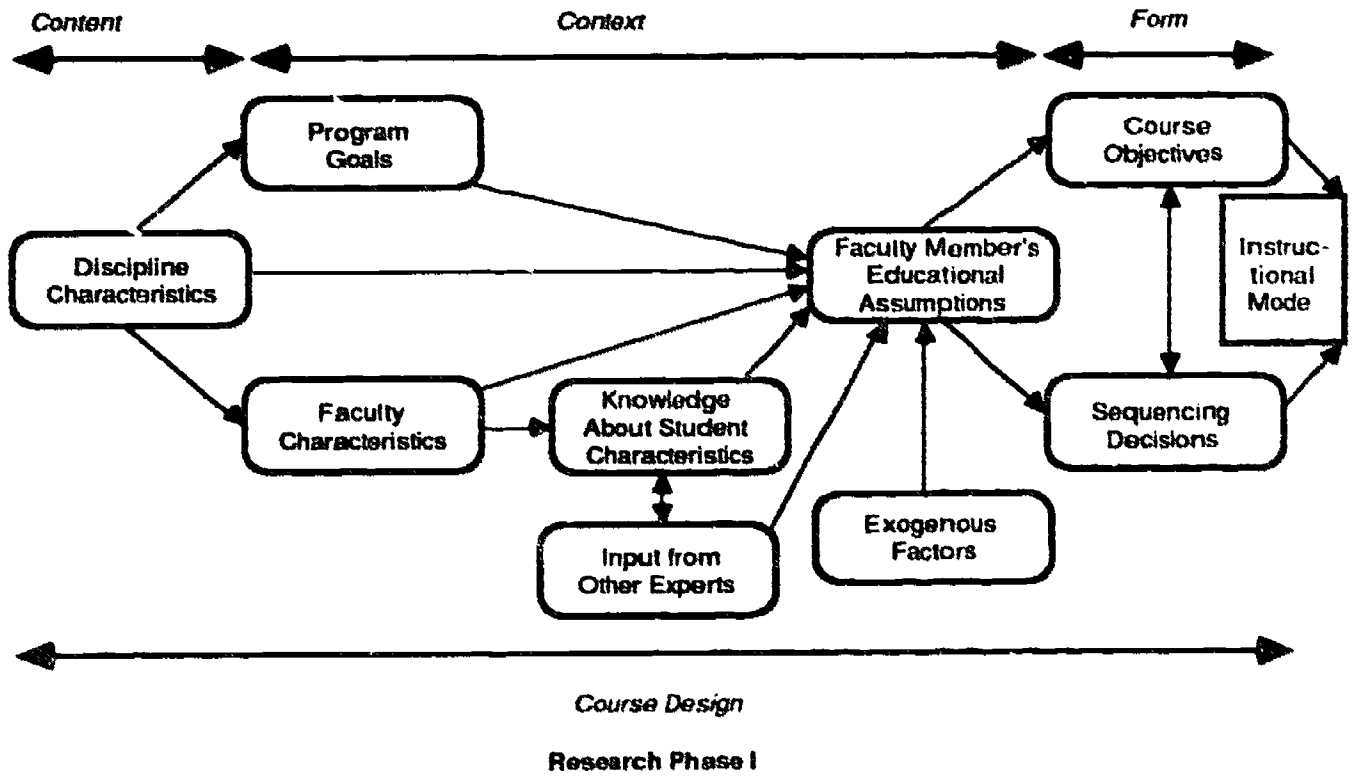

Figure 2. Tentative course design model (Stark and Lowther, 1986).

factors influencing the faculty members' educational beliefs might include knowledge of student characteristics and input from on or off-campus sources. Such input might include the views of experts who provide information about student characteristics and their educational implications. In some manner yet to be determined, these sets of factors differentially influence the objectives chosen for the course and the manner in which the content is presented to students.

Such a conception of interacting influences is consistent with the four elements of curriculum development posited by Schwab (1969, 1973): the subject matter, the teacher, the student, and the milieu. It also is consistent with the model of curriculum as a design process proposed by Toombs (1977-78) which uses three elements: content, context, and form. In this sense, as we have indicated in Figure 2, content usually is synonymous with discipline; context includes teacher and student characteristics, as well as all other milieu factors; and form characterizes the resulting choices made from among available content, the specific course objectives defined, the way the content is arranged to achieve the objectives, and the instructional mode used.

It is essential to point out that the course design model shown in Figure 2 simply serves to identify the interrelationships of potential factors that might be explored in course planning. It is not a procedural model indicating the sequence of steps faculty members may take in designing their courses. In fact, as pointed out by Posner and Rudnitsky (1982, p. 10), it is unlikely that the process of course design proceeds in a linear fashion (from broad goal setting to derivation of course objectives and decisions about content sequencing) as prescribed by the well-known Tyler rationale for curriculum planning (Tyler, 1950). Rather, based on K-12 studies, there is considerable evidence that teachers may begin with rather specific course activities or classroom routines that derive implicitly from the preceding factors in the scheme. For experienced teachers, specifically stated objectives, if used at all, often are derived from the activities rather than the reverse. Thus, Clark and Peterson (1986) have described the course design cycle as circular and progressively elaborative, without a definite beginning or ending point.

While recognizing its limitations, we found the course design model illustrated in Figure 2 to be a convenient guide as we developed our study protocols. In considering ideas to be included in each of the major dimensions of the model (content, context, and form), we drew upon the work of other researchers and theorists. The boxes in the figure represent sets of elements that may influence course planning; thus, they guided the development of sets of questions as we planned the interviews. We also used the dimensions of the model as an organizing frame for the following discussion of the origins of specific questions we asked faculty interviewees. After presenting the rationale for the questions in the faculty interviews, we describe the rationale for the parallel questions asked of students. These questions were intended to gain students' perceptions of courses they recently completed with those of faculty members. Finally, we describe the method used in the study, including the interview protocols.

3.1 The Faculty Interview

3.1.1 Content: The Discipline

Much has been written about the definition and structure of the traditional disciplines but we know little about which aspects or characteristics of the discipline affect how faculty members plan an introductory course. To provide structure and to increase our ability to identify these aspects in faculty discourse, we examined a number of overlapping disciplinary characterizations. Some characterizations of the disciplines are relatively brief and unidimensional. For example, the Harvard Report of 1945 described the humanities as dealing with the imagination, the social sciences as being relational, and the natural sciences as being logical. In similar fashion, Bell (1966) indicated that humanities could be seen as concentric, involving movement within many different circles of meaning in an attempt to attain understanding; natural sciences could be seen as sequential, requiring the understanding of one concept on which others build; and social sciences could be viewed as linkages among fields, with understanding attainable only as the question is posed in a specific context. Even in such simple forms one readily can imagine that faculty members teaching in these different broad areas would select and arrange content differently for presentation to students.

A multidimensional scheme commonly used by organizational researchers in higher education characterizes academic departments along three continua: (1) existence of an agreed-upon research paradigm (hard disciplines) versus a variety of permissible paradigms (soft disciplines), (2) pure versus applied research; and (3) concern with life systems versus concern with nonlife systems (Biglan, 1973). In much more extensive and philosophical explorations, such writers as Phenix (1964), Schwab (1964), Dressel (1980), and Dressel and Marcus (1982) have characterized the structure of the disciplines in somewhat similar ways and have viewed specific academic disciplines as imbued with one or more of the following attributes: a domain (with boundaries), a set of concepts, a set of relationships among the concepts, a mode of inquiry, a symbolic system or vocabulary, a mode of discourse, a community of interested and committed inquirers, and an instructive community transmitting the characteristics to new members of the community. Dressel and Marcus (1982) added a "conjunctive" component that describes how the discipline is related to other disciplines. Generalizing a bit further with respect to the types of concepts that characterize disciplines, Dressel, building on the work of Phenix, classifies the disciplines themselves as predominantly: (1) substantive-empiric—primarily areas of knowledge and means of obtaining new knowledge (physical science, biology, psychology, social science); (2) substantive-aesthetic (music, art, dance, literature); (3) synoptic—concerned with the interpretation and integration of meaning (history, philosophy, religion); and (4) symbolic—concerned with thought and the communication of thought (language, mathematics, and similar forms).

TABLE 1

Structural Components of Disciplines

DISCIPLINE COMPONENT*	COURSE COMPONENT FOR THIS STUDY	ASPECTS OF COMPONENT
Substantive Perceptual Conceptual	Substantive (substance)	Assumptions, axioms, basic principles, boundaries, fundamental concepts, laws, limitations, organized knowledge, processes, relations, research issues, subject matter, theories, variables
Linguistic Mathematical Non-discursive	Symbolic (symbols)	Modes of representation, symbols
Syntactical Organizational	Syntactical (inquiry)	Definition of discipline, modes of inquiry, principles, procedures
———	Skill	Skills
Value	———	Absolutes, aesthetics, ethics, morals, role of the individual, truth, universals, utility
Conjunctive	Conjunctive (relationships)	Relations among the various disciplines, relations with society

* The discipline component column is based on *Teaching and Learning in College* (p. 89) by P. Dressel and D. Marcus, 1982, San Francisco: Jossey-Bass.

In our interviews, we listened and probed for signs of faculty concern with various aspects of their discipline as they described course planning. Although we noted other dimensions as they arose, we were concerned particularly with instructors' emphasis on the field's content (substantive aspects), its relations to other fields and to society (conjunctive aspects), its mode of inquiry (syntactical aspects), its symbolic system, and, when applicable, its specific skills. These dimensions of disciplines and their relation to Dressel's work are illustrated in Table 1.

3.1.2 Context

3.1.2.1 The Teacher

What characteristics and experiences that a faculty member brings to the course planning process are influential? While many studies have related faculty demographic characteristics to their research activities (Finkelstein, 1984; Fox, 1985), few have related such characteristics to faculty members' ideas about teaching roles. There is some evidence that age, gender, and involvement in other types of work experiences are related to how faculty view teaching. In a set of studies parallel to ours, investigators currently are attempting to understand these relationships more fully (Blackburn, Lawrence, Ross, Okoloko, Bieber, Meiland, & Street, 1986).

While there is little theory on which to base our selection of questions, the possibility of systematic variations in course planning with such factors as gender, age, and experience, requires that we collect standard demographic data in any study of faculty. Various colleges and state systems are considering programs to assist college teachers in course design and teaching processes, thus, it seemed important to us to explore whether faculty members who had attended such educational programs differ from those who had not. We assumed that faculty members who had written teaching materials for publication, made presentations regarding their own teaching methods, or received pedagogical training in college might differ in their thinking about educational issues from others; thus, we asked faculty members about their prior experiences with instructional matters as well as about their disciplinary credentials and teaching experience. While such relationships in an exploratory study will not be definitive, they may be suggestive.

3.1.2.2 Program Goals

Do goals of an organizational unit or "program" influence faculty members in planning their courses?

We defined a "program" as an organizational entity that is responsible for offering a sequence of courses for students. Based on this definition, a program may be an academic department or a group of faculty from different departments responsible for coordinating course offerings. Since a program group is directly concerned with the educational process, we expect that it has formulated goals either explicitly or implicitly. Program goals most likely reflect both institutional goals and discipline characteristics; however, courses offered under program sponsorship are modified by the orientation, interests, and skills of the individual faculty members. Reciprocally, faculty members help to determine program goals and objectives.

Lengthy lists of educational purposes and goals may be found in such surveys as the Institutional Goals Inventory (ETS) or summaries by various authors (e.g., Bowen, 1977). Such lists, usually focused on broad institutional or societal goals for education, provide few suggestions of specific program goals that likely would influence course planning. Lacking a clear framework for a simple categorization of program goals, we were interested in how faculty members would spontaneously describe their program goals. Additionally, current debates concerning both the relative values of general versus specialized education and the ways of increasing student involvement in learning led us to propose several potential dimensions of program goals, some of which may be strongly interrelated: (1) general education versus specialization, (2) pure discipline versus applied field, (3) subject-matter oriented versus student oriented, (4) oriented toward knowledge production versus oriented toward knowledge transmission, (5) preparing students for advanced study versus providing terminal education, (6) strong program coordination versus minimal program coordination, (7) tightly structured curriculum versus loosely structured curriculum, (8) societal service orientation versus no service orientation, (9) oriented toward creativity versus not creatively oriented.

3.1.2.3 Student Characteristics

Do expectations or knowledge about student characteristics influence college faculty members as they plan courses?

Lively debates center on the answer to this question and caricatures of professors who are oblivious to student characteristics, goals, and needs abound. In studies of K-12 teachers, attention to student characteristics emerges as an extremely important planning influence. Student characteristics enter into specific teacher judgments about classroom management, predictions of achievement, the extent of student involvement, the difficulty of assignments, and the presentation of material. Teachers who do considerable advance planning, however, may be inclined to adhere to the plan and, thus, may be less sensitive to student characteristics (Zahorik, 1975). Teachers planning to teach new material for the first time may attend more to content than to student characteristics (Clark & Peterson, 1986). On the whole, however, it appears that for K-12 teachers the needs and abilities of students take precedence over subject matter considerations (Taylor, 1970).

As pointed out previously, only one teacher-thought study has been reported at the college level. In that study, instructors were asked to discuss their classes at weekly debriefing sessions. The instructors' observations focused extensively on students, including both student characteristics and student reactions to the class (Powell & Shanker, 1982).

Currently, not all colleges provide faculty with accessible advance information about their students to aid in course planning. Nonetheless, if student bodies are fairly stable, experienced teachers may have a good idea of the general characteristics of the student group. Accordingly, concern for knowing more about students in planning may be stronger in colleges where characteristics of student bodies are changing or where value-added type assessment procedures are being discussed or used. We thought that in open discussions faculty members might mention three types of student characteristics (demographic traits, preparation, and the quality of academic effort) and, thus we prepared to listen carefully for these in our unstructured interviews. Although more extensive classification may be possible, our literature review led us to believe that we would be able to identify only two rough dimensions of concern about student characteristics which we called simply "knowing" and "caring." At the extremes, some faculty are not likely to have a good sense of student characteristics and think them irrelevant; others possessing extensive information about students will consider it prominently in their planning

3.1.2.4 The Milieu—Other Influences

Faculty and students are not the only participants in the curricular discussion; various groups exert pressure on the course planning process. Depending on the perspective of the faculty member, these various forces may be viewed positively or negatively. The list of such possible influences is long and may vary in different institutional and program contexts. Examples include accrediting standards and packaged commercial curriculum materials as well as efforts of instructional development specialists and varied advocacy groups. In the current milieu, there is reason to explore influences such as (1) centralized curriculum planning mechanisms, (2) utilization of educational theories, (3) services of instructional development experts on the campus, (4) initiatives for testing and assessment, (5) emerging pressure to use computers in teaching, and (6) journals that treat educational issues in each field. Each of these possible influences is of concern, not only to our own research, but to closely associated studies being done by colleagues.

3.1.2.5 Teacher Beliefs

Implicit theories or belief systems represent the values that guide teachers' actions (Clark & Yinger, 1979), but they may operate unconsciously. In K-12 teaching, these belief systems are called variously "principles or philosophies of teaching," or "curriculum construct systems." College teachers, too, have beliefs about education that have been of some interest to researchers. For example, Dressel and Marcus (1982, pp. 10-11) present a lengthy chart showing basic beliefs about education that they have identified among faculty members, and they associate specific teaching practices with each set of beliefs. Based on our own casual observations, however, we were less convinced than Dressel and Marcus that ideology translates directly into teaching style. Educational assumptions held by college teachers derive, in part, from discipline-based training as Dressel and Marcus asserted, but it is likely they are mediated by contextual factors and thus do not always dictate practice.

Although we believe that ideology and teaching style should be studied as distinct variables by researchers, it is clear that they are related in some way. Writings that have characterized faculty teaching styles seem to describe teaching practice and then infer belief systems. For example, Axelrod (1973) describes several teaching styles that were later characterized by Dressel (1980, pp. 127-129) as discipline-centered, instructor-centered, student-centered (cognitive), and student-centered (affective). (Dressel was unable to find among his colleagues anyone who espoused or used the social change-centered approach to teaching described by Axelrod.) These descriptions of collegiate teaching practices parallel various ideas of the purpose of education

outlined for K-12 educators by Eisner and Vallance (1974) as "conflicting conceptions" of curriculum and by Gay (1980) as "conceptual models of the curriculum." Because of the possible intervention of other variables between belief and teaching practice, we decided to examine both variables. The curriculum conceptions may be more closely allied to issues of course planning than to teaching styles as observed by Axelrod and others.

Drawing upon these models, we constructed six one-paragraph descriptions to embody conceptions of educational purposes and processes in college. We attached no labels to these descriptions in the interviews; however, for our own reference, we entitled these short descriptions: (1) social change, (2) effective thinking, (3) systematic instructional process, (4) pragmatic/constraints, (5) personal enrichment, and (6) great ideas and discoveries. The inclusion of a belief system centered on pragmatic factors (opportunities as well as constraints) was suggested not only by Gay's conception of political pressures on curriculum operating at the K-12 level but by interviews conducted by Seidman (1985) in community colleges where fiscal and professional constraint were serious faculty concerns.

3.1.3 Form

3.1.3.1 Course Sequence

Since cognitive psychologists indicate that student integration of course material into existing conceptual schema is of great importance, the matter of how course material is ordered for presentation is also of considerable current interest. How do faculty decide how to arrange course content? Do they consider several alternative arrangements and make conscious decisions among them? In some cases, the process by which teachers sequence course content for students may be largely subconscious. Alternatively, the chosen sequence may represent a conscious attempt by the teacher to maximize desired student learning outcomes, including cognition, attitudes, and intellectual skill development. Teachers certainly do make judgments about the relationships between students, disciplines, goals, and instructional processes. In a problem-solving mode, they may consider, for example, the (1) attractiveness, (2) appropriateness, (3) effectiveness, and (4) usefulness of various ways of structuring classroom learning (Yinger & Clark, 1983). Yet, there is little evidence that faculty decision-making at either the K-12 or the college level proceeds in a rational problem-solving way, selecting a pattern of course sequencing from among many alternatives. Rather, it is commonly believed that college teachers (typically lacking pedagogical training) sequence material in ways traditional to the discipline (e.g., a chronological presentation of history or a hierarchical presentation of concepts in physical science). Although college faculty may be aware of and have consciously considered alternatives to the ways they were taught, little evidence exists to refute the folklore surrounding this issue.

A scheme for exploring the way teachers select a sequence of course content for presentation to students, developed by Posner and Strike (1976), seems applicable to all levels of education. The model of "content sequencing" contains six categories for which examples can readily be constructed in the various disciplines. We hypothesized that faculty members in certain disciplines would be most likely to prefer certain methods of arranging content over others, and some methods might be rather uniformly viewed as inappropriate for some fields of study. The reasons behind these choices may include, but are not limited to, the characteristics of the discipline and the way individuals teaching in that field have themselves been taught. Perhaps, too, there are atypical teachers—those who deviate from the norm for their fields by choosing unusual methods of arranging content. What characterizes such faculty members and what are their reasons for deviating?

TABLE 2

Adaptation of Posner and Strike's Patterns of Course Sequencing

POSNER AND STRIKE'S TERMS*	OUR TERMS
World related sequence (space, time, physical attributes)	Structurally based sequence
Concept related sequence (class relations, propositional relations, sophistication, logical prerequisites)	Conceptually based sequence
Inquiry related sequence (logic of inquiry, empirics of inquiry)	Knowledge creation sequence
Learning related sequence (empirical prerequisite, familiarity, difficulty, interest, development, internalization)	Learning based sequence
Utilization related sequence (procedure, anticipated frequency of utilization)	Knowledge utilization sequence
Implementation related sequence (temporal frame factors, physical frame factors, organizational frame factors, personal frame factors)	Pragmatic sequence

* From "A categorization scheme for principles of sequencing content" by G. J. Posner and K. A. Strike, 1976, *Review of Educational Research, 46* (4), pp. 665-689.

For purposes of discussion with college faculty members, we retained Posner and Strike's definitions but varied slightly the titles they had assigned to the various modes of sequencing, as shown in Table 2.

3.1.3.2 Objectives

Do college faculty members formulate course objectives? Do they state them verbally or in writing? Although the writing of objectives is emphasized during preservice training of K-12 teachers, experienced teachers frequently do not state teaching objectives explicitly. Rather, the tendency to be explicit apparently varies with teacher conceptions of the educational process (Clark & Peterson, 1986, p 266). Similar variations probably occur among college instructors and for similar reasons. Some teachers who use specific strategies (for example, the Keller system of personalized instruction) may demand that students demonstrate mastery of clearly specified objectives; teachers preferring other modes of teaching may vigorously oppose such a practice. Although no specific reference to classroom objectives was mentioned, a recent national report advocated making expectations clear to students (NIE, 1984). What types of faculty members, in which types of disciplines and in what contexts, are likely to state expectations and objectives explicitly for themselves and for students? And, in what ways, other than stating course objectives, do teachers make their expectations clear?

3.1.3.3. Instructional Mode

It is well documented that most college teachers rely on the lecture method of teaching in introductory courses. As indicated earlier, it was not our intention to probe deeply into instructional strategies (mode or materials). We were interested, however, in the broad decisions instructors make when they select a mode of instruction. Again, the question of interest is whether alternatives are consciously considered. The traditional forms of college instruction (lecture, seminar, self-paced, laboratory, practicum, and independent study) have been roughly classified along four dimensions: (1) instructor-centered, (2) interactive (defined as student-to-student communication), (3) individualized, and (4) experiential (Weston & Cranton, 1986). To differentiate student interaction with the instructor from student-to-student interaction, we added a dimension

and listened for faculty descriptions of five aspects of instructional mode: (1) direction of communication, (2) extent of interaction between students and teacher, (3) active versus passive learning activities, (4) individualized learning activities, and (5) experiential learning. We hoped to detect any strong relationships between these dimensions and specific beliefs or course sequences chosen by faculty members.

3.2 The Student Interview

The general question, How clearly do students perceive what the instructor intends them to learn, includes several perceptual aspects. For example, students might recognize and be able to describe: (1) major subject matter dimensions, (2) the arrangement and sequence of course content, and (3) the instructor's objectives for both intellectual development and student growth. Furthermore, we inquired, How does the student's perception of what the instructor intends (1) mesh with the student's broad educational goals and (2) relate to the student's motivation to learn and to put forth effort in the course?

Students are participant observers in the course plan as it is implemented. As participant observers they typically are not privy to the various alternatives the instructor may have weighed in the planning process. Nonetheless, they receive communications that lead them to interpret the instructor's objectives and strategies. Frequently, they make such interpretations in terms of their own learning needs and proclivities. Thus, we suspect that course plans are observed by students in terms of such dimensions as (1) explicitness of objectives, (2) linkage between activities and objectives, (3) preference for certain types of learning activities, (4) tolerance for course difficulty, 5) perceived self-competence as a learner, and (6) changes in interest, motivation, and learning effort expended during the course. It was our intent to probe the student's views of the course structure and, at the same time, to get a sufficient sense of the student's preferences to surmise how they might have colored the course view.

Extensive literature is devoted to course evaluations completed by students (Doyle, 1983; McKeachie, 1979). Generally, consistent factors of student preference emerge from these instruments including (1) stimulation of interest, (2) clarity, (3) teacher's knowledge of subject matter, (4) teacher's preparation and organization, (5) teacher's enthusiasm, (6) teacher's rapport with students, and (7) teacher's availability and interaction with students (Marsh & Hocevar, 1984). A few of these factors seem directly related to course design as it may be perceived by students. For example, "preparation and organization," "clarity," and possibly "knowledge of subject matter" seem most closely related to course planning. In eliciting student perceptions of course design, we hoped to probe beyond these broad dimensions to assess the extent to which the student perceived the specific aspects of course design in the way that the faculty member intended.

Student individual characteristics and experiences may strongly influence their perceptions of course design and the study of student characteristics is moderately well developed. Thus, it seemed important to relate students' perceptions to a variety of possible student orientations. For example, students with different perceptions of a course might be characterized in terms of educational goals, motivation for learning (McKeachie et al., 1986), developmental level of learning strategies (McKeachie et al., 1986), effort devoted to the course (Pace, 1984), and preferences for various types of instruction (Strom, Hocevar, Zimmer, & Michael, 1982).

Our interest in gaining information about student goals and effort extended beyond the immediate study. Although students' general purposes in attending college have been extensively explored (Astin, Green, & Korn, 1987; Ewell, 1983; Katchadourian & Boli,

1985), we have observed that existing student goal inventories seldom specify academic goals that may be met at the course level, rather than the college level (Stark & Lowther, 1985). Similarly, although a new "quality of effort" instrument (Pace, 1984) has considerable potential for assessing the effort the student commits to the total college experience, there is no parallel instrument focusing on the course experience. Because we are interested in developing such measures, we asked students to answer goal-related questions drawn from the broad discipline areas generally taught in college. We also asked a set of questions about effort they exerted in the specific course on which the interview centered. Linking responses to these instruments with measures of motivation and learning strategies under development (McKeachie et al., 1986) provided potential for identifying constellations of factors (e.g., high motivation, high effort, and course-goal congruence) that we suspect may be related to students' clear perceptions of course designs.

3.3 Examining Course Syllabi

The question guiding this part of the study was, To what extent do faculty members express in their course syllabi the objectives and goals of their course and their beliefs about the purposes of education, their discipline, and their students?

The literature on course syllabi is very limited. Most published articles discuss syllabi in specific academic fields or courses rather than the general or theoretical foundations on which syllabi might be designed and used. We discovered a few checklists used by local faculty development offices to demonstrate basic elements that faculty might include in syllabi (Johnson, 1987) and some brief but atheoretical discussions in well-known books on teaching (Brown & Thornton, 1963; Kelley & Wilbur, 1970; McKeachie, 1978).

It is difficult even to define the term syllabus. The word "syllabus" is sometimes used interchangeably with such terms as "course outline," "course description," "course objectives," "course organization," or "curriculum guide." What an instructor refers to as a syllabus may be merely an assignment sheet with due dates for reading, homework, exams, and papers—the type of syllabus used by faculty referred to in a recent opinion essay as "the listers" (Rubin, 1987). Or, perhaps more rarely, it may be an elaborate document incorporating statements of rationale, course goals and objectives, annotated bibliographies, and the like. Finally, faculty may concentrate so much on instructions about due dates, warnings about plagiarism, and other academic misdemeanors that they may be referred to as "the scolders" (Rubin, 1987).

We do not know how common it is for colleges to require faculty to produce course syllabi nor do we know what would be considered a typical or comprehensive syllabus. In general, we know that faculty frequently distribute some type of written document to classes, possibly to organize their own endeavors as well as those of their students. We know that some multicampus college systems publish course syllabi or curriculum guides that all instructors teaching a particular course are expected to follow. At other institutions an individual instructor has considerable autonomy about what to include or whether to distribute a syllabus at all.

We do not know much about how course syllabi are designed and implemented. For some instructors, the syllabus is a carefully designed instrument aimed at communicating certain things to students. For these individuals, the syllabus is a manifestation of course design and may represent the process of course development in which the teacher has engaged. For others, it may be merely another piece of paper that must be generated before the first day of class. Some faculty members have their syllabus handed to them on their first day of employment; in these cases, the syllabus may or

may not be part of a thoughtfully designed curriculum designed by a group of instructors.

We know even less about the impact of course syllabi on students. For some faculty members (and at some colleges) it is considered a student's right to have a course syllabus, as a permanent document of course expectations. We assume that students use syllabi in different ways but we do not know the dimensions of this aspect of student learning. We suggest that syllabi have the potential to influence course outcomes but we do not know the parameters or linkages.

There are no studies that look at the relationship between course planning and syllabus design. Is the syllabus an outcome of course planning in the same sense as an exam or a paper topic? Or, is it a tool that may be used to design a course? We viewed course syllabi as one avenue through which faculty members may communicate course design and its accompanying rationale (e.g., purposes, content selection, content organization, and expectations). Thus, it seemed appropriate that our examination of syllabi be guided by the same theoretical considerations already described for the faculty and student interviews. We constructed a checklist containing these same considerations to allow us to determine if related materials were included in the instructor's syllabi. Midway through our analysis of syllabi, we found Rubin's essay (1987) describing her experience on a large university curriculum committee. Many of the questions she posed as typically unanswered in those syllabi considered by her committee are similar to ours: Why should a student want to take this course? How does it make a difference as part of the discipline? How does it fit into the general education program? What are the prerequisites? Why do the parts of the course come in the order they do? What is the purpose of the assignments? Why have the books been chosen? Rubin views the inadequacy she perceives in syllabi as symptomatic of a broader problem of lack of communication between teachers and students.

Although we share Rubin's concern and our checklist contained questions aimed at detecting the intent to communicate course coherence in the syllabi, we began our study of syllabi with a neutral view; that is, we had no expectation that faculty members would express their course views using the syllabus as a vehicle and we had no evidence that educational effectiveness would be improved by doing so. Course syllabi are only one of many communication methods employed by professors. What is absent from a course syllabus may be discussed effectively by the professor on the first day of class. Unlike the course lecture or discussion, however, the course syllabus is a permanent record of course intent, and, as such, may deserve more attention from educational researchers than has been the case.

4.0 Study Method

We intended to explore the study questions with one or two instructors teaching in each of eight academic fields on two campuses in each of four Carnegie types of institutions (potentially eight faculty members at each of eight institutions). To arrange the interviews, we solicited cooperation from volunteer campuses within each of the four Carnegie types. At each campus we asked to interview faculty members teaching introductory courses in designated fields spanning the disciplines, as categorized by either Dressel or Biglan. Because of enthusiasm at collaborating institutions and travel complexities, our final faculty roster included 89 interviews, 25 more than planned. The distribution of interviews by college type and academic field is shown in Table 3.

A cooperating academic administrator received instructions to select "typical" faculty participants from those teaching the specified introductory courses. Because it was necessary that instructors be willing to participate in the study, the faculty interviewees probably were not representative of all faculty. Although we were told of only one outright refusal, we assume that selection was biased by excluding instructors who were expected to be uncooperative or uninterested.

Administrative coordinators also were asked to nominate at random two students who had completed the target introductory course within two to twelve weeks before the interview sessions. Whenever possible, student selections were to include one student who planned to major in the field of study and one who had taken the course as general education. (In discussing introductory courses, Smith (1986) has likened these two students to a tourist and a novice, respectively, both entering a new disciplinary culture; their purposes and needs are quite different.) There was no way to ensure a

TABLE 3

Distribution of Faculty and Student Interviews (by College Type and Introductory Course)

INTRODUCTORY COURSE	COLLEGE TYPE: Doctoral University	Comprehensive Colleges	Liberal Arts Colleges	Community Colleges	TOTAL
Sociology					
Faculty	2	2	3	3	10
Students	0	4	3	4	11
History					
Faculty	2	2	2	2	8
Students	2	4	4	2	12
Biology					
Faculty	2	3	4	4	13
Students	4	4	4	4	16
English Composition					
Faculty	2	3	4	5	14
Students	5	3	6	10	24
Literature					
Faculty	2	3	2	5	12
Students	1	4	4	2	11
Mathematics					
Faculty	2	2	4	4	12
Students	3	2	3	5	13
Nursing					
Faculty	2	1	2	6	11
Students	1	0	2	9	12
Business					
Faculty	2	2	2	3	9
Students	3	1	2	4	10
Totals					
Faculty	16	18	23	32	89
Students	19	22	28	40	109

representative sample of the students. To be eligible, a student needed to be enrolled, available on campus, and willing to be interviewed. While we believe the colleges and instructors did not deliberately select superior students, it is possible that administrators avoided inviting the weaker students to the interviews. In some cases, scheduling problems and last minute emergencies precluded us from interviewing a student selected from a certain class. Consequently, some matches were not made. The number of students who took classes with each interviewed instructor ranged from zero to three. From our sample of 109 students we interviewed 96 instructor-student pairs.

Instructors were also asked to supply for the researchers a course syllabus, a reading and assignment list, samples of in-term or final examinations, and other materials that might convey the purposes and objectives of the course and the arrangement of content used to achieve them.

4.1 Interview Procedure

Different interviewers spoke with instructors and their former students. Two members of the research team who had not participated in either set of interviews, and thus were unfamiliar with the faculty member's intended course plan or the students' grasp of it, examined and coded course materials. Faculty interviews lasted from one to two hours (student interviews lasted one hour). Interviews began with general questions intended to solicit unprompted responses and proceeded to trigger devices that elicited reactions to certain possibilities in course design. With the permission of the participants, and an assurance of confidentiality, interviews were tape recorded for later analysis; the interviewers also coded responses on an interview protocol. Participating faculty members were invited to participate in a follow-up seminar held at their college several months later to discuss and react to the general findings from the interviews. Faculty members were also sent complimentary copies of NCRIPTAL publications and NCRIPTAL made a contribution to the campus faculty development fund. If campus policy permitted, students were paid $10 each for participating.

4.2 The Interview Protocols and Guides

The specific study questions mentioned earlier focused on one of the three aspects of the investigation: faculty interviews, student interviews, or examination of course materials. The general theoretical derivation of the interview questions was discussed in Section 3.0. In this section, we describe more specifically the types of questions asked. Copies of the interview protocols and instruments used are provided in Appendices I, II, III, and IV.

4.3 Faculty Interviews

In a nondirective fashion, we asked faculty members to talk about the types of problems, issues, and key concepts covered in their introductory course; the characteristics of the students enrolled in the course; the steps they take when planning; influences upon their planning; and the instructional modes they used. Listening for the ideas they stressed most, we sought to identify what they believed best characterized their course planning. Subsequently, we used structured questions, card sorts, and ranking devices to explore in some detail both the ideas they had mentioned and the ideas (derived from our theoretical framework) that they had not mentioned.

We have organized our description of the interview protocols according to major and subsidiary study questions. Within this framework, we describe briefly (a) the categories of ideas we listened for as faculty gave free responses and (b) the trigger instru-

ments used to gain more specific information about ideas that were and were not mentioned.

In listening for faculty responses to open-ended questions, interviewers used coding sheets on which they recorded the mention and emphasis given to anticipated categories and subcategories. (Coder's judgmental ratings of 1-5 reflected mention and emphasis.) They also recorded categories of information that had not been anticipated. After listening to tape recordings and reviewing the notes taken, each interviewer coded the extent of emphasis on various categories mentioned. A second rater (and in case of substantial differences, a third) independently coded each interview.

Structured trigger devices used in interviews were of three general types: (1) lists of items from which interviewees were asked to rank order items from those most like their views to those most unlike their views. (2) sets of cards that interviewees were asked to arrange in order from most to least important, and (3) sets of cards across which interviewees were asked to distribute 100 points to indicate their relative importance. In each type of instrument, space or extra cards were provided to solicit interviewees' additional contributions to the lists. For students, structured devices included several short Likert-type questionnaires. The major categories of information gathered and the specific questions used are organized under four broad questions that follow in Sections 4.3.1 through 4.3.4.

4.3.1 Potential Influences on Designing Introductory Courses

What factors influence faculty members in designing an introductory course?

- How do faculty members describe the process in which they engage when they plan the course?
- What factors do faculty members mention as influential in their course planning?

4.3.1.1 Characteristics of the Academic Field

Items Coded in Unstructured Answers

Substantive components (substantive issues, concepts, and ideas in the discipline)

Syntactical components (mode of inquiry of the discipline; way knowledge is created or discovered)

Conjunctive components (relation of the discipline to society, to students' lives, or to other disciplines)

Symbolic components (vocabulary of the field)

Skill components

Other contributed discipline characteristics

Structured Probes

Substantive and syntactical consensus among scholars

Perceived nearest and farthest disciplines conceptually

Rank order selection of the best three characterizations of the discipline from among seven (See Appendix I)

Definition of curricular coherence

4.3.1.2 Faculty Background and Training

Items Coded in Unstructured Answers

Mention of own background, preparation, and interests

Structured Probes

Demographic variables (education, experience)
Professional involvement (Coder's judgment, 1-5)
Publication of research
Publication of teaching materials
Conference presentations about teaching

4.3.1.3 Faculty Beliefs about Education

Items Coded in Unstructured Answers

Mention of goals for students
Mention of discipline goals

Structured Probes (Ranking from card sort; see Appendix I)

Social change
Effective thinking
Systematic instructional process
Pragmatism/constraints
Personal enrichment
Great ideas and discoveries

4.3.1.4 Student Characteristics

Items Coded in Unstructured Answers

Student characteristics mentioned in course planning

Student characteristics mentioned in describing course (demographics, quality of preparation, amount of effort, and other)

Structured Probes

Relative importance of student characteristics, plans, readiness, and purposes in card sort on reasons for selecting course content. (Assign 1 to 100 points; see Appendix I.)

4.3.1.5 College or University Goals

Items Coded in Unstructured Answers

Mention of goals in description of course planning

Structured Probes

Categorization of institution (Carnegie Classification)

4.3.1.6 Program Goals

Items Coded in Unstructured Answers

Mention in course planning
Free response characterization of program goals

Structured Probes

Characterization/discussion of program goals (on eight 1-5 point polar semantic-differential type scales. See Appendix I.)

4.3.1.7 Influence from Experts and External Groups

Items Coded in Unstructured Answers

Mention of influence in course planning
- Accreditors
- Employers
- Associations
- Advocacy groups
- Educational theorists/researchers
- Other

Structured Probes

Exposure to education courses
Participation in instructional workshops
Knowledge of teaching journals in field
Use of instructional consultation service on campus

4.3.1.8 Other Influences

Items Coded in Unstructured Answers

Teaching materials
Scheduling constraints
Available resources
Promotion requirements
Other constraints and facilitators
Textbooks

Structured Probes

None

4.3.2 Estimating Relative Strength of Influences on Course Planning

In the faculty members' judgment, what is the relative strength of various influences on course planning?

Items Coded in Unstructured Answers

(See Sections 4.3.1.1 through 4.3.1.8)

Structured Probes

Relative importance given to each category of influence in card sort of ten possible influences plus option cards. (Distribution of 1-100 points; see Appendix I.)

Relative importance given to each reason for selecting course content of nine possible reasons plus option cards. (Distribution of 1-100 points; see Appendix I.)

Items included (a) various aspects of the discipline (conceptual structure, inquiry mode, usefulness); (b) various aspects of student learning (development of cognitions, cognitive skills, affective understanding, learning readiness, problem solving, implication of active rather than passive learning, applicability and integration with previous learning experiences).

4.3.3 Potential Differences by Field and Faculty Background

Do course planning processes and the form of the course plan differ for various disciplines and for various faculty backgrounds?

Items Coded in Unstructured Answers

Ways in which course content is arranged
Course purposes and objectives
Mode of instruction selected

Structured Probes

Type of sequence (Ranking from card sort. See Appendix I.)
Structural
Conceptual
Knowledge creation
Learning-based
Knowledge utilization
Pragmatic
Reasons for highest and lowest ranked sequences
Direction of communication in course

4.3.4 Communicating Course Design and Objectives to Students

In what ways do faculty members try to make clear to students (a) the overall design for their course and (b) the specific objectives they hope students will achieve?

Items Coded in Unstructured Answers

Written communication
Oral communication
Communication primarily in first session
Communication continuing throughout course
Availability of written course materials
Description of purposes for students
Special learning help provided to students
Ways of obtaining feedback about student learning
Indicators of student learning used
Own assessment of communication success

Structured Probes

None

4.4 Student interviews

Student interviews were devised to parallel the faculty interviews as closely as possible. To avoid repeating the questions described in the previous section, we have summarized the parallel sets of questions in Table 4, below. In contrast, Table 5 lists those items (already described) that were unique to faculty interviews. Table 6 gives those items that were unique to student interviews. Since questions asked of faculty have already been described, only the unique questions asked of students (Table 6) are described in detail below. In addition, at the end of each table, we have noted some items originally included in our theoretical considerations that were eliminated to reduce the length of interviews.

4.4.1 Student Perceptions of Course Design

How clearly do students perceive what the instructor intends them to learn?

- What does the student believe is the overall design for the course as planned by the faculty member?
- What specific objectives does the student believe the faculty member intends him/her to achieve?

Unstructured Questions

In student questions that paralleled faculty questions, students were asked to surmise what the instructor intended them to learn and to describe related strategies from their view. Next, they indicated their own goals and preferred learning strategies. Finally, they were asked to compare the two perceptions of goals or strategies.

Structured Probes

Probes parallel to those for faculty
Several survey-type instruments described below
Instructional Preference Inventory (Hocevar, Zimmer, Strom, Groh, n.d.; see Appendix III). Thirty-three forced-choice, paired items. Two expected factors: preference for course structure and tolerance for course difficulty.

Student Goal Questionnaire (Constructed from items by Pace, Higher Education Measurement Kit; see Appendix III.) Twenty Likert-type items (1 = very little to 4 = very much). Responses were solicited with reference to college attendance generally and to enrollment in this course specifically.

4.4.2 Relationship of Student Motivation and Effort

How do students' perceptions of what the instructor intends relate to their motivation and course effort?

In student questions that paralleled faculty questions, students were asked to surmise what the instructor intended them to learn; they were also asked to describe related strategies from their view. Next, they indicated their own goals and preferred learning strategies. Finally, they were asked to compare the two perceptions of goals or strategies.

TABLE 4

Parallel Questions on Faculty and Student Interviews

QUESTION NO.	TOPIC OF FACULTY QUESTION	QUESTION NO.	TOPIC OF STUDENT QUESTION
3	Key problems, issues, concepts in course (C.A.)	6	Key problems, issues, concepts recognized in course (C.A.)
15	Discipline components entering in planning (V33-43)	6	Discipline components recognized in course (C.A.)
25	Faculty goals for students (V80-83)	1,2,11	Perception of instructor's goals (V11-15, V29-62)
26,27	Messages to students about goals and purposes (V84-87, 88)	18	Recognition of messages (V65-73)
29	Course sequencing patterns (V89-94)	20,21	Recognition of sequencing patterns (V80-65)
33	Mode of instruction (V95)	26	Mode of instruction (V86)
34	Communication flow (V96)	27	Communication flow (V87)
35	Important aids to help students learn (V97-100)	28	Important aids to help students learn (V88)
36,39	Feedback methods (V101, 102)	29	Feedback methods (V89, 90)
40,41	Educational beliefs (V103-106)	30,31	Perception of educational beliefs (V91-102). Note also #32, 33, 37, (C.A.)

Note: Question numbers refer to interview protocols. C.A. is an abbreviation for content analysis: that is, data were examined by content analysis rather than quantitative coding. Variable numbers referring to the coded interviews are given in parentheses after the question description.

TABLE 5

Questions Unique to Faculty Interviews

QUESTION NO.[a]	TOPIC OF QUESTION	VARIABLE NO.[b]
4	Characteristics of students in course	11-13
5	Course enrollment	14
6	Times taught	15
7-9	Program goals	16-23
10	Planning activities	24-29
15	Influences on planning	33-43
16	Characteristics of discipline	44-50
17-19	Perceptions of discipline	51-55
21	Perceptions of coherence in curriculum	56
23	Factors influencing planning	57-68
24	Criteria for selecting content	69-78
26-28	Perceptions of student understanding of plan	84-88
35-36	Indicators of learning	97-101
39	Sources of course design/planning assistance	102
44-46	Educational background	111-113
47-49	Teaching experience	114-116
50-51	Pedagogical training	117-118
52-54	Publications/presentations	120-122
55	Journal reading	123

Note: Questions discarded due to lack of time: emphasis on symbolic system of field; teaching satisfaction; influence of computers; role models for teaching.

[a] Question numbers refer to items on interview protocol.

[b] Variable numbers refer to items in interview coding.

TABLE 6

Questions Unique to Student Interviews

QUESTION NO.[a]	TOPIC OF QUESTION
3-5	Student objectives for course
7-9	Assignments given and believed most useful
16	Desirable prerequisites for course
17	Desirable corequisites for course
22-25	Desirable sequencing for own learning
29b	Ways of judging own progress in learning
38-54	Demographic information
52	Goals in attending college Goals in taking course
53	Instructional preferences: Preference for course structure Tolerance of difficulty
54	Motivation toward course/use of higher order learning strategies
55	Effort in course

Note: Questions discarded due to lack of time: perceived characteristics of discipline; perceived influences on faculty planning.
[a] Question numbers refer to items on interview protocol.

Structured Probes

Course effort questionnaire (Adapted from items in Pace, Higher Education Measurement Kit; see Appendix III.) Thirty-one Likert-type self-report behavioral items (1 = "seldom" or "never" to 4 = "very often").

Course motivation questionnaire (Adapted from McKeachie et al., draft MLSQ; see Appendix III). Thirty-five Likert-type items covering intrinsic and extrinsic motivation, expectancy of success in course, organizational learning strategies, help-seeking behavior, and text anxiety.

4.5 Course Design as Reflected in Syllabi

Do course syllabi communicate the faculty member's plan and course objectives?

To answer this question for the most comprehensive syllabus, our trial checklist was built around the following question: What would a syllabus look like that provided clues to all dimensions of course planning that we discussed with faculty members and students in the interviews?

With such a comprehensive checklist, we were quite sure we would not encounter any syllabus that included all dimensions. Two independent judges recorded whether items were included in instructors' syllabi explicitly, included implicitly, omitted, or probably not applicable given the nature of the discipline or course. The major categories included in the checklist are given in Table 7. (The entire checklist is in Appendix IV.)

TABLE 7

Categories of Information Included in Comprehensive Syllabus Checklist

Basic class information
Class calendar
Information about a basic textbook
Information about supplementary readings
Information about learning recources for students
Course goals and objectives
Discipline content embedded in goals and objectives
Assumptions about student characteristics
References to other influences on course design
References to instructor's educational beliefs
Rationale for choice of course material
Rationale for way course content is arranged
Rationale for specific assignments/activities
Instructional mode or teaching/learning strategies
Methods of providing feedback to student
Indicators of how instructor obtains feedback

5.0 Overview of Study Results

The results of the study are organized according to the three questions:

- What factors influence faculty members as they design courses? (Sections 5.0 and 6.0)
- Are faculty members' goals and overall course plans recognized by students? (Section 7.0)
- How do faculty members express course designs they develop in syllabi and other course materials? (Section 8.0)

(NOTE: In addition to the three questions considered in this report, we anticipate producing separate reports describing some auxiliary aspects of the study. These may include such topics as: (a) development of a questionnaire to confirm influential factors in college course design; (b) exploring student ability to articulate course and college goals, motivations and efforts; (c) the usefulness of reporting interviews about teaching to faculty; (d) a guide to views on teaching for faculty search committees; and (e) a course syllabus writing guide.)

5.1 Influences on Faculty in Course Design

5.1.1 New Models of Course Planning

Our literature review and our own experience as faculty members convinced us that course planning is a decision-making process involving faculty choices from a wide array of options. The instructor's decisions are influenced by many variables, some of which operate overtly and others of which operate more subtly. Furthermore, faculty decision makers bring to their efforts a variety of problem-solving styles. The richness and complexity of this decision-making arena became even more apparent following our exploratory interviews. Although it may seem trite, our data emphasize the point that course planning is a very complex and demanding process.

To help describe the course planning process we have drawn on our exploratory interviews to formulate a revised model of course planning. While this model remains incomplete, it more accurately represents the course planning process than the tentative course design model (see Figure 2, p. 8) with which we began the study. We propose the new model as a scheme to guide our continued thinking and research as well as to provide complex reality. In no way should this model be viewed as final or prescriptive at this point in our research.

In continuing to present the course planning process in flow chart format, we may be accused of knowingly reducing a complex activity to a simplistic one. This is not our intent for we are aware of the limitations associated with flow chart representations of course planning that erroneously suggest decision-making occurs in a linear, step-by-step fashion with appropriate starting and ending points (Romiszowski, 1981). In fact, our interviews provide evidence that course planning involves much nonlinear activity and appears to have no definite starting or ending points. We attempted to incorporate these findings in the model.

Despite the weaknesses of models, we present the flow chart model first for the convenience of readers who desire a general picture of our findings without too much detail. The model encompasses broad generalizations and understandings we have begun to develop. Later, we buttress the model with detailed data from the interviews. This manner of presentation follows the research process used in the study: we first obtained global impressions from interviewing and reading interview transcripts, then

we began data reduction. We emphasize the exploratory nature of this study; the impending survey results will provide more evidence to support or contradict early findings.

5.1.1.1 *Discarding the Original Model*

We have now set aside the literature-based course design model with which we began our exploration. Although it provided us with an appropriate structure for interview protocols, the model (depicted in Figure 2) is an inaccurate and incomplete representation of reality for college course planning. We had three primary reasons for discarding this model:

1. The original model indicated that academic discipline was temporally the first element entering into the course planning process; in other words, content precedes context. Although it is certainly true that the disciplines predated any individual faculty member, this temporal relationship is irrelevant at the time course planning takes place. Rather, experienced faculty members *simultaneously* bring their own background characteristics, disciplinary training, views about the nature of the discipline, and set of related educational assumptions to the course planning process as a complex set of operating theories. Thus, discipline content is not as independent of the course planning context as was implied in the original model.

2. In the original model, faculty members' educational assumptions were presumed to be formulated during the course planning process as they considered a variety of factors, including student characteristics and program goals. Based on our interviews, we believe that faculty members' educational assumptions are more enduring and less situational than we originally thought. Instead of being influenced by the context in which teaching is to take place, educational assumptions may well influence perceptions of that context, particularly the faculty members' willingness to recognize and consider student characteristics. While the educational context may be very important in influencing some faculty, not all faculty are equally subject to contextual influences.

3. Except in a single unique field (nursing), we have found little reason to believe that college faculty members generally set objectives or choose content before selecting activities or selecting an instructional mode. Rather, we have found a variety of patterns of course planning. For example, some faculty members start their planning by selecting a textbook. Others select activities for students; and still others focus initially on student needs and characteristics. The determinants of the order of planning steps are not yet clear to us.

Although the original model with which we started our study has been set aside, we are aware that we discarded it after interviewing faculty members who had been planning courses for many years. Based on those few cases where we interviewed new faculty members, we suspect there may be reason to resurrect the linear model when studying the process by which new faculty members initially form their assumptions and operating theories about course planning.

5.1.1.2 *Substituting the Contextual Filters Model*

From our exploratory interviews we formulated several possible models of course planning, each of which represented what we heard faculty say somewhat more fully than did the model with which we begin the study. We have selected one of these, the contextual filters model (see Figure 3), as our current working model because it encompasses most aspects of the others. This model seems helpful in identifying factors that

might be varied to improve course planning, which is the ultimate goal of our research. We are continuing to refine and reshape the model through discussion with groups of faculty members. We anticipate that survey results will test our preliminary estimates of the strength and nature of the course planning influences tentatively depicted in the model.

The most important determinant of course planning in the contextual filters model is a complex of factors associated with faculty background, academic field, and related educational assumptions. Repeatedly, we heard faculty members attempt unsuccessfully to separate these interrelated influences as they tried to rank them in card sorts. In their descriptions of their courses we heard them repeatedly phrase their basic assumptions about education in terms of their own disciplines and backgrounds. Consequently, while this contextual filters model maintains our original distinction among content, context, and form (Toombs, 1977-78), we now see content and context as interlinked to produce a broad context in which the instructors' background and discipline assumptions are both prominent and in which neither temporally precedes the other. To illustrate this interdependence graphically, we have shown the three elements (faculty background, discipline characteristics, and educational assumptions) as interacting factors on the left of Figure 3. We have used heavy borders to represent their strong influence on the course planning process.

In this new model we have not attempted to give sequential order to the wide variety of variables that may intervene between the faculty background factors and the course planning decisions. Rather, we envision them as an infinite number of screens with varied sizes of mesh and, thus, we have placed them in the center of Figure 3. We have called these variables "contextual filters" since they seem differentially to affect faculty members' thinking as they move from assumptions toward course implementation. Some of these filters (such as campus experts and services) were consistently unimportant to faculty members we interviewed, while others, such as student characteristics, regularly played an important role in course design. Still other factors, such

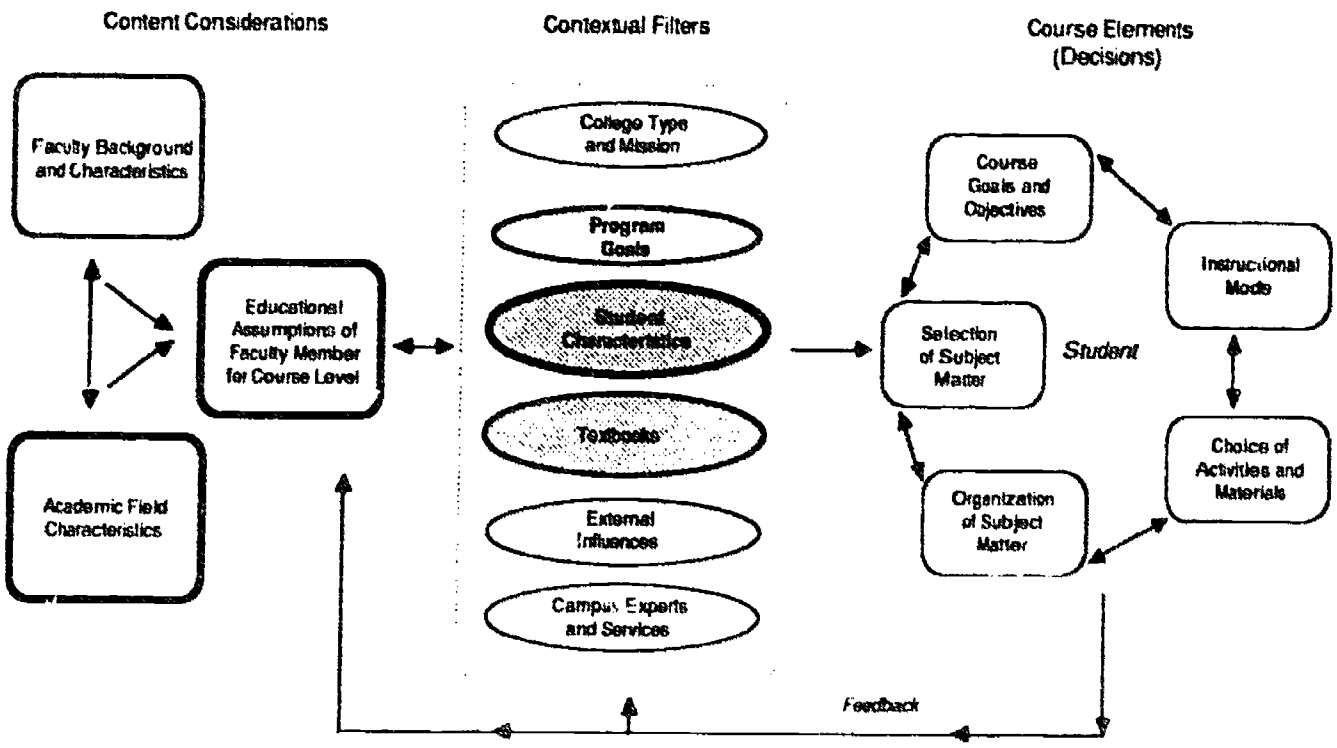

Figure 3. The "contextual filters" model of course design (developed by Stark and Lowther, 1987).

as program goals, state agency regulations, and textbooks, to name a few, may serve as important filters in some contexts but are largely irrelevant in others. Based on our small interview sample, we have shown the factors we believe to be most influential in heavy type and with heavy shading. The lighter the border and shading the more likely that the influence was mentioned by faculty members under some special circumstance rather than consistently.

Although we have not yet tested this idea, it appears that faculty members (consciously or unconsciously) may make *two* sequential decisions with respect to those elements we have labeled as contextual filters. First, it is necessary to make a decision to consider the element at all; second, a decision must be made regarding how important a filtering role the element will play in course planning.

The ultimate decisions to be reached about course design are shown in the contextual filters model (on the right side of Figure 3) as linked in a closed loop. As yet, we have no evidence of any consistent tendency among faculty members to make any one of these decisions before another. If any elements have slight temporal precedence, they are probably course goals or selection of course content; faculty members tell us that these elements both depend on whether the course is introductory or advanced. But either the choice of goals or the selection of subject matter (or both) may depend, as we shall see, on the choice of a textbook. We suspect that we will find some points of entry into the course planning cycle are more typical in some disciplines than in others but we await a test of this idea from a larger sample of faculty members.

In the contextual filters model, we have included a feedback loop to signify the changes that may take place in subsequent course planning. We believe course evaluations completed by students are one useful element in such feedback but perhaps their potential for changing the way faculty members teach and plan has been overestimated. Feedback appears to originate in a more complex way from the entire course implementation process as students and their instructor experience it together. Faculty members may either obtain feedback from students, perceive it themselves, or both. It is not possible for the feedback to change the faculty member's background or discipline but it may influence educational assumptions or the attention given to contextual filters.

As a consequence of the feedback provision in the model, we should mention briefly the possible implications for improving teaching implied by the contextual filters model. These implications will be developed more fully later. In our judgment, the model implies at least three major leverage points for change. Because faculty assumptions about their discipline and education appear to be firmly entrenched, the most fundamental (and most difficult) change approach may be to change these basic ideas or the way they interact. A second approach may be to increase the visibility or usefulness to faculty of the specific contextual filters that may affect course planning. For example, more relevant information about student characteristics might be provided. A third approach might be to expand the faculty members' horizons by supplying information about alternative course design decisions that are consistent with their basic assumptions about the discipline and educational context. For example, if a history faculty member views social change as an important educational goal, he or she might be introduced to ways of arranging course content to emphasize social issues concurrently with chronological history. As these examples illustrate, the model allows consideration of faculty change in course design both at a very fundamental and enduring level and at a more experimental procedural level.

5.2 Quantitative Analysis of Faculty Interview Data

In the previous section we described a broad and still tentative model depicting what may or may not influence faculty as they plan courses. This section of the report describes in quantitative terms the interview data that led us to this conception. It provides a detailed report of the characteristics of the faculty sample, the frequency of responses to each unstructured and structured question, and some correlation patterns based on coded interview data. This section is intended to answer the three questions:

- What factors influence faculty in their course planning?
- What is the relative strength of various influences on course planning?
- Do course planning influences and processes differ for faculty in various disciplines and in different institutional settings?

For ease of reference we have presented much of the data in this section in tabular form, and we have used inferential statistics to help us separate what appear to be patterns worthy of continued exploration from those that appear trivial. We caution the reader that statistical inference that appears to test hypotheses is inappropriate for these data because the sample of faculty interviewed was chosen for convenience and the coding of interviews was necessarily subjective. Although we endeavored to gather views from a diverse set of faculty, our subjects were not selected randomly and are not necessarily representative of any specific population. To continually remind ourselves and our readers that the data are only suggestive, we have rounded the figures in the tables (including percentages) more than is usual in data tables to indicate that they may not be replicable.

5.2.1 Participating Institutions

We interviewed faculty teaching introductory courses at three community colleges, two liberal arts colleges, two comprehensive universities, and one doctoral university. Research universities were not included for two reasons: (1) they are not formally part of NCRIPTAL's target audience of "teaching" colleges, and (2) a high percentage of introductory courses in research universities are probably taught by teaching assistants rather than regular faculty members.

Table 8 shows the pattern of our interviews by institutional type and enrollment. Although there are about 400,000 full-time faculty and an unknown number of part-time faculty teaching in U.S. colleges and universities, the distribution of these faculty members by institutional type or discipline is seldom reported. Thus, we present data showing that the number of faculty we selected for interviews approximates the distribution of existing institutional types. That is, 37% of our interviewees were community college faculty compared with the 39% of the total population of institutions that consists of community colleges; similarly, 18% of our interviewees were from a doctoral university compared with 14% of the target population of doctoral institutions (including research universities). In terms of institutional size, however, our sample substantially underrepresented small institutions. Whereas 39% of colleges have less than a thousand students, only 26% of our interviewees were from colleges of this size. Large institutions were over represented; 38% of our interviewees were from colleges of ten thousand or more, which represent only 10% of the total number of institutions.

Appendix V contains brief descriptions of each of the fictionally named cooperating institutions. Since we conducted interviews at more than one institution among community and comprehensive colleges, we will refer to these colleges by their type in our discussion. For convenient distinction among the two liberal arts colleges which

TABLE 8

Distribution of Faculty Interviewed

	PERCENTAGE OF INSTITUTIONS NATIONALLY*	FACULTY INTERVIEWED	
		Number	Percentage
Institutional type by highest degree granted			
Two-year	39	32	37
Bachelor's only	25	23	26
Master's, but not doctorate	21	16	18
Doctorate	14	16	18
Institutional enrollment			
Fewer than 1,000 students	39	23	26
1,000 to 4,999 students	39	12	13
5,000 to 9,999 students	12	20	23
10,000 or more students	10	34	33

*The percentages reported are Fall 1983 national statistics from the *1986-87 Fact Book on Higher Education* by the American Council on Education, 1987, New York: MacMillan.

differ in mission, selectivity, and wealth, we refer to them as Denominational College and Endowed College, respectively. Since there was only one doctoral level institution we will call it Midwest Doctoral University to distinguish it from the two comprehensive colleges which are of similar size and historical origin.

5.2.2 Faculty Sample

The demographic characteristics of the 86 faculty members for whom usable data were obtained are given in Table 9 by institutional type and in Table 10 by academic field. (Of the 89 interviews conducted, two could not be coded because of taping deficiencies and one, conducted as a courtesy, was in an academic field not included in the study.)

The mean age of faculty we interviewed was 46, with a range of 26 to 66. The mean age is consistent with national averages for college faculty and was similar across both academic fields and college types. Overall, 59% of the faculty members we interviewed were male and 41% were female. This is a greater percentage of women than among faculty generally. This unusual distribution probably occurred in our sample because: (1) women tend to teach introductory courses, particularly English composition, (2) nursing faculty are typically female, and (3) it is possible that women more readily agreed to participate. At Endowed Liberal Arts College (where there were no nursing or business programs and less need for first-level courses in English composition) all faculty interviewed were male.

Faculty interviewed at the different types of institutions were similar in length of teaching experience. The average number of years taught was 15 and the range of full time years of college teaching was 1 to 41 years. With respect to other types of work experiences, about 45% of the faculty members had at least a modest amount of work experience other than teaching, a figure that did not differ substantially for the different types of colleges. As might be expected, differences did occur by academic field; history and composition faculty members were least likely to have worked at nonacademic positions; business, nursing, and sociology faculty members were most likely to have done so.

Because two of the three community colleges used no academic ranks, a comparison of ranks across institutions is not meaningful. The distinctly different patterns of rank among our interviewees across the several academic fields, however, deserves more exploration.

TABLE 9

Demographic Characteristics of Faculty Interviewees (by College Type)

CHARACTERISTIC	ITEM NO.	COLLEGE TYPE: Total (*N*=86)	2-year (*n*=32)	LA II (*n*=13)	Comp (*n*=16)	LA I (*n*=9)	Doc (*n*=16)	*F*	*df*	*p**
Age	110									
M		46	46	43	46	50	44	1	4,81	n.s.
SD		8	8	7	7	8	9	(*N*=86)		
Range		26-66	33-66	30-54	32-64	33-60	26-54			
Years taught college	115									
M		15	14	14	14	22	15	2	4,81	n.s.
SD		9	8	11	7	8	9	(*N*=86)		
Range		1 14	1-40	3-41	2-29	5-34	2-31			
		PERCENTAGE						χ^2		
Sex	109									
Male		59	41	58	63	100	69	11	4	0.02
Female		41	59	42	38	0	31	(*N*=85)		
Years at other work	117									
None or nearly none		42	38	62	25	78	31	18	12	n.s.
Slight		13	13	0	13	11	25			
Modest		21	16	15	44	11	19			
Many		24	34	23	19	0	26			
Rank	114									
Unranked		24	59	8	6	0	0	62	20	0.00
Lecturer		4	3	8	0	0	6			
Instructor		9	9	8	0	11	19			
Asst prof		21	13	31	44	0	19			
Assoc prof		14	3	31	19	0	25			
Professor		28	13	15	31	69	31			
Degree	111									
Bachelor		2	3	8	0	0	0	30	12	0.00
Master		43	69	46	19	11	31			
Two masters		8	9	15	0	0	13			
Doctorate		47	19	31	81	89	56			
Education courses	118									
None or few		50	31	46	63	89	56	16	8	0.05
Some		30	38	23	38	11	25	(*N*=86)		
Much		20	31	31	0	0	19			
Instructional workshops	119									
None or few		49	31	46	69	78	50	13	8	n.s.
Some		23	28	39	6	11	25	(*N*=86)		
Much		28	41	15	25	11	25			
Published teaching material	120									
None or little		86	91	100	69	89	81	16	8	0.04
Some		7	3	0	25	11	0	(*N*=86)		
Much		7	6	0	6	0	19			
Published research	121									
None or little		77	91	92	63	78	50	19	8	0.02
Some		9	6	0	13	22	12	(*N*=86)		
Much		14	3	8	25	0	38			
Presented conferences	122									
None or little		72	72	77	56	89	75	11	8	n.s.
Some		21	25	23	19	11	19	(*N*=86)		
Much		7	3	0	25	0	6			

* n.s. = p >.10

A far greater percentage of faculty members interviewed at Endowed Liberal Arts College and at the comprehensive universities had doctoral degrees (89% and 81%, respectively) than at community colleges (19%). The percentage of doctorates among faculty interviewed at Midwest Doctoral University was lower than at the comprehensive universities. This was, in part, due to a high proportion of lecturers and "contract

TABLE 10

Demographic Characteristics of Faculty Interviewees (by Academic Field)

CHARACTERISTIC	ITEM NO.	ACADEMIC FIELD: Total (N=86)	Bio (n=13)	Bus (n=9)	Comp (n=13)	Hist (n=8)	Lit (n=12)	Nurs (n=11)	Math (n=12)	Soc (n=8)	F	df	p*
Age	110												
M		46	49	42	44	46	45	44	47	46	1	7,78	n.s.
SD		8	8	9	7	7	8	9	9	6	(N=86)		
Years taught college	115												
M		15	18	12	15	17	16	10	16	16	1	7,78	n.s.
SD		9	9	12	9	5	10	5	12	5	(N=86)		
		PERCENTAGE									χ^2		
Sex	109												
Male		59	69	75	54	75	67	0	75	63	20	7	0.01
Female		41	31	25	46	25	33	100	25	38	(N=85)		
Years at other work	117												
None or some		42	62	11	77	75	33	9	42	13	34	21	0.03
Slight		13	15	11	8	0	25	9	17	13			
Modest		21	15	33	8	25	17	18	25	38			
Much		24	8	44	8	0	25	64	17	38			
Rank	114												
Unranked		24	23	33	15	25	25	36	17	25	37	35	n.s.
Lecturer		4	8	0	0	0	8	0	8	0			
Instructor		9	0	11	23	0	0	27	8	0			
Asst prof		21	8	22	23	13	8	36	33	25			
Assoc prof		14	8	11	8	38	17	0	8	38			
Professor		28	54	22	31	25	42	0	25	13			
Degree	111												
Bachelor		2	0	11	0	0	0	9	0	0	31	21	0.08
Masters		43	23	56	46	38	33	91	33	25			
Two masters		8	8	0	8	25	0	0	17	13			
Doctorate		47	69	33	46	38	67	0	50	63			
Education courses	118												
None or few		50	31	56	39	75	67	27	58	63	10	14	n.s.
Some		30	46	22	31	13	25	46	25	25			
Much		20	23	22	31	13	8	27	17	13			
Instructional workshops	119												
None or few		49	46	78	8	75	58	27	75	38	27	14	0.02
Some		23	31	11	39	13	0	36	8	50	(N=86)		
Much		28	23	11	54	13	42	36	17	13			
Published teaching material	120												
None or little		86	85	78	77	88	83	91	92	100	6	14	n.s.
Some		7	8	11	15	0	8	0	8	0	(N=86)		
Much		7	8	11	8	13	8	9	0	0			
Published research	121												
None or little		77	62	56	69	63	92	100	100	63	23	14	0.05
Some		9	15	11	8	13	0	0	0	38	(N=86)		
Much		14	23	33	23	25	8	0	0	0			
Presented conference	122												
None or little		72	85	78	46	75	58	82	75	75	18	14	n.s.
Some		21	15	11	23	25	33	18	17	25	(N=86)		
Much		7	0	11	31	0	8	0	0	0			

* n.s. = $p > .10$

instructors" teaching introductory composition and business courses there. Overall, the highest percentage of faculty possessing doctorates were in biology, literature, and sociology. No nursing faculty members interviewed held doctorates.

Faculty members teaching at Denominational Liberal Arts College and at the community colleges were most likely to have taken education courses; some faculty we interviewed in these institutions had a second master's degree or a doctorate in education. At Endowed Liberal Arts College, faculty were less likely to have taken any education courses. Faculty at Midwest Doctoral University were more likely to report some background in education than those at the comprehensive universities; faculty at Midwest often mentioned being associated formerly with teacher education programs. The comprehensive universities, also formerly teachers' colleges, seemingly have moved further from their historical origins. Composition and nursing instructors were most likely to have taken education courses whereas literature and history faculty were least likely to have taken them. However, the differences by field generally were not significant.

Despite some definitional inconsistencies when answering the question, about 49% of the faculty we interviewed either had never participated in any instructional workshop (28%) or reported only one brief instructional development experience (21%). Faculty members least likely to have had experiences with instructional workshops were those at Endowed Liberal Arts College and the comprehensive universities. Business, history, and mathematics faculty members were less likely to have participated in an instructional workshop; composition faculty members were most likely to have done so.

We asked faculty to indicate whether they had shared teaching strategies, materials, or ideas they developed with colleagues, either through publication or conference presentations. Additionally, we asked about publications as a way of sharing research or scholarship with others in their discipline. The responses suggested that teaching developments are shared in a very limited way. Overall, 86% of the faculty had never published teaching materials and 72% had not shared any with colleagues at conferences. Those who had shared extensively were concentrated at Midwest Doctoral University, and the conference presenters were primarily the untenured composition teachers.

There is no evidence that faculty members teaching introductory courses (many of whom had substantial teaching loads) have shared more frequently with colleagues by publishing traditional research either. Overall, 77% had not published. Those who had published the most were in the comprehensive or doctoral universities and taught in fields other than nursing or mathematics.

5.2.3 Introductory Classes

The characteristics of the introductory classes, as the faculty described them, are summarized in Table 11 (by college type) and Table 12 (by field).

The mean enrollment of the classes we discussed was about 37 students. The size of classes ranged from about 20 in English composition to several hundred in business. The largest classes were at Midwest Doctoral University (mean = 55), and the smallest at Denominational Liberal Arts College (mean = 27). The vast majority of the faculty interviewed had taught the course under discussion more than ten times.

The majority of instructors (76%) said they taught by the lecture or lecture/discussion method. In 90% of the courses, instructors judged that communication flowed from them to the students more than 50% of the time. Although this pattern of instructor-to-student communication was consistent across types of colleges, there were substantial differences by academic field. English composition and literature courses were far more frequently taught by using participatory methods than were other courses. Introductory courses in nursing typically involved lab or clinical work. Science courses frequently involved labs, although professors typically discussed the lecture part of the course.

TABLE 11

Course Characteristics and Instructional Mode (by College Type)

CHARACTERISTIC	ITEM NO.	COLLEGE TYPE Total (*N*=86)	2-year (*n*=32)	LA II (*n*=13)	Comp I (*n*=16)	LA I (*n*=9)	Doc (*n*=16)	*F*	*df*	p*
Class size (index)	14									
M		4	4	3	5	4	6	4.9	4,81	0.00
SD		2	2	1	2	2	3	(*N*=96)		
Times taught (index)	15									
M		3	4	3	3	4	3	2.2	4,80	0.07
SD		1	1	1	1	1	1	(*N*=85)		
		PERCENTAGE						χ^2		
Instruction mode	95									
Lecture		40	29	23	47	44	67	22.6	16	n.s.
Discussion		8	16	8	0	11	0	(*N*=83)		
Lecture/discussion		36	29	62	27	44	33			
Lecture/lab		10	19	0	13	0	0			
Group inquiry		6	7	8	13	0	0			
Communication flow	96									
More than 75%		58	46	62	43	89	69	8.4	8	n.s.
More than 50%		33	36	31	50	11	25	(*N*=83)		
More than 25%		10	16	8	7	0	6			
Ways of helping		97								
Provide support		34	43	23	40	11	33	12.9	16	n.s.
Provide structure/clarity		35	21	39	40	56	42	(*N*=77)		
Provide motivation		17	14	23	13	11	25			
Show enthusiasm		8	11	15	0	11	0			
Show empathy/concern		7	11	[illegible]	7	11	0			
Feedback										
Quiz/exam	98	53	45	69	53	44	57	2.5	4	n.s.
Face/body	99	22	10	39	27	33	21	5.4	4	n.s.
Class discussion	100	63	68	77	53	56	57	2.4	4	n.s.
Ask questions	101	7	4	17	13	0	0			
Office hours	101	12	5	17	13	40	0			
Attend	101	16	16	50	13	0	0			
Homework	101	42	47	17	50	60	20			
Drop	101	5	5	0	0	0	20			

* n.s. = $p > .10$

When asked to indicate methods they most frequently used to try to help students in their course learn, faculty members gave answers that seemed familiar. We found we were able to categorize their answers into the same dimensions often reported as factors of student evaluation of teaching instruments. The three most frequent categories were (1) trying to be sure course materials are structured and clear (35%); (2) providing additional supportive academic help (34%); and (3) trying to arouse student motivation and interest (17%). History instructors (17%) and sociology instructors (13%) were less likely to give special academic support, while biology (58%) and composition (50%) instructors reported giving such help most frequently. In several institutions, students could also receive help at student assistance or tutoring centers.

When asked how they obtained clues that students actually were involved with their learning, faculty members listed ten different clues. They most frequently mentioned whether students participate in class discussions (63%) and do assigned homework (41%), the results of quizzes and exams (53%), and the way students' faces and bodies appear in the classroom (22%). There were few notable differences in such ways of obtaining feedback across types of institutions; but disciplinary differences appeared to reflect classes with different sizes and instructional modes.

TABLE 12

Course Characteristics and Instructional Mode (by Academic Field)

CHARACTERISTIC	ITEM NO.	Total (*N*=86)	Bio (*n*=13)	Bus (*n*=9)	Comp (*n*=13)	Hist (*n*=8)	Lit (*n*=12)	Nurs (*n*=11)	Math (*n*=12)	Soc (*n*=8)	*F*	*df*	*p**
		ACADEMIC FIELD											
Class size (index)	14												
M		4	5	5	3	4	4	4	4	6	2.7	7,78	0.01
SD		2	3	3	1	0	1	2	2	3	(*N*=86)		
Times taught (index)	15												
M		3	3	3	4	4	4	3	3	4	1.0	7,78	n.s.
SD		1	1	1	1	1	1	1	1	0	(*N*=86)		
		PERCENTAGE									χ^2		
Instruction mode	95												
Lecture		40	62	67	9	50	17	27	54	38	62.5	28	0.00
Discussion		8	0	0	36	0	25	0	0	0	(*N*=83)		
Lecture/discussion		36	15	33	13	50	42	27	36	63			
Lecture/lab		10	23	0	0	0	0	46	0	0			
Group inquiry		6	0	0	18	0	17	0	0	0			
Communication flow	96												
More than 75%		58	100	67	33	75	18	36	83	50	50.9	14	0.00
More than 50%		33	0	33	17	25	64	64	17	50	(*N*=83)		
More than 25%		10	0	0	50	0	18	0	0	0			
Ways of helping	97												
Provide support		34	58	22	50	17	36	30	27	13	30.1	28	n.s.
Provide structure/clarity		35	33	56	10	50	27	10	46	63	(*N*=77)		
Provide motivation		17	0	11	30	33	9	30	9	25			
Show enthusiasm		8	0	11	0	0	18	10	18	0			
Show empathy/concern		7	8	0	10	0	9	20	0	0			
Feedback													
Quiz/exam	98	53	83	63	33	14	36	40	67	75	15.1		0.03
Face/body	99	22	50	38	0	25	9	10	33	13	13.2		0.07
Class discuss	100	63	58	78	67	75	64	70	25	88	11.3		n.s.
Ask questions	101	7	0	20	0	40	0	0	0	0			
Office hours	101	12	33	0	0	20	13	14	20	0			
Attend	101	16	0	0	25	0	12	14	40	50			
Homework	101	42	67	40	63	20	50	29	40	0			
Drop	101	5	0	0	0	0	13	14	0	0			

* n.s. = $p > .10$

5.2.4 Responses to Unstructured Questions

We asked faculty members several open-ended questions about their courses and how they planned them, listening for the extent of emphasis that they placed on different factors. By listening first for what the faculty members themselves mentioned, we tried to gain a sense of their real decision-making processes and concerns while minimizing the possibility that they would agree with ideas we suggested that seemed socially or educationally acceptable. Of course, this open-ended method introduced some subjectivity in our estimates of the amount of emphasis a faculty member placed on a topic. Coding discrepancies were resolved by using several raters. Results of spontaneously mentioned factors are given in Table 13 (by college type) and Table 14 (by academic field).

5.2.4.1 Descriptions of Students

When prompted to "tell me about the students in your course," 97% of the instructors mentioned demographic "types" of students defined by such characteristics as age, socioeconomic status, or race (see Section A of Tables 13 and 14). Secondly, they mentioned quality of student preparation (60%). Far less frequently mentioned was typical student effort (25%). The frequency of mention of these varied student charac-

TABLE 13

Course Planning Influences Faculty Independently Mentioned (by College Type)

INFLUENCE	ITEM NO.	COLLEGE TYPE: Total (N=86)	2-year (n=32)	LA II (n=13)	Comp I (n=16)	LA I (n=9)	Doc (n=16)	χ^2	df	p*
		PERCENTAGE MENTIONS								
Section A										
Student characteristics										
Type	11	97	97	100	93	100	94	1.6	4	n.s.
Quality of preparation	12	60	65	69	60	33	56	3.5	4	n.s.
Effort	13	25	22	31	40	11	19	3.5	4	n.s.
		PERCENTAGE STRONG OR VERY STRONG EMPHASIS								
Section B										
Factors mentioned in course planning										
Discipline	24	48	47	46	56	67	31	28.4	16	0.03
Materials	25	62	53	62	75	89	50	18.6	16	n.s.
Activities	26	33	38	54	25	22	19	21.4	16	n.s.
Students	27	40	50	46	38	33	19	23.5	16	n.s.
Goals/objectives	28	42	41	62	25	33	50	29.8	16	0.02
		PERCENTAGE STRONG OR VERY STRONG EMPHASIS								
Section C										
Influences on planning										
Discipline										
Substance	33	52	59	54	50	78	25	24.0	16	0.09
Inquiry	34	11	3	15	6	44	6	30.7	16	0.01
Conjunctive	35	21	19	23	25	44	6	25.3	16	0.06
Symbolic	36	4	3	0	6	0	6	13.9	16	n.s.
Student characteristics	37	54	59	62	50	44	44	26.4	16	0.05
Program goals	38	35	19	54	21	33	69	36.0	16	0.00
Agencies	39	15	28	15	0	0	13	15.7	16	n.s.
Experts	40	8	6	15	6	22	0	20.5	16	n.s.
Own background	41	24	22	39	25	44	6	18.4	16	n.s.
Feedback	42	12	9	15	6	22	13	12.3	16	n.s.
Textbook	43	44	53	31	63	78	0	64.4	16	0.00

* n.s. = $p > .10$

teristics were not significantly different for different college types but we noted that faculty members at Endowed Liberal Arts College were a bit less likely to mention quality of student preparation (33%), compared, for example, with community college faculty members (65%). In comparing disciplines (Table 14), composition faculty (85%) and mathematics faculty (83%) were most likely to mention quality of student preparation (in both of these fields some faculty members were teaching "developmental" courses) while sociology faculty members seldom mentioned student preparation (13%). Faculty members teaching history (50%) and literature (50%) were most likely to mention student effort (while indicating the necessity to motivate students toward greater effort) whereas no faculty member in introductory business did so.

5.2.4.2 Descriptions of Course Planning

As faculty members responded to the invitation, "Tell me about what you do and think about as you plan your course," researchers tallied broad categories that instructors mentioned. Tape recordings and notes were later analyzed for extent of emphasis placed on each category. The percentages reported in Section B of Tables 13 and 14 represent the percentage of faculty who were judged to have placed strong or very strong emphasis on a category. Overall, in describing their own course planning, faculty members stressed selecting course materials (62%), selecting discipline content

TABLE 14

Course Planning Influences Faculty Independently Mentioned (by Academic Field)

INFLUENCE	ITEM NO.	ACADEMIC FIELD: Total (N=66)	Bio (n=13)	Bus (n=9)	Comp (n=13)	Hist (n=8)	Lit (n=12)	Nurs (n=11)	Math (n=12)	Soc (n=8)	χ^2	df	p*
		PERCENTAGE MENTIONED											
Section A													
Student characteristics													
Type	11	97	92	100	92	88	100	100	100	100	5.1	7	n.s.
Quality of preparation	12	60	50	44	85	63	64	55	83	13	15.1	7	0.03
Effort	13	25	31	0	8	50	55	27	17	13	14.3	7	0.05
		PERCENTAGE STRONG OR VERY STRONG EMPHASIS											
Section B													
Factors mentioned in course planning													
Discipline	24	48	77	33	31	63	42	36	50	50	17.4	28	n.s.
Materials	25	62	77	67	62	63	67	27	67	63	21.1	28	n.s.
Activities	26	33	15	44	77	0	33	59	17	0	41.4	28	0.05
Students	27	40	31	22	39	50	67	46	25	38	24.1	28	n.s.
Goals/objectives	28	42	23	33	39	25	33	82	58	38	40.0	28	0.07
		PERCENTAGE STRONG OR VERY STRONG EMPHASIS											
Section C													
Influences on planning													
Discipline													
Substance	33	52	77	44	31	63	42	55	58	50	33.6	28	n.s.
Inquiry	34	11	15	0	15	25	17	0	8	0	33.5	28	n.s.
Conjunctive	35	21	23	22	46	25	17	9	8	13	34.9	28	n.s.
Symbolic	36	4	0	11	0	0	8	0	0	13	36.1	28	n.s.
Student characteristics	37	54	46	44	62	63	58	73	33	50	29.2	28	n.s.
Program goals	38	35	39	33	23	13	25	64	50	25	31.1	28	n.s.
Agencies	39	15	8	22	8	13	0	55	17	0	37.0	28	0.02
Experts	40	8	15	0	15	13	17	0	0	0	34.8	28	n.s.
Own background	41	24	23	33	46	25	8	18	25	13	24.3	28	n.s.
Feedback	42	12	8	0	8	13	8	36	8	13	38.2	28	0.09
Textbook	43	44	46	33	46	38	50	27	58	50	26.3	28	n.s.

*n.s. = $p > .10$

(48%), establishing course goals and objectives (42%), considering student characteristics (40%), and selecting specific learning activities (33%). Relatively few faculty members independently mentioned making conscious decisions about whether to adopt an overall instructional strategy (e.g., example, lecture mode versus participatory mode). Similarly, few articulated various possibilities for arranging course content, at least in the kinds of theoretical terms we had reviewed. (See our earlier discussion of Posner and Strike's scheme of course sequencing.)

During these open-ended discussions we noted that instructors of courses where skill development is a prominent course objective (business, nursing, and composition) most frequently emphasized selecting activities as an early step in course planning (44%, 59%, and 77%, respectively) and less frequently emphasized the characteristics of their field (33%, 36%, and 31%, respectively). In contrast, instructors in history and sociology where skills are not a primary objective, entirely omitted mention of selecting classroom activities.

Among the various institutions, there were no significant differences in the extent to which instructors mentioned considering student characteristics in course planning. At Endowed Liberal Arts College and the comprehensive colleges, however, faculty

members were more likely to stress the characteristics of their disciplines in addition to student characteristics. At Midwest Doctoral University (50%) and at Denominational Liberal Arts College (67%), which recently had been engaged in a discussion of how its religious mission should be incorporated in coursework, faculty members were more likely to mention establishing goals and objectives.

5.2.4.3 Probing for More Specific Influences on Course Planning

Following the broad question about course planning and using a more focused but still open-ended question, we asked faculty to describe things that influence them as they plan their courses. (Later in the interview a more structured presentation of specific influences was used; results will be reported subsequently.)

Detailed breakdowns by field and college type are given in Section C of Tables 13 and 14. Table 15 highlights, in order of decreasing frequency, the influences that were mentioned by the 86 faculty members interviewed.

The following variations by college type seem notable (Table 13, Section C). Student characteristics were mentioned as specific influences on planning slightly more often by instructors at community colleges and at Denominational Liberal Arts College. Faculty members at Endowed Liberal Arts College stressed all aspects of the discipline as more strongly influential in their planning than did faculty in other institutions. Textbooks were an important influence at Endowed Liberal Arts College as well as at the comprehensive universities. Program and college goals were influential at Denominational Liberal Arts College, where they were clearly articulated, and at Midwest Doctoral University, where a great deal of centralized planning for introductory courses is done at the program level.

Although the percentage of faculty who mentioned the influence of external agencies did not differ statistically across college types, we believe that the small amount of influence expressed by community college faculty members is important. These faculty members mentioned prospective employers and articulation agreements enforced by state coordinating boards.

Overall, unprompted reports of influences on course planning seem more closely related to type of college (and, accordingly, to other associated characteristics, such as location, type of control, or admissions selectivity) than to the academic field taught

TABLE 15

Highlights of Faculty Emphasis on Specific Course Planning Influences

INFLUENCE	PERCENTAGE
Student characteristics	54
Discipline substance	52
Textbooks	44
Program or college goals	35
Instructor's background	24
Relation of field to other fields, to life, career, etc.	21
External influences	15
Feedback from previous classes, students, colleagues	12
Mode of inquiry of discipline	11
Views of experts in instruction	8
Vocabulary/symbolism of discipline	4

In part, the lack of statistical significance across disciplines is due to the very wide range of fields and views represented. Notable are nursing faculty members, 64% of whom report strong influence of program goals, which they typically decide collegially and follow closely. In turn, however, this type of programmatic decision making is based on influence from both the accrediting agency and state licensure examinations. These same influences may account for nurse-educators' frequent use of prior student evaluation instruments in their planning.

Mathematics instructors in our sample also reported heavy influence of college and program goals (50%). From our conversations with them we believe that this influence occurred in cases where college-wide decisions had instituted an introductory mathematics requirement. As a result, these instructors were obliged to teach general education students with deficient math preparation. Furthermore, in various colleges, mathematics courses considered to be "introductory" ranged from remedial mathematics (at levels generally taught in junior high school) to introductory calculus. Despite these varied levels of student preparation and subject focus, mathematics professors relatively infrequently (33.3%) mentioned that they considered student characteristics in course planning. Similarly and possibly due to the elementary nature of the courses, mathematics, business, and nursing instructors least often mentioned (0-8%) the inquiry mode of the discipline as a planning influence.

5.2.4.4 *Faculty Characterizations of Their Fields*

From a set of definitions of academic fields derived from prior literature, we asked faculty to select those that best characterized the field they teach. Table 16 highlights the mean faculty responses.

TABLE 16

Highlights of Faculty Characterizations of Their Academic Fields

CHARACTERIZATION	MEAN RATING[a]	BEST CHARACTERIZATION
A set of interrelated concepts and operations	2.5	25%
A mode of inquiry	2.4	30%
A body of knowledge	2.2	22%
A group of objects or phenomena to explain	1.8	12%
A group of scholars	1.6	11%
A set of interrelated interests and values	1.4	0%

[a] 1 = not a characterization; 4 = best characterization

As would be expected, substantial discipline differences were found as faculty members selected characterizations of their academic fields. Table 17 summarizes those descriptions selected by at least one faculty member in different fields. Table 18 gives detailed comparisons of the "best" and "second best" characterizations by college type, and Table 19 gives the information by academic field.

The information we gained about faculty views of their academic field cannot be fully discussed in a quantitative way. Therefore, we digress here from our summary of coded interview responses to highlight some issues that faculty aired as they described their courses to us and as they "thought aloud" when choosing the best characterization of their discipline. Not surprisingly, faculty members with scholarly credentials teaching in more selective institutions were more likely to discuss with us the substantive aspects of their courses. Faculty members with more limited preparation more often focused their open discussions on course implementation. This distinction also

TABLE 17

Summary of Faculty Characterizations of Their Academic Fields

ACADEMIC FIELD	CHARACTERIZATION					
	Mode of Inquiry	Body of Knowledge	Interrelated Concepts	Group of Individuals	Objects to Explain	Set of Interests and Values
Biology	X	X	X		X	
Sociology	X	X	X			
Mathematics	X	X				
Business		X	X			
Nursing		X	X			
History	X	X			X	
Literature	X			X		
Composition	X		X			

Note: X means that at least one faculty member espoused that characterization as describing the field they teach.

TABLE 18

Faculty Characterizations of Their Academic Fields (by College Type)

CHARACTERIZATION	ITEM NO.	COLLEGE TYPE[a]							
		Total (N=86)	2 year (n=32)	LA II (n=13)	Comp I (n=16)	LA I (n=9)	Doc (n=16)	F df=4,76 (N=81)	p[c]
Mode of Inquiry	44								
M		2.4	2.3	2.4	2.6	3.1	2.0	1.2	n.s.
SD		1.3	1.2	1.5	1.4	1.3	1.2		
Interrelated Interests	45								
M		1.4	1.5	1.2	1.5	1.1	1.3	1.3	n.s.
SD		0.7	0.7	0.4	0.8	0.3	0.6		
Objects to be explained	46								
M		1.8	1.5	1.6	2.2	2.3	1.9	1.6	n.s.
SD		1.1	1.0	1.0	0.9	1.4	1.2		
Group of individuals who share interests	47								
M		1.6	1.7	1.5	1.1	1.0	1.9	1.2	n.s.
SD		1.0	1.2	1.0	0.4	0.7	1.3		
Body of knowledge	48								
M		2.3	2.3	2.5	2.6	1.2	2.4	2.2	0.08
SD		1.2	1.2	1.0	1.4	0.4	1.4		
Interrelated concepts	49								
M		2.5	2.6	2.9	1.9	2.3	2.9	1.9	n.s.
SD		1.1	1.2	1.0	1.2	0.9	1.0		
		PERCENTAGE[b]							
Best characterization									
Mode of inquiry		30	21	39	40	56	14		
Interrelated interests/values		0	0	0	0	0	0		
Objects to be explained		12	10	8	7	33	14		
Group of individuals		11	17	8	0	0	21		
Body of knowledge		22	20	8	40	0	36		
Interrelated concepts		25	30	39	13	0	29		

[a] 1 = not mentioned; 4 = best characterization.

[b] Percents do not add to 100% because some respondents supplied a unique characterization or could not respond.

[c] n.s. = p >.10

was evident during our discussions about the nature of the academic field and about the amount of consensus among disciplinary scholars on teaching and inquiry issues. Faculty members who saw themselves as scholars in their field were readily able to articulate such issues for us while a few others either seemed unable to interpret our

TABLE 19

Faculty Characterizations of Their Academic Fields (by Academic Field)

CHARACTERIZATION	ITEM NO.	Total (*N*=86)	Bio (*n*=13)	Bus (*n*=9)	Comp (*n*=13)	Hist (*n*=8)	Lit (*n*=12)	Nurs (*n*=11)	Math (*n*=12)	Soc (*n*=8)	*F* *df*=7,73 (*N*=81)	*p*[c]
		ACADEMIC FIELD[a]										
Mode of inquiry	44											
M		2.4	2.5	1.8	3.4	2.8	2.7	1.3	2.6	2.4	3.1	0.01
SD		1.3	1.2	1.3	0.9	1.3	1.3	0.7	1.2	1.5		
Interrelated interests	45											
M		1.4	1.2	1.3	1.4	1.4	2.0	1.6	1.0	1.1	2.7	0.01
SD		0.7	0.6	0.5	0.5	0.7	0.9	0.8	0.0	0.4		
Objects to explain	46											
M		1.8	2.3	1.2	1.5	2.9	2.2	1.5	1.6	1.6	2.7	0.01
SD		1.1	1.2	0.4	0.9	1.1	1.2	0.9	0.9	1.2		
Group of individuals who share interests	47											
M		1.5	1.4	1.1	1.6	1.0	2.5	1.6	1.5	1.9	2.2	0.04
SD		1.0	0.9	0.3	0.9	0.0	1.4	1.2	0.8	1.1		
Body of knowledge	48											
M		2.3	2.7	3.3	1.2	2.1	1.1	2.9	2.6	2.4	6.7	0.00
SD		1.5	1.2	0.5	0.6	1.3	0.3	0.9	1.4	1.3		
Interrelated concepts	49											
M		2.5	2.4	3.1	3.0	1.9	1.6	3.2	2.4	2.6	3.0	0.01
SD		1.1	1.4	1.1	0.9	1.1	1.1	0.9	0.9	0.7		
		PERCENTAGE[b]										
Best characterization												
Mode of inquiry	44	30	27	22	55	38	36	0	27	38		
Interrelated interests	45	0	0	0	0	0	0	0	0	0		
Objects to be explained	46	12	17	0	9	38	18	9	0	13		
Group of individuals	47	11	8	0	9	0	36	18	0	13		
Body of knowledge	48	22	33	33	0	13	0	36	36	25		
Interrelated concepts	49	25	33	44	27	13	9	36	18	13		

[a] 1 = not mentioned; 4 = best characterization.
[b] Percentages do not total 100% because some respondents supplied a unique characterization or could not respond.
[c] n.s. = $p > .10$

question correctly or admitted unfamiliarity with recent research in the field they teach. Although the number of cases was small, we gained the distinct impression that faculty members currently pursuing doctoral work were likely to have especially high exposure to current issues and ferment in the disciplines.

Although we specifically sought evidence that students would be made aware of the methods of scholarship in the discipline as well as already accepted facts and principles, instructors in all fields told us rather clearly that they do not attempt to introduce students in beginning courses to the mode of inquiry of their field or to share with them current issues and controversies among scholars in the field. Repeatedly we heard, "If you were asking me about an advanced level course, I would answer quite differently."

The comments faculty members made about their "field" or "discipline" need major qualification for courses in English composition, nursing, and business administration. We found that discipline descriptions we had derived from the literature did not fit these applied studies well. Faculty members in these fields frequently were inclined to fill in the blank option we had provided and to discuss in some detail why and how their field differed.

Many English composition instructors emphasized that their field was *not* a discipline. Rather, they classified it either as a method of inquiry, skill development, or a type of

self-exploration. They saw themselves as teachers rather than disciplinarians. Whether they considered themselves "scholars" of the field or not, most teachers of English composition were able to articulate current controversies about how writing is best taught. Most placed themselves squarely in one current pedagogical camp or another. In a related question, teachers of English composition tended not to be able to view their field as conceptually close to or distant from specific other fields. They believe language use is interrelated with most fields (except perhaps mathematics, a quite different symbolic system).

Another distinct pattern was discussed by nursing instructors. Although their students could be either freshmen (in the community college) or juniors (in the four-year colleges), nursing instructors placed emphasis on skills needed to get students ready for a clinical experience. (In community colleges, the time allocated to this preparation was as short as eight weeks for new freshman.) At the same time, these faculty members saw nursing not as a set of skills but as a field with substantive and relational characteristics not unlike the traditional disciplines. They told us that they emphasized this substantive view to introductory students while socializing them into the professional role. Due to professional standards and accrediting criteria, these emphases are quite uniform across different campus settings. Nursing programs typically establish a comprehensive philosophy and attempt to follow it in course planning. Although they were unique in our sample in this respect, had we interviewed faculty in other service-oriented professional fields we may have discovered similar arrangements and influences.

In contrast to nursing courses, introductory courses in business administration, another applied field, were more eclectic and variable. These courses sometimes assumed the dual character of career counseling and disciplinary survey course. Faculty members teaching these courses found themselves trying to convey to many aspiring but uncertain students what the world of business is about. In doing so, they either chose topics according to their own notions or were handed a textbook already selected. There was little evidence of a coherent philosophy guiding introductory business courses.

5.2.5 Responses to Structured Questions

5.2.5.1 General Influences

To ascertain whether faculty would reaffirm course planning influences they had independently mentioned as important and to check the relative importance of some they neglected to mention, we asked them to rank a set of ten cards suggesting such influences. After sorting, they assigned a total of 100 points to the cards to indicate their relative influence, supplying additional influences on two blank cards if needed. Highlights of the overall results in order of the importance of planning influence are given in Tables 20 and 21. Detailed comparisons by college type and by academic field are given in Tables 22 and 23, respectively.

There are relatively few differences in the course planning influences as rated by faculty members in various types of colleges. We note, however, the tendency of faculty at Endowed Liberal Arts College to emphasize the discipline and to identify little influence from instructional experts. This pattern contrasts with the view of planning influences held by faculty members in Denominational Liberal Arts College and the community colleges.

The modest rating given to students' future plans in all colleges does not necessarily mean that such plans are unimportant. Rather faculty members teaching introductory general education courses often indicated that the diversity and flexibility of student

TABLE 20

Highlights—Relative Importance of Course Planning Influences

INFLUENCE	MEAN RATING[a]
Characteristics of the disicipline	16.4
Student characteristics	12.8
Instructor's own background	12.2
Program goals	9.8
Student's future plans	8.3
College goals	7.1
Available resources and facilities	6.0
Instructional expert views	5.7
Factors I can't control	5.0

[a] Minimum = 1 point; maximum = 100 points.

TABLE 21

Summary of Influence Strength in Course Planning

	ACADEMIC FIELD							
INFLUENCE	Bio	Bus	Comp	Hist	Lit	Nurs	Math	Soc
Characteristics of the discipline	XX	XX	XX	XX	X	XX	XX	X
Faculty beliefs	X	X	XX	XX	XX		XX	X
Student characteristics	X	X	X	X	XX	X	X	
Instructor's own background	X	X	X	XX	X		XX	X
Program goals	X	X				X		
Students' future plans						X	X	
College goals								
Available resources and facilities								
Instructional expert views								
Factors I can't control								

	COLLEGE TYPE				
	2-year	LA II	Comp I	LA I	Doc
Characteristics of the discipline	X	XX	XX	XX	XX
Faculty beliefs	X	X	XX	XX	X
Student characteristics	X	X	X	X	X
Instructor's own background	X	X		X	X
Program goals	X				
Students' future plans		X			
College goals					
Available resources and facilities			X		
Instructional expert views					
Factors I can't control					

Note: The Xs indicate the strength of an influence according to the number of points assigned to it on a 100 point scale: X = 10-15 points; XX = 15-20 points.

goals precluded knowing or considering varied plans at this level. In contrast, nursing and math instructors said they did not place heavy emphasis on student plans for quite different reasons. Since nursing instructors encounter students with more homogeneous plans, the plans seem to be taken for granted during course planning.

TABLE 22

Influences on Course Planning (by College Type)

INFLUENCE	ITEM NO.	COLLEGE TYPE[a] Total (N=86)	2-year (n=32)	LA II (n=13)	Comp I (n=16)	LA I (n=9)	Doc (n=16)	F df=4,81 (N=86)	p[b]
Discipline characteristics	57								
M		16.4	14.4	15.9	16.4	23.9	16.3	2.1	0.09
SD		9.0	7.9	7.9	8.1	8.2	11.4		
Own background	58								
M		12.2	12.3	13.2	9.8	11.7	14.0	0.9	n.s.
SD		6.9	7.2	5.7	5.8	7.3	7.9		
Own beliefs	59								
M		15.6	15.0	12.7	17.3	21.1	14.4	1.7	n.s.
SD		8.3	7.9	6.9	8.8	7.8	9.2		
Views of instructional experts	60								
M		5.7	7.3	7.7	4.5	1.9	4.4	3.6	0.01
SD		5.0	5.8	3.3	4.8	1.8	4.1		
Factors I cannot control	61								
M		5.0	3.9	4.8	4.8	4.9	7.6	1.0	n.s.
SD		6.2	3.8	1.8	5.7	3.4	11.7		
Student characteristics	62								
M		12.8	13.3	12.5	12.8	12.8	12.3	0.1	n.s.
SD		6.9	7.3	5.2	7.8	6.2	7.3		
Students' future plans	63								
M		8.3	8.9	10.2	6.3	5.3	9.3	1.5	n.s.
SD		6.1	6.2	5.1	6.6	6.3	5.8		
College goals	64								
M		7.1	5.8	9.7	7.5	5.9	7.8	0.8	n.s.
SD		7.1	4.0	5.4	7.3	5.5	12.2		
Program goals	65								
M		9.5	10.1	7.2	9.9	8.9	10.1	0.5	n.s.
SD		7.0	6.0	5.0	10.1	5.1	7.9		
Available resources	66								
M		6.0	7.1	4.9	6.3	4.2	5.6	1.0	n.s.
SD		4.8	5.3	3.5	6.4	3.5	2.8		

[a] Minimum = 1; maximum = 100.
[b] n.s. = p>.10

Yet another reason for not considering student plans was expressed by instructors in mathematics: They felt that the world will demand some mathematical competence for all students, although the students may not perceive it yet.

Since there were ten cards in this card sort and faculty members were asked to distribute 100 points, influences receiving more than ten points could be considered to have "greater than average" influence on course planning while those receiving at least 15 points could be said to have "strong" influence. In Table 21 we have used these somewhat arbitrary parameters to present a capsule view of the patterns of influences on course planning by academic field and college type.

Judging from information summarized in Tables 20 to 23, faculty members in history are influenced by the discipline while literature teachers perceive less such discipline influence. While composition faculty members were the group most insistent about relying heavily on their own beliefs as an influence, history and literature faculty members also frequently admitted that their own background and beliefs influence their planning. Literature teachers emphasized the importance of student characteris tics; history, mathematics, and biology instructors are the least likely to consider the opinions of instructional experts. Probably due to the number of teachers of obligatory remedial math courses included in our sample, mathematics instructors appear to consider college goals as well as other factors beyond their direct control as influential.

TABLE 23

Influences on Course Planning (by Academic Field)

INFLUENCE	ITEM NO.	ACADEMIC FIELD[a] Total (*N*=86)	Bio (*n*=13)	Bus (*n*=9)	Comp (*n*=13)	Hist (*n*=8)	Lit (*n*=12)	Nurs (*n*=11)	Math (*n*=12)	Soc (*n*=8)	*F* *df*=7,78 (*N*=86)	*p*[b]
Discipline characteristics	57											
M		16.3	17.0	16.1	16.7	20.9	12.7	18.8	15.1	14.5	0.8	n.s.
SD		9.0	5.1	7.0	9.8	7.4	5.9	12.6	7.4	15.0		
Own background	58											
M		12.2	10.9	11.8	10.2	18.9	13.7	7.4	15.3	11.3	2.9	0.01
SD		6.9	6.0	6.2	7.4	5.7	3.8	4.5	9.2	6.2		
Own beliefs	59											
M		15.6	12.6	12.0	18.0	18.6	22.0	9.6	16.8	14.5	3.2	0.01
SD		8.3	9.5	5.2	8.1	6.4	6.5	2.3	9.6	10.0		
Views of instructional experts	60											
M		5.7	4.0	8.2	7.4	1.6	6.8	6.6	3.8	7.4	2.3	0.04
SD		5.0	4.3	6.1	5.8	1.4	4.9	2.8	2.8	7.3		
Factors I can't control	61											
M		5.0	4.0	4.8	4.0	5.0	4.3	4.3	7.6	6.4	0.5	n.s.
SD		6.2	3.5	3.2	2.1	4.3	5.7	1.1	13.6	6.8		
Student characteristics	62											
M		12.8	10.9	11.8	13.5	14.3	17.4	10.7	13.7	9.6	1.5	n.s.
SD		6.9	6.6	6.4	6.5	6.8	6.6	6.7	8.0	6.0		
Students future plans	63											
M		8.3	9.9	8.4	5.6	6.8	6.5	10.3	10.1	8.8	1.0	n.s.
SD		6.1	6.6	6.0	3.3	5.4	5.9	5.7	8.7	5.9		
College goals	64											
M		7.1	7.2	7.6	5.5	5.3	7.0	8.2	9.3	5.8	0.4	n.s.
SD		7.1	4.4	5.3	4.1	5.0	8.1	7.1	13.5	3.0		
Program goals	65											
M		9.5	13.5	12.9	9.2	5.3	7.7	14.7	5.9	5.3	3.8	0.00
SD		7.0	9.7	6.0	6.0	5.0	5.1	6.6	5.0	3.4		
Available resources	66											
M		6.0	8.8	9.4	3.9	3.6	3.5	7.6	4.8	6.9	3.3	0.00
SD		4.8	4.6	5.3	2.8	3.5	5.5	3.4	5.0	4.3		

[a] Minimum = 1; maximum = 100.
[b] n.s. = p>.10

Program goals were not rated as a particularly strong influence by most faculty, but a note is in order. Relatively early in our interviews we used an additional exploratory probe that asked faculty members to react to a number of potential program goals, which we posited as polar opposites. We told faculty members we were exploring with these probes and asked them to tell us how they felt about these continua rather than to rigorously classify their program on these dimensions. This was a way to get faculty members talking about goals and influences in general, as well as a way to discover what the salient dimensions of program goals might be for faculty. In general, we found that faculty members did not articulate program goals clearly. In addition, we found that some of our phrasing, drawn from prior literature, was relatively meaningless to faculty members. Thus, we experimented by changing the continua as we proceeded through the interviews, making it impossible to present coded data. Therefore, we report only some general impressions.

One impression was that, as they discussed their program emphasis and goals, faculty members seemed to separate themselves from their organizational units as if they belonged to some other organization. To illustrate, a common response was, "I guess, officially, we would be viewed as stressing X but personally, I think I would differ from my colleagues in wishing to stress Y." A second impression was that almost no program is seen by its faculty members as espousing a single philosophy or educational purpose. A program typically has multiple goals—teaching and research, altru-

ism and entrepreneurship, preparation for life, and preparation for graduate school, etc. In particular, we noted that faculty objected strenuously to a continuum derived from Dressel's work that posed subject-centered goals against student-centered goals as opposite ends of the continuum. A third impression was that faculty members preferred the term "general education" to describe a program role relative to all students; they felt language implying that they or their program provided "service" to others was pejorative.

There were two major exceptions to faculty ambiguity about program goals. One was at Midwest Doctoral University, an institution where close coordination of introductory courses is exercised by most departments, including common syllabi, examinations, and textbooks. Clearly program goals receive a great deal of discussion in this setting. As mentioned earlier, the second case was in nursing, an applied field where external examinations or other standards are influential and are implemented by a program consensus philosophy.

At a broader level, we found that faculty members tended to take the goals of their institutions for granted. Since college goals are part of the everyday context which unobtrusively affect the way they plan courses, faculty may not pay very much attention to them. The college goals probably affect course planning indirectly through other mediators such as student characteristics and program goals as well. The primary exception was Denominational Liberal Arts College where many faculty members mentioned the effect the college mission had on course design.

5.2.5.2 Selection of Course Content

Anticipating that academic discipline would be a major influence on course planning, we asked faculty to rank and assign 100 points showing relative importance to a series of statements about their rationale for selecting particular course content for their introductory courses. We were especially concerned with detecting evidence of faculty attention to integrating concepts (as discussed by cognitive psychologists) and to exposing students to the modes of inquiry of the disciplines (as recommended by the AAC report, *Integrity in the College Curriculum, 1985*). Highlighted results of this card sort are given in Tables 24 and 25; detail by field and college type are given in Tables 26 and 27.

Note that since 100 points were to be distributed, an item of average importance would receive a score of 11 points. Table 25 uses the same scheme as did Table 21 to graphically illustrate the degree of emphasis given by instructors in various disciplines and college types to each reason for selecting course content.

The nine reasons we presented to faculty for selecting course content received relatively similar ratings. Most of these reasons tended to be relatively important to faculty members, and it was often difficult for them to rank some reasons higher than others. There were no statistically significant differences in the way faculty teaching in different types of colleges rated the reasons although there were slight tendencies for faculty in the less selective colleges to give more emphasis to student readiness for learning. Additionally, although most felt that the introductory course was not the place where research ideas of the field are to be introduced, faculty at more selective colleges more often emphasized the research questions in the field. Most faculty objected to the idea that they would choose content based solely or primarily on student enjoyment or readiness to learn. More often than others, however, sociology and history teachers (who saw their fields as not particularly popular with today's students) said they would choose topics that students enjoy and readily learn so that they could connect with the student's world.

TABLE 24

Highlights—Specific Influences on the Selection of Course Content

INFLUENCE	MEAN RATING*
Fundamental concept of discipline	14.1
Helps students accumulate knowledge into whole	12.8
Stimulates search for meaning	12.0
Interrelates concepts into larger whole	11.0
Useful in solving problems	10.7
Encourages learning on own	10.0
Students enjoy topic	9.5
Based on research concept in field	6.7
Students readily learn	6.6

* Minimum = 1; maximum = 100.

TABLE 25

Summary of Influence Strength in Selecting Content for Introductory Courses

	INTRODUCTORY COURSE							
INFLUENCE	Bio	Bus	Comp	Hist	Lit	Nurs	Math	Soc
Fundamental concept of discipline	XX	XX		XX		XX	X	
Helps students accumulate knowledge into whole	X	X	X	X		X	XX	X
Stimulates search for meaning		X	X	X	XX			X
Interrelates concepts into larger whole	X		X			X	X	
Useful in solving problems	X					X	XX	
Encourages learning on own			X		X			
Students enjoy topic					X			
Based on research concept in field				X				
Students readily learn								

	COLLEGE TYPE				
	2-year	LA II	Comp I	LA I	Doc
Fundamental concept of discipline	X	X	X	X	X
Helps students accumulate knowledge into whole	X	X	X	X	X
Stimulates search for meaning	X		X	X	
Interrelates concepts into larger whole		X		X	X
Useful in solving problems	X	X		X	
Encourages learning on own			X	X	
Students enjoy topic					
Based on research concept in field					
Students readily learn					

Note: X = 11-16 points; XX = 16-21 points.

Composition and literature teachers, in particular, had difficulty with this list of reasons for selecting course content. For example, they felt there were not fundamental concepts in their field to be interrelated or ideas to be developed hierarchically; rather, a search for meaning, an attempt to create knowledge, or encouraging independent learning provide the rationale for choosing content in these courses. Mathematics,

TABLE 26

Influences on Course Content Choice (by College Type)

INFLUENCE	ITEM NO.	COLLEGE TYPE[a] Total (*N*=86)	2-year (*n*=32)	LA II (*n*=13)	Comp I (*n*=16)	LA I (*n*=9)	Doc (*n*=16)	*F* *df*=4,81 (*N*=86)	*p*[b]
Students readily learn	69								
M		6.6	7.9	6.2	5.4	3.8	6.9	1.4	n.s.
SD		5.2	6.2	4.3	4.4	3.7	4.8		
Fundamental concept of discipline	70								
M		14.1	14.9	15.7	12.1	13.1	13.9	0.3	n.s.
SD		10.4	10.0	9.8	12.0	10.8	10.9		
Students enjoy topic	71								
M		9.5	10.7	8.7	8.8	7.9	9.2	0.5	n.s.
SD		6.5	7.8	4.2	6.4	4.3	6.3		
Based on research concept in field	72								
M		6.7	5.7	7.4	5.4	8.9	8.2	1.3	n.s.
SD		5.4	4.0	5.6	4.9	6.7	6.9		
Stimulates search for meaning	73								
M		12.0	13.0	9.5	12.6	13.8	10.6	0.6	n.s.
SD		8.5	8.5	5.7	10.7	9.7	7.6		
Encourages learning on own	74								
M		10.0	8.9	8.9	12.7	11.1	9.8	0.7	n.s.
SD		7.8	7.0	6.6	11.6	6.2	6.6		
Interrelates concepts into larger whole	75								
M		11.0	9.5	12.5	9.9	15.0	11.8	0.7	n.s.
SD		9.5	9.4	5.7	7.1	17.7	8.0		
Useful in solving problems	76								
M		10.7	11.4	11.9	9.8	11.0	9.1	0.4	n.s.
SD		7.2	7.9	6.6	6.3	7.5	7.3		
Helps students accumulate knowledge into whole	77								
M		12.8	12.0	12.5	12.3	13.6	14.9	0.4	n.s.
SD		7.4	8.1	6.1	7.2	8.9	6.4		

[a] Minimum = 1; maximum = 100.
[b] n.s. = p>.10

nursing, and composition teachers all viewed problem solving as an important reason for selecting content, but it was clear that the term "problem solving" held different meanings for these faculty members teaching in different fields.

5.2.6 Faculty Beliefs About Educational Purpose

Faculty were asked to sort a set of six cards describing conceptions of educational purpose that might guide course planning decisions. (As indicated earlier, these descriptions were based, in large part, on the work of Eisner and Vallance, 1974.) The higher ranked card was assigned six points and the lowest ranked card was assigned one point. Accordingly, in interpreting the results, it should be remembered that the degrees of freedom to rank the cards diminished after each preceding rank had been assigned. Furthermore, we can not assume that the interval between any two cards equals the interval between any other two cards. In fact, faculty frequently found two or three cards quite akin to their beliefs while two or more other cards seemed alien to them. In the end, then, the number of points assigned gives only a rough estimate, subject to further confirmation using Likert scales.

TABLE 27

Influences on Course Content Choice (by Academic Field)

INFLUENCE	ITEM NO.	ACADEMIC FIELD[a] Total (*N*=86)	Bio (*n*=13)	Bus (*n*=9)	Comp (*n*=13)	Hist (*n*=8)	Lit (*n*=12)	Nurs (*n*=11)	Math (*n*=12)	Soc (*n*=8)	*F* *df*=7,78 (*N*=86)	*p*[b]
Students readily learn	69											
M		6.6	6.3	9.6	4.0	8.6	8.4	6.1	3.6	8.0	2.1	0.05
SD		5.2	3.5	4.5	3.8	6.6	5.2	6.1	3.5	7.3		
Fundamental concept of discipline	70											
M		14.1	21.6	16.0	6.7	17.3	7.4	24.3	11.7	8.6	7.0	0.00
SD		10.4	10.8	5.9	5.6	7.7	5.8	11.4	10.3	7.1		
Students enjoy topic	71											
M		9.5	7.2	9.4	10.0	9.9	12.8	8.7	8.4	9.4	0.8	n.s.
SD		6.5	3.1	5.2	6.9	6.3	7.9	4.5	9.0	6.7		
Based on research concept in field	72											
M		6.7	8.0	8.0	6.0	12.0	3.8	6.9	3.0	8.6	3.4	0.00
SD		5.4	4.0	5.0	5.6	7.8	3.5	3.7	4.8	5.0		
Stimulates search for meaning	73											
M		12.0	10.2	12.7	15.6	15.9	18.5	8.3	4.1	12.0	4.4	0.00
SD		8.5	7.1	11.2	9.0	8.4	8.2	2.5	5.0	5.8		
Encourages learning on own	74											
M		10.0	9.3	8.9	14.6	7.9	13.8	6.9	8.8	7.5	1.7	n.s.
SD		7.8	4.4	4.7	9.0	5.7	7.3	4.1	3.7	4.2		
Interrelates concepts into larger whole	75											
M		11.0	12.5	9.4	13.1	10.3	7.6	12.5	12.9	8.3	0.6	n.s.
SD		9.5	3.2	6.0	13.4	8.1	5.8	7.3	16.5	7.1		
Useful in solving problems	76											
M		10.7	11.4	9.7	10.9	6.1	9.9	11.9	15.0	8.4	1.4	n.s.
SD		7.2	4.4	3.3	8.6	5.9	7.7	6.2	10.4	5.3		
Helps students accumulate knowledge into whole	77											
M		12.8	14.0	14.6	12.6	11.9	10.3	13.4	11.4	15.6	0.6	n.s.
SD		7.4	4.0	5.1	8.4	7.0	7.3	6.1	9.2	11.3		

[a] Minimum = 1; maximum = 100.
[b] n.s. = p>.10

The majority of faculty members interviewed felt that the card we labeled "development of effective thinking" was most like their beliefs about educational purpose. Contrary to results reported by Dressel, a substantial number of faculty members also endorsed as a first or second choice the description labeled "social change" that referred to the purpose of education as "making the world a better place." At the opposite pole, the description implying that the purpose of collegiate education is determined by forces external to faculty members, leaving them little choice in their context, was unacceptable to most.

We believe it is useful to characterize the faculty educational purpose orientation as an interrelated pair of educational beliefs. Tables 28 and 29 give the overall mean rankings of the cards as well as the percentage of faculty members selecting various belief pairs. Note that the belief that education should teach effective thinking is variously paired with beliefs in social change, in systematic instruction, or in learning about the great ideas and discoveries of humankind. Within the limits of the options we offered, these pairs of beliefs seem to constitute the primary orientations of educational purpose among faculty.

Tables 30 and 31 provide comparisons by college type and academic field, respectively. Differences in educational belief seem related to the type of institution in two respects.

TABLE 28

Highlights—Mean Ranking Assigned to Each of Six Educational Beliefs

EDUCATIONAL BELIEFS	MEAN RANKING[a]
Effective thinking	5.4
Social change	4.4
Systematic instructional process	3.5
Great ideas/discoveries	3.1
Personal enrichment	3.1
Pragmatic constraints	1.6

[a] Minimum ranking = 1; maximum ranking = 6.

TABLE 29

First and Second Choices of Preferred Educational Beliefs

	SECOND-RANKED PREFERENCE							
FIRST-RANKED PREFERENCE	Social Change	Effective Thinking	Systematic Instruction	Pragmatic Constraints	Personal Enrichment	Great Ideas & Discoveries	*N*	%
Social change	—	14	0	0	2	2	18	22.0
Effective thinking	22	—	15	1	1	10	49	59.8
Systematic instruction	1	1	—	0	0	0	2	1.2
Pragmatic constraints	1	0	1	—	0	0	2	2.4
Personal enrichment	1	3	1	0	—	0	5	6.1
Great Ideas/discoveries	2	4	1	0	0	—	7	8.5
N	27	22	18	1	3	12	83	—
%	32.9	26.8	22.0	1.2	3.7	14.6	—	100.0

In our sample, instructors at Endowed Liberal Arts College placed less emphasis on "social change" as a purpose of education and more emphasis on teaching students about the "great ideas and discoveries" humans have made. The emphasis on great ideas was, of course, strongest among history faculty members. Not surprisingly, faculty members in literature were most likely to emphasize personal enrichment.

After discussing the rankings of these purpose descriptions with faculty members, we find we have omitted at least two educational belief sets that are important to particular groups of faculty—preparation for direct career entry and development of values or religious commitment. While these beliefs are ostensibly covered by a broad definition of "problem solving," it is possible that some faculty members also might endorse a specific focus on developing useful skills in a noncareer context, that is, "education for life."

5.2.7 Preferences for Arranging Course Content

In a card sort technique like that used for educational beliefs, we asked faculty to rank the methods of arranging course content according to how closely the methods resembled the way they arranged their introductory course. Again, a rating of six was assigned to the sequencing method most like that of the faculty member's own practice and a rating of one to that least like the respondent's course. As discussed previously, five of the six sequencing descriptions were based on the work of Posner and Strike. The overall results are summarized in Tables 32 and 33 while details by field and by college type are given in Tables 34 and 35.

TABLE 30

Faculty Educational Beliefs (by College Type)

EDUCATIONAL BELIEFS	ITEM NO.	COLLEGE TYPE[a] Total (N=86)	2 year (n=32)	LA II (n=13)	Comp I (n=16)	LA I (n=9)	Doc (n=16)	F df=4,77 (N=82)	p*
Social change	103								
M		4.4	4.6	4.5	4.1	3.1	4.7	2.1	0.09
SD		1.4	1.5	1.2	1.4	1.1	1.4		
Effective thinking	104								
M		5.4	5.2	5.3	5.6	5.6	5.7	1.4	n.s.
SD		0.8	0.8	1.3	0.6	0.7	0.6		
Sytematic instruction	105								
M		3.5	3.7	3.3	3.3	3.4	3.7	0.5	n.s.
SD		1.2	1.2	1.6	1.1	1.1	1.0		
Pragmatic constraints	106								
M		1.6	1.6	1.5	1.5	1.5	2.0	0.4	n.s.
SD		1.3	1.4	0.8	0.9	1.4	1.5		
Personal enrichment	107								
M		3.1	3.3	3.3	2.5	3.3	3.1	0.9	n.s.
SD		1.4	1.4	1.3	1.4	1.5	1.2		
Great ideas/discoveries	108								
M		3.1	2.7	3.0	3.9	4.3	2.5	4.3	0.00
SD		1.5	1.1	1.6	1.4	1.6	1.6		

[a] Minimum = 1; maximum = 6.
* n.s. = p>.10

TABLE 31

Faculty Educational Beliefs (by Academic Field)

EDUCATIONAL BELIEFS	ITEM NO.	ACADEMIC FIELD[a] Total (N=86)	Bio (n=13)	Bus (n=9)	Comp (n=13)	Hist (n=8)	Lit (n=12)	Nurs (n=11)	Math (n=12)	Soc (n=8)	F df=7,74 (N=82)	p*
Social change	103											
M		4.4	4.0	4.9	4.2	4.1	4.2	5.1	3.7	4.9	1.3	n.s.
SD		1.4	1.7	1.3	1.3	1.3	1.7	1.0	1.6	1.0		
Effective thinking	104											
M		5.4	5.3	5.7	5.8	5.4	4.9	5.5	5.3	5.6	1.1	n.s.
SD		0.8	0.8	0.5	0.6	1.2	1.1	0.7	0.9	0.5		
Systematic instruction	105											
M		3.5	3.8	3.7	3.3	3.3	3.1	4.4	3.6	3.1	1.5	n.s.
SD		1.2	1.3	1.3	1.2	1.2	0.9	0.7	1.3	1.0		
Pragmatic constraints	106											
M		1.6	1.7	1.2	1.0	1.8	1.4	2.2	2.6	1.1	2.4	0.03
SD		1.3	0.9	0.7	0.0	1.2	0.9	2.1	1.8	0.4		
Personal enrichment	107											
M		3.1	2.2	3.4	3.9	2.6	4.6	2.9	2.1	3.4	6.4	0.00
SD		1.4	0.9	0.7	0.9	1.4	1.5	1.3	1.1	0.7		
Great ideas/discoveries	108											
M		3.1	4.0	2.3	2.9	4.3	2.8	1.9	3.8	2.9	3.9	0.00
SD		1.5	1.5	0.7	1.2	1.3	1.4	0.6	1.8	1.6		

[a] Minimum = 1; maximum = 6.
* n.s. = p>.10

Although the limitations of the card-sort technique and the slightly different group of faculty on each campus must be kept in mind, the striking finding from this card sort is that no major differences occurred among faculty teaching in different college types. In contrast, substantially different ways of arranging course content characterized faculty in different academic fields.

TABLE 32

Highlights of Preferred Method of Sequencing Content for Introductory Course

SEQUENCE METHOD	MEAN RANKING*	FIRST CHOICE
Conceptually-based	5.0	48%
Learning-based	4.1	17%
Knowledge utilization	3.5	9%
Structurally-based	3.3	18%
Knowledge creation	3.1	8%
Pragmatic	2.0	4%

* Minimum ranking = 1; maximum ranking = 6.

TABLE 33

First and Second Choices of Preferred Sequencing Methods

	SECOND-RANKED PREFERENCE							
FIRST-RANKED PREFERENCE	Structurally Based	Concept Based	Knowledge Creation	Learning Based	Knowledge Use	Pragmatic	*N*	%
Structurally-based	—	7	3	4	0	0	14	17.5
Conceptually-based	7	—	5	16	9	0	37	46.3
Knowledge creation	0	2	—	1	3	0	6	7.5
Learning-based	1	7	1	—	5	0	14	17.5
Knowledge utilization	1	3	2	1	—	0	7	8.8
Pragmatic	1	1	0	0	0	—	2	2.5
N	10	20	11	22	17	0	80	—
%	12.5	25	13.8	27.5	21.3	0	—	100.1

TABLE 34

Preferred Ways of Sequencing Course Content (by College Type)

		COLLEGE TYPE*							
SEQUENCING METHOD	ITEM NO.	Total (N=86)	2-year (n=32)	LA II (n=13)	Comp I (n=16)	LA I (n=9)	Doc (n=16)	F df=4,74 (N=79)	p^*
Structurally-based	89								
M		3.3	3.1	3.3	3.6	3.7	3.0	0.4	n.s.
SD		1.8	1.8	1.4	1.8	1.9	2.1		
Conceptually-based	90								
M		5.0	4.7	5.7	5.1	5.3	4.8	1.7	n.s.
SD		1.3	1.4	0.5	1.1	0.9	1.6		
Knowledge creation	91								
M		3.1	3.2	2.3	3.3	3.5	3.4	1.1	n.s.
SD		1.5	1.5	1.1	1.3	1.3	2.0		
Learning-based	92								
M		4.1	4.6	4.2	3.8	3.8	3.8	1.2	n.s.
SD		1.4	1.0	1.6	1.8	1.4	1.7		
Knowledge utilization	93								
M		3.5	3.6	3.5	3.1	3.5	3.7	0.4	n.s.
SD		1.5	1.6	1.3	1.4	1.7	1.4		
Pragmatic	94								
M		2.0	2.0	1.9	2.1	1.8	2.3	0.4	n.s.
SD		1.3	1.3	1.2	1.5	1.2	1.4		

* Minimum = 1; maximum = 6.
* n.s. = p>.10

TABLE 35

Preferred Ways of Sequencing Course Content (by Academic Field)

SEQUENCING METHOD	ITEM NO.	ACADEMIC FIELD[a] Total (*N*=86)	Bio (*n*=13)	Bus (*n*=9)	Comp (*n*=13)	Hist (*n*=8)	Lit (*n*=12)	Nurs (*n*=11)	Math (*n*=12)	Soc (*n*=8)	*F* df=7,71 (*N*=79)	*p*[b]
Structurally-based	89											
M		3.3	4.0	3.7	2.1	6.0	3.2	2.6	2.4	2.6	6.7	0.00
SD		1.8	1.6	1.2	1.5	0.0	1.8	1.7	0.9	1.8		
Conceptually-based	90											
M		5.0	5.3	5.8	4.7	4.5	3.8	5.1	5.6	5.4	3.2	0.01
SD		1.3	1.2	0.7	1.0	1.1	1.8	0.8	0.9	1.1		
Knowledge creation	91											
M		3.1	3.3	2.3	3.9	3.1	3.2	1.6	3.8	3.4	3.1	0.01
SD		1.5	1.4	1.0	1.4	1.2	1.7	0.7	1.2	2.1		
Learning-based	92											
M		4.1	3.2	3.8	5.0	2.9	4.4	4.8	4.7	4.0	3.4	0.00
SD		1.4	1.4	1.6	1.3	1.6	1.1	1.4	0.9	1.1		
Knowledge utilization	93											
M		3.5	3.2	3.4	3.8	2.7	4.1	3.7	3.3	3.5	0.7	n.s.
SD		1.5	1.5	1.5	1.2	1.4	2.0	1.7	1.4	1.1		
Pragmatic	94											
M		2.0	2.0	2.0	2.1	2.1	2.4	2.3	1.3	2.0	0.8	n.s.
SD		1.3	1.5	1.3	1.7	1.0	1.6	1.3	0.5	0.9		

[a] Minimum = 1; Maximum = 6.
[b] n.s. = $p > .10$

Most noticeably, history professors unanimously chose structurally-based sequencing (in their case, chronological treatment of their subject). In contrast to their colleagues in history, teachers in mathematics and biology generally preferred to arrange their material according to organizing concepts. Finally, faculty members in literature and composition more often took a learner-based approach to content organization.

Once again, at least for these introductory courses, instructors were unlikely to indicate that students should pursue their subject by inquiry methods to discover knowledge as scholars have done. Rather they believed these beginning students need to acquire many more skills, concepts, and principles before they are ready to inquire after truth themselves. Only in composition was the inquiry-based description we called "knowledge creation" considered appropriate. In this case, however, we learned that the teachers viewed the commitment of students' thoughts to paper as "inquiry." Thus, to English instructors the term took on a somewhat different meaning than might be used by traditional scholars in other fields.

Last, while they admitted that schedules, budgets, and similar factors do affect their teaching, relatively few faculty members believed that their course arrangement was substantially determined by pragmatic factors.

5.2.8 Relationships of Influence Variables to Course Planning Decisions

In this research, our ultimate goal was to understand which factors influence course planning decisions. Referring back to the contextual filters model of course design (Figure 3, p. 31), the independent (or predictor) variables in course planning are the sets of potential influences on the left side of the flow chart. The critical dependent variables are the five (or possibly more) types of decisions that faculty members make in course design—shown in a closed loop at the right of the figure.

Thus far in our exploratory interviews, we have measured dependent variables in two crude ways. In one case, with respect to some decisions in course planning (establish-

ing course objectives, selecting activities, selecting materials, and choosing subject matter), our crude measures do not tell us which specific alternatives faculty chose. The measures merely tell us (1) whether or not the faculty member independently mentioned having considered decision alternatives and (2) an estimate of the degree of emphasis the faculty member gave to this deliberation. Thus, as extremely rough dependent variables, we can use our judgments of the emphasis faculty placed on broad decision categories as they described their planning to us.

For two other dependent variables (decisions about organization of subject matter and instructional mode) we have measures that are slightly more refined because we structured the alternatives for faculty. Although faculty members seldom independently mentioned making conscious decisions about the way content should be sequenced in their course or about the extent to which they would lecture, we know they did make such decisions. In card sorts and in answering specific questions, they provided us with categorical data about the decision results. Of course, this rough categorical data is skewed by the ranking technique we used in the interviews and by omission of crucial categories.

In order to get ideas of fruitful avenues to pursue in the future, we explored these rough proxies for dependent variables to estimate relationships of the independent and dependent variables in the course planning model. In seeking potential patterns, we (1) examined the intercorrelations among variables and (2) conducted a crude hierarchical multiple regression. Based particularly on the correlations, we developed tentative descriptive vignettes of faculty members who typically might prefer certain types of course sequencing. These vignettes are hypotheses rather than conclusions.

5.2.8.1. Bivariate Correlations Among Variables

Because of the large number of variables coded from the interview data, the total intercorrelation matrix is extensive. The data are too tenuous and the samples too small for use of data reduction techniques such as factor analysis that would allow a parsimonious treatment. We sought to retain for further examination only correlations that seemed to point to influence factors that may continue to be meaningful in the forthcoming survey data. In Tables 36 and 37 we present selected correlations of course-planning influences with the two available sets of dependent variables, namely sequencing preferred (Table 36) and broad decision categories mentioned in the interview (Table 37). Selected for inclusion in the table were correlations above .20, approximately a .10 level of statistical significance, for 70 nonmissing cases.

Numerous patterns that confirm common sense or suggest further exploration can be discerned from these correlations. For example, in Table 36 it is not surprising to find that faculty members who have had courses in education, attended instructional workshops, and presented their teaching materials to others at conferences are somewhat more likely than their colleagues to select a "learning-based" arrangement of course content and to use student evaluations in their planning. The intuitively logical correlations of sequencing choices with dummy variables representing the academic fields provide face validity.

5.2.8.2 Exploratory Regression Analyses

In Tables 38 and 39 we present an overview of exploratory hierarchical multiple regressions of 11 different dependent variables (five independent mentions of planning decisions and six course-content arrangements) on various influence measures. We introduced the influence measures in meaningful sets as they might enter into a faculty member's course planning process. Following our contextual filters model (Figure 3), we first included the faculty member's personal background, then specific

TABLE 36

Correlates of the Ways of Arranging Course Content

CONTENT ARRANGEMENT	ITEM NO.	METHOD: Structurally Based V89	Concept Based V90	Knowledge Creation V91	Learning Based V92	Knowledge Use V93	Pragmatic V94
Mentions of planning factors							
Choose materials	25			25			
Set goals/objectives	28					25	
Mentions of planning influence							
Discipline structure	35						-25
Student evaluations	42			-25	21		
Definitions of academic field							
Mode of inquiry	44			29			-20
Set of values	45		-25				20
Set of objects to explain	46	44			-35		
Group of scholars	47		-30			38	
Body of knowledge	48		27	-28			21
Interrelated concepts	49	-30	40	-21			
Specific influences on planning							
Own background	58	26					
Beliefs about education	59		-24				
Instructional experts	60	-21			37		
Constraints	61			31			
Student plans	63		26				
College goals	64						34
Program goals	65			-29			
Resources/facilities	66		24				20
Influences on content selection							
Student readiness	69						30
Fundamental concept	70			-31			
Stimulate search for meaning	73		-34			25	
Encourage self-learning	74		-24				
Problem solving	76	-20				45	
Educational beliefs							
Social change	103					28	
Pragmatic	106					-32	
Personal enrichment	107		-22			29	
Discover great ideas	108	26				-29	
Person/situation factors							
Class size	14				28		22
Courses in education	118	-31			29		
Teaching workshops	119	-41			35		
Presented conferences	122		21		31		
Academic field dummy							
Biology	141						
Business	142			-20			
Composition	143				21		
History	144	39					
Literature	145		-35				
Nursing	146			-34			
Mathematics	147						

Notes: Only items with correlations above .20 are shown in table. Decimal points are omitted. V is an abbreviation for variable number, referring to the coded interview. $N = 70$ after listwise deletion of missing values.

educational/professional variables that might influence educational beliefs. Next, we looked at existing beliefs, views of the discipline, a dummy variable representing the actual disciplines, and finally, factors from the local context (including institutional type, size, and class size). The detailed variable sets are given in Appendix VI.

These regression models, based on tentative data, are encouraging because they suggest that it may be possible to understand some chosen course sequencing patterns from knowledge of other factors that influence faculty members' planning. We will reexamine these patterns when more representative data are gathered. To form a

TABLE 37

Correlates of the Decisions in Course Planning

		DECISION FACTORS MENTIONED SPONTANEOUSLY				
CONTENT ARRANGEMENT	ITEM NO.	Discipline V24	Materials V25	Activities V26	Students V27	Goals V28
Mentions of planning influence						
Discipline structure	35					31
Student evaluations	39				23	
Definitions of academic field						
Mode of inquiry	44		30			
Set of objects to explain	46			-24		
Body of knowledge	48		-20			
Specific influences on planning						
Beliefs about education	59		25			
Instructional experts	60		-21			
Student characteristics	62				31	
Student plans	63				21	-22
Program goals	65					
Influences on content selection						
Fundamental concept	70					
Students enjoy learning	71				32	
Encourage self-learning	74		33			
Educational beliefs						
Systematic instruction	105		-22			24
Pragmatic	106				-21	
Personal enrichment	107				39	
Discover great ideas	108			-24	-23	
Person/situation factors						
Class size	14	-22		-26		
Teaching workshops	119			29		
Presented conferences	122				22	
Academic field dummy						
Biology	141				-20	
Business	142			26		
Composition	143			45		
Nursing	146	-23		32		21

Notes: Only items with correlations above .20 are shown in table. Decimal points are omitted. V is an abbreviation for variable number, referring to the coded interview. $N = 70$ after listwise deletion of missing values.

TABLE 38

Regression of Independent Mention of Planning Factors on Sets of Potentially Influential Variables

	R^2				
VARIABLE SET ADDED	Discipline V24	Materials V25	Activities V26	Students V27	Goals V28
Personal variables	0.1	0.0	0.0	0.0	0.0
Professional variables	0.1	0.1	0.1	0.2[a]	0.1
Educational beliefs	0.2	0.2	0.2	0.3	0.2
Views of disipline	0.2	0.3	0.3	0.4	0.2
Discipline dummy	0.4	0.4	0.6[a,b]	0.4	0.3
Context factors	0.6[a,b]	0.4	0.6	0.5	0.4
F for regression	1.8[b]	n.s.	2.1[b]	n.s.	n.s.

Note: V is an abbreviation for variable number, referring to the coded interview.
[a] Addition of variable set caused significant increase in R^2 at .05.
[b] Regression is significant at .05; nonsignificant F not reported.

basis for discussion with faculty groups, we have, however, constructed descriptive vignettes that might characterize faculty members who choose each sequencing pattern. These vignettes follow.

TABLE 39

Regression on the Method of Arranging Course Content on Sets of Potentially Influential Variables

	R^2					
VARIABLE SET ADDED	Structural V89	Conceptual V90	Knowledge Creation V91	Learning Based V92	Knowledge Utilization V93	Pragmatic V94
Personal variables	0.0	0.0	0.1	0.0	0.0	0.1[a]
Professional variables	0.3[a,b]	0.1	0.1	0.3[a,b]	0.2[a]	0.2
Educational beliefs	0.4[a]	0.3[a]	0.3	0.3	0.4[a,b]	0.2
Views of discipline	0.5[b]	0.5[a,b]	0.4	0.5	0.6[a,b]	0.3
Discipline dummy	0.7[a,b]	0.6[a]	0.5	0.5	0.6[b]	0.5
Context factors	0.7[a]	0.6[a]	0.5	0.6	0.6[b]	0.5
F for regression	2.9[b]	1.8[b]	n.s.	n.s.	2.0[b]	n.s.

Note: V is an abbreviation for variable number, referring to the coded interview.
[a] Addition of variable set caused significant increase in R^2 at .05.
[b] Regression is significant at .05; nonsignificant *F* not reported.

5.2.8.3 Tentative Vignettes of Faculty Course Decision Making

Conceptually-Based Sequencing

Conceptually-based sequencing was the most popular type of content sequencing among faculty we interviewed. In all, 46% of the 86 chose this type of content arrangement as their first choice and 71% chose it as their first or second choice.

Based on correlations close to or greater than the ten percent significance level and 70 cases with complete data on all variables used, faculty members who prefer conceptually-based sequencing tend to

a. Believe the purpose of education is developing effective thinking rather than personal enrichment.

b. Characterize their discipline as a set of concepts or a body of knowledge but not as a group of scholars sharing common interests or as an interrelated set of interests and values.

c. Mention discipline aspects more often when discussing their course planning than student characteristics, or college, or program goals.

d. Downplay the idea that their own beliefs heavily influence their course planning but claim to include attention to student plans.

e. Be more interested in choosing content that helps the student accumulate lower level information into abstract concepts and principles than in stimulating the student's search for meaning or ability to learn on his/her own.

f. Teach in any of the eight fields interviewed. Faculty members in several disciplines (biology, business, mathematics, and sociology) chose this method of course sequencing as their first choice. When those choosing it as their second choice were added, history and nursing faculty joined the group who espoused this arrangement. Only literature and composition teachers were not likely to select conceptually-based sequencing as either their first or second choice.

Learning-Based Sequencing

Learning-based sequencing was the second most popular type of content sequencing among the faculty we interviewed. In all, 18% of the 86 faculty members chose this type of content arrangement as their first choice and 45% selected it as a first or second choice.

Based on correlations close to or greater than the ten percent significance level and 70 cases with complete data on all variables used, faculty members who prefer learning-based sequencing tend to

a. Believe that the purpose of education is personal enrichment rather than gaining familiarity with great ideas or bringing about social change.
b. View their field as a mode of inquiry or a set of interrelated values rather than as a set of objects or phenomena to be explained.
c. Report that student characteristics and various goals (program, college, external agencies) are important influences in their course planning but that materials (textbooks, etc.) are not important influences.
d. Independently mention prior student evaluations as influential when planning a course but not mention instructional experts. When the category of instructional experts is prompted, their views are valued, as compared to college goals.
e. Tend not to choose course content because it is an important concept to research in the field.
f. Teach English composition or nursing. Of the composition teachers interviewed, nearly half chose this as their first choice of sequencing patterns and about three-fourths chose learning-based sequencing as either their first or second choice. In nursing, nearly half chose this sequence as their first choice. In other fields, it was typically a second choice to other sequencing modes. Notable second choices were in business, mathematics, and literature.

Structurally-Based Sequencing

Structurally-based sequencing of content was selected as a first choice by 18% of the 86 faculty interviewed and of one of the two first choices by 30% of the faculty.

Based on correlations close to or greater than the ten percent significance level and 70 cases with complete data on all variables used, faculty members who prefer structurally-based sequencing tend to

a. Believe the purpose of education is becoming familiar with great ideas and discoveries of the human mind.
b. Believe their field is a set of objects or phenomena to be explained rather than a set of interrelated concepts or operations.
c. Emphasize no particular aspect of their course planning compared to any other during the unprompted section of the interview. Notable was their failure to mention instructional experts.
d. Report their own training heavily influences their course planning, when prompted with categories.
e. Not see problem solving or the accumulation of lower level concepts into broader level abstractions as important reasons to select course content.

f. Teach history and possibly biology rather than other fields. All the history professors interviewed chose this method of sequencing as a first choice, while about half of the biology teachers chose it.

Knowledge Utilization Sequencing

Sequencing of content based on how knowledge will be used was selected as a first choice by 9% of the 86 faculty interviewed and as a first or second choice by 30%.

Based on correlations close to or greater than the ten percent significance level and 70 cases with complete data on all variables used, faculty members who prefer knowledge utilization sequencing tend to

a. Espouse personal enrichment and bringing about social change as important purposes of education, rather than transmitting great ideas.

b. See their field as a group of scholars sharing common values and interests.

c. Mention teaching/learning activities, goals and objectives, and student characteristics when asked to describe their course planning. They also mention student characteristics as important influences and downplay the substantive nature of the discipline.

d. Downplay the discipline as an influence in course planning and stress the importance of the views of instructional experts more than most faculty.

e. Say they choose content based on stimulating students' search for meaning and acquisition of problem-solving skills.

f. Teach in nursing or literature. Over one third of nursing faculty members made this sequence a first choice and over half of literature faculty members made it either a first or second choice.

Knowledge Creation Sequencing

Sequencing of content based on the way knowledge has been created in the field was selected as a first choice by 8% of the 86 faculty interviewed and as one of the first two choices by 21% of the faculty.

Based on correlations close to or greater than the ten percent significance level and 70 cases with complete data on all variables used, faculty members who prefer knowledge creation sequencing tend to

a. Believe gaining familiarity with the great ideas and discoveries the human mind has produced is an important purpose of education but downgrade a systems approach to instruction and a view of education as being primarily for personal enrichment.

b. Believe their field is primarily a mode of inquiry rather than a body of knowledge to be learned or a set of interrelated concepts and operations.

c. Report that materials and textbooks are important in their course planning, rather than student characteristics, specific teaching activities, or previous student evaluations.

d. Consider program goals relatively unimportant. In various respects, these faculty may feel constrained in their teaching.

e. Not choose content on the grounds that it is a fundamental concept in their field.

f. Be somewhat scarce or teach primarily in composition or in sociology (nearly half of composition faculty members chose this as a first or second choice and about half of sociologists chose this as first or second choice). In no teaching field did more than 20% of the faculty members interviewed choose this sequencing description as their preferred choice for introductory courses.

Pragmatic Sequencing

Faculty members who believed the sequencing of content in their courses was based primarily on opportunities and constraints of the situation comprised only 3% of the 86 faculty members interviewed.

No patterns are described based on the small degree of response to this method of sequencing.

5.2.9 Summary

As faculty describe course planning, they place strong emphasis on selecting content from their field, selecting course materials, and recognizing student characteristics; they place relatively little emphasis on choosing among alternative instructional strategies.

Faculty are strongly influenced in course planning by the characteristics of the discipline they teach, the characteristics of students, their own beliefs, and the textbooks available. Program goals, college goals, and objectives of external groups (such as accreditors or state agencies) influence how faculty plan introductory courses in a modest way. The strength of these influences varies with situational factors. The views of instructional experts, feedback from previous classes, research concepts from the disciplines, and pragmatic factors in the local situation are seldom important in course planning.

Course planning influences mentioned independently by faculty members seemed more closely linked to college characteristics (institutional type, selectivity, curricular coordination) than to discipline. However, when faculty responded to structured questions about influences on introductory course planning, major differences emerged that were associated with the disciplines and the instructors' views of them. Specifically, among the fields represented in our sample, there was a distinct separation between those instructors who characterized their discipline as sets of concepts, principles, ideas, phenomena, or objects to be explained to students (e.g., history, biology) and those instructors who believed their fields were not well characterized as disciplines (composition, literature). The former are likely to emphasize their role in conveying the concepts or explanations while the latter emphasize their role in promoting student growth, skill acquisition, or personal enrichment.

For most faculty, a belief in the importance of helping students become effective thinkers influenced course planning. For most also, this belief was linked with one of three other important beliefs: for example, that education should "make the world a better place," that instruction should be conducted systematically and based on knowledge about student learning, or that students should "learn about the great ideas and discoveries of humankind." Associated with these broad orientations, we suspect a variety of more specific college and discipline differences can be identified. For example, compared with others in our sample, faculty at a selective liberal arts college placed more emphasis on transmitting the great ideas and discoveries of humankind and less emphasis on social change. History faculty members were more likely than their colleagues to transmit great ideas of humankind, while literature teachers were more likely to help students seek personal enrichment.

Combining our findings about beliefs and sequencing, the most common pattern is that faculty believe teaching effective thinking is an important goal and also see the field to be taught as a set of concepts or a body of knowledge. Faculty members in this group may teach in any of several fields except literature or composition. They are likely to arrange course content according to the concepts of the discipline and to believe students should learn to integrate ideas from the discipline into abstract principles.

A second common pattern links the importance of education for personal enrichment with a view that either a set of interrelated values or a mode of inquiry is to be taught. Faculty members in this group are likely to teach composition or nursing. For them, student characteristics are very important, relative to other influences, such as textbooks, for example.

In selecting content to include in their introductory courses, many faculty members choose material that represents fundamental disciplinary concepts, that will help students add to their cumulative knowledge, that will help them integrate their ideas, or that will stimulate them to search for meaning. In describing their reasons for choosing content, differences among faculty members followed the disciplinary lines previously described; the views of those instructors concerned with for transmitting knowledge varied from the views of those concerned with skill development and student growth. As faculty repeatedly told us, however, it would be a mistake to pose subject-centered education and student-centered education as two ends of a continuum. Each group of faculty believes both goals are important although they tend to attribute slightly more weight to one of the two orientations.

Despite the influence of their field, faculty members seldom select content for introductory courses because of its relation to research or inquiry or simply because students enjoy the material or find it easy to learn.

Faculty at all types of colleges were most likely to arrange content either according to concepts to be taught or according to what they believe is known about learner needs and characteristics. Variations in the way material is arranged, however, are closely associated with the academic field being taught and thus with the educational beliefs of the faculty members. For example, by teaching chronologically, history instructors rather consistently choose a structurally-based sequencing pattern, but literature and composition instructors preferred learner-based and personal enrichment approaches.

Patterns and relationships suggested by these tentative findings will be pursued further in correlational analyses of data from a more representative survey of faculty members teaching introductory courses.

5.3. Qualitative Descriptions of Course Planning

5.3.1 Introduction

Teaching and research are the primary work activities of college faculty members. Therefore, demonstrated competence in one or both of these activities may determine career and salary patterns. Since we interviewed faculty in colleges devoted primarily to teaching and found that more than three-fourths of them rarely or never published results of their research, we assume that teaching constitutes the greater portion of their work life. Indeed, Finkelstein (1984) reports that in four-year colleges, the American academic profession is characterized essentially by teaching, not by research.

Despite the emphasis on teaching in most colleges, it is widely believed that faculty members rarely receive much systematic preparation for it (Eble, 1983). This belief was borne out in our interviews, which documented that about half of the faculty teaching introductory courses had no formal training for teaching. College teachers do not seem disturbed about their lack of formal preparation for their primary work role. In fact, McKeachie (1982) claims that faculty tend to resist involvement in workshops and courses designed to improve teaching. Consistent with this finding, our data also indicate that faculty do not value highly the potential assistance of instructional specialists. Among those who have speculated about this, Eble (1971) suggests that many faculty members believe "good teachers are born not made."

Nonetheless, even without formal instruction or assistance, many faculty members have acquired a high degree of competence as course planners and teachers. Many of them discussed their course planning and teaching in terms that indicated a greater familiarity with teaching theory and practice than they seemed to recognize or admit. Nearly half of them endorsed a learner-based approach to planning their courses when it was not attributed directly to instructional experts. Those who did endorse learner-based planning were no more likely to have had formal training in education than the rest, although they were more likely to have participated in informal workshops on instruction.

Two intriguing questions face those who inquire into the norms of college teaching. Why do faculty, working in environments devoted to formal instruction and frequently leading to competence in other occupations, receive and seem to desire little formal instruction in performing their key occupational activity? Given the lack of formal preparation in their primary work activity, how do faculty become adept at teaching practice? This section of our report first addresses the latter question, then it addresses the question of faculty views on pedagogical training.

5.3.2 Prior Research

Hints about how faculty achieve teaching and course design competence may be found by examining our interview data in light of recent research by Sternberg and colleagues (Sternberg and Caruso, 1985; Wagner and Sternberg, 1986). Despite the frequent implication that college teaching is unique as an occupation for which individuals do not prepare, Wagner and Sternberg (1985) suggest that higher education is not anomalous in this regard. They propose that in many other occupations as well, intellectual competence in the performance of key everyday work activities is developed through knowledge acquired informally on the job.

It appears that workers, including teachers, acquire and use a collection of practically oriented understandings and procedures about their work (Elbaz, 1983). Sternberg and Caruso (1985) have labeled these informally acquired understandings "practical knowledge," that is, those understandings and skills useful in such life pursuits as work. We speculate that the course planning skills of faculty might fit the criteria of practical knowledge.

How is practical knowledge acquired, if not formally? In attempting to explain, Wagner and Sternberg (1986) employ the term "tacit knowledge" to identify understandings and skills that lead to competence in practical tasks. For them, tacit knowledge is a form of practical knowledge acquired through indirect rather than direct instruction. They contrast tacit with academic knowledge by stating that the former "is considered (1) practical rather than academic, (2) informal rather than formal, and (3) usually not directly taught" (p. 54). Claiming that vocational success depends on the worker's ability to acquire such knowledge, usually by means of self-directed or indirect on-the-

job instruction, they divide tacit knowledge into three categories: about self, about managing others, and about career management.

This line of reasoning suggests that faculty members need to acquire tacit knowledge about course planning in order to perform competently (or achieve career success). As stated by Sternberg and Caruso (1985), "One's ability to acquire tacit knowledge on the job will be the key factor in one's success or failure as a teacher" (p. 148). However, despite its importance in everyday work life, they point out that such knowledge has very low status when compared with academic knowledge acquired in formal ways. This status difference may account in part for the reluctance of higher education faculty to value tacit knowledge or to develop it through formal means. A review of emerging work on practical knowledge suggested to us that our interviews were tapping certain aspects of the understandings acquired informally by faculty members about course design and teaching processes.

5.3.3 Study Purpose

In the previous section, we described the faculty interview data quantitatively, albeit tentatively, recognizing the limitations of such analysis with a small, non-random sample. In this section and the next, we will examine some of the same data from a theoretical perspective that seems more amenable to qualitative analysis. Our analysis focuses on statements made by faculty members as they responded to our unstructured questions about how they design their introductory courses. We were interested primarily in the process faculty use in planning and within this process we sought evidence of the practical knowledge they may have acquired. Once again, we remind our readers that we are merely generating hypotheses and hinting at possible conclusions; firmer observations await the completion of a more representative survey.

In reviewing the interview transcripts to identify statements about the planning process, we found that several course planning activity patterns seemed to characterize the responses. Certain themes associated with course design, mentioned repeatedly by the interviewees, seemed to have broader character than the way we had originally coded them, as "steps" in or "influences" on planning. Instructors occasionally referred to beliefs or theories that had not been included in our theoretically derived card sorts but that teachers clearly held as a basis for their course planning. These observations suggested the following organizing research questions for the qualitative analysis:

a. What are the patterns of course planning activities that faculty report as a regular part of their work?

b. What are the course design themes mentioned by the respondents as they pursue these various activities?

c. Are the planning activities and the course design themes linked with specific fields and with specific course planning patterns?

d. What beliefs or theory assumptions do faculty state in describing their planning behavior?

e. What can be speculated about sources of faculty members' tacit knowledge of course design and teaching?

5.3.4 Procedures

The interviews were read broadly with the intention of identifying major categories of course planning activities and themes most frequently mentioned. Once these categories and themes were identified and decision rules constructed, the interviews were

reread to categorize specific statements of faculty by activity and theme. It should be noted that there was much variability in the nature of the responses. Some faculty members spoke directly to the questions about course design, others talked more about their class teaching behavior. Some responses were rich in content and description; others were thin gruel. In our judgment, a number of key factors interacted in contributing to this variability: the time available for the interview, the interest and talkativeness of the faculty respondent, and the way in which the interviewer presented the questions. Although in some interviews we used occasional probes or cues to advance the interview and to yield a thicker response, for the purpose of this examination we tried to record only unprompted esponses.

5.3.5 Sample

Initially we analyzed statements of faculty members in four of the eight fields—biology (13), literature (13), nursing (11), and sociology (8), for a total of 45 interviews (or one half of the total of 89). In this sample, we had representation from science, humanities, social science, and a professional field, representing a wide range of educational belief preferences. We had two fields in which faculty members had essentially no formal pedagogical training (about two-thirds of literature and sociology professors had none) and two fields in which pedagogical training had been more frequent (more than two-thirds of biology and nursing instructors had at least some pedagogical training).

5.3.6 Results

Analysis of the interview transcripts revealed that the responses could be classified, reflecting the following different types of course planning activities: (1) planning for a new course, (2) planning major revisions of an established course, (3) doing routine review for an established course, (4) doing routine maintenance for an established course, and (5) using a course plan designed by others. We developed a set of decision rules to use in classifying planning statements into one of these five course planning categories. These rules are given in Table 40.

Reading the interview responses in a search for planning themes revealed that faculty mentioned 11 different themes as they described course planning procedures and influence factors. The 11 themes and the types of statement they encompass are listed in Table 41. In the table, we also compare these themes derived independently from the data with the five broad coding themes for "steps in course planning" and the seven broad categories of "influences" we had established in advance of the interviews for response coding. Three distinct broad themes that we had omitted from our anticipa-

TABLE 40

Types of Course Planning Activities

Planning for a new course
1. Instructor indicates that the course is new to the college/university and has not been taught previously.
2. Instructor designates it as a "new" course although courses in the field may have been taught.
Planning a major course revision
1. Instructor describes some need or event which caused major revision in course.
2. Instructor indicates an overhaul of objectives, content, and student activities.
Routine review for an established course
1. Instructor indicates periodic systematic review of course purpose, content, activities, and so on.
2. Instructor reports group planning by instructors teaching the course or by department sponsoring it.
Routine maintenance of an established course
1. Instructor indicates review of textbook
2. Instructor describes adjustments to syllabus, reading list, student activities, and so on.
3. Instructor describes updating content of course.
Using a course plan designed by others
Instructor indicates that he/she had no part in course planning, textbook selection, and syllabus preparation

tory coding were mentioned by faculty members; they included feedback from students, syllabus development, and instructional mode. Originally, we had seen these categories as potential outcomes of the course design process rather than as steps or influences in it. Other discrepancies were primarily a matter of level of emphasis. For example, while our original framework had included a broad category for attention to (and influence of) activities and materials, faculty seemed to move quickly to details on these issues. They also separated class activities into at least two sets: (1) activities and assignments for students and (2) instructional activities for themselves as teachers. Under materials, many stressed separately the importance of the textbook as distinct from other types of teaching materials. Obviously, this was a case where neat categories devised for coding, even though the researchers themselves were college teachers, were insufficient to capture the range of interpretations to broad, open-ended questions.

Following the broad overview to identify and describe course planning activity categories and themes, the interviews were reread to determine the order in which the themes were mentioned by faculty. In our judgment, the first three spontaneously mentioned themes seemed to provide a clear picture of the factors most important to the respondent when working within the activity classification. The three themes mentioned by each faculty member in the subsample were recorded on a coding sheet designed for this purpose (see Appendix VII). In this analysis, no attempt was made to record the number of times a theme was cited, the order of mention, or the intensity of the response.

In addition to theme identification and classification of the statements into one of five course planning activity categories, the interviews were reviewed for faculty references to personal beliefs about course planning or theories that guide their planning activities. We report the results in four parts. The first part (Section 5.3.6.1) describes

TABLE 41

Themes Identified in Discussions of Course Planning

	THEME	THEME DESCRIPTION
1.	Discipline/content (Discipline)	Refers to the knowledge, subject matter, and concepts to be taught
2.	Textbook (Materials)	Refers to the textbook as a course planning influence
3.	Non-text materials (Materials)	Refers to teaching materials other than textbooks, such as film, videotapes or computer programs
4.	Syllabus (Not included)	Refers to the preparation or use of a syllabus
5.	Goals/objectives (Goals/objectives)	Refers to course purpose, course objectives, or course rationale
6.	Faculty Background (Faculty background)	Refers to respondent's background, either educationally or experientially
7.	Feedback (Other)	Refers to feedback from students about the course
8.	Structural (Structural)	Refers to factors such as the semester, length of school calendar, or time available to teach
9.	Student needs (Students)	Refers to students' needs, goals, and interests
10.	Student activities (Activities)	Refers to course activities and assignments required of students
11.	Instructional mode (Not included)	Refers to instructional modes or teaching methods

Note: Categories in parentheses are parallel a priori coding categories before content analysis.

examples of the five types of course planning activities that faculty reported. The second part (Section 5.3.6.2) describes the course planning themes faculty mentioned. The third section examines the themes in light of the type of course planning activity described by the faculty member. The fourth section focuses on faculty beliefs about pedagogical training and about their own teaching. Finally, we summarize our speculations for future investigation.

5.3.6.1 Types of Course Planning Activities

As might be expected when interviewing faculty concerning introductory courses, 75% of the planning activity focused on established courses. In fact, the most common form of planning within that category was routine course maintenance (47%) in all fields except nursing, where routine review activities prevailed. The two activities requiring perhaps the most intense efforts, planning for a new course and making major revisions in an established course, accounted for the remaining 25% of the course planning activities described. These results are reported in Table 42. The reader will recall that we did not attempt to draw a sample of faculty engaged in varied types of course planning or to determine the actual frequency of course planning types in colleges

TABLE 42

Types of Course Planning Activities (by Faculty in Four Academic Fields)

	FREQUENCY BY ACADEMIC FIELD					
PLANNING ACTIVITY	Biology (n = 13)	Literature (n = 13)	Nursing (n = 11)	Sociology (n = 8)	TOTAL (N = 45)	PERCENTAGE OF TOTAL
New course	0	5	0	2	7	16
Major revision	2	0	1	1	4	9
Routine review	1	0	7	2	10	22
Routine maintenance	9	6	3	3	21	47
Use other's plan	1	2	0	0	3	7
Totals	13	13	11	8	45	100

generally. Rather these types simply emerged from our talks with a set of conveniently selected faculty who were teaching specified introductory courses.

Planning for a New Course

Planning statements of seven faculty respondents in two fields, literature and sociology, were classified in this category.

An English professor described the motivation for a new literature course in these words:

> We instituted the idea of freshmen seminars, which were designed to give the freshmen students a seminar experience. And we did not conceive of these originally as being sequential; therefore, we had more freedom in what we could do with the course. And we could focus simply on a concept and topic and develop that in any way that made sense without regard to courses that might follow. So I think we had a lot of freedom in that. And I thought about works that I enjoyed teaching and recognized, as I think I had earlier, actually, but a lot of the works that I found particularly challenging to me and I found what worked with students had to do with some aspect of freedom. And so I considered the possibility of focusing on that concept. And I started to assemble a list of works that would be relevant for that. And I think the first time I taught the course and I did something like this: I think the title was "toward a definition of individual freedom." I was very tentative.

> Because the more I read about freedom, the more I realized how little we really understand. So I indicated in the title of the course that the seminar would be groping for definition and answers.

It appears the motivation for and broad goals of the new course originated with the department, but the selection of the course topic and content as well as the specific objectives were the individual responsibility of the respondent. The same professor, having chosen the theme of individual freedom for the course, described a new planning procedure he used.

> I also did something with this course that I think probably I hadn't done before. So, in a sense I'm not sure that it's typical. But I sent a note to my colleagues in other departments. And said that since I'm now, in a sense, going outside my field—or I want to go outside my field to bring in anything that might be relevant—and what suggestions would they make about possible reading for a freshman seminar that would deal with freedom. And I got a number of suggestions from psychology, political science, economics, philosophy, [and] religion.

In this case, the goal or objective was the need to provide freshman students with a seminar experience, based on some tacit definitions of what a seminar involves and "felt assumptions" about the value of that type of experience. A course theme—freedom—was chosen and the search for appropriate content followed. The solicitation of advice from colleagues is perhaps unusual and suggests individual security on the part of the respondent and a spirit of cooperation between faculty in departments.

In commenting on course planning procedures, a sociologist described another approach.

> I sit in my office and I ruminate. Particularly in designing a new course, there is a long process of critical thinking and analysis that goes on. So, that comment about ruminating isn't totally in jest. It is a long process. It occurs walking down the street or at different times. Through that process what I am attempting to come to grips with is "what are the essential objectives which should guide the course." Those objectives would aim towards designing a course that indicates the personal relevance of the discipline to the lives of the students. And I consider that an important objective because of the nature of the discipline. Sociology, I think, particularly lends itself directly to looking at personal life relevance, individual and corporate understanding.

This instructor suggests that new course planning begins with considerable contemplation of the course purpose. For her, this purpose includes how the course content can be integrated into students' lives so that it possesses utility. For this respondent, course planning began with the development of a series of objectives that would be used as a guide for content choice.

Another professor of English points out the ambiguities and uncertainties associated with planning a new course.

> In my 14 or so years of teaching, I have taught an enormous number of courses and I've been less reluctant than many people to take on a new course. And, when I take on a new course, I know that I'm never going to be able to prepare adequately the first time. I'm a student-centered teacher—a lot of in-class discussion—and I really learn along with the students the first time I teach a class. I am, right now, after teaching Shakespeare for five years, feeling that I've finished the class, that I now have a firm grasp on Shakespeare. When I think about major plays, I don't become confused in my own mind about what happens where and the differences between developments. So, when I first taught the class I recognized that I was going to be learning with the students and I thought that "I have other strengths that I can bring to this class, and I will concentrate on the plays that I know best already. I will maybe teach one fewer play than I would if I were a practiced experienced teacher. Then I will ask a lot of open-ended questions, not give too many lectures." When I first started, I thought, "I'm going to find a good guide in Shakespeare and require that students read it and I'll read it too and we'll let that be our lecture material

> and then we will just stumble around and try to understand passages and characters." I recognized at the time that it was going to take a lot of active energy on my part. I was going to have to think about the class a lot, put at least an hour and a half into each hour class time, reading, thinking about the concepts.

This statement demonstrates that new course planning is an act of exploration, of confronting the extent of one's own knowledge about the topic, and of devising activities to foster mutual learning between the faculty member and the students. The experience that the new course planner does not possess is that of having taught the course previously. Consequently, new course planning occurs in an environment of uncertainty and anticipation.

Planning a Major Course Revision

Planning statements from four respondents (two in biology, one each in nursing and sociology) were placed in the category entitled Planning a Major Course Revision. The category was defined as illustrating a major overhaul of an ongoing, existing course. The responses suggest that a key factor in prompting major revisions in an established course is dissatisfaction with course objectives, process, or content. Dissatisfaction with all three facets is illustrated by this statement of a faculty respondent in nursing.

> When I overhauled the course, way last year, I sat in on it for one year, observed strengths and weaknesses, noted that objectives were such, then gave my input.... The course was purely historical and in lecture format and dry in that sense. We wanted to give the students hands on experience that would reaffirm some of our ideas about what nursing is...we wanted very much to move away from the lecture format and involve the students.

Routine Review of Established Course

We defined routine review activity as embracing planning statements that suggest that the total course design is reviewed systematically and periodically by the individual instructor or by a group. For example, a biology professor described routine review in his department.

> But for the most part it involves the faculty members who teach the course relative to the course description. And there is almost constant discussion about ways to improve the course, ways to improve laboratory exercises, subject matter, and so on.... I think the younger faculty members are more involved now than they were.... I'm very much interested in hearing what the younger faculty have to say. And we do work very closely in the course.

Implied in this statement is the assumption that routine course review is a departmental function rather than the responsibility of one faculty member. A nursing professor illustrated this with the following statement:

> Well, first of all we always meet as a team. It's not just one individual.... Every spring we schedule a meeting and basically we go through the whole course syllabus.

A nursing faculty member from another institution revealed the extent and purpose of such planning:

> All right, as we sat down to really plan how we wanted to teach it, we looked at it from two standpoints. Certainly, the theory that they have to have as beginning nursing students.... Our nursing course is set out as building blocks.... Theory doesn't mean anything in nursing when they can't apply it. So we have to be realistic. So we had to start with the very beginning. We have to look at our students.... It's a team approach.

Of the ten statements placed in this category of routine review, seven were in the field of nursing. In our observation, much planning and instruction for introductory nurs-

ing courses is conducted as a team effort, perhaps in part due to the "building-block" nature of the curriculum. The other three courses where routine review took place (one biology and two sociology courses) were located in an institution with strong departmental influence over introductory courses. Although we suspect that these two situations of high group involvement are atypical, that is that less group-directed routine review takes place in most college settings, our data do not provide this information.

Routine Maintenance of Established Course

The difference we specified between routine review and routine course maintenance is that routine review is a systematic, deliberate, periodic, and reasonably encompassing activity, possibly involving other faculty as well as the individual instructor. Routine maintenance may be no less intense but attends primarily to course details: reviewing the textbook, revising the syllabus, adjusting reading lists, updating lectures, changing assignments, and the like. It is an activity most teachers conduct as they prepare to teach an established course. It is the logical planning activity that emerges from regularly teaching an established course with a high degree of satisfaction. Typically, the major goals and objectives and the general range of content are retained. In this sense, then, routine course maintenance is an evolving process building on what is believed to be a firm foundation. In the sample of 45 interviews, 21 (or 47%) of the planning activities were placed in this planning category. By field, routine maintenance among our sample of faculty members was reported most often in biology and literature and least often in sociology. Nursing instructors seemed more likely to engage in routine review than in maintenance.

The following accounts typify routine maintenance.

Sociology

> That's about all the planning I do any more—attempt to change texts and interviewing students from time to time.

> I begin with looking at the textbooks that are available to us in that we have students with varying degrees of ability. I stay fairly close to what is covered in black and white so that we can help them through and guide them through something that is concrete.

Biology

> I'm the only person involved in selecting [the textbook] for this course.... I usually change textbooks every two years.

Nursing

> It's the methods, the teaching methods, that we have a lot of freedom on.

Literature

> The department tells teachers that they must choose a certain number of texts from a list.... Beyond that, I can choose, for example, within an anthology of short stories, which stories I want to use.

Using a Course Plan Designed by Others

Only three planning descriptions were classified within the category of using a course plan designed by others (one in biology and two in literature). In each case, the faculty respondent was new to the institution and was assigned the course without much prior notice. Typically, the syllabus had been written and the textbook selected, thus

restricting planning opportunities for the interviewee. One biology teacher commented on his own experience:

> And the day I came to work they said, "By the way, you're teaching general biology." I was supposed to teach medical microbiology. So, my planning, it was a crash course. Basically what I did was read through the text that we were using, read through the prescribed syllabus.

Despite the short notice and the lack of any personal control over the syllabus or text, the biologist explained, "I very much like the way in which this course is [designed and] approached."

Yet, another faculty member in English, at a different institution in much the same circumstances, felt differently:

> I do use this book [but] I don't like and it would be different now [if it were my choice] in terms of planning the course prior to teaching it. It would be very different the next time around. At the same time it gives me something to shoot at.

The general tone one heard when reading descriptions of planning when the basic design had been completed by others was a sense of incompleteness when a faculty member does not participate in the full cycle of course development and presentation. One might observe, however, that in a discipline like biology (with reasonably strong agreement about what concepts should be covered in an introductory course), it is possible that the instructor would feel more satisfied than in literature where there is less hierarchical treatment of content and more attention to selecting material for students' personal enrichment.

5.3.6.2 Planning Themes Mentioned by Faculty

In recording the first three planning themes mentioned by faculty, we merely counted the total number of faculty mentions by field (up to a maximum of three per interviewee). Thus, if all eight sociology respondents had cited a theme as one of the first three they mentioned, the theme was given the value eight for sociology. (The order of mention was not considered in determining the value.) Accordingly, the 45 faculty respondents whose interviews were reviewed (biology, 13; literature, 13; nursing, 11; sociology, 8) might have produced a maximum of 135 (3 x 45) mentions across all themes. One faculty respondent in biology and one in literature mentioned only two planning themes, thus the total was 133 mentions.

The percentage of themes by field (based on the percentage of total mentions within the field for each theme) is presented in Table 43. Four themes, "discipline content," "textbook," "goals/objectives," and "student activities" accounted for 70% of the 133 mentions by faculty interviewees in the four fields (Table 43). Another 15% of mentions were represented by the "student needs" and "instructional mode" themes.

Identification of the most frequently mentioned planning themes in response to the open-ended questions about course planning reveals some similarities and differences across the four fields of biology, literature, nursing, and sociology. Faculty members in all of the fields mentioned discipline content to about the same extent. Nursing faculty less frequently mentioned textbooks but more often mentioned goals and objectives. For sociology instructors, the reverse was true. Biologists were less likely to mention student needs, compared with others. Literature instructors, in contrast, mentioned both student needs and activities most frequently.

It is interesting to note the low ranking of the "student" theme among biology instructors; only one biologist referred to this theme among the first three planning issues

TABLE 43

Ranking of Planning Themes Mentioned by Faculty (in Four Academic Fields)

	FOUR FIELDS ($N = 45$)		ACADEMIC FIELD: Biology ($n = 13$)		Literature ($n = 13$)		Nursing ($n = 11$)		Sociology ($n = 8$)	
PLANNING THEME	*n* ment	% ment	*n* ment	% ment	*n* ment	% ment	*n* ment	% ment	*n* ment	% ment
Discipline content	36	27	11	29	11	29	7	21	7	29
Textbook	23	17	7	18	7	18	3	9	6	25
Goals/objectives	17	13	4	11	4	11	7	21	2	8
Student activities	17	13	3	8	8	21	6	18	0	0
Student needs	12	9	1	3	3	8	4	12	4	17
Instructional mode	8	6	3	8	2	5	1	3	2	8
Structural factors	7	5	3	8	1	3	2	6	1	4
Feedback	4	3	1	3	0	0	2	6	1	4
Non-text materials	4	3	1	3	2	5	0	0	1	4
Syllabus	3	2	3	8	0	0	0	0	0	0
Faculty background	2	2	1	3	0	0	1	3	0	0
Total Mentions	133	100	38	100	38	100	33	100	24	100

Note: "Ment" is an abbreviation for mentions, referring to mentions of course planning themes by participating faculty in the interviews.

mentioned. A general impression gained from reading these interviews was that biology instructors in our sample were very content-oriented. Thus, decision making about the content of the introductory course was seldom fraught with ambiguity or doubt. This reinforced our finding that biologists chose either structurally-based or conceptually-based sequencing patterns in the card sort we presented to them.

Literature instructors differed from others in placing emphasis on the activity theme. This was consistent with the participatory instructional mode they often reported and with their reported belief that they teach for personal enrichment rather than for concept acquisition. It may be that literature teachers tend to view reading and discussion activities as distinct from content presentation and that the concern about educational activities suggests these faculty are attempting to make the students' encounter with literature more active than passive.

Since nursing is a professional field with a tightly structured curriculum and explicit accreditation standards, it was not surprising to find faculty place a high emphasis on a theme of "goals/objectives" (as important as "discipline content") when they plan introductory courses. The frequent citation of "activities" reveals that nursing instructors, even in the first course, attempt to (or are required to) complement theory with practice. It may be that the great emphasis placed on clinical experience with the corresponding need for class interpretation accounts for the finding that the "textbook" theme received the lowest percentage of mentions in the four fields.

As with biology, "discipline content" and "textbook" themes accounted for a high percentage of all planning themes (52%) given by sociology instructors. However, the "student needs" theme received the largest percentage of mentions in the four fields, apparently consistent with the instructors' assumption that sociological content has consequence for the students' lives. The "student activities" theme did not receive any mention, possibly because, as reported in the interview, the lecture is the typical mode

of instruction in sociology. Interestingly, the "goals/objectives" theme received the lowest percentage of mentions by sociology instructors of any of the four fields.

Another way of interpreting these findings is to categorize the themes according to the types of knowledge faculty members might draw upon when they plan introductory courses. In a review of research about course planning thoughts and activities among K-12 teachers, Clark & Lampert (1986) suggest that teachers need three categories of knowledge in planning: contextual, subject matter, and speculative. Within this framework, contextual refers to knowledge about the teaching situation, subject matter to content knowledge, and speculative to the knowledge teachers hold that is uncertain. Speculative knowledge speaks to questions such as: What is the best mode of

TABLE 44

Planning Themes Clustered by Practical Knowledge Categories (for Faculty in Four Academic Fields)

			ACADEMIC FIELD							
	FOUR FIELDS		Biology		Literature		Nursing		Sociology	
PLANNING THEME	*N*	%	*n*	%	*n*	%	*n*	%	*n*	%
Contextual knowledge										
Goals/objectives	17	40	4	40	4	50	7	44	2	25
Faculty background	2	5	1	10	0	0	1	6	0	0
Feedback	4	10	1	10	0	0	2	13	1	13
Structural	7	17	3	30	1	13	2	13	1	13
Students needs	12	29	1	10	3	38	4	25	4	50
Subtotal	42	(32)	10	(26)	8	(21)	16	(48)	8	(33)
Speculative knowledge										
Student activities	17	68	3	50	8	80	6	86	0	0
Instructional mode	8	32	3	50	2	20	1	14	2	100
Subtotal	25	(19)	6	(16)	10	(26)	7	(21)	2	(8)
Subject matter										
Discipline content	36	55	11	50	11	55	7	70	7	50
Textbook	23	35	7	32	7	35	3	30	6	43
Non-text materials	4	6	1	5	2	10	0	0	1	7
Syllabus	3	5	3	14	0	0	0	0	0	0
Subtotal	66	(50)	22	(58)	20	(53)	10	(30)	14	(58)
Total	133	(100)	38	(100)	38	(100)	33	(100)	24	(100)

instruction? What kind of activities will be most effective? The results of clustering the themes mentioned into these three categories are displayed in Table 44.

This comparison provides further confirmation that the discipline exerts a pervasive influence on decision making about college course planning. In the four combined fields, 50% of the themes fell in the "subject matter" category. Thus, when faculty discussed course planning processes with us they focused on matters of content while giving somewhat less attention to contextual issues (32%). The low percentage (19%) of the themes classified as "speculative knowledge" is consistent with the fact that 76% of the instructors we talked with use lecture or lecture/discussion mode of instruction. Apparently, these college teachers do not speculate very much about other ways of teaching: for most, instructional mode and the type of student activities to be assigned are taken for granted in planning. Perhaps these issues receive greater attention during interactive planning once the class has been met.

When the data are examined separately by field, they suggest that in introductory course planning nursing faculty are more contextually oriented than other faculty. The fact that nursing is a professional field with outside accreditation and licensing

standards as well as a dependence upon relationships with clinical environments may contribute to both its contextual sensitivity and less need to choose discipline content at the local level. As one nursing educator put it "We're prepping for state boards." Another stated, "Our curriculum is tightly prescribed by the State Board of Nursing. We don't have much choice."

Nurse educators also must be very responsive to the placement of students so that they acquire and demonstrate clinical competence. In contrast, for faculty in biology, literature, and sociology, the crucial environment is the classroom itself; these instructors need not concern themselves about the students' competence in other settings. That they at least occasionally do view their teaching in a broader context is illustrated, however, by one biologist's comment:

> And they give you their experiences, having gone on to some other school—how well they've done and how well the material fit in with the courses they were taking.

5.3.6.3 Themes by Types of Course Planning Activities

In Table 45 we present a distribution of planning themes across four of the five categories of course planning activities. (There were too few cases of faculty members using a course designed by others to consider this category.) The apparent disciplinary differences just discussed require us to stress that the shape of such a distribution

TABLE 45

Themes Mentioned Within Course Planning Activities (by Faculty in Four Academic Fields)

	PLANNING NEW COURSE		MAJOR REVISION		ROUTINE PLANNING		ROUTINE MAINTENANCE		USING OTHERS' PLAN	
PLANNING THEME	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
Discipline content	5	24	2	17	8	27	19	32	(Too few cases)	
Textbook	4	19	1	8	5	17	11	18		
Goals/objectives	1	5	3	25	6	20	6	10		
Student activities	4	19	2	17	5	17	5	8		
Student needs	5	24	1	8	2	7	4	7		
Instructional mode	0	0	2	17	1	3	4	7		
Structural factors	0	0	0	0	2	7	5	8		
Feedback	0	0	1	8	1	3	2	3		
Non-text materials	2	10	0	0	0	0	2	3		
Syllabus	0	0	0	0	0	0	2	3		
Faculty background	0	0	0	0	0	0	0	0		
Total	21	100	12	100	30	100	60	100		

Note: $N = 45$ for the total number of cases used in four academic fields: biology, literature, nursing, and sociology.

may depend on the fields included in the interviews. Nonetheless, we proceeded to form hypotheses, and some speculations follow.

Themes in New Course Planning

When planning new courses, respondents most often mentioned "discipline content" and "student needs" themes followed closely by references to textbooks and activities. Using the "knowledge required for planning" framework we presented earlier (see Table 44), the distribution of themes was as follows: subject matter knowledge accounts for 52% of the themes, contextual knowledge for 29%, and speculative knowledge for 19%.

These data suggest, in part, that new course planning may originate within the discipline arena but in response to the needs of students or other contextual demands.

Themes in Major Revision of Established Course

In revising an established course, the top ranked theme was "goals/objectives," followed by "discipline content," and instructional mode. This can be viewed as confirmation of the assumption that general course dissatisfaction leads to this type of planning. The outcome of this planning mode appears to be innovative and may, in the end, be more dramatic than intended if an entirely different course emerges.

Themes in Established Course—Routine Review

The data in Table 45 show the top themes mentioned by respondents describing routine review of established courses are of roughly equal importance. They are discipline content, goals/objectives, textbook, and student activities. Placing these data in the knowledge framework demonstrates that subject matter themes have the highest percentage of mentions, followed closely by contextual themes; speculative knowledge is of very little importance. The strong showing of the contextual themes may reflect the programmatic character of course planning unique to our sample since routine review most often took place in nursing. On the other hand, contextual considerations in other fields may be one catalyst that prompts routine review. It appears that routine review may not elicit much speculation about changes in activities and instructional mode.

Themes in Established Course—Routine Maintenance

During routine course maintenance, discipline content and textbook themes accounted for 50% of the theme mentions while the remaining 50% of the theme mentions were distributed over nine other themes. The knowledge framework template revealed the subject matter category themes at 57%, the speculative at 15%, and the contextual at 27%. These data suggest that while routine maintenance activities were most heavily associated with the selection and modification of content, they affected all areas of the course, if only minimally.

5.3.6.4 Beliefs About Pedagogical Training, Instructional Experts, and College Teaching

Since the faculty members we interviewed were polite and pleasant and knew we were professors of education, we probably didn't hear as much as we might have about their views of instructional or pedagogical experts. In fact, as both the words and the hesitancy in the following examples show, our interviewees felt, and sometimes expressed, discomfort as they talked aloud while consistently placing the views of instructional experts low among perceived influences on their course planning.

> This must be.. must be agonizing for you since I don't...I'm not using the language the way you would like me to. And if I'd had...if I'd had enough education courses these things would summon up...arguments for certain kinds of pedagogy that is translated into things. But I...have to...read them [the cards] and take them very literally.

> I have a natural aversion to "educationalese." I really do. That's my own...my own shortcoming.

Even so, several of our interviewees, particularly those in the social sciences, complimented us on our technique, as if to distance us from instructional experts.

> It's a hell of a good interview. (six-second pause)

> For a pilot study you are going about it all the right ways near as I can tell.... I assume you have been as careful on that score as you have on, you know....
>
> It's OK since you've asked some open-ended questions (five-second pause).... My concern with much quantitative research is that I don't think people have done enough...qualitative to know how to frame the questions...(but) frankly I had to put expert.... I put experts last, because I really don't know a great deal about educational philosophy (five-second pause). I think I know a good deal about educational process that actu. ly has come from my social work training. But I...I couldn't name for you a half dozen ed ational specialists beyond Dewey and company.

Another instructor expressed her view that education colleagues on her campus provided poor examples of what they preached.

> And then "the views of experts in instructional development, psychology of learning." Um...you know I ..I...I don't like it when people tell me, "Well you [professors], you know it all." I don't even know anything about that. I mean I don't...so I don't...it's not as if I don't think that the people...in educational theory have some things to offer. It's just that the more I'm around those people, and we have people here...who are known nationally in some of those areas...I'm not saying that they don't...they haven't identified good things, I'm just not always sure that essentially that they really have captured the proper component.... I mean...no matter how sincere the person is, how much educational theory, how...how many tools the person uses...I think...it has a lot to do with...sort of motivation, desire, personality types....

While most interviewees said they knew little about educational theory, others said that such theory had not served them well in practice. For example, one mathematics instructor commented,

> I firmly believe that the strong background in subject matter [math] is much more important than any educational course they [future teachers] could possibly take.... Uh...I had two [courses in education] when I was thinking about being a high school teacher and decided, NO WAY.

The skepticism expressed in the previous quotation notwithstanding, the faculty members we interviewed had broad contributions to make to educational thought. Although we did not question our respondents directly about beliefs or theories they held, statements we heard during the interviews suggest that faculty members possess theories and beliefs about content, students, course planning, and the multiple obligations that their own role as teachers entails. Even for K-12 teachers, research on these topics is limited; yet, teachers' beliefs must be considered when implementing curricular or instructional change (Clark & Peterson, 1986). Current attention to improving college teaching and learning certainly requires no less attention to teacher beliefs.

Earlier in this report, we described the construction of six short, descriptive statements, each of which represented a belief about educational purpose derived from the work of educational theorists. The results of having faculty sort these statements according to personal preference were reported in Section 5.2.6 and seemed closely associated with the discipline and background of the faculty. Because of the importance of teacher beliefs in course planning, we illustrate in this section the types of beliefs faculty independently volunteered to us. We highlight some of the operating beliefs faculty contributed in their own language as they described the course planning process. Again, we gain a sense that different beliefs operate for faculty members in different disciplines and that these are related to perceptions of their discipline's place in society and in the students' education.

In selecting statements to include here, we made no distinction between beliefs, assumptions, attitudes, and feelings. Rather, our criterion was simply whether the interviewee seemed to be saying, "I believe that..." when describing aspects of course planning. Since we did not seek belief statements systematically in our interviews, we

view their investigation to be a rich arena for further research. These explorations seem particularly important in attempting to learn more about the practical knowledge of college instructors and how it evolves.

The statements expressed by faculty about students focused for the most part on beliefs about student characteristics and how they influenced course planning and teaching. For example, a biologist contrasted the college student population with students he had once taught in high school whom he described as immature.

> I think [in high school] they're not ready, really ready to learn yet. I find even here my best students are those that have been out of school for maybe two, three, four years and then come back. Now they're emotionally ready to learn where they weren't before.

At the same time, this instructor mentioned the social demands and concerns that can distract college students, as well as high school students, from their education. Without using the language of instructional experts, another instructor expressed an obligation to adjust her teaching to the capabilities and inclinations of the learners:

> One of my philosophies is that the student should have the opportunity to learn the material in more than one way. So, for example, they may have a lecture and also a demonstration; or, they may have a lecture and see a film strip...so that students who have difficulty in one area or another are not handicapped by that.

Apparently linking her perceptions of the students with the conviction among college faculty members that learning to think effectively is a key goal, a faculty member teaching sociology in a community college expressed the following views:

> It's my view that most students can read and understand what they read in the text. And, therefore, I tend to focus in my lectures less on facts and more on analytical approaches to situations...and one of the biggest problems I have in that class is not with the ability of the student to read as such, [it's] the ability to think creatively. I think our grade schools, [and] high schools are failing miserably in that regard.

This belief that students possess adequate reading skills yet have creative inadequacies implies to the instructor that

> When I plan the course I plan [the] way in which I can help them conceptualize, help them analyze, help them to be critical.... What is important is that whatever of those courses the student takes, he or she learns to think creatively.

A similar perspective on this same issue of thinking critically was contributed, but for somewhat different reasons, by another instructor:

> So what I do is...in various ways get them to challenge their own beliefs, and I purposely challenge usually their religious and moral beliefs because if you don't challenge beliefs that are held firmly then the challenge doesn't take.... They are frustrated at first but [by the end of the course they agreed that] while it would have been interesting to [hear the instructor's views], it's much better that [the instructor doesn't share] in a course like this.

Another sociology instructor commented on student purpose as a factor in course planning:

> I would say that the first thing that influences me is my perception of what I think the course is supposed to be for the student...and that is predicated, of course, on my perception of what the students are essentially trying to do. What are they in school for? Will this introductory course fit into their scheme of things?

This faculty member observed that students arrive at college with their own goals into which they fit courses, even introductory courses. Because of this belief, the interviewee expressed obligations to both the student and the discipline:

> For a large portion of the students, the introductory course may be the only one they take. [and consequently,]...I'm trying to show them what sociology is....

A third sociology instructor recognized that students bring to college their own beliefs which present a challenge to him in course development:

> I want the students to understand themselves and their community and world in a cross-cultural, transcultural perspective. That's very important to me. I think Americans in general tend to be parochial. And, perhaps the nature of our student body may be that they are even more parochial.

A faculty member in English echoes this same belief about students and how his views of them shapes course purpose and instruction.

> An aim of mine, though I never make it overt, I never become didactic as far as I know, is to try to get them past their own feelings, their own [stilted] perceptions of things to think about...something or someone other than themselves...to realize that, that their lives extend out past their own gonads and their own preoccupations. They exist in a world of other people, and that matters.... Basically, what I'm after I guess, is to get these kids to think through their own experiences and not of the characters they meet in the books. And their colleagues. And I try to make them aware that the class itself is a microcosm of all other communities. They're responsible to the other kids...for the other kids as well as their own responses.

Although the obligations to society that undergird their teaching were most often expressed by those teaching in the humanities and social sciences, in describing his course planning one biologist also stressed the obligation that his field has to society:

> Well, one of the major things is that these students are for the most part going to be people in professional areas of biology and so society demands that the students be as well prepared as possible for whatever it is they've selected. I see competence as being very, very important.... We have an obligation to the legion of scholars and society to provide the very best foundation that we can for subsequent biology courses. These people are going to be an extremely important segment of society. There are going to be a lot of people that depend upon them.

Still another biologist, planning a course for non-science majors, had a somewhat different set of concerns and beliefs.

> And so I try to give what I consider a fair amount of time to each of the major topics in biology. Because I feel that one topic that may be of great interest to me may interest only ten percent of my audience. And it's my philosophy of teaching that if I can interest a student in my subject, I may convert him into at least being an understanding person in science even though they may not be in science. They will at least be understanding. But if I turn them off, they're never going to read a *Time* magazine article about science, or pick up a *New York Times* article about biology.

The following statement by a sociologist further illustrates this pervasive dilemma of whether the introductory course should be a general survey of the field or focus in greater depth on certain aspects of the field. From her statement, you can see that she has resolved this conflict with a very pragmatic belief:

> First of all I think about what is it that I want the course to do, in the sense of saying "Here are my students, here is the introductory sociology course, now what is this course to be for them?" I would say basically [there are] two directions one could go. You can do a survey where you try to cover the field and introduce the student to all the different subdisciplines and the differing perspectives and so forth within the field. Some other people use a technique where you don't go so much for breadth but for greater depth. You take a narrower series of concepts and narrower series of applications and try to probe and go deeply into it. My philosophy is that I feel we have ample upper level courses so that the student can take the course in a particular subspeciality.... I see my role more as a survey role to introduce the students to the field.

This decision of what to select from a vast array of knowledge is a major concern in course planning. As pointed out by Thielens (1987), this feeling of obligation to winnow through the material for the student may be one reason why the lecture method is so popular in introductory courses. The view is summed up quite precisely and pragmatically in the statement:

> A teacher's role is to take this textbook, which is filled with an infinite number of details that they will never have to know in their lives, and pick out the ones they *will* have to know....

While these statements demonstrate the close relationship between course content and course purpose for many college faculty members, only a few describe the relationship in terms of writing specific goals and objectives in their planning. The following statement of a faculty interviewee with a strong background in education (more the exception than the rule in our interviews) illustrates the relationship using other language:

> When we sit down to plan a course, we're involved in writing objectives. This is what we're all about when you go through being prepared to teach. You have lots and lots of methods courses and you learn and learn and learn how to write objectives. And so that's a good starting point because there should be a one-to-one correlation between the objectives, the work you give [to students] and your [teaching] activities and such.

In contrast, an instructor in English expresses concern about being too specific in setting goals:

> I take interest and pride in class discussions. That's why I'm a little bit cautious about specific learning goals. Because, if I think what am I going to get from this discussion of Hamlet and death, it's likely to throw me off if I think this isn't meeting one of my preestablished goals. I'd rather be an explorer at that point. My general overall goal is to increase students' perception of the humanity of others. They get that in class by...that's really one of the goals. You get that in class by establishing a community. By students recognizing the obsessions, the problems, the abilities of other students in the class. The better they get to know each other, the more likely they are to read the plays sympathetically.

Another faculty member, also teaching English, described a unique process he has developed over the years to foster the sense of community mentioned above. As was so common among English teachers, his process implies broad, general goals, rather than specific objectives:

> I guess this is part of my personal philosophy.... My classroom activities are somewhat unusual, although I guess its becoming more widespread. I use something I've come to call "group inquiry," which is something I've written about extensively and worked on for some years. It's built on the premise that students do not, will not, learn anything unless they are deeply and authentically involved.... I divide my class into teams of five, four or six, depending, you know, on how things fall. I will assign each team a problem...a literary problem. The teams are asked to go home...and respond in writing to that issue, that problem...they will come back to class, get in the group of five, and they will read their preliminary response to that.

This statement suggests that strongly held beliefs about planning and teaching did emerge from practice and, thus, became the basis for action. As in the case of this professor, a few college faculty members write about their practice, thus encapsulating it as an educational practice theory upon which others in their field may draw. Even so, they might never be willing to say they had developed an educational theory or even a systematic instructional process.

The practice/action cycle is further illustrated in the statement:

> I do know from experience some things that work and things that don't work for me and so...to keep me from simply going on and repeating the course, which I think is deadly. So each time I begin with some sort of focus. I never state it for the students but I'm delighted when they begin to find it later in the course.

Our research suggests that such beliefs and knowledge of "what works" may vary widely from teacher to teacher and discipline to discipline, thus contributing to a variety of interpretations about teaching matters. The beliefs upon which college teachers build their planning processes incorporate in complex ways the characteristics of the students, the content, the teaching role, and the relation of the field to society. In this sense they include all or most elements that instructional designers would include in a model of course planning. It appears to us, however, that many of the operating beliefs college teachers expressed as they talked about course planning in our interviews are rooted in practice rather than in theory.

While those trained in education might readily identify many of the expressed beliefs with the names of theorists who have formalized and more scientifically tested some of these ideas, the names of theorists or researchers cropped up only a few times in our interviews (Bloom, Maslow, Jung). Indeed, considering the laborious and often lengthy process through which college teachers appear to have acquired their practical knowledge, it is little wonder they resist generalization or labeling of what they have learned as someone's theory. It is possible that many fields in which much practical knowledge is held by current practitioners are especially resistant to formal training.

In a few fields, particularly English composition, we heard about formalized teaching philosophies (perhaps better termed "schools of thought") of current interest to those teaching in the field. It seemed to us that such schools of thought that faculty found influential (either because they are advocates or opponents) often resulted from the work of "translators" who move freely between educational theory and teaching practice. These translators both frame theory in practical terms and convert practical knowledge to theory. As we suggested earlier, the investigation of faculty belief statements, the relation of the beliefs to the development of practical knowledge, and, possibly, the role of translators seem fruitful areas for additional research.

5.3.7 Summary

Faculty described five different levels of course planning activities, the most common being routine maintenance of established courses. Planning for a new course and major revision of an old course both require intense effort and may generate considerable creativity and enthusiasm; little faculty satisfaction seems linked to teaching a course without a role in planning it.

The motivations for different levels of planning may be related to the level of satisfaction with the current course or courses. For example, routine maintenance is common when faculty members are satisfied with the overall objectives and framework of the course but sense the need to adjust or update materials or content. Routine review may be conducted most often when an individual faculty member or a program group has established a systematic procedure for periodic examination of courses. Major course revisions may be stimulated by dissatisfaction with course objectives, processes, or content. Finally, planning a new course may be undertaken to respond to new goals, objectives, activities, experiences, or clientele. Quite possibly, objectives are made explicit during new course planning but are assumed to exist during the more routine types of planning activities.

A classification of course planning themes mentioned by college faculty showed that much attention is given to discipline or content, less to contextual issues, and very little to speculative knowledge (instructional form or mode). Furthermore, some types of planning activities, as well as some planning themes appear to be field related. For example, among the faculty we interviewed, nurse educators were more likely than others to engage in routine review of courses and to articulate specific goals and objectives; literature instructors more frequently emphasized devising activities of a participatory nature for students while stating broad goals rather than specific ones.

Most faculty members have very little or no formal training in course planning and most have little regard for the views of instructional, educational, or psychological experts. In their planning activities, however, faculty members exhibit knowledge that apparently has been gained in informal ways. To support their practices, they express operating beliefs about their obligations as teachers of their disciplines as well as about their roles in preparing students for future roles as citizen and workers. To help fulfill these obligations, faculty members have developed "practical knowledge" that may not represent the best choices among alternatives since many alternatives have not been considered. Nonetheless, the possession of practical knowledge that enables them to succeed in their own goals may cause college instructors to resist formal consideration of how they might revise their planning and teaching.

6.0 Special Topics of Current Interest

We asked our respondents to address several questions that are currently of national interest and thus especially relevant to our research mission on the influences and impact of curriculum. In addition to answering these questions, our interviewees often spoke at length on topics that seemed important to them. In both situations, we believe that the actual words of the faculty members are essential to a full understanding of their views. Yet, the richness of these responses from 86 different interviews required that we group them by topics to bring order to a presentation. We have only begun to categorize these answers, so this section of our report should be seen as a preview to a more detailed analysis. We also caution that, by selecting quotations, we risk overemphasizing the views of those who contributed most fully. In this part of the report, we intend to capture the flavor of the comments; no attempt has been made to calculate what proportion of our interviewees each comment represents.

In the first section (Section 6.1) we provide illustrative comments on the following curricular issues: (1) a coherent curriculum, (2) development of core curricula, (3) the way course content should be sequenced, and (4) goals that faculty members hold for their students.

In the second section (Section 6.2) we comment on faculty perceptions of current students, specifically, their preparation, motivation, and needs.

In Section 6.3, we cover various aspects of faculty-student interaction. This includes comments on (1) detecting and promoting student involvement, (2) communication with and among students, and (3) ways instructors provide special assistance to students.

6.1 Curricular Issues

It was clear to us during the interviews that many faculty have not followed national discussions about college curricula nor have they read the many national reports that have been released within the last three years. We suspect that faculty are aware of recent criticisms of college teaching and learning primarily on campuses where administrators have attempted to create forums for discussing the reports.

6.1.1 A Coherent Curriculum

Following the dictionary definition of the word, coherence is probably best defined as meaning "fitted together into a harmonious whole." When used with respect to curriculum, our own perspective, developed fully elsewhere (Stark, 1986), is that harmoniousness can be viewed from at least three perspectives: (1) that of the educational plan as designed, (2) that of the educational plan as it is executed, and (3) that of the student who, in experiencing the plan, must achieve harmony between new learning and old. We listened for these ideas and others as we posed the questions: "There's been a lot of talk nationally about 'coherence' in the college curriculum. From your perspective, what meaning does this have? What does a 'coherent' curriculum mean to you?"

Perhaps the most discouraging (and the briefest) comment we elicited was: "Nothing. It means absolutely nothing."

The next level of reaction was clearly speculative, and there were several such responses, amply illustrated by the next two quotations:

> The only thing that maybe I could think of would be...that majors in various disciplines would be, say, required to take the same degree of difficulty in courses. I'm not sure really if that's what other people think about it as a.... I'm really not familiar with the concept.
>
> I've never been in a context...where we have discussed that in any great detail.... It tends to be serendipitous—it happens when it happens.

Others adopted the eclectic viewpoint in which coherence meant "study a bit of everything."

> A realization that our students need a variety of educational experiences which cross departmental lines...realizing that today's successful person is a composite of a little bit of everything and they should be encouraged to take liberal arts courses and business, you know...creative writing is important but so is financial knowledge....
>
> [Coherence is]...a core curriculum where all the students do take certain core courses that are basic...underlying many fields: communication, biology, math, computers [nowadays] because they are so much used in hospitals.

Some faculty members saw coherence primarily as a student outcome or a student responsibility:

> Being able to fully understand...subject material and the relevance of that subject material.
>
> I think we tend to leave that task [of pulling things together] up to the student.

A substantial number of faculty members described coherence not by defining it but by judging that their own undergraduate education epitomized the concept. Thus, the experiences cited were diverse. There were also a considerable number of responses, generally brief, in which faculty members defined coherence in terms of well-known language that seemed to them to require no further interpretation. An example is "education of the whole person."

In both positive and negative tones, some instructors cited traditional views, territorial views, or pleaded special causes:

> From a traditional point of view, it means the liberal arts orientation. This is, that knowledge starts as a reasonable whole and gets divided up into departments... artificially.... If they can get outside the whole of which they are a part...they would see that there are some consistent orientations.... [This happens when] I address them on the issues of women's studies.
>
> In the old days...theology [philosophy] was the centerpiece...and everything was related and as you came closer to the center it was related more tightly. What happens when you take the theology out of the center... everybody scrambles...if you don't have a center you have four and twenty masters.

Some readily responded in terms of their own discipline's potential contribution to coherence:

> Writing (composition) provides for coherence across the curriculum. It's in language that we communicate across...[using words]—the geneticist can convince me that this definition of life is important. The philosopher can say but that's not the notion of life as he sees it.... [For me as composition teacher] the goal is to help my student enter into that conversation.
>
> What we're doing in math should not contradict what we're doing in...in other...areas...should not be counterproductive. I would hope that they could use at least the same pattern of study.
>
> A balance of liberal arts and our more specialized professional courses in business. I think that we [business] have something to offer...contribution to make to a student's education.

Some views of coherence were couched in political or organizational terms. For example,

> It seems to me...that essentially...that level of packaging is not nearly as significant as... what happens in the classroom between teacher and students. [I don't like] all this talk about if we just package the curriculum right we'd save the school and it'd be a wonderful ...thing.

> I think the difference is political views. They're trying to defend their jobs or their point of view and they're arguing against people they don't like or...people's philosophy they don't like.

> [I suspect it is easier to have a coherent curriculum] at [a large university] because the colleges...the individual colleges have the opportunity to define a coherence that they are striving for....

> As far as integration across different fields...there is some lip service paid to it, and some comments made that we ought to be doing more of it but I find that the actual integration across fields is not so much a function of intellectual discipline as of geographical accident and personality.

A few faculty members who had obviously thought about the issue or were serving on pertinent committees took a somewhat broader view. They included in their comments such issues as the balance between breadth and depth of knowledge, the extent to which it is necessary for students to understand basic concepts and possess basic skills before integration can proceed, and the extent to which all knowledge is interrelated as it relates to issues and problems of mankind. The following quotations are illustrative of these comments:

> A curriculum that is clearly articulated...and in touch with the mission and purpose of the institution...one that has mutually supportive rather than competitive disciplines in it.

> Making sure that students have the same information base...in its best form it can take students and make certain that they are exposed...to...a variety of fields, to a variety of modes of inquiry. In its worst form it can be a set of courses which all students take that end up being titled...things like "Contemporary Trends"...which I find sort of dishwatery-grey, dull courses.... I guess I feel that a bit of specialization gives you a good hook on which to hang a mode of inquiry.

> So, I come down much more heavily with starting with a carefully constructed content base. Rather than...what I just call a bull session between sincere people who don't know what they're talking about.

> One thing should dovetail with another.... [But] I think you need to build on principles, basic principles.

> Students need to be aware that different disciplines are simply different approaches to the same issues.

> Maybe I'm also talking about students perceiving the coherence as important....

> I'm very much in favor of interdisciplinary courses at the upper division level which can help students who have something to integrate better see connections.

> General education committee proposed...a cross-discipline course in the social sciences where it would basically point out connections. The division voted it down...concerned that it might be a general education requirement that actually would be a diluted presentation of many disciplines that would not particularly have any significant outcomes.

> I think it is absolutely essential that the general education program relate coherently with the entire institution, every major in it. You struck a nerve on that one.

6.1.2 Core Curricula

The last several quotations about coherence raise the issue of core curricula that are being newly adopted by some colleges as one of the answers to questions about coherence and integration, about poor student achievement in certain fields, and about lack of cultural breadth. We asked no direct questions about this topic, but it was an issue on which our faculty respondents commented independently. Some faculty members seemed more to be inquiring of us than contributing a response; others were steeped in the issue by virtue of campus discussions; and still others presented new or strongly held views. By way of illustration, we provide one example of each of these cases.

A respondent who did not seem knowledgeable:

> Some of the new courses I'm not real familiar with...they're calling them "core courses." I think that "core" is that, you know, that liberal arts section will be a core of knowledge.

A knowledgeable respondent:

> We are engaging in some...some very heated discussion now about where content areas ought to be held. We have a psychologist who...says that history of psych, or the history of any field, could easily meet the "history of civilization" kind of requirement. Now I say, "Absolutely not because we need, in addition to content, the historiographer's approach to...and understanding of history...."

Respondent with new vision:

> [The president of the institution] was talking about the mission...as generally we are into the business of developing human beings...and I think that's an excellent mission. It says what we are.... We're not a teaching institution, we're not a research institution, we are in an institution of developing human beings!...And that implies a lot of things... because of a mission statement like that there has to be a strong bondage between various goals because we're all involved in, all responsible, if you will, for the development of any student that comes here or leaves here.

Respondent with a strongly held view:

> I think that it is morally offensive to me to teach Western civilization as if there is this great body of knowledge out there that all students need to know.... I had 25 black students and they're supposed to think that Socrates and Aristotle are all I'm supposed to tell them about? [If I do,] then I don't have time to talk about Africa or Asia or all these other kinds of things...make them memorize the great powerful figures in history and these great wonderful ideas. Well...phooey. I'm sorry, I just can't accept that as so important to these students.... So when we got to the reformation...talked about Luther, then you think about how you resist certain kinds of power structures. .that is really the theme [of mankind and of the course]—POWER. [That is what is meaningful.] How do you get it [POWER], what do you do with it, and how do you resist it?

Our subjective impression drawn from these comments confirms what others concerned with the study of curricular change have often said. It appeared to us that on campuses where reexamination was taking place, the process of discussion that gets faculty involved in rethinking the curriculum and thus prevents it from stagnating may be as important as the outcome or the specific configuration that results. One academic vice-president with whom we talked said he was heartened when he learned that many new curricular reforms in the past have lasted only 10 years or so. If they lasted longer, he believed, the crucial reexamination that is essential to good education would not take place.

6.1.3 Arranging Course Content

Early on in this research project, we postulated that college faculty members might not systematically consider the various ways in which content could be sequenced. Indeed, after the interviews, it is our impression that most instructors do arrange content very deliberately according to norms established by the discipline taught. On the other hand, when the disciplinary norms are indefinite or present legitimate alternatives, the instructors usually add their own rationale based on the local context. The following quotation articulates this very clearly:

> Historians have two ways of organizing the material. One might be topical in which they would deal with immigration, foreign policies...or to arrange the material chronologically. My feeling has been that students tend to like things which are at...the lower level.... They like things that are carefully laid out. They want to know where they're going to go. And sometimes topic courses seem to be less direct...to them. And so I teach the course chronologically.

The same idea, that of organizing a course according to the instructor's perception of student need for organization, structure, or firmer preparation, was heard in a number of ways:

> I give them what I believe to be a fairly detailed course calendar on the last page (of the syllabus). I think that it is important for them to have some idea of where I'm going, provide some structure.... I lay out on the board my objectives for that particular day.

Occasionally, an instructor took issue on pedagogical grounds, not only with the sequencing pattern preferred in the discipline, but with the pattern that had been adopted in the field at all levels. A mathematics professor, while feeling powerless to change an entire system, made some interesting points that we have excerpted below:

> The discipline [mathematics] has made an agreement...that it would teach things in order of importance and not in order of pedagogical simplicity.... So that in the second grade we teach students one of the most complicated of all possible mathematical systems...what they need is dreadfully important arithmetic on whole numbers [and so that is what is taught], despite the fact that it is a mathematical nightmare...because operations can sometimes not be performed...[there is no answer within the whole number system]. Pedagogically, it's a sick thing to do...by virtue of their practical importance...stuffed down their throats by some rote process [rather than achieving understanding]...and we continue to do it; [calculus is not the best first college course but] they have to have it first quarter to get into physics, [so we repeat the error again].

Sometimes instructors' needs seem to be as important as those of the students, as in the following example.

> I know from experience some things that work and some things do not work for me and so those decisions I don't even think about any more.... I begin by choosing for myself really, more than for the students, because I need something fresh each time. A new angle to explore to keep me from simply going in and repeating the course.

The organization of a course sometimes depends upon faculty creativity:

> We should be able to sit back and pretend that we were God and try to imagine how a particular organ system should be designed. Assuming that there are certain functions that are required...and those functions are going to make predictable kinds of structures. So, if you're going to breathe, you have to have certain kinds of structures...so I bring that kind of creativity to it.

Or it may lack creativity:

> I looked at their [others'] syllabi and I basically allocated.... I tried to parrot or copy what the other people who are teaching the course along with me are doing. And, so, what I did

was I simply took those topics and I sat down and then I developed lectures that I thought would adequately cover the material, deciding the degree of emphasis based on the portion of the time allocated and such.

Alternatively, arranging course material may be a matter of learning by trial and error, as shown by the two quotations that follow:

So I guess the first time around I went through [the course] in a more or less accidental way. And, then, I got to thinking about it...and...asking myself how it could be improved.

I would start by asking myself a question: Did it seem to work, a lot of times?

Some instructors were concerned with knowledge utilization:

Even though it's called a management theory course, I believe there have got to be practical applications. Experiential exercises, case studies that provide some hands-on experiences for the students and so, as I develop the course, I try to come up with ideas, exercises, cases that will allow them to apply the contents or the techniques.

Things that will help my students as they move into the four-year university or into their careers...and, therefore, I attempt to identify concrete situations that can help illustrate the concepts and theories that I'm presenting.

Some depended heavily on a text for course organization:

Now we change our (mathematics) textbooks fairly often around here to prevent... instructors from nodding off over problems that they've done 30 times. We seldom use a textbook more than two years in a row.... There's no way that we're going to get through any one of those books that you see on that shelf in 20 weeks. That's the selection that has to be done. And, so, most of the planning is very mechanical and uninteresting and has to do with making your wishes...coming into harmony with the physical reality of how much time you have. So, most of the planning consists of opening the text and saying, "Yes, I'll spend three weeks on that, two weeks on this, two...we can't talk about that at all...."

And others preferred to avoid texts:

I generally have not used a text for this. I tell the students that I will give them...the sort of framework for the course. And then I assign paperbacks on more specialized topics. And I do that because I want the students to have some...a greater variety in their reading...a sense of the different possible approaches to history. And, also, I want them to do some primary reading.... It seems to me that for students as good as the ones we're getting...that they can manage to take more specialized monographs and...handle them.

Relatively few focused on engaging the student in the learning task:

I work very hard at packaging. I mean, it doesn't take me long to pick out what content to share, that's not very hard. But I work very hard at packaging.... I would say that up front, when I think of the whole course, initially, I try to...let's say pick topics up front that are going to capture the students' interest and pick topics about which they will have something to say.

Seldom did we hear responses that referred solely to the discipline in providing a rationale for course organization. Instead, the comments seemed to reinforce our quantitative analysis that led us to the contextual filters model. The model attempts to represent a planning process in which the discipline, the instructor's own background and assumptions, and the instructor's perceptions of students interact to strongly influence decisions about course sequencing.

6.1.4 Faculty Goals for Students

The vast majority of goals faculty expressed for students were discipline-related. In general, it may be possible to classify three levels of discipline-related goals faculty expressed:

> Level 1. Specific objectives of the course or discipline, such as learning about the operation of the stockmarket or understanding the events leading to the Civil War.
>
> Level 2. Broad objectives of the course that relate to the importance of the discipline or the foundation being laid for future endeavors. For example, "...we study history in order to understand change... we don't study history in order to accumulate a lot of minutiae." Or, "...most of the students are entering the health sciences and must have a high degree of competence. The foundation we lay in biology is absolutely essential because there are going to be a lot of people that depend on them [the way they do their jobs]. You don't get any more responsibility than that."
>
> Level 3. Broad intellectual and personal development goals that might be an outcome of almost any college course, lodged in the discipline but not unique to it.

Our discussion here focuses, for the most part, on the generic goals instructors mentioned in Level 3. Consequently, it is important to note that we heard faculty members express their goals for students in many ways and in answer to nearly every question in our interview. More of these goals were discipline specific than generic.

Most faculty members appeared to formulate generic goals for students with optimism and concern. Although a few expressed frustration, this number seemed relatively small. Many faculty wanted to share their love of the discipline with students, as illustrated in the following remarks.

> The discipline is out there and my role is to try to get people to understand what that discipline is about and how it can enrich their lives. I think that goal remains supreme in everything that I do and the rest of these things are really accommodations that I make to that.
>
> Between 30 and 60 percent of the students, depending on how pessimistic [you are]...are totally untouched. But the ones who will go on in mathematics, they're beginning to get their leg up and they start seeing a glimmer, enough to keep them going in the discipline. And the ones who don't...they're probably not mathematicians. That's the kind of fatalistic attitude that I have toward it. The ones who weren't meant to be fiddle players, let them take up the trumpet.
>
> I'd like them to develop some conceptual understanding of...the things that are, in fact, dealt with in the syllabus. I think homeostasis is important...this course truly does serve in our program as a foundation course.... I also want them to have an appreciation for the fascination of biology.
>
> To stimulate them to think how they are affected by the business system and how they might someday fit into it.

In some institutions, the college mission or purpose takes on considerable importance:

> But another objective that is unique to the nature of our institution which...in your interviews would probably be somewhat different than some other institutions is that...because we are an...an institution in the Christian tradition, one of my objectives is to work toward an integration of the discipline and the principles of the discipline, the realities of society and biblical faith.

More often, however, the goals of inquiry prevail:

> In that, I guess that I think they ought to start asking questions. I encourage students to think for themselves. If they can come to the conclusion that we are asking questions, even after the research is done, we continue to ask questions. If we stop asking questions, we stop the whole [educational] process.
>
> I think that our main purpose of education is to teach students how to think effectively. As a nurse, you have to. If you can't think, you cannot be a nurse.
>
> To get them to try to think so they can understand why the Soviet Union, for example, might perceive a problem differently.... I refuse, of course, to give them any answers from the standpoint of saying this one is right.... I keep telling them you have to think through the various approaches and make your decision as to which you agree with. If it was a definitive answer as to which one is right, I wouldn't be bugging them with all these different viewpoints.

Often, the purpose of education was to transmit a skill:

> My primary goal is to (five-second pause) help each student become a more effective writer.
>
> My primary goal is that they learn the material; number two, that they can relate this material to their lives, that they use this material in their lives.
>
> Our type of goal is to give the student basic skills and...it would have to be background they need to pass the state boards.

Goals of breadth and self-understanding were common:

> We read literature because of the value of some kind of understanding or insight that it contributes to.
>
> There is sort of an ascending order of priorities and of course, correctness of language is one...and organization is a little up...and going on up the scale we're into thinking, reasoning, and using writing to sort ones' thoughts out. And, finally, into discovery...I think that's the ultimate goal—discovering yourself in a large context.
>
> And, then, primarily my objective would be to broaden the student, socially, and culturally. I want the students to understand themselves and their community and world in a cross-cultural, transcultural perspective.
>
> To help students to understand the complexities of the world in which they live.... A second one [objective] would be to understand change over time, how things change...and, also, how some things remain the same.

Developing self-confidence was important:

> I want them to come out liking language...liking to write...feeling the importance of putting their ideas on paper.
>
> [To convince them that]...if you give me anybody that's coachable, willing to develop the study skills so that they can handle the volume of knowledge...they can be successful in mathematics.
>
> I just want the student to learn that they can sit there with a piece of blank paper like an artist in front of them and that they can do something that is theirs. That they can put words on a paper in an order that wasn't there before...and they can get some kind of sense of accomplishment.

Comparing these diverse goals for students held by faculty members in eight different academic fields, one is struck by the richness and different developmental perspectives to which the student is exposed in taking a wide variety of courses. While one school of thought might espouse an integrated core course, it is relatively easy to see how

another, perhaps equally valid perspective, might support the diversity of goals and learning assumptions that can be gained from simply distributing one's courses across various disciplines with a variety of teachers.

6.2 Faculty Perceptions of Students and Their Learning Needs

Interestingly, we discovered, most faculty members in both the least and most selective institutions appeared to have adjusted to the types of students they teach. In the most selective colleges, instructors tended not to mention student preparation at all. In the least selective colleges, they noted the lack of student preparation but most seemed committed to working with the level of students available. Overwhelmingly, they saw themselves as teachers, not scholars or researchers. Some explicitly said that by having come to the particular type of college, they had accepted the teaching mission. Only a small minority seemed to us to be pessimistic and frustrated with their tasks.

> My obligation to these students, I think, is really quite different from what I might feel if I were teaching a freshman comp class at a major university.... With these students academic success and...degrees is not a primary goal.
>
> Most students...have very few problem-solving skills. Sometimes I wonder how they get dressed in the morning. [But] if we can teach [problem solving], it is one of the most useful things that you can give them...how to solve seemingly unrelated problems.
>
> And, then, the other things I've noticed is that they're not coming as well academically prepared, as my first few years here. I've been 14 years here...their ACTs have gone down, their class standings have gone down...and then we have had our definite increase of [disadvantaged] groups, too, into our program.
>
> One is that these kids have come out of a...have lived all their lives in a culture that...nearly deifies individuals...in which the only...culturally accepted frames of reference are if it feels good to do it.
>
> We have some who have not only pretty decent ability but who have had adequate writing preparation in their high school program. We have others who come to class who have not written very much at all, some who do not even know what a footnote is, to be honest with you.
>
> We don't basically get those [highly motivated students who know they want to be doctors, lawyers, scientists, etc.] because they really don't have that much affinity for being in the business world. They are going to be in some legitimate areas of knowledge, and they have that motivation. Of course there are always exceptions.... Who are the people who come [to business]? People who are sort of average...they like money but they don't know how to go about making money so they have a vague notion that business...they really haven't made up their mind...they don't have the precise drive, they don't have the specific confidence to be in other fields. So they say OK, we'll go to the business school.
>
> They are drawn draggin' and kicking into this world of abstraction. They do not like it...this is not a natural world for them. They cannot believe that abstraction is the key to simplicity...[But]...I do think by the time they finish [four years] they are beginning to get some real glimmer of how the whole thing fits together...I think it takes four years.
>
> It used to be that I could count on at least the parochial kids who would be...a relatively large number to have had European history. But, as of late, even the students coming in from the parochial schools seem to have had no history. So there's no background. No one reads Fitzgerald nowadays, Hemingway...and so it's difficult to find a point of reference.
>
> The students here simply do not have the same self-confidence that the students at [another more prestigious school] do. They do not think that they are capable of understanding.... They think that they are mediocre...probably true [based on SATs and such] but still they have no motivation, no incentive.
>
> A lot of times they don't have the skills but I view that more...as the background that they've experienced rather than their fault. But I find their positive attitude and the

willingness to change...the willingness to learn and coming to class. I have practically 100% attendance in class. And I haven't found that.... I've found 50% attendance at other universities more characteristic of low level courses...and I don't find that here. They're spending a good bit of money and they want to get their dollar's worth.

Mathematical skills which we use a little bit with the microscope...magnification, area of the field...they can't handle that. They don't know what a diameter is. And you wouldn't believe, I get up on a stool with a stick and say, "This stick is three feet long but it's not divided. Can I use this stick to measure the size of those bricks accurately?" If I thought 10 years ago I would be doing something as stupid as that I wouldn't have believed it. I used to ask a lot of essay type questions. Now I minimize the writing, I don't know what they are saying. Honestly, I cannot interpret what they're saying.

I have fine students. I have excellent students. But more of them [other students] are likely to be at the low end of the spectrum. There is no doubt about it [a decline in skill and ability levels]. I've been teaching for almost 20 years. Some of them are married [and have those responsibilities]. Some have short attention spans. So, I have to do different kinds of things in class. I don't just lecture at them. No way. It cannot be done. My students also...the younger ones, tend to be kind of irresponsible....

And increasingly...when teaching the general students, I have to think...because I've been teaching a long time [15 years] and the assumptions that I could make about students...I'm frequently caught short because of the change in attitude...that feeling of...I've paid my dues here, I've paid my tuition, teach me. You try to find ways to get students to invest themselves. Themselves rather than their money.

6.3 Faculty and Student Interaction

Based on research by Alexander Astin, and prominent in the title of a recent national report, *Involvement in Learning* (National Institute of Education, 1984), the "investment" of oneself referred to by the faculty member quoted last is often referred to now by the term "involvement." Among other recommendations, the report urges that colleges find ways to cause students to involve themselves.

6.3.1 Detecting and Promoting Student Involvement

Our interest in knowing how faculty tell whether students are involved in their learning stems partially from Astin's work and partly from a proposal made by K. Patricia Cross in 1986. Speaking at the National Conference on Higher Education, Cross suggested that each faculty member could and should become a "classroom researcher" who explores how, what, and why students are learning. Since then Cross has been talking with some faculty about "feedback devices" and, partly under NCRIPTAL sponsorship, writing a handbook of such ideas for faculty. To coordinate with her work, we asked faculty we interviewed: "How do you tell if students are involved in learning?"

As reported earlier, tests, quizzes, discussions, office visits, and in-class observation of student behavior by the faculty member were mentioned most frequently. Some faculty members amplified their responses and, as we examined their statements, we found very little evidence that methods faculty use to assess involvement could be termed scientific or systematic. Nonetheless, their responses seemed to reflect an intuitive, experienced based ability to know if students are involved. The following responses were typical.

Well, I have...I do observe, I mean I look at them and if I see puzzled faces and I ask them...even in big section classes...I'll say..."OK, how many?"...and I make them raise their hands. And if they sit there I'll say "OK, are you not raising your hand because you don't know or you don't care. If you don't care you've got to respond."

Sometimes I just stop talking until they answer a question..."So...are you still with me. Are you still there?" Occasionally, I ask for a vote on a topic.

> They will give me examples...or situations and ask me if such-and-such will apply. And, if so, what would the end results be? You can see them shaking their heads, yes.... Or they approach me after class and say "I don't understand this...I have a problem with this."
>
> The papers get better. They begin to have a critical method. They begin to write more effectively...with more perception, more sensitivity. You can tell. You know, it's an intuitive thing but it's...field is based on...you know, experience.

One way of getting students involved might be to provide materials that are easy to learn or enjoyable to learn. We found a strong dichotomy among the faculty we interviewed on this issue when we asked if those two factors would influence them in selecting course content.

> I don't really pay much attention to how much fun kids are having any more in these courses. I don't think I can do much about that. To tell the truth, I do not look upon learning as being a particularly joyous enterprise.
>
> There's this tension between learning should be fun or learning should be easy. I think it's enjoyable to learn. But, learning is not easy. I think that sometimes students don't understand that to learn is a struggle. To write is a struggle. All people struggle with writing no matter how much they write. So, I would want students to enjoy the learning. But I think the enjoyment is probably more intrinsic. I don't know if that's my job. I don't consider it one of my primary jobs to entertain them and necessarily make them like it. I would hope that I could foster their liking it but it's still pretty intrinsic.
>
> My feeling is that's part of my job to convince the student that it's important.... The students are human beings and there are very good reasons why they probably think history isn't very interesting.... That's part of what I have to deal with, part of what I have to fight.
>
> We have found that it is necessary...in an introductory course to...particularly in the beginning of the semester, get them involved in something that is attractive to them in order for them to...become involved in the course....
>
> They have to have some investment in it. And by enjoying it I don't mean "Gee, this is great." But if they can get some kind of significant pleasure out of it so much the better.

As with the term "coherence," we got the distinct impression that faculty members had not become familiar with the meaning of "involvement" as it is being used by many higher education researchers and administrators. To many faculty members, involvement appeared to be synonymous with "listening," "paying attention," or "being alert" rather than signifying engagement with the material being learned. The dilemma was characterized by one instructor in this way:

> And that would lead me to believe that, at least they paid attention to what I've been saying. Whether or not they understand it fully, I guess I don't really know. But I think they do.

We wonder whether the responses would have been different had we used the term "investment" which was contributed by faculty members themselves.

6.3.2 Communication

Despite common criticism and stereotypes of the college professor droning on from yellowed notes, faculty members we interviewed seldom apologized for conducting their classes primarily by the lecture method. They contributed a variety of comments which, in essence, constituted reasons they felt supported lecturing. The reasons ranged from student timidity to the need to select and organize course content for students, a finding congruent with other research (Thielens, 1987).

'Cause most of these are freshman students, they're still really timid. They're so afraid that what they say is going to sound stupid.... It's hard for them to...engage in any of this if they don't have any experiences that they can relate to.

Mostly [the communication] is from me to the students...[I] tell them that if they have a question and they don't...they feel uncomfortable talking in front of all the students, is just to write it down and I'll get to it. And if I can't do it in class time, I'll write it out and make sure that everybody gets a copy of the solution.

The value of discussion, as compared to lecture, was also supported by a few faculty members, typically composition or literature teachers, as follows:

I think if you develop an atmosphere in the classroom that makes them feel comfortable contributing anything that they think is relevant, they will bring in their own experience and...what they've been picking up in other classes. I think you set the tone for that.]

It seems to me that discussion has to be...a situation in which...you...help people to understand what you're trying to have them respond to...so I use discussion as an attempt to really have students clarify their opinions on the issues.

I believe in active learning instead of passive learning. So I try to personally arrange the material so that they're actually "doing" part of the time...you know, that they're not just sitting there.

6.3.3 Providing Special Assistance to Students

Recognizing that most of our faculty interviewees commented on the preparation deficits of their students, we thought it worth examining in greater detail the types of special assistance instructors provided.

In the answers to the question "What do you do that you think most helps students in their learning?," we found an interesting parallel with the dimensions researchers have reported on teaching evaluation instruments. The comments below illustrate the faculty members' attention to their own enthusiasm, organization, clarity, personal supportiveness, and so on.

Another relevant observation is that personal interaction may be decreasing. Many of the tutorial tasks that possibly used to provide an arena for one-to-one interaction between faculty and students are now performed by teaching assistants in special learning or media centers. In several colleges, particularly community colleges, these centers have become so much a part of the learning strategy that faculty members often forgot to mention them directly. Only because we pursued some comments that seemed unclear did we discover how dependent both faculty members and students appear to be on these learning centers. We submit that the whole concept of faculty-student interaction might need to be rethought in terms of both the emergence of these centers and the learning assistance function of the computer.

Some of the comments faculty made about special assistance are given below, primarily to show the diversity of views:

I tell them that I'm not a teacher and I don't know what a teacher is. I'm a person that's going to help them learn this material.

The contact in the lab is what I treasure...[it is there that] they may be able to see that I'm more excited about the material than they can see in lecture.

In other words, if I just tried to teach the subject, I don't know that I would have all that much success...if I didn't interact with the students and see their individual needs and take them aside for conferences and that sort of thing.

Well, the one-on-one relationship when a student has a problem and comes to my office where we can discuss...whatever it is that the student wants to talk about. I always tell the students to come by. I really am very busy but, on the other hand, I always make time for students. And they may not be able to talk to me exactly when they want to, but they always get a chance to talk to me.

I mean, I work hard at finding illustrations. I work *hard* at updating illustrations. What happened in the news this week that I could use.... You know I have things in my notes from other years...so that works for me pretty well.

Not to be judgmental. Create a climate to the extent that I can do it, where they are free to say anything and everything without fear of judgment or...the thing that terrifies our kids most is being made to seem stupid.... The thing I have to fight most, and I often lose the battle, is stepping in when something is apparent nonsense.

By the way, I always have them write a response...I have them do two things in writing for every assignment. A half-page *summary* of what they think the person is saying, so they can't be wrong. They're just giving their opinions...and then a half-page *reaction* to what they think the person was saying.

[I] serve as a model of a person who is just obviously a normal human being who's been able to comprehend this stuff. And express my enthusiasm for it.

I prepare the material well and am available to talk.

I make every effort...partially by the quizzes...to make sure that they come...[to class].... I'm relentless.

The most important thing? I present an organized plan for learning. And a system to do it, and I encourage them to do it.

The final quotation brings us back to our initial definition of curriculum as an academic plan to assist learning. The impression we have is that there are many views of what should be included in such a plan and at least an equally large number of ways the plan can be constructed.

6.4 Summary of Special Topics of Current Interest

The faculty members we interviewed emphasized discipline-related goals for their students most strongly, but many also believed they should be helping students develop in other ways, personally and intellectually. Thus, although most instructors seemed unfamiliar with terms that currently are being used by curriculum reform advocates (such as coherence, integrity, and involvement), they support similar goals using other words. Some knowledgeable faculty, however, were worried that through attempts to illustrate more explicitly the linkages among academic fields, some reforms might sacrifice depth for shallow breadth.

While sharing a variety of ways they used to help students learn, faculty in most fields described lecturing as the dominant mode of their classroom instruction. Many believe teacher-to-student communication is appropriate for introductory courses in order to highlight important material for students or to counteract student shyness. In lieu of extensive student-to-faculty communication, most faculty members use ad hoc techniques to judge if students are attentive; they may assume that attentiveness is equivalent to involvement.

7.0 Results of Student Interviews

7.1 Do Students Recognize Their Instructors' Designs?

This section examines the responses of students in interviews intended to gather their perceptions about the design of courses they had recently completed. Our primary purpose in conducting a few exploratory interviews with students was to assess the feasibility of gathering such perceptions. Thus, although the variety of institutions and classes involved in our study ensured a rather diverse group of students and although we asked that students selected from the various classes for interviews be "typical," we did not seek a fully representative student sample.

Consequently, tabular data presented here do not test any hypotheses that might be implied by the tables. Rather, we intend these preliminary findings to *suggest* hypotheses that might be pursued more systematically. As in examining the coded data from faculty interviews, we have used both a level of statistical significance of .10 and our own sense of what is unique or important only to help us decide what seems worth pointing out to the reader. To emphasize the very tentative nature of our findings, we have rounded percentages and other figures considerably more than is customary.

7.1.1 Student Demographics

Of 109 students interviewed, 108 responses were usable, but two of these were not fully identified by field of course enrollment. The missing two students cause minor discrepancies between the tables that show distributions by college type and those that show distributions by field of enrollment.

Table 46 gives a distribution of the students interviewed by field of course enrollment and type of college. Although Endowed College does not offer programs in business or nursing, the proportions of students from each of the eight types of courses offered in the eight institutions were reasonably balanced. More students from English composition classes were interviewed than originally intended. Since these excess interviews were distributed across colleges, they seem unlikely to bias cross-institutional comparisons. Through faculty reports, however, we know that English composition classes are often taught differently from other subjects; therefore, the distribution of compost-

TABLE 46

Distribution of Student Interviews (by Academic Field and College Type)

			COLLEGE TYPE									
	Total		2-year		LA II		Comp		LA I		Doc	
SUBJECT	*N*	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
Biology	16	15	4	11	2	15	4	19	2	13	4	21
Business	10	9	4	11	2	15	1	5	0	0	3	16
Composition	23	22	10	26	2	15	3	14	4	27	4	21
History	11	10	2	5	1	8	3	14	3	20	2	11
Literature	12	11	2	5	1	8	4	19	3	20	2	11
Nursing	11	10	8	21	2	15	0	0	0	0	1	5
Mathematics	12	11	4	11	2	15	2	10	1	7	3	16
Sociology	11	10	4	11	1	8	4	19	2	13	0	0
Total	106	100	38	36	13	14	21	12	15	20	19	18

Note: $\chi^2 = 25.29$, $df = 28$, p = n.s; n.s. = $p > .10$.

tion students among the interviewees may bias data aggregated across academic fields by adding extra emphasis to course design strategies often used in composition courses.

The demographic characteristics of the students interviewed are summarized by college type in Table 47 and by field of course enrollment in Table 48.

TABLE 47

Demographic Characteristics of Student Sample (by College Type)

CHARACTERISTIC	ITEM NO.	COLLEGE TYPE: Total (N = 108)	2-year (n = 40)	LA II (n = 13)	Comp (n = 21)	LA I (n = 15)	Doc (n = 19)	F	df	p^*
Age	105									
M		23	26	21	24	19	19	6.5	4,103	0.0
SD		6	7	3	7	1	1			
Range		18-49	19-49	18-29	19-40	18-21	18-23			
Credits enrolled	108									
M		14	13	15	15	15	15	4.7	4,103	0.0
SD		3	4	1	3	0	2			
GPA	113									
M		4.1	4.4	4.2	3.9	3.7	4.0	3.5	4,103	0.0
SD		0.7	0.6	0.4	0.6	1.0	0.6			
		PERCENTAGE						χ^2		
Works during school	114	64	78	85	52	53	42	11.5	4	0.0
College class	106									
Freshman		48	40	39	29	87	63	32.2	12	0.0
Sophomore		35	50	54	24	13	21			
Junior		12	8	8	33	0	11			
Senior		5	3	0	14	0	5			
Sex	103									
Male		32	25	39	33	47	26	2.9	4	n.s.
Female		69	75	62	67	53	74			
Race	104									
White		90	88	100	86	87	95	12.0	12	n.s.
Black		7	10	0	14	7	0			
Hispanic		2	3	0	0	7	0			
Other		1	0	0	0	0	5			
Father attended college	109	55	45	69	43	80	58	7.8	4	0.1
Father graduated college	110	40	30	31	33	73	47	9.9	4	n.s.
Mother attended college	111	49	31	69	48	80	47	13.1	4	0.0
Mother graduated college	112	34	18	39	33	60	42	9.7	4	0.1
Attended college after h.s.	107	81	60	92	86	100	94	18.4	4	0.0

* n.s. = $p > .10$

Women students are overrepresented in our sample (69%) compared to their enrollment in higher education generally (51%). Although the overrepresentation is partly due to the inclusion of nursing; we suggest it may also be true because women students more frequently were invited to the interviews and agreed to participate. Slightly fewer minority group students were included (10%) than are in the general college population (14.3%); this may have been characteristic of the colleges themselves—none was located in an inner city.

As would be expected, community college students were the oldest of the student groups and were enrolled for somewhat fewer credits than others (Table 47). In the

TABLE 48

Demographic Characteristics of Student Sample (by Academic Field)

CHARACTERISTIC	ITEM NO.	ACADEMIC FIELD: Total (N=105)	Bio (n=16)	Bus (n=10)	Comp (n=23)	Hist (n=11)	Lit (n=12)	Nurs (n=11)	Math (n=11)	Soc (n=11)	F	p*
Age	105											
M		23	23	25	21	20	26	26	20	21	2.1	0.1
SD		6	6	8	5	2	9	7	3	3		
Range		18-49	18-40	19-39	18-39	19-24	18-49	18-38	18-29	19-29		
Credits enrolled	108											
M		14	15	11	14	15	14	13	15	15	1.8	0.1
SD		3	2	5	2	2	4	4	2	2		
GPA	113											
M		4.1	4.2	4.0	4.0	3.9	4.4	4.0	4.2	4.2	0.7	n.s.
SD			0.8	0.8	0.9	0.3	0.7	0.6	0.4	0.6		
		PERCENTAGE									χ^2	
College class	106											
Freshman		48	44	30	78	27	25	46	83	27	42.7	0.0
Sophomore		35	38	50	22	55	17	46	17	46	(*df*=21)	
Junior		12	6	20	0	9	42	9	0	27		
Senior		5	13	0	0	9	17	0	0	0		
Works during school	114	64	38	70	61	73	83	73	50	73	0.3 (*df*=7)	n.s.
Sex	103											
Male		32	31	40	30	36	25	9	50	36	5.2	n.s.
Female		69	69	60	70	64	75	91	50	64	(*df*=7)	
Race	104											
White		90	94	80	91	82	92	100	92	82	15.0	n.s.
Black		7	6	20	4	9	8	0	8	9	(*df*=21)	
Hispanic		2	0	0	0	9	0	0	0	9		
Other		1	0	0	4	0	0	0	0	0		
Father attended college	109	55	44	40	61	36	58	64	75	64	6.3	n.s.
Father graduated college	110	40	31	10	48	27	58	18	67	55	13.9	0.1
Mother attended college	111	49	47	40	44	46	58	55	58	55	1.8	n.s.
Mother graduated college	112	34	20	30	35	36	50	36	42	27	3.3	n.s
Attended college after h.s.	107	81	88	70	93	91	75	46	92	91	12.4 (*df*=7)	0.1
Intended major	118											
Biology		8	50									
Business administration	15		70									
Communications/ journalism	5			17				33				
Computer science		2										
Education		13			17	18				27		
Engineering		3	13									
Fine arts		1										
Health science		8	19									
History		4				27						
Literature		6					67					
Mathematics		1							0			
Nursing		17	13					100				
Philosophy		1										
Physics		1										
Physical science		2										
Psychology		6								36		
Religion		1										
Socialwork		2										
Sociology		1										
Undecided		6										

* n.s. = $p > .10$

aggregate, students interviewed from business and nursing (in the four-year colleges, typically second term sophomores or first term juniors) were somewhat older than other students (Table 48). Although the vast majority of the students had entered college directly after high school, the variations followed expected patterns; the smallest percentage of immediate college attenders were students at community colleges.

Overall, 64% of the students said they worked during the school term, a considerably higher percentage than the group of freshmen who expect to work as reported by Astin in recent years for full-time college freshmen (33%). Although community college and Denominational Liberal Arts College students were more likely to be working, no difference in work patterns occurs by field of course enrollment.

The students we interviewed tended to self-report B as an academic average (a mean GPA of 4.09 where A = 5 and F = 1), but two students reported D and F averages. The highest mean GPA was at the community colleges and the lowest at Endowed Liberal Arts College, in reverse order of their selectivity in admissions.

A comparison of the college attendance and graduation patterns of the students' parents with national norms suggests that parental education levels are fairly typical (Astin, Green, & Korn, 1987). The 40% of students who reported that their fathers graduated from college matches Astin's figure, while a slightly higher percentage of our sample of students reported that their mothers were college graduates than did Astin's sample of fall 1986 full-time college entrants.

Although most were underclassmen, all but six of the students we interviewed had an intended major in mind. In Table 48 we have shown only those majors intended by a substantial number of students in each type of course. As expected, students we interviewed in introductory nursing and business courses typically were planning to major in these fields. Also, as expected, the intended majors of those taking English composition and introductory mathematics courses tended to be diverse; conversely, intended education majors were found enrolled in any of several general introductory courses, particularly in history, literature, and sociology.

7.1.2 Perceptions of Course Design and Faculty Intent

As with the faculty interviews, we first asked students to respond to broad questions about their course, the concepts it covered, and its goals and objectives. Later we proceeded to use more structured questions to ascertain both how students perceived their instructors' intent in teaching the course and how that perception meshed with their own intents in taking the course.

7.1.2.1 Course Objectives, Modes of Instruction, Types of Assignments, and Communication Flow

First we asked students to describe what they believed were their instructors' primary objectives in teaching the course. Then we asked if, as students, any additional objectives were important to them. While some students responded to these unstructured questions with ease, others had difficulty articulating their thoughts. Since these questions occurred at the opening of the interview, we believe the results give a good indication about what students report spontaneously. In Table 49 we present 12 groupings of objectives that emerged when the varied student comments were examined.

If each student had attributed two objectives to the instructor, the possible total of the first two mentions would have been 216. Percentage responses of the first two mentions based on these 216 possible responses are given in Table 49. The most promi-

nent notions students have about their instructor's objectives emerge clearly from this analysis: that is, most students believe their instructors are concerned with teaching them to appreciate the great discoveries and ideas of the human mind. This idea was included in 54.2% of the objectives students spontaneously attributed to their instructors. Mentioned somewhat less frequently were objectives concerned with applying knowledge in life or in the course itself and with learning a skill. None of the other categories was mentioned frequently, compared to these three objectives. Sixty students mentioned a third instructor's objective, and 23 students mentioned a fourth, but these additional responses did not change the pattern established by the first two objectives mentioned.

TABLE 49

Course Goals Students Spontaneously Attributed to Their Instructors

COURSE GOALS	RESPONSE CATEGORY	FIRST TWO MENTIONS	PERCENTAGE OF 216 POSSIBLE MENTIONS
Most frequent mentions[a,b]			
Appreciate great discoveries/ideas	6	117	54.2
Be able to apply knowledge to life/course	7	26	12.0
Learn a skill	8	32	14.8
Other			
Understand broad trends	1	5	
Understand why things happen	2	6	
Understand contemporary social issues	3	9	
Learn to think effectively	4	8	
Gain personal enrichment/autonomy	5	5	
Get a good grade/pass course	9	0	
Become creative	10	3	
Appreciate different viewpoints	11	4	
Observe teaching methods	12	0	

Note: $N = 108$. The variable numbers are 11 and 12, referring to the coded interviews.
[a] χ^2 by college type = 8.79, $df = 14$, p = n.s; n.s. = $p > .10$.
[b] χ^2 by academic field = 79.52, $df = 14$, $p = .00$.

In general, students seemed to feel that the objectives they attributed to their instructor were not unlike their own objectives for the course. When asked to contribute additional or different objectives that they held, 62 students added one objective, 21 students added two, and 8 students added three. All of these statements fell into the 12 grouping categories shown in Table 49; thus, the additional student objectives simply reinforced the three most important ones already cited for instructors. The only substantive addition was that 22 students mentioned getting a good grade or passing the course as their personal objective.

Information about [illegible] of instruction students observed is given in Tables 50 and 51. Clearly the lecture and lecture-discussion mode predominate, with no substantial difference across types of colleges. Among the fields of study, composition and literature classes clearly are taught differently than the others; a far greater amount of discussion is the norm in these courses.

In addition to instructional mode, we asked each student, "Would you say that communication in this course flowed predominantly from instructor to students, from students to instructor, or about equally in each direction?" Sixty-one percent of the students indicated that communication flowed predominantly from instructor to student; 38% reported that communication flowed about equally, while a single student maintained that communication flowed more from student to instructor. Variation across type of college was not extensive, but, again, the responses demonstrate that English composition courses involve more student-to-faculty communication than

TABLE 50

Instructional Mode Reported by Students (by College Type)

INSTRUCTIONAL MODE	RESPONSE CATEGORY	PERCENTAGE RESPONSES BY COLLEGE TYPE					
		Total (N = 108)	2-year (n = 40)	LA II (n = 13)	Comp (n = 21)	LA I (n = 15)	Doc (n = 19)
Type of class[a]							
Lecture	1	28	15	23	43	33	39
Discussion	2	12	13	15	5	20	11
Lecture/discussion	3	57	70	62	43	47	50
Seminar		1					
Self-paced		2					
Laboratory		0					
Field experience		0					
Group inquiry		0					
Communication[b]							
Teacher to students	1	61	43	54	76	80	72
Both directions	2	38	58	46	24	13	28
Students to teacher	3	1	0	0	0	7	0

[a] χ^2 = 9.36, df = 8, p = n.s; n.s. = $p > .10$. The variable number is 86, referring to the coded interviews.
[b] χ^2 = 18.73, df = 8, p = .02. The variable number is 87, referring to the coded interviews.

TABLE 51

Instructional Mode Reported by Students (by Academic Field)

INSTRUCTIONAL MODE	RESPONSE CATEGORY	PERCENTAGE RESPONSES BY ACADEMIC FIELD								
		Total (N=105)	Bio (n=16)	Bus (n=10)	Comp (n=23)	Hist (n=11)	Lit (n=12)	Nurs (n=11)	Math (n=11)	Soc (n=11)
Type of class[a]										
Lecture	1	28	69	20	0	55	0	18	55	18
Discussion	2	13	0	0	55	0	17	0	0	0
Lecture/discussion	3	59	31	80	45	46	83	82	46	88
Seminar		1								
Self-paced		2								
Laboratory		0								
Field experience		0								
Group inquiry		0								
Communication[b]										
Teacher to student	1	61	88	70	35	91	58	64	55	55
Both directions	2	38	13	30	65	9	33	36	46	46
Students to teacher	3	1	0	0	0	0	8	0	0	0

[a] χ^2 = 69.02, df = 14, p = .00. The variable number is 86, referring to the coded interviews.
[b] The variable number is 87, referring to the coded interviews.

other courses. In contrast, students in biology, business, and history are most likely to see their courses as instructor dominated.

We asked students to tell us about the types of assignments that are given in the course and also to indicate which assignments they found most useful in their learning. The results of student comments are given in Table 52.

Four types of assignments (text reading, short writing assignments, laboratory exercises, and various types of work sheets and problem sets) predominated and there were no differences across types of colleges. Not surprisingly, there were significant differences across disciplines since laboratory assignments were predominantly reported for biology classes, clinical exercises for nursing students, work sheets in nursing and mathematics, and so on. Long writing assignments were mentioned infrequently, while computer assignments received only one mention.

TABLE 52

Types of Assignments Students Mentioned

ASSIGNMENTS	RESPONSE CATEGORY	PERCENTAGE RESPONSES BY ACADEMIC FIELD: Total (N=105)	Majority (n=93)	Bio (n=16)	Bus (n=10)	Comp (n=23)	Hist (n=11)	Lit (n=12)	Nurs (n=11)	Math (n=11)	Soc (n=11)
Most frequent mentions[a]											
Readings in text	1	30	34	27	33	10	80	50	33	9	67
Laboratory exercises	3	11	12	73	0	0	0	0	0	0	0
Short writing assignments	4	32	37	0	22	91	20	50	50	0	33
Worksheets	12	16	17	0	44	0	0	0	17	91	0
Other											
Readings outside of text	2	0									
Long writing assignments	5	4									
Attend campus events (plays)	6	0									
Prepare for in-class quizzes	7	0									
Prepare for hour-exams/ tests	8	0									
Prepare for class discussion	9	0									
Quizzes	10	2									
Exams	11	1									
Study guides	13	1									
Clinical exercises	14	3									
Keep journal	15	0									

[a] $\chi^2 = 151.05$, $df = 21$, $p = .00$.

Notes: The variable number is 27, referring to the coded interviews. The column titled "majority" refers to the percentage of the top four responses.

ASSIGNMENTS	RESPONSE CATEGORY	PERCENTAGE RESPONSES BY COLLEGE TYPE: Total (N = 108)	Majority (n = 93)	2-year (n = 40)	LA II (n = 13)	Comp (n = 21)	LA I (n = 15)	Doc (n = 19)
Most frequent mentions[a]								
Readings in text	1	30	34	16	50	50	23	42
Laboratory exercise	3	11	12	13	8	11	15	11
Short writing assignments	4	32	37	42	17	28	54	37
Worksheets	12	16	17	29	25	11	8	11
Other								
Readings outside of text	2	0						
Long term assignments	5	4						
Attend campus events (plays)	6	0						
Prepare for in-class quizzes	7	0						
Prepare for hour-exams/ tests	8	0						
Prepare for class discussion	9	0						
Quizzes	10	2						
Exams	11	1						
Study guides	13	1						
Clinical exercises	14	3						
Keep journal	15	0						

[a] $\chi^2 = 13.6$, $df = 12$, p = n.s; n.s. = $p > .10$.

Notes: The variable number is 27, referring to the coded interviews. The column titled "majority" refers to the percentage of the top four responses.

Students either seemed to have no complaints about the types of assignment their instructors gave or they had no ideas about what other types of assignments they might have been given. Overwhelmingly, they designated the four primary types of assignments they had been given as those that were most useful in their learning. A few students added long writing assignments to the list of particularly useful assignments.

7.1.2.2 Instructor Goals and Messages About What is Important to Learn

Pursuing in more depth the initial unstructured question in which we had asked students to volunteer what they believed their instructor's objectives to be, we later provided a structured question. Of a list of 17 items that an instructor might want students to learn, we asked students to indicate whether they thought it was very important, somewhat important, or not important *to their instructors* that this learning took place. We also asked students how important it was *to them personally* that they accomplish each objective.

This information is examined in two different ways in Tables 53 and 54. In Table 53, we report the percentage of students who said various objectives were important to them and, they presumed, to their instructors. In Table 54, Column 1, we provide mean responses of the importance students believe their instructors attached to each objective (on a scale of 1 = very important to 3 = not important). The mean responses for what students thought was important are given in Column 4 of Table 54. Columns 2 and 3 give clues about whether students' perceptions of their instructors' objectives differ by field of study or by college type. Columns 5 and 6 give these same rough indicators of comparison for student's own views of what is important. Column 7 gives the discrepancies between the pairs of means and Column 8 gives the correlation between the two views that were expressed by the student.

TABLE 53

Student Rankings of Importance of Course Objectives to Themselves and to Their Instructors

	PERCEPTION OF INSTRUCTOR'S VIEWS*			OWN VIEWS*			
OBJECTIVE	ITEM NO.	Very important (%)	Somewhat important (%)	Not important (%)	ITEM NO.	Very important (%)	Somewhat important (%)	Not important (%)
Way discipline fits	29	79	16	6	46	76	19	6
Way scholars investigate	30	39	42	19	47	39	38	24
Solve social problems	31	48	36	16	48	48	37	15
Useful in future career	32	56	33	11	49	66	26	8
Helps understand world	33	64	29	7	50	64	26	9
My readiness to understand	34	65	30	6	51	63	30	8
Values of scholars	35	47	37	16	52	36	43	21
Disagreement of scholars	36	30	44	27	53	22	44	34
Moral values	37	38	33	29	54	41	33	26
Become happier person	38	22	36	42	55	36	27	37
Enjoyable to learn	39	53	36	11	56	68	24	9
Easiest to learn	40	27	38	35	57	30	36	34
Most difficult to learn	41	44	43	13	58	50	38	12
Stimulate to learn more	42	69	26	5	59	76	21	4
Foundation for future	43	82	19	0	60	87	12	1
Making decisions	44	54	37	9	61	65	27	8
Discipline connections	45	57	33	10	62	59	34	7

* 1 = important to 3 = not important.

Taking the simplest interpretation by examining the percentage of objectives judged "very important" in Table 53, it seems clear that students want to know how the discipline fits together, they want a good foundation for the future, and they want to find the material they learn enjoyable, although not necessarily easy to learn. They

TABLE 54

Student and Instructor Course Objectives as Students Perceive Them

OBJECTIVE	(1) PERCEPTION OF INSTRUCTOR OBJECTIVES: Item no.	M[a]	SD	PROBABILITY (2)[b] Diff by field	(3)[b] Diff by type	(4) PERCEPTION OF OWN OBJECTIVES: Item no.	M[a]	SD	PROBABILITY (5)[b] Diff by field	(6)[b] Diff by type	(7)[c] DISCREPANCY OF MEANS	(8)[d] *r* STUDENTS WITH INSTRUCTOR
Way discipline fits	29	1.3	0.3	n.s.	n.s.	46	1.3	0.6	0.1	n.s.	0.0	0.7
Ways scholars investigate	30	1.8	0.7	0.0	n.s.	47	1.8	0.8	0.0	n.s.	0.0	0.7
Solve social problems	31	1.7	0.7	0.0	n.s.	48	1.7	0.7	0.0	n.s.	0.0	0.8
Useful in future career	32	1.6	0.7	0.0	0.0	49	1.4	0.6	0.0	n.s.	0.2	0.6
Helps understand world	33	1.4	0.6	0.0	0.0	50	1.4	0.7	0.0	0.0	0.0	0.8
Readiness to understand	34	1.4	0.6	0.0	n.s.	51	1.5	0.6	0.0	n.s.	0.0	0.8
Values of scholars	35	1.7	0.7	0.1	n.s.	52	1.9	0.7	n.s.	n.s.	-0.2	0.7
Disagreement of scholars	36	2.0	0.8	0.0	n.s.	53	2.1	0.7	n.s.	n.s	-0.1	0.6
Moral values	37	1.9	0.8	0.0	0.0	54	1.9	0.8	0.0	0.1	0.0	0.8
Become happier person	38	2.2	0.8	0.1	0.0	55	2.0	0.9	0.1	n.s.	0.2	0.7
Enjoyable to learn	39	1.6	0.7	n.s.	n.s.	56	1.4	0.6	n.s.	0.0	0.2	0.7
Easiest to learn	40	2.1	0.8	n.s.	0.0	57	2.1	0.8	n.s.	0.0	0.0	0.8
Most difficult to learn	41	1.7	0.7	n.s.	n.s.	58	1.6	0.7	n.s.	n.s.	0.1	0.8
Stimulate to learn more	42	1.4	0.6	n.s.	n.s.	59	1.3	0.5	n.s	n.s.	0.1	0.5
Foundations for future	43	1.2	0.4	0.0	0.0	60	1.1	0.4	0.1	0.1	0.1	0.6
Making decisions	44	1.6	0.7	0.0	0.1	61	1.4	0.6	0.0	n.s.	0.2	0.8
Discipline connections	45	1.6	0.7	n.s.	n.s.	62	1.5	0.6	0.1	n.s.	0.1	0.7

[a] Scale of 1 = important to 3 = not important.

[b] Columns 2, 3, 5, and 6 show the significance level of the comparisons across academic fields and across college types, respectively.

[c] Column 7 is the difference obtained by subtracting mean scores on students' own objectives from the mean scores of students' perceptions of faculty objectives.

[d] Column 8 is the correlation of student ratings of their instructor's perceptions with their own perceptions.

want the material to be useful in decision making and in their future careers, a help in understanding the world, and a stimulus to learning more. With only a little variation, students saw their instructors as valuing these same learning objectives for them. In fact, in Table 54 the small size of the discrepancies (Column 7) and the high correlations (Column 8) show that either students did not have very different objectives from those they attributed to their instructors or they did not freely express them.

Upon examining the minor discrepancies, it is probable, and not surprising, that students see themselves as slightly more concerned with their future careers and happiness than they believe their instructors to be. At the same time, they see themselves as less interested in the values and issues of the disciplines than they assume their instructors may wish them to be.

The importance attached to each individual objective in the list of 17 we presented, hints at more variation among students studying courses in different fields than among students in different types of colleges. With the limited data base available, we believe it premature to present a detailed interpretation of these differences.

In addition to knowing how students perceived their instructors' objectives for them, we were interested in the ways instructors make those objectives known to students.

Thus, in a structured question that pursued in more depth our previous general inquiry about communication patterns, we asked the students to indicate the three most important ways the instructors gave them messages about what was important. We offered the students eight different possibilities (see Table 55) and asked them to rank the three they selected as most typical of their course.

TABLE 55

Ways the Instructor Sends Messages About What Is Important to Learn

MESSAGES	ITEM NO.	%[b] MENTIONS	MEAN RATING BY ACADEMIC FIELD[a] Total (N=105)	Bio (n=16)	Bus (n=10)	Comp (n=23)	Hist (n=11)	Lit (n=12)	Nurs (n=11)	Math (n=11)	Soc (n=11)	F df=7,98	p[c]
Course materials	65	41	1.8	2.3	2.0	1.3	2.0	2.2	1.4	1.5	2.2	2.3	0.0
Discusses course goals	66	37	1.9	1.8	1.7	2.2	2.0	12.8	1.9	2.1	1.4	0.6	n.s.
Discusses discipline	67	33	1.7	2.0	2.1	1.4	1.5	1.8	2.1	1.0	2.0	1.6	n.s.
Discusses program goals	68	11	1.2	1.1	1.0	1.5	1.1	1.0	1.6	1.3	1.0	1.5	n.s.
Responds to questions	69	50	1.9	1.5	1.4	2.4	1.7	2.0	1.3	2.2	1.8	2.5	0.0
Way organizes materials	70	62	2.3	2.8	2.7	1.6	2.4	2.2	2.4	1.9	2.8	2.4	0.0
Kinds of assignments	71	36	1.7	1.1	1.7	2.3	1.3	1.5	1.7	1.9	1.4	2.8	0.0
What is on the tests	72	30	1.5	1.4	1.4	1.1	2.1	1.5	1.5	1.8	1.3	2.3	0.0

MESSAGES	ITEM NO.	%[b] MENTIONS	MEAN RATING BY COLLEGE TYPE[a] Total (N=108)	2-year (n=40)	LA II (n=13)	Comp (n=21)	LA I (n=15)	Doc (n=19)	F df=4,103	p[c]
Course materials	65	41	1.8	1.6	1.7	1.9	2.5	1.5	2.1	0.1
Discusses course goals	66	37	1.9	2.0	1.6	1.6	1.5	2.5	2.2	0.1
Discusses discipline	67	33	1.7	1.7	2.0	1.7	1.5	1.7	0.3	n.s.
Discusses program goals	68	11	1.2	1.2	1.3	1.2	1.3	1.1	0.4	n.s.
Responds to questions	69	50	1.8	1.9	2.1	2.1	1.6	1.6	1.1	n.s.
Way organizes material	70	62	2.3	2.3	1.7	2.4	2.4	2.4	1.0	n.s.
Kinds of assignments	71	36	1.7	1.6	1.9	1.6	1.8	1.6	0.2	n.s.
What is on the tests	72	30	1.5	1.4	1.8	1.5	1.4	1.4	0.7	n.s.

[a] 1 = not mentioned; 4 = most important.
[b] Percentage of students who mentioned item as one of three ways most typical in their course.
[c] n.s. = $p > .10$

Clearly, students receive a wide variety of messages from instructors; most possibilities we presented were selected by a substantial group of students. Overall, however, the strongest messages to students seem to be communicated by the way instructors organize material, the way they respond to questions, and by the course materials themselves. At the other end of the continuum, instructors either discuss program goals with students infrequently or students do not see such discussions as having much meaning; discussion of program goals was not an important way of communicating course goals to students in these introductory courses.

The patterns of messages students perceive instructors to use in reaching them do not differ much across college types. (Course materials achieve slightly greater prominence at Endowed Liberal Arts College as do discussions of course goals at Midwest Doctoral University.) More differences are observed by academic field, and these seem to parallel what might be expected, based on reported instructional modes. For example, it appears that types of assignments and responses to questions (rather than course materials or organization) are a primary means of communication in composition courses where learning is often participatory. In contrast, course organization

and course materials may be the primary means of communication in courses where the lecture method predominates. Finally, in history, students were somewhat more likely than in other fields to rely heavily on tests to determine what was important. We note parenthetically that students cited program goals as discussed somewhat more frequently in nursing where (as we pointed out in discussing the faculty interviews) programs are often prominent in guiding faculty activities.

7.1.2.3 Course Sequencing Patterns

Since we included in this study a theoretical framework to examine how courses are organized, it was interesting to note that across college types and most fields of study, students believed the ways that instructors organize courses to be a very important way of communicating course goals and intents to them. To gain additional insight into how students think their instructors organize the content of courses, we asked each student to select from among six possible course sequencing descriptions those that were closest to what they had actually experienced. The six descriptions were the same shown to faculty members (see Section 5.1). As with the faculty interviews, the descriptions were read and sorted on separate cards that lacked titles.

Because we anticipated students might observe more than one type of sequencing during one course, we asked them to assign from 0 to 100 points to each description approximating what percentage of the course followed the pattern actually used by their instructor. After students had apportioned points based on the actual sequence patterns they had observed, they were asked to rank the cards and apportion the points again, this second time in keeping with their own preference for arranging the course content.

Tables 56 and 57 show the mean number of points students allocated to the various sequencing descriptions, based on their actual course experience. Comparisons in these tables are by college type and academic field, respectively. In a parallel way, Tables 58 and 59 show the students' own preferences for course sequencing.

In the aggregate, while students indicated that several sequencing patterns may be used in each course, they overwhelmingly both preferred and perceived their courses to follow the pattern we referred to as conceptually-based sequencing. This sequencing pattern develops a course according to conceptual relationships and logical sequences of ideas, theories, or patterns. In both perceptions and preferences, students' second choice was learning-based sequencing, in which course content is arranged according what is known about how people learn. The third-ranked preference and perception was for organization of courses around knowledge utilization, that is grappling with problem-solving situations likely to be encountered in lives and careers. Students seldom perceived that their instructors organized courses for essentially pragmatic reasons, nor did they endorse such a rationale.

Students at various types of colleges generally reported similar perceptions of how their instructors arrange courses as well as similar preferences for course organization. However, there were significant differences both in student perceptions and student preferences, across fields of study (see Tables 58 and 59). Without attempting to point out all of the field-related differences in students' perceptions shown in these tables, we simply note that history students were most likely to observe that their instructors arranged things in a structurally-based (in this case, chronological) way, biology instructors stressed conceptually-based sequencing, composition teachers used a learning-based mode of organization, while nursing and business instructors were seen as oriented toward knowledge utilization. The congruence between faculty reports about their plans and procedures as discussed in Section 5.1 and the student observations reported here, gives credence to the idea that students can be astute

TABLE 56

Student Perceptions of Course Sequencing Methods (by College Type)

SEQUENCING METHOD	ITEM NO.	MEAN NUMBER OF POINTS BY COLLEGE TYPE[a] Total (*N*=108)	2-year (*n*=40)	LA II (*n*=13)	Comp (*n*=21)	LA I (*n*=15)	Doc (*n*=19)	*F* *df*=4,103	*p*[b]
Structurally-based	80								
M		13.3	11.8	12.6	14.3	17.5	13.0	0.6	n.s.
SD		13.8	13.1	17.6	11.7	17.4	11.9		
Conceptually-based	81								
M		24.0	20.6	28.7	18.9	31.2	27.1	2.5	0.1
SD		16.1	11.7	18.0	13.9	25.4	13.6		
Knowledge creation	82								
M		12.9	12.8	4.9	17.4	14.9	12.4	1.7	n.s.
SD		14.2	13.7	6.0	15.3	18.5	13.0		
Learning-based	83								
M		22.6	26.8	16.3	21.8	17.4	23.0	1.4	n.s.
SD		17.1	19.4	16.7	14.3	17.0	13.8		
Knowledge utilization	84								
M		20.3	22.5	16.0	22.4	13.1	21.7	1.0	n.s.
SD		18.2	16.1	15.3	25.3	11.4	18.9		
Pragmatic	85								
M		7.0	7.3	9.0	6.3	6.6	6.0	0.2	n.s.
SD		10.0	10.5	13.4	7.0	7.5	11.7		

[a] Minimum = 1; maximum = 100.
[b] n.s. = $p > .10$

TABLE 57

Student Perceptions of Course Sequencing Methods (by Academic Field)

SEQUENCING METHOD	ITEM NO.	MEAN NUMBER OF POINTS BY ACADEMIC FIELD[a] Total (*N*=105)	Bio (*n*=16)	Bus (*n*=10)	Comp (*n*=23)	Hist (*n*=11)	Lit (*n*=12)	Nurs (*n*=11)	Math (*n*=11)	Soc (*n*=11)	*F* *df*=7,98	*p*[b]
Structurally-based	80											
M		13.3	10.5	12.2	8.6	30.6	17.3	6.3	8.8	19.0	4.9	0.0
SD		13.9	8.0	7.2	11.2	20.0	15.1	7.3	11.0	15.6		
Conceptually-based	81											
M		23.9	32.1	24.0	16.9	27.7	18.3	31.6	19.7	25.9	2.1	0.1
SD		16.3	17.3	12.0	18.7	14.0	10.3	14.7	10.8	20.2		
Knowledge creation	82											
M		12.7	8.1	12.2	13.3	15.2	23.4	8.4	10.5	11.2	1.5	n.s.
SD		14.2	7.2	7.9	18.9	16.6	18.0	8.2	13.5	9.6		
Learning-based	83											
M		22.5	22.4	21.5	30.5	7.5	12.8	16.9	27.2	23.3	1.8	0.1
SD		17.1	14.7	10.3	22.4	17.6	10.9	15.9	17.6	13.3		
Knowledge utilization	84											
M		20.4	16.9	26.0	21.4	7.1	22.3	31.8	24.8	13.4	2.2	0.0
SD		18.3	14.5	13.1	24.0	5.2	20.3	18.5	17.0	12.7		
Pragmatic	85											
M		7.1	12.1	9.4	7.0	2.1	7.3	6.1	3.3	8.2	1.3	n.s.
SD		10.1	14.7	9.3	11.1	1.9	11.2	9.0	4.1	8.5		

[a] Minimum = 1; maximum = 100.
[b] n.s. = $p > .10$

observers of course design. We are less sure why students preferred course organization congruent with what they observed their instructors already using. Possibly students have limited knowledge of alternatives, have been conditioned to the idea that certain types of subjects are usually presented in certain ways, have found these teaching and learning strategies effective for different fields in the past, or trust in their teachers as experts in their field.

TABLE 58

Student Preferences for Course Sequencing Methods (by College Type)

SEQUENCING METHOD	ITEM NO.	MEAN NUMBER OF POINTS BY COLLEGE TYPE* Total (*N*=108)	2-year (*n*=40)	LA II (*n*=13)	Comp (*n*=21)	LA I (*n*=15)	Doc (*n*=19)	*F* *df*=7,98	*p*†	CORRELATION WITH PERCEPTION
Structurally-based	74									
M		12.2	10.5	14.8	15.0	15.1	8.8	5.0	n.s.	0.7
SD		13.6	13.6	21.9	8.5	13.1	10.6			
Conceptually-based	75									
M		29.2	24.1	30.4	29.7	27.9	39.5	1.9	n.s.	0.6
SD		21.0	17.4	21.0	20.8	22.1	24.1			
Knowledge creation	76									
M		15.0	16.3	6.5	16.1	18.8	13.5	1.1	n.s.	0.6
SD		17.1	18.5	6.3	15.5	19.8	18.1			
Learning-based	77									
M		22.0	27.1	18.2	18.8	17.9	20.6	1.2	n.s.	0.6
SD		19.0	23.0	15.2	14.1	17.8	17.1			
Knowledge utilization	78									
M		16.0	14.9	15.5	16.5	15.8	18.4	0.1	n.s.	0.7
SD		18.3	15.6	16.9	23.1	19.2	19.5			
Pragmatic	79									
M		5.7	6.0	7.9	5.4	6.3	3.4	0.6	n.s.	0.5
SD		8.6	10.0	12.5	6.3	7.5	4.7			

* Minimum = 1; maximum = 100.
† n.s. = $p > .10$

TABLE 59

Student Preferences for Course Sequencing Methods (by Academic Field)

SEQUENCING METHOD	ITEM NO.	MEAN NUMBER OF POINTS BY ACADEMIC FIELD* Total (*N*=105)	Bio (*n*=16)	Bus (*n*=10)	Comp (*n*=23)	Hist (*n*=11)	Lit (*n*=12)	Nurs (*n*=11)	Math (*n*=11)	Soc (*n*=11)	*F* *df*=7,98	*p*†	CORRELATION WITH PERCEPTION
Structurally-based	74												
M		12.2	10.9	10.9	6.8	28.7	13.8	6.1	7.3	20.2	5.0	0.0	0.7
SD		13.6	8.9	12.2	9.1	21.7	10.6	7.4	9.1	16.1			
Conceptually-based	75												
M		29.2	38.2	34.5	20.4	33.2	23.1	24.4	32.9	32.8	1.5	n.s.	0.6
SD		21.0	18.0	21.1	25.2	21.4	18.8	16.8	19.2	18.4			
Knowledge creation	76												
M		15.0	7.0	9.8	19.8	21.6	23.3	9.6	9.3	15.6	1.9	0.1	0.6
SD		17.1	8.2	7.6	26.6	18.1	16.3	9.9	11.0	13.6			
Learning-based	77												
M		22.0	25.5	24.4	31.0	8.9	13.0	18.5	24.3	19.3	2.2	0.0	0.6
SD		19.0	18.8	16.8	24.3	6.4	15.0	20.7	19.7	12.7			
Knowledge utilization	78												
M		16.0	7.3	20.1	15.2	4.6	20.7	35.3	23.4	6.4	4.6	0.0	0.7
SD		18.3	8.0	19.4	22.3	4.4	19.9	18.5	16.2	8.7			
Pragmatic	79												
M		5.7	6.8	3.2	5.3	4.6	7.8	7.5	3.4	7.7	0.5	n.s.	0.5
SD		8.6	9.2	3.8	7.2	3.9	15.3	9.9	4.5	10.4			

* Minimum = 1; maximum = 100
† n.s. = $p > .10$

7.1.2.4 Educational Beliefs

We asked students about their perceptions of their instructor's beliefs about the purpose of education. We presented an educational purpose on each of six cards (the same descriptions as for faculty) and asked the students to order the cards according to similarity to their instructors' beliefs about education as they observed them. As with faculty, the beliefs were untitled, but we use titles here for easy reference.

TABLE 60

Student Perceptions of Instructors' Educational Beliefs (by College Type)

BELIEF	ITEM NO.	MEAN RANKING BY COLLEGE TYPE[a] Total (*N*=108)	2-year (*n*=40)	LA II (*n*=13)	Comp (*n*=21)	LA I (*n*=15)	Doc (*n*=19)	*F* *df*=7,78	*p*[b]
Social change	91								
M		3.9	4.5	3.6	3.6	3.5	3.8	2.0	n.s
SD		1.6	1.6	1.7	1.4	1.1	1.6		
Effective thinking	92								
M		2.3	2.	2.1	2.2	2.3	2.3	0.2	n.s.
SD		1.1	11.5	1.2	1.1	1.5	1.0		
Systematic instruction	93								
M		2.7	2.7	2.5	2.9	3.5	2.3	1.3	n.s.
SD		1.7	1.4	1.7	1.8	2.1	1.4		
Pragmatic constraints	94								
M		4.8	4.5	5.3	5.0	4.8	5.0	0.8	n.s.
SD		1.4	1.6	1.2	1.3	1.2	1.2		
Personal enrichment	95								
M		3.7	3.4	3.3	4.0	3.7	4.3	1.3	n.s.
SD		1.7	1.7	1.7	1.7	1.6	1.5		
Great ideas/discoveries	96								
M		3.4	3.5	4.2	3.4	3.1	3.2	1.0	n.s.
SD		1.6	1.4	0.8	3.2	1.9	1.8		

[a] Lowest ranking = 1; highest ranking = 6.
[b] n.s. = $p > .10$

TABLE 61

Student Perceptions of Instructors' Educational Beliefs (by Academic Field)

BELIEF	ITEM NO.	MEAN RANKING BY ACADEMIC FIELD[a] Total (*N*=105)	Bio (*n*=16)	Bus (*n*=10)	Comp (*n*=23)	Hist (*n*=11)	Lit (*n*=12)	Nurs (*n*=11)	Math (*n*=11)	Soc (*n*=11)	*F* *df*=7,105	*p*[b]
Social change	91											
M		3.9	4.3	3.0	4.4	4.6	2.9	4.8	4.1	2.6	4.4	0.0
SD		1.6	1.4	1.8	1.2	0.8	1.9	1.6	1.1	1.2		
Effective thinking	92											
M		2.3	2.5	2.6	2.2	1.8	2.5	2.6	1.9	2.5	0.8	n.s.
SD		1.1	0.8	1.4	0.9	0.9	1.2	1.4	0.9	1.7		
Systematic instruction	93											
M		2.7	1.6	2.3	3.2	2.7	4.3	2.2	2.1	3.3	4.4	0.0
SD		1.7	1.0	1.5	1.7	1.8	1.7	1.3	1.4	1.4		
Pragmatic constraints	94											
M		4.8	5.3	5.4	4.7	4.7	4.7	4.6	3.5	5.7	3.1	0.0
SD		1.4	1.1	1.3	1.7	1.4	1.4	3.5	1.2	0.5		
Personal enrichment	95											
M		3.7	4.3	3.6	2.6	4.3	3.8	2.8	5.6	3.7	6.0	0.0
SD		1.7	1.4	1.5	1.2	1.7	1.7	1.6	0.7	1.6		
Great ideas/ discoveries	96											
M		3.4	3.0	4.1	3.7	2.8	2.8	4.0	3.8	3.2	1.4	n.s.
SD		1.6	1.5	1.0	1.9	1.4	1.5	1.2	1.7	1.6		

[a] Lowest ranking = 1; highest ranking = 6.
[b] n.s. = $p > .10$

According to their students' observations, teaching students to think effectively is the predominant educational goal among the faculty members teaching these selected introductory courses, followed closely by a belief that instruction should be conducted systematically. A belief that the purpose of education is overwhelmed by pragmatic

TABLE 62

Student Preferences for Educational Beliefs (by College Type)

BELIEF	ITEM NO.	MEAN RANKING BY COLLEGE TYPE[a] Total (N=108)	2-year (n=40)	LA II (n=13)	Comp (n=21)	LA I (n=15)	Doc (n=19)	F df=7,78	p[b]	CORRELATION WITH PERCEPTION
Social change	97									
M		3.4	3.8	3.2	2.8	3.4	3.5	1.4	n.s.	0.6
SD		1.5	1.7	1.6	1.5	1.0	1.5			
Effective thinking	98									
M		2.2	2.4	2.2	1.9	1.9	2.2	0.8	n.s.	0.5
SD		1.4	1.4	0.9	1.0	1.1	0.9			
Systematic instruction	99									
M		3.3	3.2	2.8	4.0	3.9	2.4	2.7	0.0	0.6
SD		1.8	1.7	1.8	1.5	1.8	1.9			
Pragmatic constraints	100									
M		5.1	4.8	5.6	5.2	5.5	5.1	1.3	n.s.	0.5
SD		1.4	1.6	0.7	1.4	0.9	1.3			
Personal enrichment	101									
M		3.5	3.3	3.1	3.3	3.6	4.2	1.5	n.s.	0.6
SD		1.5	1.5	1.9	1.4	1.6	1.4			
Great ideas/discoveries	102									
M		3.5	3.5	4.0	3.7	2.7	3.5	1.5	n.s.	0.6
SD		1.4	1.5	0.8	1.5	1.4	1.5			

[a] Lowest ranking = 1; highest ranking = 6

[b] n.s. = $p > .10$

TABLE 63

Student Preferences for Educational Beliefs (by Academic Field)

BELIEF	ITEM NO.	MEAN RANKING BY ACADEMIC FIELD[a] Total (N=105)	Bio (n=16)	Bus (n=10)	Comp (n=23)	Hist (n=11)	Lit (n=12)	Nurs (n=11)	Math (n=11)	Soc (n=11)	F df=7,105	p[b]	CORRELATION WITH PERCEPTION
Social change	97												
M		3.4	3.8	2.9	3.7	4.0	2.3	3.3	3.6	2.7	2.1	0.1	0.6
SD		1.5	1.6	1.5	1.5	0.8	1.4	1.9	1.3	1.5			
Effective thinking	98												
M		2.2	1.4	2.3	2.2	1.8	1.9	2.6	2.1	2.2	0.5	n.s	0.5
SD		1.4	1.0	1.3	1.2	1.2	0.7	1.4	0.9	1.6			
Systematic instruction	99												
M		3.3	2.3	2.9	3.7	3.6	4.7	3.6	1.6	4.0	4.9	0.0	0.6
SD		1.8	1.5	2.0	1.6	1.7	1.2	2.0	0.9	1.6			
Pragmatic constraint	100												
M		5.1	5.4	5.6	4.4	5.7	5.3	5.3	4.8	5.5	1.7	n.s.	0.5
SD		1.4	1.0	0.7	1.9	1.0	1.2	1.1	1.3	1.0			
Personal enrichment	101												
M		3.5	3.8	3.1	2.9	3.7	3.8	2.7	5.0	3.2	3.2	0.0	0.6
SD		1.5	1.6	1.4	1.3	1.3	1.6	1.4	1.1	1.5			
Great ideas/ discoveries	102												
M		3.5	3.3	4.1	3.9	2.2	3.0	3.6	3.9	3.4	2.1	0.1	0.6
SD		1.4	1.5	1.2	1.8	1.0	1.4	1.2	1.4	1.1			

[a] Lowest ranking = 1; highest ranking = 6.

[b] n.s. = $p > .10$

concerns and constraints, so that any particular educational belief system is muted, does not operate often among their instructors, the students judged.

In general, student perceptions of their instructors' views about educational purpose did not differ by college type (Table 60), but it did differ in a number of respects by field of course enrollment (Table 61). For example, while effective thinking is seen as impor-

tant to instructors regardless of field, social change purposes are attributed more frequently to professors in sociology and least often to those in nursing. Systematic instructional process is viewed as more important to faculty members in biology and less important to those in literature; while personal enrichment is seen as least important to mathematics teachers and most important to composition teachers. Again, the results are intuitively appealing and congruent with aggregate faculty views of their own beliefs about educational purposes. Students may have observed accurately. As shown by the modest correlations between students' beliefs and their perceptions of their instructors beliefs, students believe that their instructors think somewhat as they do, at least well within the bounds of chance variation. Quite possibly, however, students view their instructors as somewhat more ready to endorse systematic instructional processes than the instructors admit (compare Tables 60 and 62).

7.1.2.5 Aids to Learning and Feedback

"What important things did your instructor do to help you learn?," we asked each student. The students gave us many answers, and we have listed in Table 64 the 22 categories into which we grouped their responses. Although the results were not as definitive as for some questions we have described, four contributions, listed in Table 64 and compared by college type and by field of enrollment, were mentioned most frequently: answers student questions willingly or well, holds office hours, summarizes key points, and communicates enthusiasm or interest. When comparing just these high frequency categories, we find some potential differences in the important types of help faculty members give by type of college. Because of our small sample size, it seems premature to pursue in detail the differences in these distributions.

We also asked two questions to obtain the students' view of how feedback is obtained. We asked what methods instructors used to find out whether students learned, and we asked students to describe their own ways of knowing they had learned. The answers to these two queries are given in Tables 65 and 66, respectively.

In Table 65 we see that students in all types of colleges frequently thought their teachers depended on tests or quizzes to know if they are learning. The next most frequently mentioned way was by asking students if they have questions, and the third most common method (particularly for composition courses) was by grading essays.

For their own part, students in all college types appeared to place less emphasis on tests and quizzes (or grades received) than they attributed to their instructors, students seemed to desire more self-reliance, including making self-estimates of whether they can follow and understand lectures, remember and articulate the information learned, and apply the knowledge.

7.1.3 Results of Field Testing Trial Student Questionnaires

After completing an interview, each student was asked to keep the specific introductory course in mind while completing four Likert-type trial questionnaires. One of these trial instruments described the student's educational goals for both college in general and the specific course; one measured motivation and learning strategies (McKeachie et al.,1986), one (modeled after early work by Pace, 1975), explored the amount of effort exhibited by the student in the specific course, and another measured the student's preference for course structure and tolerance for difficulty, following work by Strom and others.

TABLE 64

"What Does the Instructor Do to Help You Learn?"

WAYS OF HELPING	RESPONSE[b] CATEGORY	PERCENTAGE RESPONSES BY ACADEMIC FIELD: Total (*N*=105)	Majority (*n*=52)	Bio (*n*=16)	Bus (*n*=10)	Comp (*n*=23)	Hist (*n*=11)	Lit (*n*=12)	Nurs (*n*=11)	Math (*n*=11)	Soc (*n*=11)
Most frequent mentions[a]											
Holds office hours	2	11	24	25	0	38	13	17	20	38	40
Answers students questions willingly	3	19	36	25	33	25	25	33	80	50	20
Summarizes key points	9	10	20	25	50	0	38	17	0	13	20
Communicates enthusiasm/interest	13	10	20	25	17	38	25	33	0	0	20
Other											
Organizes course well	1	4									
Holds special help sessions	4	1									
Provides copies of lecture notes	5	0									
Gives quizzes to motivate us	6	0									
Gives tests	7	0									
Diagrams/audiovisual aids	8	7									
Explains interrelationships	10	1									
Encourages tutoring by others	11	0									
Provides study guide	12	5									
Gives examples	14	8									
Comments on essays	15	5									
Gives clear explanations	16	6									
Instills fear, terror, anxiety	17	1									
Encourages independent thinking	18	4									
Selects good readings	19	2									
Elicits discussion from students	20	4									
Relates knowledge to everyday life	21	4									
Demands/encourages complete hmwk	22	1									

[a] $\chi^2 = 19.35$; $df = 21$, p = n.s; n.s. = $p > .10$.

[b] The variable number is 88, referring to the coded interviews. The column titled "majority" refers to the percentage of the top four responses.

WAYS OF HELPING	RESPONSE[b] CATEGORY	PERCENTAGE RESPONSES BY COLLEGE TYPE: Total (*N*=108)	Majority (*n*=52)	2-year (*n*=40)	LA II (*n*=13)	Comp (*n*=21)	LA I (*n*=15)	Doc (*n*=19)
Most frequent mentions[a]								
Holds office hours	2	11	24	27	14	10	33	10
Answers student questions willingly	3	19	36	41	43	20	33	57
Summarizes key points	9	10	20	5	43	60	0	0
Communicates enthusiasm/interest	13	10	20	27	0	10	33	14
Other								
Organizes course well	1	4						
Holds help session	4	1						
Provides copies of lecture notes	5	0						
Gives quizzes to motivate us	6	0						
Gives tests	7	0						
Diagrams/audiovisual aids	8	7						
Explains interrelationships	10	1						
Encourages tutoring by others	11	0						
Provides study guides	12	5						
Gives examples	14	8						
Comments on essays	15	5						
Gives clear explanations	16	6						
Instills fear, terror, anxiety	17	1						
Encourages independent thinking	18	4						
Selects good readings	19	2						
Elicits discussion from students	20	4						
Relates knowledge to everyday life	21	4						
Demands/encourages complete hmwk	22	1						

[a] $\chi^2 = 22.02$, $df = 12$, $p = .04$.

[b] The variable number is 88, referring to the coded interviews. The column titled "majority" refers to the percentage of the top four responses.

TABLE 65

"How Does the Instructor Obtain Feedback to See If You Are Learning?"

FEEDBACK METHODS	RESPONSE[b] CATEGORY	PERCENTAGE RESPONSES BY ACADEMIC FIELD: Total (N=105)	Majority (n=87)	Bio (n=16)	Bus (n=10)	Comp (n=23)	Hist (n=11)	Lit (n=12)	Nurs (n=11)	Math (n=11)	Soc (n=11)
Most frequent mentions[a]											
Asks if we have questions	2	13	17	6	38	9	14	44	14	14	11
Gives quizzes or tests	4	52	62	94	63	9	86	56	86	86	89
Grades essays	6	17	21	0	0	82	0	0	0	0	0
Other											
Holds discussions in lecture	1	7									
Holds office hours	3	2									
Calls on students to do problems	5	2									
Observes in clinical setting	7	4									
Grades daily homework	8	3									

[a] $\chi^2 = 75.38$, $df = 14$, $p = .00$.
[b] The variable number is 89, referring to the coded interviews. The column titled "majority" refers to the percentage of the top four responses.

FEEDBACK METHODS	RESPONSE[b] CATEGORY	PERCENTAGE RESPONSES BY COLLEGE TYPE: Total (N=108)	Majority (n=87)	2-year (n=40)	LA II (n=13)	Comp (n=21)	LA I (n=15)	Doc (n=19)
Most frequent mentions[a]								
Asks if we have questions	2	13	17	21	36	10	9	6
Gives quizzes or tests	4	52	62	57	55	75	55	71
Grades essays	6	17	21	21	9	15	36	24
Other								
Holds discussions in lecture	1	7						
Holds office hours	3	2						
Calls on students to do problems	5	2						
Observes in clinical setting	7	4						
Grades daily homework	8	3						

[a] $\chi^2 = 8.62$, $df = 8$, $p =$ n.s; n.s. = $p > .10$.
[b] The variable number is 89, referring to the coded interviews. The column titled "majority" refers to the percentage of the top four responses.

There were three objectives in administering the questionnaires:

1. To provide profiles of self-perceived motivations, effort, educational goals, and learning strategies of the students interviewed and to detect major differences in these profiles among the varied courses and colleges included in the pilot study.
2. To compare interview results of students with very different goals, motivations, and learning styles.
3. To experiment with questions potentially useful at a later date in designing and validating a student goal instrument suitable for use as a pretest and posttest measure in curriculum design studies.

In each of the following sections, we describe the trial instrument and its origin briefly. Then we report information regarding the first objective above, namely describing the types of students in this pilot interview study as well as comparing the student group across colleges and eight types of courses. Because of time constraints, not all interviewees completed all questionnaires.

7.1.3.1 Student Goals

The Student Goals Questionnaire contained 20 randomly arranged statements reflecting vocational, humanistic, critical thinking, and human relations benefits frequently

TABLE 66

Student Self-Assessment of Learning

SELF-ASSESSMENT METHODS	RESPONSE[b] CATEGORY	PERCENTAGE RESPONSES BY ACADEMIC FIELD: Total (N=105)	Majority (n=69)	Bio (n=16)	Bus (n=10)	Comp (n=23)	Hist (n=11)	Lit (n=12)	Nurs (n=11)	Math (n=11)	Soc (n=11)
Most frequent mentions[a]											
Can follow/understand lectures	1	26	38	50	50	33	0	57	25	60	33
Do well on quizzes/tests	2	15	24	36	25	0	50	0	25	40	17
Am getting good grades	4	13	21	7	25	50	13	0	25	0	33
Can articulate information	11	11	18	7	0	17	38	43	25	0	17
Other											
Can do the laboratory reports	3	0									
Can remember materials learned	5	8									
Can do the homework	6	6									
Can apply knowledge elsewhere	7	9									
Improve over time	8	6									
Perform well in clinical setting	9	2									
Want to learn more	10	4									
Get feedback/comments on essays	12	2									

[a] $\chi^2 = 31.41$, $df = 21$, $p = .07$

[b] The variable number is 90, referring to the coded interviews. The column titled "majority" refers to the percentage of the top four responses.

SELF-ASSESSMENT METHODS	RESPONSE[b] CATEGORY	PERCENTAGE RESPONSES BY COLLEGE TYPE: Total (N=108)	Majority (n=69)	2-year (n=40)	LA II (n=13)	Comp (n=21)	LA I (n=15)	Doc (n=19)
Most frequent mentions[a]								
Can follow/understand lectures	1	26	38	35	44	17	50	53
Do well on quizzes/tests	2	15	24	17	22	33	25	24
Am getting good grades	4	13	21	30	0	17	13	24
Can articulate information	11	11	18	17	33	33	13	0
Other								
Can do the laboratory reports	3	0						
Can remember materials learned	5	8						
Can do the homework	6	6						
Can apply knowledge elsewhere	7	9						
Improve over time	8	6						
Perform well in clinical setting	9	2						
Want to learn more	10	4						
Get feedback/comments on essays	12	2						

[a] $\chi^2 = 13.21$, $df = 12$, p = n.s; n.s. = $p > .10$.

[b] The variable number is 90, referring to the coded interviews. The column titled "majority" refers to the percentage of the top four responses.

associated with higher education. The items were adapted with permission from items included in the Higher Education Measurement and Evaluation Kit (Pace, 1975). Using different wordings, Pace has included similar items in the "Estimate of Gains" section of the College Student Experience Survey (Pace 1984, 1987). The specific statements as we adapted them are shown in the questionnaire in Appendix III and are listed in abbreviated form in Tables 67 to 70.

Our use of these goal statements differed from prior uses since we asked the student to answer twice, first for their goals in attending college and second for their goals in taking the specific course on which the interview focused. As in Pace's early work, the response scale was structured as a four-point Likert-type scale with responses of 4 = very much, 3 = quite a bit, 2 = some, and 1 = very little.

Aggregate mean student responses to the goal statements about goals in attending college are given in the "total" column of Table 67. Although even the lowest rated goal statements seem to be "quite a bit" important, students in our interview sample rated

TABLE 67

Student Goals in Attending College (by College Type)

STUDENT GOAL	ITEM NO.	MEAN RESPONSES BY COLLEGE TYPE* Total (N=94)	2-year (n=39)	LA II (n=9)	Comp (n=17)	LA I (n=11)	Doc (n=18)	F df=4	p*
Vocational goals		3.5							
Background for further study	197	3.7	3.6	3.7	3.8	3.6	3.7	0.1	n.s.
Improve social/economic status	203	3.1	3.1	2.3	2.9	2.7	3.2	0.8	n.s.
Vocabulary, facts, skills	205	3.7	3.7	4.0	3.7	3.4	3.7	1.9	n.s.
Direct job skills	212	3.6	3.6	4.0	3.4	3.5	3.9	2.0	0.1
Humanistic goals		3.0							
Exp. cultural/philosoph.	213	3.2	3.1	3.4	3.0	3.5	3.2	1.1	n.s.
Appreciate literature	198	2.8	2.8	2.4	3.2	3.0	2.6	1.1	n.s.
Appreciate arts	204	2.4	2.3	2.6	2.5	2.6	2.3	0.4	n.s.
Improve writing/speaking	206	3.4	3.5	3.3	3.4	3.6	3.3	0.3	n.s.
Critical thinking goals		3.1							
Improve logical reasoning	199	3.4	3.2	3.4	3.6	3.5	3.6	1.6	n.s.
See relationships	202	3.2	3.0	3.4	3.2	3.4	3.5	1.7	n.s.
Learn nature of science	208	2.8	2.8	2.8	2.8	2.5	3.1	0.4	n.s.
Develop skepticism	207	3.2	2.9	3.4	3.2	3.5	3.5	2.4	0.1
Improve quantitative thinking	214	2.7	2.8	2.8	2.8	2.4	2.8	0.4	n.s.
Human relations goals		3.1							
Develop personally	200	3.4	3.3	3.4	3.6	3.3	3.6	1.2	n.s.
Make lasting friendships	201	2.8	2.4	3.7	2.6	3.6	3.1	6.2	0.0
Appreciate individuality	209	3.3	3.2	3.1	3.3	3.5	3.4	0.5	n.s.
Develop socially	210	3.3	3.2	3.4	3.3	3.5	3.6	0.9	n.s.
Develop tolerance	211	3.2	3.1	3.4	3.0	3.3	3.2	0.5	n.s.
Appreciate religion/ethics	215	2.4	2.3	3.2	2.3	2.3	2.2	1.8	n.s.
Other									
Earn credits	216	3.5	3.7	3.8	3.4	3.3	3.5	1.0	n.s.

* Very little importance = 1; very important = 4.

* n.s. = $p > .10$

vocational goals highest and humanistic, critical thinking, and human relations goals slightly lower. We note that students in our sample rated all goals as slightly more important than did the national trial samples Pace reported in 1975.

In Table 67 we provide statistics that may be used to alert us to potential differences across institutions. Using the .10 level of statistical significance to continue to explore potential differences, we note that there are few differences in the goals students at the various colleges espouse for their college attendance. Among the differences that may exist, students at Denominational Liberal Arts College and Midwest Doctoral University are slightly more likely to desire skills directly useful in a career and are more interested in making lasting friendships than are the students we interviewed at other types of colleges. Community college students seem less interested in developing skeptical attitudes about the world.

As might be expected, more potential differences, not in the broad area of human relations development but in more specific goals, were found when the mean responses of students enrolled in different courses were compared. Recall that, except for nursing and business students, the intended majors of these introductory course enrollees spanned many fields. Naturally, there was a slightly greater likelihood that students planning to major in health science areas were enrolled in biology courses, potential literature majors in literature or history, and so on. Not surprisingly, literature students were little concerned with acquiring job-related skills. Nursing and biology students had great interest in developing their understanding of science but less interest in appreciating literature and the arts (in some colleges, nursing students may already have completed their general education courses). These minor differences primarily serve to indicate the face validity of the responses.

TABLE 68

Student Goals in Attending College (by Academic Field)

STUDENT GOALS	ITEM NO.	MEAN RESPONSES BY ACADEMIC FIELD[a] Total (N=91)	Bio (n=13)	Bus (n=9)	Comp (n=19)	Hist (n=11)	Lit (n=8)	Nurs (n=11)	Math (n=10)	Soc (n=10)	F df=7	p[b]
Vocational goals		3.5										
Background for further study	197	3.7	3.7	3.7	3.6	3.5	3.8	3.7	3.7	3.9	0.4	n.s.
Improve social/economic status	203	3.1	3.3	3.0	3.0	2.6	3.1	3.5	3.8	3.0	2.9	0.0
Vocabulary, facts, skills	205	3.7	3.8	3.8	3.7	3.8	3.1	3.8	3.9	3.9	2.3	0.0
Direct job skills	212	3.6	3.7	3.6	3.6	3.6	3.0	3.9	3.9	3.7	1.5	n.s.
Humanistic goals		3.0										
Exp. cultural/philosoph.	213	3.2	3.0	2.9	3.3	3.2	2.9	3.[illegible]	3.3	3.5	0.7	n.s.
Appreciate literature	198	2.8	2.8	3.0	2.9	2.6	3.0	1.9	2.6	3.3	2.0	0.1
Appreciate arts	204	2.4	2.4	2.2	2.9	2.6	2.3	1.6	2.4	2.3	1.8	0.1
Improve writing/speaking	206	3.5	3.1	3.4	3.7	3.5	3.3	3.2	3.9	3.5	1.3	n.s.
Critical thinking goals		3.1										
Improve logical reasoning	199	3.4	3.5	3.5	3.4	3.4	3.5	3.2	3.5	3.5	0.9	n.s.
See relationships	202	3.2	3.3	2.8	3.3	3.3	3.1	2.9	3.5	3.4	1.0	n.s.
Learn nature of science	208	2.8	3.6	2.3	2.9	2.0	2.3	3.1	2.6	3.2	3.9	0.0
Develop skepticism	207	3.2	3.0	2.7	3.4	3.3	3.1	2.7	3.4	3.7	1.7	n.s.
Improve quantitative thinking	214	2.7	2.8	3.1	2.7	2.5	2.4	2.2	3.1	2.9	1.1	n.s.
Human relations goals		3.1										
Develop personally	200	3.4	3.3	2.9	3.4	3.6	3.5	3.2	3.6	3.7	1.4	n.s.
Make lasting friendships	201	2.8	3.3	2.2	3.1	2.9	2.3	2.6	2.9	3.0	1.4	n.s.
Appreciate individuality	209	3.3	3.3	2.6	3.4	3.4	3.3	3.0	3.4	3.7	1.2	n.s.
Develop socially	210	3.3	3.3	2.7	3.7	3.0	3.0	3.2	3.8	3.4	2.2	n.s.
Develop tolerance	211	3.1	2.9	2.9	3.5	3.1	2.9	3.0	3.4	3.2	0.9	n.s.
Appreciate religion/ethics	215	2.4	2.0	2.4	2.5	2.4	2.6	2.3	2.4	2.3	0.3	n.s.
Other												
Earn credits	216	3.5	3.6	3.9	3.5	3.4	2.9	3.7	3.8	3.6	1.5	n.s.

[a] Very little importance = 1; very important = 4.
[b] n.s. = $p > .10$

In each group of goal statements, it appears that there is at least one statement with a highly skewed distribution, that is, it would be unusual for college students to say that development of vocabulary, skills and facts, improvement of writing or logical reasoning, or personal development were *not* among their goals. Such global socially desirable statements may be of little use in separating groups of students.

In general, students ranked the goals of lesser importance when referring to the specific course about which they were interviewed. Logically, perhaps, one expects less impact for an individual course (often required rather than freely chosen) than for one's college education generally. In the group of items referred to as "vocational," students in community colleges seemed to hold stronger expectations that courses would build educational background for the future, provide job-related skills, gain credits toward a degree, or improve social and economic status. Compared with students in other types of colleges, these same community college students also attached more importance to the opportunities a given course would provide for development of friends and social skills. Possibly, students whose degree program is shorter, such as in community colleges, see each course as more potent in fulfilling overall goals.

As anticipated, given a reasonable balance among students in different courses, there were no significant differences across colleges for the fairly specific humanities goal statements for the courses.

The number of statistically different comparisons in Table 70 suggests that students hold specific goals for different courses. Looking at the cases where items were answered *similarly* for students in the various courses, one notes that several are generic skills and abilities that may be developed in any course: background for

TABLE 69

Student Goals in Taking Course (by College Type)

STUDENT GOAL	ITEM NO.	MEAN RESPONSES BY COLLEGE TYPE* Total (N=94)	2-year (n=39)	LA II (n=9)	Comp (n=17)	LA I (n=11)	Doc (n=18)	F df=4	p*
Vocational goals		2.8							
Background for further study	217	3.0	3.1	3.1	2.9	2.6	2.9	0.6	n.s.
Improve social/economic status	223	2.1	2.8	1.4	1.9	1.5	1.7	9.1	0.0
Vocabulary, facts, skills	225	3.1	3.4	2.8	2.8	2.8	3.0	1.6	n.s.
Direct job skills	232	2.8	3.2	2.6	2.5	1.9	2.6	4.0	0.0
Humanistic goals		2.3							
Exp. cultural/philosoph.	233	2.4	2.5	2.7	2.6	2.4	2.1	0.5	n.s.
Appreciate literature	218	2.4	2.4	2.6	2.6	2.3	2.1	0.5	n.s.
Appreciate arts	224	1.7	1.8	1.7	1.4	1.8	1.4	0.9	n.s.
Improve writing speaking	226	2.6	2.7	2.2	2.8	2.6	2.4	0.6	n.s.
Critical thinking goals		2.7							
Improve logical reasoning	219	3.2	3.2	3.2	3.2	3.0	3.0	0.3	n.s.
See relationships	222	3.0	2.9	3.8	3.2	2.6	2.9	2.5	0.0
Learn nature of science	228	2.2	2.4	2.3	2.0	1.8	2.3	0.6	n.s.
Develop skepticism	227	2.7	2.7	2.4	2.9	2.6	2.6	0.4	n.s.
Improve quantitative thinking	234	2.3	2.5	2.4	2.1	2.1	2.2	0.8	n.s.
Human relations goals		2.7							
Develop personally	220	2.6	2.8	2.4	2.6	2.2	2.4	1.3	n.s.
Make lasting friendships	221	1.8	2.1	2.2	1.4	1.7	1.4	2.8	0.0
Appreciate individuality	229	2.6	2.8	2.8	2.4	2.9	2.2	1.4	n.s.
Develop socially	230	2.4	2.7	2.7	2.3	2.1	1.9	2.2	0.1
Develop tolerance	231	2.5	2.7	2.4	2.8	2.5	1.9	1.9	n.s.
Appreciate religion/ethics	235	1.8	1.9	2.2	2.0	1.8	1.3	1.7	n.s.
Other									
Earn credits	236	2.9	3.5	2.6	2.8	1.7	2.4	8.1	0.0

* Very little importance = 1; very important = 4.

* n.s. = $p > .10$

further study, reasoning ability, ability to see relationships, personal development, and lasting friendships. In the case of other items, the expected discipline differences are obvious in the data. Students do not expect their mathematics course to help them develop religious or ethical understanding, but they do hope it may improve their quantitative skills. Nursing students see their introductory course as instrumental in achieving economic and social advancement; literature students do not. Sociology students desire to develop skepticism, literature students to gain appreciation of literature and the arts, writing and speaking, and so on. When linked to their specific courses, some of these student goals resemble statements faculty members made about their course goals. (Recall that in this study the students had already completed the courses under discussion. Thus, when literature students indicate that one of their goals for the literature course was to appreciate individuality, we cannot tell from these data whether they held that goal before the course began or whether it developed as a result of the course experience.)

To summarize, based on our limited study, we found that students have specific goals for taking introductory courses that are related to the academic field of the course offered rather than to college type differences. These goals are less strongly held and less vocationally directed than are overall goals for attending college.

7.1.3.2 Motivation and Learning Strategies

The motivation questionnaire (see Appendix III) was based on work underway by colleagues developing the Motivated Strategies for Learning Questionnaire (MSLQ) (McKeachie et al., 1986). We arbitrarily chose 30 items we thought relevant to understanding student goals and motivations and that also had high loadings on factors our

TABLE 70

Student Goals in Taking Course (by Academic Field)

STUDENT GOAL	ITEM NO.	MEAN RESPONSES BY ACADEMIC FIELD[a] Total (*N*=91)	Bio (*n*=13)	Bus (*n*=9)	Comp (*n*=19)	Hist (*n*=11)	Lit (*n*=8)	Nurs (*n*=11)	Math (*n*=10)	Soc (*n*=13)	*F* *df*=7	*p*[b]
Vocational goals		2.8										
Background for further study	217	3.0	3.2	3.3	2.8	2.9	2.8	3.5	2.8	2.8	1.0	n.s.
Improve social/economic status	223	2.1	2.2	2.0	2.0	1.7	1.5	3.1	2.5	2.0	2.6	0.0
Vocabulary, facts, skills	225	3.1	3.1	3.8	3.1	2.5	2.4	3.7	2.9	3.1	2.5	0.0
Direct job skills	232	2.8	3.2	2.8	2.8	2.0	1.5	3.8	3.2	2.3	5.7	0.0
Humanistic goals		2.3										
Exp. cultural/philosoph.	233	2.4	1.9	2.2	2.1	2.8	3.0	2.9	1.1	3.9	9.5	0.0
Appreciate literature	218	2.4	1.6	2.2	3.2	2.6	3.8	2.0	1.3	2.3	8.3	0.0
Appreciate arts	224	1.7	1.2	1.7	2.3	1.5	2.9	1.0	1.2	1.6	4.9	0.0
Improve writing/speaking	226	2.6	1.9	2.2	3.7	2.5	3.6	2.7	1.7	2.2	7.8	0.0
Critical thinking goals		2.7										
Improve logical reasoning	219	3.1	2.8	3.0	2.8	3.3	3.4	3.2	3.8	3.2	1.7	n.s.
See relationships	222	3.0	2.9	2.6	2.9	2.7	2.9	3.2	3.1	3.7	1.4	n.s.
Learn nature of science	228	2.2	3.8	1.7	1.6	1.2	1.4	3.2	2.2	2.5	13.7	0.0
Develop skepticism	227	2.7	2.3	2.8	2.4	3.0	2.9	2.9	2.0	3.7	3.4	0.0
Improve quantitative thinking	234	2.3	2.5	2.6	1.9	2.0	1.6	2.2	3.3	2.5	2.6	0.0
Human relations goals		2.7										
Develop personally	220	2.6	2.3	2.3	2.7	2.3	3.0	3.2	2.3	2.9	1.7	n.s.
Make lasting friendships	221	1.8	2.0	1.4	1.7	1.5	1.5	2.4	1.4	2.1	1.6	n.s.
Appreciate individuality	229	2.6	2.2	2.0	2.6	2.4	3.5	2.8	1.9	3.5	3.8	0.0
Develop socially	230	2.4	2.2	1.8	2.5	2.0	2.5	3.1	1.7	3.2	3.2	0.0
Develop tolerance	231	2.5	1.8	1.9	2.7	2.8	3.0	3.0	1.2	3.6	9.2	0.0
Appreciate religion/ethics	235	1.8	1.4	1.6	1.6	1.8	2.6	2.4	1.1	2.6	4.1	0.0
Other												
Earn credits	236	2.8	2.7	3.6	2.7	2.5	1.9	3.7	3.2	2.3	3.5	0.0

[a] Very little importance = 1; very important = 4.
[b] n.s. = $p > .10$

colleagues derived as they field tested the instrument in biology, psychology, and English classes. When the items were selected, they represented six tentative conceptual groupings: motivation (intrinsic and extrinsic), perceived competence, test anxiety, learning strategies, help-seeking strategies, and goals. We asked students to focus on the target course and to respond to the clustered items on a seven-point scale ranging from 1 = "not at all true of me in this course" to 7 = "very true of me in this course." Some of the items had opposite meanings, thus scores would need to be reversed if scale scores were calculated.

Overall, the students in our sample had quite a positive view of their competence in their course work (mean of 5.6/7, excluding two negatively phrased items: 8 and 11) and were quite strongly motivated (5.7/7, excluding one negatively worded item: 14).

Students reported that they were slightly more likely to use higher level learning strategies (4.56/7 on items 23, 24, 25, 26, 28, 29, and 31) than to use recitation, memorization, and other lower level strategies (3.2/7 on items 21, 22, 27, and 30). Examination of response distributions leading to these mid-range mean scores on learning strategies reveals that student responses were rather evenly distributed with respect to use of the various strategies rather than showing either a strong central or bimodal tendency. As a group, students reported modest levels of test anxiety (4.0/7) with approximately even numbers reporting high, medium, and low levels of anxiety. The mid-range mean for levels of help-seeking (4.9/7), however, resulted from a bimodal distribution. Students reported modest certainty about their educational goals; again, a bimodal distribution showed two distinct patterns of certainty.

TABLE 71

Motivation and Learning Strategies (by College Type)

STRATEGY	ITEM NO.	MEAN RESPONSES BY COLLEGE TYPE[a] Total (N=86)	2-year (n=34)	LA II (n=9)	Comp (n=17)	LA I (n=11)	Doc (n=15)	F df=4	p[b]
Motivation (intrinsic/extrinsic)									
Learning useful after college	131	5.8	6.2	5.7	5.5	5.9	5.1	1.9	n.s.
Learning useful in future courses	132	5.3	6.0	6.2	5.7	5.4	5.1	1.3	n.s.
Interested in course content	133	5.7	5.7	6.0	5.8	6.2	5.0	1.2	n.s.
Important for intellectual growth	134	5.6	5.7	5.8	5.7	5.5	5.2	0.4	n.s.
Important to do well	135	6.3	6.4	6.3	6.3	5.5	6.4	1.3	n.s.
Needed encouragement	144	3.5	3.7	3.8	3.5	2.8	3.3	0.5	n.s.
Learned from mistakes	145	5.8	5.7	6.2	5.4	5.4	6.5	2.4	0.1
Worked when disliked course	146	5.5	5.4	6.0	5.5	5.1	5.5	0.4	n.s.
Worked when dull	147	4.9	4.8	5.0	4.9	4.5	5.2	0.3	n.s.
Learning strategies									
Wrote down every word	151	3.3	3.3	3.1	4.1	3.2	2.6	1.2	n.s.
Had difficulty with important points	152	2.8	2.7	3.0	3.2	2.7	2.4	0.4	n.s.
Integrated different sources	153	4.0	4.1	3.7	4.7	3.5	3.7	0.9	n.s.
Skimmed for organization	154	4.6	4.3	5.4	4.8	3.7	5.0	1.9	n.s.
Related to known material	155	5.3	5.4	5.1	5.4	4.5	5.7	1.3	n.s.
Summarized main ideas	156	3.8	4.0	3.0	3.6	4.6	3.1	1.2	n.s.
Recited materials	157	3.7	3.9	4.2	4.6	2.2	2.9	3.5	0.0
Used topic headings	158	3.5	3.7	4.9	3.4	3.0	2.7	3.0	0.0
Recalled related ideas	159	5.2	5.2	5.2	5.2	5.0	5.1	0.0	n.s.
Did not understand reading	160	3.0	2.8	3.4	2.9	3.3	3.2	0.3	n.s.
Looked for logical fit	161	5.5	5.5	5.1	5.6	5.5	5.5	0.2	n.s.
Perceived competence									
Grades depend on effort	136	6.0	6.2	6.4	5.6	5.8	6.2	1.3	n.s.
Grades depend on quality	137	6.1	6.0	6.6	5.9	6.1	6.1	0.4	n.s.
Grades depend on instructor	138	4.9	4.6	4.9	5.6	4.8	5.3	1.7	n.s.
Confident of course success	139	5.5	5.5	5.4	5.8	4.9	5.5	1.1	n.s.
Confident of background	140	4.8	4.7	4.1	4.9	4.5	5.8	1.9	n.s.
Give up/doubt ability	141	3.2	3.8	2.7	3.3	2.0	2.9	2.3	0.1
Confident of understanding	142	5.7	5.3	5.7	6.5	5.6	6.2	3.5	0.0
Ability led to success	143	5.5	5.4	5.8	5.2	5.3	5.9	0.7	n.s.
Test anxiety									
Thinks about poor tests	148	4.3	4.6	4.9	4.4	3.0	4.2	1.8	n.s.
Thinks about failing	149	3.8	3.9	4.3	4.2	2.6	3.7	1.3	n.s.
Thinks about other test items	150	4.0	4.0	4.3	4.4	3.4	4.0	0.6	n.s.
Help-seeking strategies									
Asked teacher to clarify	162	5.5	6.1	4.8	5.1	5.2	4.9	3.2	0.0
Asked help-study skills	163	4.2	4.2	4.2	4.2	4.2	4.1	0.0	n.s.
Goals									
Feel confused about goals	164	3.7	3.7	2.8	4.1	3.6	3.4	0.7	n.s.
Feel educ. goals have changed	165	4.0	4.4	3.2	3.7	4.4	3.3	1.1	n.s.

[a] 1 = not true; 7 = very true.
[b] n.s. = $p > .10$

Relatively few statistically significant differences by college type were found on these motivational and learning strategy items. Students in Denominational Liberal Arts College and Midwest Doctoral University scored higher than other students on learning from mistakes they had made, which could mean either that they perceived themselves to learn more or that they perceived they made more mistakes. Differences in reported use of particular learning strategies have no immediately obvious interpretation. Finally, it appears that students in community colleges express less confidence in their understanding and more frequently express a tendency to give up because they doubt their own ability. Similarly, they are more likely to ask the instructor for clarification than the other groups of students are. Given the non-representative sample, such comparisons are only suggestive of differences meriting continued exploration.

TABLE 72

Motivation and Learning Strategies (by Academic Field)

STRATEGY	ITEM NO.	MEAN RESPONSES BY ACADEMIC FIELD[a] Total (N=89)	Bio (n=11)	Bus (n=8)	Comp (n=19)	Hist (n=11)	Lit (n=8)	Nurs (n=11)	Math (n=10)	Soc (n=11)	F df=7	p[b]
Motivation (instrinsic/extrinsic)												
Learning useful after college	131	5.8	5.9	6.1	5.9	5.5	5.9	6.6	4.8	5.9	1.5	n.s.
Learning useful in future courses	132	5.8	5.9	5.6	5.9	5.7	4.8	6.9	5.3	5.6	1.6	n.s.
Interested in course content	133	5.7	6.1	6.1	4.8	5.9	6.5	6.4	4.3	6.4	4.8	0.0
Important for intellectual growth	134	5.6	5.2	5.8	5.4	5.5	6.5	6.0	4.9	6.1	1.4	n.s.
Important to do well	135	6.2	6.7	6.4	5.9	6.3	6.0	6.6	5.6	6.5	1.4	n.s.
Needed encouragement	144	3.5	2.1	3.8	4.8	3.1	2.6	4.1	3.9	2.5	3.4	0.0
Learned from mistakes	145	5.8	6.0	6.3	6.1	5.5	4.6	5.8	5.9	5.8	1.5	n.s.
Worked when disliked course	146	5.5	6.1	5.3	5.7	5.3	5.4	4.6	5.8	5.3	0.8	n.s.
Worked when dull	147	4.9	4.8	4.6	4.9	5.4	4.4	5.1	5.0	4.8	0.4	n.s.
Learning strategies												
Wrote down every word	151	3.3	3.7	3.8	2.6	2.7	2.8	4.4	2.9	4.0	1.6	n.s.
Had difficulty with important points	152	2.7	2.0	3.5	3.3	2.6	2.1	2.4	2.8	2.9	1.1	n.s.
Integrated different sources	153	4.0	3.7	5.3	3.4	4.7	3.6	4.3	3.2	4.5	1.3	n.s.
Skimmed for organization	154	4.6	4.3	4.9	4.5	4.7	4.3	4.8	4.4	4.7	0.2	n.s.
Related to known material	155	5.3	5.2	4.9	5.2	5.5	4.4	5.7	5.6	5.6	0.8	n.s.
Summarized main ideas	156	3.8	3.5	3.9	3.8	2.6	4.9	3.8	3.6	4.5	0.9	n.s.
Recited materials	157	3.7	3.8	3.9	3.5	3.5	2.5	4.2	3.8	4.1	0.6	n.s.
Used topic headings	158	3.5	3.2	4.5	3.0	2.9	3.0	4.3	3.4	4.2	1.6	n.s.
Recalled related ideas	159	5.2	4.5	5.4	5.1	5.3	3.6	5.8	5.8	5.6	2.7	0.0
Didn't understand reading	160	2.9	2.2	2.8	3.6	2.7	2.9	2.6	3.7	2.6	0.9	n.s.
Looked for logical fit	161	5.5	5.9	5.4	4.8	5.5	4.9	5.9	5.5	6.2	1.6	n.s.
Perceived competence												
Grades depend on effort	136	6.0	6.3	6.5	5.7	6.4	5.5	6.5	6.1	5.5	1.0	n.s.
Grades depend on quality	137	6.0	6.3	6.1	5.8	6.5	6.6	6.3	5.4	5.5	1.3	n.s.
Grades depend on instructor	138	4.9	5.3	4.9	4.8	5.3	4.3	4.4	5.3	5.0	0.6	n.s.
Confident of course success	139	5.5	5.5	4.9	5.6	5.3	5.6	5.3	5.3	6.1	1.0	n.s.
Confident of background	140	4.9	5.8	5.0	4.7	5.5	3.6	4.8	5.3	4.1	1.7	n.s.
Give up/doubt ability	141	3.2	1.5	3.4	4.3	2.7	3.9	3.0	4.1	2.1	3.5	0.0
Confident of understanding	142	5.8	5.9	6.0	5.8	5.9	5.4	5.7	5.0	6.5	1.2	n.s.
Ability led to success	143	5.5	5.7	5.6	5.7	6.0	5.3	5.7	5.1	4.5	1.4	n.s.
Test anxiety												
Thinks about poor tests	148	4.3	4.0	4.3	4.6	3.7	3.5	4.9	4.4	4.4	0.6	n.s.
Thinks about failing	149	3.8	4.2	3.8	3.9	2.7	2.7	4.9	3.5	4.1	1.4	n.s.
Thinks about other test items	150	4.0	4.6	4.7	3.8	3.2	3.0	4.5	4.3	4.1	1.2	n.s.
Help-seeking strategies												
Asked teacher to clarify	162	5.5	5.9	5.6	5.4	4.5	4.9	6.1	5.1	6.0	1.5	n.s.
Asked help-study skills	163	4.1	4.9	4.1	4.3	3.3	2.9	4.5	4.1	4.4	0.9	n.s.
Goals												
Feel confused about goals	164	3.6	2.8	3.4	4.7	3.7	2.5	3.1	3.8	3.6	1.4	n.s.
Feel educ. goals have changed	165	4.0	3.6	4.5	4.6	3.3	4.5	3.9	2.8	4.2	1.0	n.s.

[a] Not true = 1; very true = 4.
[b] n.s. = $p > .10$

The small number of differences by field of course enrollment appear to be more easily interpreted. Students in composition and mathematics courses, typically enrolled by requirement rather than by choice, were less interested in the course content, more likely to need encouragement, and more likely to give up because they doubted their ability. Students in literature courses were markedly less likely than other students to recall ideas related to what they were learning, quite possibly, if we believe their instructors, because of the lack of conceptual or hierarchical structure in literature courses.

7.1.3.3 Effort

The effort questionnaire was constructed to elicit information about the amount of effort a student expends in study and preparation for classes. Although we added

items to relate to the academic fields included in our interview sample, the questions are based on the work of Pace (1975). Pace derived them from student logs and grouped them into categories but did not test their reliability as scales: academic learning style, experiential learning style, and course activities and attitudes. Pace reported no national comparison figures for these items, some of which were the precursors of items now in the Student College Experience Survey. Several of the items were redundant with or closely related to items in our trial version of the Motivated Strategies for Learning Questionnaire. Students used a four-point scale to indicate how often the activities described in the 31 statements were performed in the context of the target course. This reference point differed from the more encompassing reports requested by Pace for activities over a year or more. The questions were clustered according to the concept they were intended to tap and the responses signified 4 = very often, 3 = fairly often, 2 = occasionally, and 1 = seldom or never (see Appendix III).

Overall, students were more likely to participate in class discussions than to do library work, research projects, or read nonassigned books, each of which they did less often than "occasionally." Experiential learning activities linked to these introductory courses were few; students helped other students more frequently than they partici-

TABLE 73

Student Effort in Course (by College Type)

EFFORT	ITEM NO.	MEAN RESPONSES BY COLLEGE TYPE[a] Total (N=91)	2-year (n=39)	LA II (n=9)	Comp (n=17)	LA I (n=11)	Doc (n=15)	F df=4	p[b]
Academic learning style									
Discussed in class	166	3.0	3.3	2.9	2.6	2.8	2.8	1.9	n.s.
Conversation with professor	167	2.0	2.3	1.8	1.9	2.1	1.3	3.0	0.0
Discussed with peers	168	2.3	2.4	1.7	2.2	2.3	2.3	0.8	n.s.
Concentrated study	169	2.5	2.5	2.7	2.5	2.7	2.2	0.5	n.s.
Studied on weekend	170	2.2	2.6	2.0	1.9	2.3	1.3	4.1	0.0
Read non-assigned book	171	1.6	2.0	1.3	1.4	1.3	1.2	4.3	0.0
Browsed for books	172	1.6	1.9	1.7	1.5	1.4	1.1	3.2	0.0
Did research project	173	1.6	2.0	1.4	1.4	1.4	1.1	3.2	0.0
Did library work	174	1.4	1.6	1.4	1.1	1.5	1.4	0.8	n.s.
Experiential learning style									
Did work experience	175	1.5	1.7	1.6	1.4	1.3	1.4	0.7	n.s.
Helped another student	176	2.3	2.4	2.2	1.8	2.6	2.5	1.5	n.s.
Did community experience	177	1.3	1.4	1.4	1.2	1.5	1.2	0.3	n.s.
Did laboratory exercise	178	1.7	1.9	1.8	1.2	1.8	1.7	0.9	n.s.
Course activities									
Took detailed notes	179	3.2	3.3	3.3	3.2	2.9	3.1	0.4	n.s.
Memorized material	180	3.1	3.1	3.3	3.0	2.5	3.3	1.2	n.s.
Underlined major points	181	3.2	3.1	3.4	2.9	3.3	3.4	0.5	n.s.
Made outlines	182	2.3	2.6	1.9	1.8	2.4	2.4	1.6	n.s.
Explained to others	183	2.6	2.7	2.2	2.5	2.9	2.5	0.8	n.s.
Thought about applications	184	2.8	2.8	2.8	3.2	2.8	2.5	0.9	n.s.
Related to own ideas/ experience	185	2.9	2.9	3.0	3.2	2.9	2.5	1.0	n.s.
Looked for basic structure	186	3.0	2.9	3.6	3.1	2.8	2.9	1.3	n.s.
Looked for fit	187	3.2	3.1	3.7	3.2	3.2	3.2	0.7	n.s.
Postponed coursework	188	1.8	1.8	1.7	1.8	1.8	1.7	0.1	n.s.
Skipped class	189	1.2	1.3	1.2	1.1	1.0	1.1	1.2	n.s.
Listened in class	190	3.6	3.6	3.8	3.6	3.3	3.5	1.0	n.s.
Course attitudes									
Enjoyed coursework	191	2.3	3.4	3.8	3.2	3.4	3.0	1.5	n.s.
Only took required	192	2.1	2.1	2.4	2.1	1.6	2.1	0.5	n.s.
Took for easy course	193	1.1	1.1	1.0	1.3	1.1	1.1	1.0	n.s.
Take more courses in field	194	2.9	3.0	3.0	2.6	2.9	2.7	0.4	n.s.
Told friends of interest	195	2.6	2.8	2.7	2.6	2.6	2.3	0.6	n.s.
Recommended to others	196	2.8	2.8	3.0	2.6	2.6	2.7	0.3	n.s.

[a] 1 = seldom or never; 4 = very often.
[b] n.s. = $p > .10$

TABLE 74

Student Effort in Course (by Academic Field)

EFFORT	ITEM NO.	MEAN RESPONSES BY ACADEMIC FIELD[a] Total (N=88)	Bio (n=11)	Bus (n=8)	Comp (n=19)	Hist (n=11)	Lit (n=8)	Nurs (n=11)	Math (n=10)	Soc (n=11)	F df=7	p[b]
Academic learning style												
Discussed in class	166	3.0	2.6	3.0	3.2	2.6	3.1	3.0	2.6	3.2	1.0	n.s.
Conversation with prof	167	2.0	2.5	1.4	2.2	1.5	2.4	1.9	1.6	2.3	1.5	n.s.
Discussed with peers	168	2.3	3.0	2.4	1.9	1.7	2.5	2.3	2.8	1.9	1.9	0.1
Concentrated study	169	2.5	3.1	2.8	2.4	2.5	2.5	2.4	1.8	2.7	1.2	n.s.
Studied on weekend	170	2.2	2.6	2.4	1.8	1.9	1.9	2.4	2.0	2.5	1.0	n.s.
Read non-assigned book	171	1.6	1.5	1.6	1.4	1.3	2.0	2.1	1.5	1.7	1.3	n.s.
Browsed for books	172	1.6	1.5	1.6	1.4	1.3	2.0	2.1	1.1	2.4	3.1	0.0
Did research project	173	1.6	1.6	2.0	1.4	1.5	1.5	1.9	1.3	1.9	0.8	n.s.
Did library work	174	1.4	1.5	1.5	1.5	1.1	1.5	1.7	1.0	1.7	0.9	n.s.
Experiential learning style												
Did work experience	175	1.5	1.5	1.6	1.5	1.0	1.5	2.5	1.0	1.5	2.6	0.0.
Helped another student	176	2.3	2.8	2.9	1.9	1.4	2.9	2.7	2.6	1.7	5.2	0.0
Did community experience	177	1.4	1.4	1.4	1.3	1.0	1.8	1.7	1.0	1.5	1.3	n.s.
Did laboratory exercise	178	1.7	3.5	1.0	1.5	1.0	1.3	2.7	1.0	1.4	13.4	0.0
Course activities												
Took detailed notes	179	3.2	3.8	3.4	2.2	3.2	2.8	3.7	3.5	3.5	5.7	0.0
Memorized material	180	3.1	3.7	3.8	2.1	3.0	1.6	3.7	3.4	3.6	10.8	0.0
Underlined major points	181	3.2	3.3	4.0	2.6	3.1	3.0	3.5	2.6	3.8	2.5	0.0
Made outlines	182	2.4	2.6	2.4	2.2	1.9	2.3	3.1	2.0	2.5	1.1	n.s.
Explained to others	183	2.6	2.8	3.0	2.2	2.0	2.9	2.8	2.7	2.6	1.7	n.s.
Thought about application	184	2.8	2.5	2.9	2.9	2.3	3.0	3.2	2.5	3.4	1.6	n.s.
Related to own ideas/exp	185	2.9	2.6	2.5	3.2	2.5	3.4	3.2	2.6	3.3	1.6	n.s.
Looked for basic structure	186	3.0	3.0	3.0	2.6	3.1	2.6	3.5	3.0	3.4	2.0	0.1
Looked for fit	187	3.2	3.4	3.0	3.1	3.5	3.1	3.4	2.7	3.5	1.1	n.s.
Postponed coursework	188	1.8	1.6	2.3	1.8	1.5	1.6	1.9	2.0	1.7	0.8	n.s.
Skipped class	189	1.2	1.2	1.1	1.2	1.1	1.5	1.1	1.0	1.3	1.0	n.s.
Listened in class	190	3.6	3.7	3.6	3.4	3.7	3.6	3.6	3.6	3.5	0.6	n.s.
Course attitudes												
Enjoyed coursework	191	3.4	3.6	3.8	3.2	3.3	3.8	3.4	2.7	3.5	1.9	0.1
Only took required	192	2.0	2.0	2.0	2.5	1.3	1.9	1.5	3.2	2.6	3.1	0.0
Took for easy course	193	1.1	1.1	1.0	1.2	1.0	1.1	1.0	1.3	1.1	0.8	n.s.
Take more courses in field	194	2.9	3.5	3.3	2.2	3.1	3.0	3.5	2.3	2.9	3.4	0.0
Told friends of interest	195	2.7	2.9	2.5	2.6	2.5	3.5	3.3	1.7	2.5	2.4	0.0
Recommended to others	196	2.8	3.1	2.9	2.6	2.6	2.6	2.8	2.2	2.8	1.4	n.s.

[a] Seldom or never = 1; very often = 4.
[b] n.s. = $p > .10$

pated in community, laboratory (except biology students), or work experiences. While students reported that they seldom or never skipped class, some did postpone doing course work. Fairly often, on the other hand, they took detailed notes, looked for fit in material they were studying, and performed other learning activities they believed to be effective.

On the whole, on this questionnaire, students expressed a moderate degree of affinity for the courses on which the interviews were focused. They enjoyed the courses "occasionally," only "fairly often" would recommend the courses to friends, and only "fairly often" would they take more courses in the same field themselves.

When comparing student responses in various types of colleges, there were no statistically significant differences in the effort devoted to experiential learning (minimal in any case), to various course activities, or to attitudes toward the completed course. A few differences were found in the questions Pace classified as "academic learning style."

Students in Midwest Doctoral University reported fewer conversations with their professors (recall that this college had the largest classes). Students at Midwest Doctoral

University were also least likely to study on weekends, read a nonassigned book, browse for books related to the course, or do a research project. In contrast, students at the community colleges were more likely, on the average, to report engaging in all of these academic activities.

Comparing the student responses by course field, it appears that biology students discussed subject matter with peers more frequently than history students, while sociology students browsed for related books far more than history students. Not surprisingly, nursing students were most likely to have work experience in the course and, as well, biology and nursing students were more likely to do laboratory work.

Similarly, differences in course activities may reflect the type of course as much as student styles of learning or studying. For example, detailed notes were more likely to be taken in some courses, memorization of materials to be more common in others. The courses least likely to be enjoyed were English composition and math, the same courses that were most likely to be taken because they were required.

7.1.3.4 Instructional Preferences

This questionnaire was developed by Strom and others (1982) to provide two scales: preference for course structure and tolerance for difficulty. Designated choices a respondent makes from 33 forced-choice items (see Appendix III) are summed to arrive at the two scores. The maximum score on preference for course structure is 20; the maximum score on tolerance for course difficulty is 13 (see Appendix III). Scores obtained by our student sample are shown in Table 75.

This scale was used experimentally. In retrospect, a number of the statements contain pejoratives that might compel respondents to accept the alternative, and some statements were worded so they could be interpreted as not being mutually exclusive. For these reasons, we do not plan to continue use of the scale.

Summary results are shown in Table 75. There were no significant differences by either college type or course of enrollment on the scale termed "preference for course structure." On the scale called "tolerance for difficulty," respondents differed both by college and by course. The patterns appear to us to have no obvious interpretation.

TABLE 75

Instructional Preference Inventory

		MEAN SCORES BY COLLEGE TYPE						
SCALE	Total (N=93)	2-year (n=36)	LA II (n=10)	Comp (n=16)	LA I (n=11)	Doc (n=18)	F df=4	p*
Preference for structure[a]	10.2	10.8	11.5	7.9	10.8	9.7	1.7	n.s.
Tolerance for difficulty[b]	7.4	6.9	6.9	8.8	8.7	6.6	3.7	0.0

		MEAN SCORES BY ACADEMIC FIELD									
SCALE	Total (N=91)	Bio (n=14)	Bus (n=9)	Comp (n=19)	Hist (n=10)	Lit (n=8)	Nurs (n=11)	Math (n=10)	Soc (n=10)	F df=7	p*
Preference for structure[a]	10.2	11.5	9.6	7.3	11.3	10.0	10.2	8.8	12.5	1.7	n.s.
Tolerance for difficulty[b]	7.3	6.2	8.5	9.4	6.9	6.9	6.6	7.2	7.5	1.8	0.1

[a] Minimum = 0; maximum = 20.
[b] Minimum = 0; maximum = 13.
* n.s. = p = > .10.

7.1.4 Congruence Between Faculty and Student Perceptions

In interviews, students were asked (1) to cite perceptions of their instructors' plans, goals, and beliefs that underlie the course, and (2) to describe their own preferences on such issues. Based on mean scores of both groups, students (N = 108) tended to equate their views with those of the instructors (N = 89). Yet, these group aggregates do not adequately describe congruent views between faculty members and their students. For example, some instructors had no students interviewed; in other cases more than two students were interviewed. Thus, to facilitate analysis, we examined only actual paired faculty-student responses on selected data dimensions. Thirty faculty members were involved in more than one pair since two or more students from their class were interviewed. In all, we were able to identify 96 faculty-student pairs.

This analysis of faculty-student pairs has several limitations. First, we considered the perceptions of one student as potentially representative of the class. Second, in some cases the faculty and student questions were not parallel or were scored in different ways; consequently, to make the comparisons, the data required considerable manipulation and interpretation. This was particularly true in cases where post hoc content analysis had been used to establish response categories for open-ended questions. In most such cases, it was necessary to collapse either faculty or student response categories to achieve parallelism. Despite these limitations, the process of data reduction and re-aggregation was itself informative and consistent with our purpose in understanding the s in which faculty and students describe and interpret course design.

Table 76 presents the data categories for which we compared the 96 faculty-student pairs (Column 1). In Columns 2 and 3, the table gives (a) the types of unstructured or structured interview questions from which data were obtained for faculty and students, and (b) the types of scores that were originally recorded. Column 4 describes the types of manipulation used to achieve arallelism. Beginning at the top of the table, the data categories are ordered from th se that rely on direct student observation (e.g., the instructional mode and direction of communication flow in the class) to those that involve considerable student inference (e.g., student attribution of beliefs to their instructors). Theoretically, we expected student and faculty congruence to be more frequent in the dimensions listed first in the table.

Following the achievement of parallel data, the analyst sought "matches," cases in which faculty and student views were congruent. This process lead to a second criterion category, which we labeled "half matches." The "half match" was recorded when the student's response partially, but not completely, matched the faculty response.

Using course sequencing patterns as our example, we illustrate the meaning of "match" and "half match. (We followed similar procedures for other data categories listed in Table 76. In each instance we built on what we had learned about how faculty members and students responded to interview questions.) Faculty members typically endorsed two (occasionally, three) of the six sequencing patterns and rejected the remaining three or four. Thus, we considered the two sequencing patterns that faculty members ranked first and second as descriptive of their practice patterns. Students were given a slightly different task, that of assigning some number of points (0 to 100) to describe the portion of time they believed the instructor employed each sequencing pattern. Frequently, students assigned equal points to two or three patterns. We selected the three sequencing patterns receiving the highest number of points as representing the student's perception. A "match" was recorded if the faculty member's top two choices were among the three top-rated student choices; a "half match" was recorded if the student had chosen only one of the two top faculty selections.

TABLE 76

Data Manipulation to Achieve Parallelism in Comparing Faculty and Student Pairs

(1) DATA CATEGORY	(2) FACULTY RESPONSES	(3) STUDENT RESPONSES	(4) MANIPULATION
Instructional mode	Free response. Categorized by interviewers. Nine descriptors.	List of nine descriptors.	Resolve differences in coding categories.
Direction of communication flow	Open-ended. Categorized by interviewer into four categories.	Three categories provided.	Collapse faculty categories.
Ways instructor helps student learn	Open-ended. Coders sort top responses into five categories.	Open-ended. Coders sort top responses into 22 categories.	Collapse student categories to five.
Content sequencing	Rank six cards.	Rank six cards and distribute 100 points	Compare two highest ranks of faculty to three highest ranks of students. Resolution of ties if more than 20 points.
Educational beliefs	Rank six cards.	Rank six cards.	Compare two highest ranks of faculty with three highest ranks of students.
Ways instructor gets feedback	Open ended. Nine content categories coded.	Open ended. Primary response coded.	Compare primary responses of students with all faculty responses.
Influences on course planning	Two cards sorts: (1) assign 100 points to 10, (2) assign 100 points to 9.	17-item questionnaire with 3-point scale. Oral response.	Content matching to obtain 17 matched items. Faculty responses converted to 3-point scale: very important ≥15; somewhat important = 6-14 points; not important ≤ 5 points.

Table 77 summarizes the numbers and percentages of matches, half matches, non-matches, and missing cases among the 96 faculty-student pairs for each of the categories of comparison that were described in Table 76. A brief discussion of each data category of Table 77 follows.

TABLE 77

Percentage of "Matches" Between Faculty and Student Perceptions for 96 Pairs

DATA CATEGORY	"MATCHES" N	(%)	HALF "MATCHES" N	(%)	TOTAL "MATCHES" N	(%)	NO "MATCH" N	(%)	MISSING N	(%)	PERCENTAGE OF "MATCHES" BASED ON NON-MISSING %	(N)
Instructional mode	52	(54)	30	(31)	82	(85)	3	(3)	4	(4)	89	(92)
Direction of communication	75	(78)	—		75	(78)	18	(19)	3	(3)	81	(93)
Ways instructor helps student learn	42	(44)	—		42	(44)	37	(39)	17	(18)	53	(79)
Content sequencing	39	(41)	37	(39)	76	(80)	8	(8)	12	(13)	90	(84)
Educational beliefs	36	(38)	48	(50)	84	(88)	4	(4)	8	(8)	95	(88)
Ways instructor gets feedback	49	(51)	—		49	(51)	32	(33)	15	(16)	60	(81)
Influences on course planning	53	(55)	28	(29)	81	(84)	2	(2)	13	(14)	97	(83)

Instructional mode and direction of communication. For discussion, we combine these two conceptually linked categories from Table 77. The results of these analyses indicate substantial agreement in the ways faculty and students view course communication patterns. Any lack of congruence may be primarily due to differences in the way coding was done for the two sets of respondents. Where differences occurred, students were more likely to believe that they were more active communicators in the instructional process than was reported by the faculty member. When more than one student responded per course, there was more often agreement between students than disagreement.

Ways instructor helps students learn. Of all data dimensions, the lowest congruence was achieved on this comparison. Considerable missing data resulted from our inability to find faculty counterparts for categories of help mentioned by students. Furthermore, considerable data may have been eliminated by selecting only the first mentioned response for faculty and students. Of students responding for the same instructor, equal numbers had congruent views and non-congruent views with the faculty member. These findings raise the possibility that faculty help students differently. Perhaps there is little reason to expect one student to recognize a help mode used by another student with different needs.

Sequencing of content. If half matches are considered, a high percentage of students (80%) recognized the sequencing pattern their instructor intended to use. Students in the same class were consistent in the patterns they recognized. Since one pattern (sequencing based on pragmatic constraints) was seldom used, it can be said that out of five patterns presented, students recognized their instructor's patterns quite consistently.

Educational beliefs. If half matches are considered, students rather frequently attributed to instructors the same belief patterns the instructors themselves mentioned as their own (88%). Since only three of the six belief patterns were viewed by most faculty as most important, this congruence is not surprising and may be overstated. Previous research using different beliefs statements in liberal arts colleges, for example, has shown greater discrepancies (Stark & Morstain, 1978.)

Ways instructor gets feedback. About half of the students (51%) correctly identified the way their instructor gets feedback. This is probably attributable to high use of traditional means, such as tests and essays.

Influences on course planning. Although congruence appears frequent, our comparisons seem unreliable because of lack of direct congruence between instructor and student items and the need to convert faculty responses to a three-point scale. Therefore, we will not discuss the results.

7.1.4.1. Distribution of Faculty Based on Faculty-Student "Congruence Scores"

To paint a general picture of faculty-student congruence across the seven broad dimensions, we calculated a rough score for each faculty member based on the number of times faculty and students concurred in their judgments. Based on a maximum possible score of 15 points (typically 2 for a match, 1 for a half match, 0 for a mismatch) we found the distribution tending in the direction of congruence. Four faculty members scored 5 or less points (5%), 60 faculty members scored 6 to 10 points, (70%), and 22 faculty members scored 11 or more points (26%). We don't know, of course, whether the congruence was due to: astuteness of students in perceiving their instructors' intent, effectiveness of instructors in communicating with students, ease of communicating intent in some disciplines, or some other aspect of the specific college setting. Although we have learned much about how to structure a more

controlled investigation of faculty-student congruence, about all we can say from this small sample is that many students appear to perceive their instructors' intent quite accurately while a smaller number do not.

7.1.4.2 Congruence Across College Types and Academic Fields

For consistency with earlier analyses in this report, we examined faculty-student congruence by institutional type and academic field. For this comparison we judged each of the seven major data categories to be a faculty-student match or not. We tallied the total number of matches for faculty members (N = 69) with one or more participating students. Summary results are given in Table 78.

TABLE 78

Comparison of Faculty and Student Matches (by College Type and Academic Field)

	COMPARISONS IN PERCENTAGES				
CATEGORY	<5 matches	5 matches	6 matches	7 matches	*n* of pairs
College type					
Community colleges	38	29	29	4	24
Liberal arts II colleges	33	0	42	25	12
Comprehensive colleges	8	38	31	23	13
Liberal arts I colleges	0	75	25	0	4
Doctoral university	12	38	44	6	16
Academic Field					
Biology	0	36	45	18	11
Business	0	20	40	40	10
Composition	75	8	16	0	12
History	0	78	11	11	9
Literature	0	67	33	0	6
Nursing	17	17	67	0	6
Mathematics	36	9	56	9	11
Sociology	50	25	25	0	4
Total percentage	23	30	35	12	69

The data in Table 78 indicate that five or six matches in the seven comparison categories was the modal expectation for faculty-student pairs. It was unusual for students and faculty to report congruently in all seven categories. Overall, if this sample were representative, we might expect to find non-congruent perceptions between faculty and students about 25% of the time. Setting aside rows in Table 78 with as few as four matched pairs (sociology and Endowed Liberal Arts College), there appears to be less congruence in student and faculty reports at the three community colleges and at Denominational Liberal Arts College. Similarly, English composition and mathematics students are more likely than others to hold perceptions of course design that are not congruent with those of their instructors.

These two results from Table 78 are probably the result of confounding factors. More composition students and developmental level mathematics students were interviewed in the two types of colleges that are overrepresented as lacking perceptual matches. Is it the case that students taking (and perhaps required to take) English composition and mathematics courses in these types of colleges have not developed the ability to perceive their instructors' intent? Is there something about the nature of content in these courses (particularly the lack of conceptual structure their instructors reported for introductory courses) that causes students not to grasp the instructor's intent? Or is there something about the way the instructors teach these introductory courses that produces ineffective communication to students about the course design? These questions arising from the data suggest an important area for further research.

7.1.5 Student Interview Data Summary

Students attending various types of colleges described courses in the same field similarly, but their course characterizations differed according to the field of study. As was true of faculty members, students described intended course goals somewhat differently in open-ended discussions than when responding to structured questions. When unprompted, most students tended to describe their instructors as intent on teaching them the great ideas of mankind, the applications of knowledge, or specific skills. In contrast, when responding to prompts, they viewed their instructors as helping them to build a strong foundation for future study, understand how things fit together, and use what they have learned. Most students reported little discrepancy between their own objectives and those of their instructors.

Students reported that the course materials and the way the instructor organizes them help them to understand the instructor's goals. Within each specific discipline, students generally identified the patterns of course organization that their instructors had described in separate interviews. As a group, students also seemed to identify quite readily the educational beliefs their teachers held. Possibly, however, students overestimate the importance their instructors place on systematic instructional techniques and in arranging knowledge according to its potential use.

When asked to suggest other objectives, assignments, activities, or ways of judging success other than those determined by the teacher, students reported a limited range of options. In general, students seemed more capable of matching prototypical descriptions with their course experiences than describing in their own words their observations about the educational goals and course design of their instructor.

Examination of matched pairs of faculty and students reveals that students perceive faculty course design quite accurately in over half of cases. The cases where student and faculty perceptions differ (about 25%) are disproportionately in nonselective colleges and in English composition and mathematics courses. Further research would be needed to verify and explain why these areas foster incongruent perceptions.

8.0 How are Course Designs Expressed in Syllabi?

8.1 The Syllabus Checklist

We located no previous studies that had systematically used a theoretically grounded checklist to assess whether elements or categories of elements might be included in course syllabi. Thus, we constructed a checklist designed to parallel conceptually the exploratory interviews with faculty and our evolving survey instrument. The checklist (see Appendix IV) included 130 elements grouped into 16 categories of potential syllabus content (see Table 7). Course syllabi were coded in terms of the presence or absence of each of the 130 elements. One of four values was assigned to each element for each syllabus:

0 = the item is neither stated nor implied;

1 = the item is implied but not stated explicitly;

2 = the item is stated explicitly;

PNA = the item is probably not applicable to that particular course (for example, a laboratory is unlikely in a history course).

Two raters used this scheme to code the course syllabi. Both indicated the task was very difficult. The process raised some general issues we will discuss briefly before presenting the analysis and results.

8.1.1 Determining What Constitutes a Syllabus

Instructors were asked to bring to the interview a "syllabus and other illustrative course materials." Not all campus coordinators phrased this request identically. It was often difficult to determine exactly which documents provided by a particular instructor constituted the "syllabus." Often, the packets included only an assignment sheet and copies of a few quizzes. Lacking further information in these cases, the coders assumed the syllabus consisted merely of a list of assignments when other materials, in fact, may merely not have been volunteered. In other cases, most commonly for nursing and English composition courses, the packets included assignment sheets, philosophy statements about the course, or lengthy booklets. In these cases, the coders included all the information as part of the syllabus even when the elaborate booklets obviously were not written by the individual instructor.

8.1.2 Identifying the Coder's Perspective

It was possible for coders to take several perspectives when analyzing the syllabi: that of the faculty member, that of the student, and that of the "objective" educational researcher. Even when they had elected the objective perspective and adopted seemingly clear decision rules, coders found it difficult to maintain consistency when coding even a single syllabus. Temporarily, judgment could be colored by one's own expertise in the field or one's own educational beliefs. Thus, there seems little doubt that there was substantial inconsistency between coders and among syllabi rated by the same coder. By extension, our experience reinforces the observation of many classroom teachers that the perspectives of students may not be similar; different students evaluate the course in different ways. Surely it attests to the difficulty outside observers may have in conducting course evaluations that include examination of syllabi.

8.1.3 Implicit Versus Explicit Statements

We created a category for "implicit mentions" based on the need for such a designation in similar prior research, which coded accreditation standards. As we expected, the implicit category was needed in coding syllabi, too. For some categories, it was rare that explicit statements were made in a syllabus but not unusual to read a statement that left the coder with a distinct impression of the intent of the instructor. The coders frequently had difficulty pointing to a particular phrase as "proof" of the presence of a particular element in the syllabus, but they often had a sense that the variable was implied. Even so, making a distinction between implicit and explicit statements was often a difficult task.

8.1.4 The Role of Inference and Interpretation

It was often difficult to determine the extent to which inference or interpretation should be used in coding a syllabus. Can one infer discipline content from a topic outline on an assignment sheet? Does the fact that a biology course gives regular spelling tests imply that the symbolic component of biology is being conveyed to the student? Can one interpret that "All papers are due on the date assigned unless the student has experienced a major personal crisis." to mean that the instructor takes into account time or personal pressures on students? Far more information than that committed to paper in a syllabus is needed to make such inferences.

8.1.5 Bias in Coding: Stereotypes and Knowledge Base

Certain assumptions may have affected the accuracy and consistency of the coding of syllabi. Stereotypes of and personal knowledge about the disciplines may have colored the quality and nature of coders' interpretations of information conveyed in a syllabus. For example, it is commonly believed that history instructors sequence their courses structurally/chronologically and that biology instructors incorporate laboratory experiments into their range of teaching methods. Such common knowledge can make it easy to overlook the unusual case. As another illustration of potential bias, coders may also have unintentionally assumed that longer syllabi were better; these syllabi may have received more "points" because, even if the coder couldn't find evidence of the information, it was assumed to be there.

8.2 Method of Analysis

The syllabi were coded twice by two independent coders, neither of whom had been involved in interviewing students or faculty. The first coder had not been involved in discussions of the theoretical basis of the study or development of the experimental checklist but instead was given a set of definitions regarding its dimensions. The second coder had been involved in discussions of the study and was familiar with the theoretical framework of the checklist. The second coder was responsible for resolving the differences between the two codings and entering the information into the database.

8.2.1 First Coding

The syllabi were first coded du[illegible] the early summer of 1987. Twenty syllabi were coded as a "trial run" to give the co[illegible]r a feel for the process, to identify problems, and to flesh out decision rules. The remaining syllabi were coded; then, the originally selected twenty were recoded. In coding each syllabus, the coder first read the entire document or set of documents to get a feel for its content; then the syllabus was reread and values were assigned to the variables in the syllabus checklist.

8.2.2 Second Coding

The syllabi were recoded by a second individual during the late summer and fall of 1987. The second coder talked to the first coder to learn some of his/her decision rules and problem resolutions. The second coder also analyzed the first twenty syllabi to get a feel for the process. Some of the decision rules were redefined and missing categories were added to the syllabus checklist. The remaining syllabi were then coded and the first twenty syllabi were recoded. In each instance, the coder first read the syllabus to get a feel for the document; the syllabus was reread and values (0, 1, 2, PNA) were assigned to the elements on the syllabus checklist.

8.2.3 Resolving Two Differing Codings

In the late fall of 1987, the two independent sets of syllabus codings were compiled into a single database by the second coder. The value assigned to each element by each coder was examined. If the values assigned by both coders were the same, that value was entered into the database. If the values differed by one, the higher value was entered into the database, thus giving a slight bias to the assumption that element was implied or could be located in the syllabus. If the values differed by two, the syllabus was reviewed to assign an appropriate value, which was entered in the database. If the first coder had coded the value "0" and the second coder had coded the value "probably not applicable," an "x" was entered into the data base. This method of value resolution may have artificially inflated the values assigned to the variables, giving the impression that the syllabi are slightly more inclusive than is actually true.

8.2.4 Organizing the Database

In analyzing the coded information it became apparent that comparing the 130 discrete elements that could potentially be included in a syllabus constituted too detailed a level of analysis. For an exploratory study with small sample size, lack of random selection, and considerable coding subjectivity, it seemed most appropriate to discuss general trends and characteristics of syllabi. Thus, data analysis focused on 17 broad categories of information: a syllabus identification category and 16 categories paralleling those on the syllabus checklist. For each broad category of information, mean scores were summarized and then compared by institutional type and academic field.

In deriving the mean scores for each category, the following formula was applied to compensate for the "x"s ("probably not applicable"):

$$\frac{\text{Total of Sums for All Syllabi in Division}}{\text{Total \# of Values}} \times (\text{\# Items in Category})$$

Total # of Values = (# Items in Category)(# Syllabi)—(# of "x"s in Category)

Had such a formula not been used, syllabi that had been assigned zero points on both those potentially applicable elements not included in the document and those elements that did not pertain to the particular course would have received artificially low scores.

8.3 Results of the Analysis

Syllabi from diverse disciplines and varied college types were included in the analysis and substantial differences were found by college type and course discipline. Over 90 instructors were interviewed, for whom 89 usable interviews have been discussed in earlier sections of this report. Seventy-three instructors provided the researchers with some document in response to the request for syllabi. The number of syllabi examined from each academic field and each type of college included in the study are shown in

Tab 79. The proportions of syllabi from each type of institution and from each dis ine do not appear to differ significantly from the interview sample. In those m. r differences that do occur, the greatest proportion of missing syllabi were from community colleges and Endowed College (Liberal Arts I). Business, mathematics, and nursing courses were also slightly underrepresented. In addition to known cases where the campus liaison merely failed to stress providing the syllabus, some reasons for the missing syllabi can be speculated. For example, nursing courses frequently were team taught or two instructors we interviewed used a common syllabus; in business, the introductory courses often had been preplanned (and the syllabus constructed) before the instructor was hired.

8.3.1 Syllabus Types by College Type and Academic Field

TABLE 79

Comparative Proportions of Interviews and Available Syllabi (by College Type and Academic Field)

	N OF INTERVIEWS	PERCENTAGE OF TOTAL	NUMBER OF SYLLABI	PERCENTAGE OF TOTAL
College type				
Community colleges	33	37%	21	29%
Lib ral arts colleges	23	26%	19	26%
Co nprehensive colleges	18	20%	18	25%
Doctoral university	16	18%	14	19%
Academic field				
Biology	13	14%	12	17%
Business	9	10%	6	8%
Composition	13	14%	11	15%
History	9	10%	9	13%
Literature	13	14%	10	14%
Mathematics	12	13%	9	13%
Nursing	11	12%	5	7%
Sociology	10	11%	10	14%

We classified course syllabi into three general types: "assignment sheets," "philosophy statements", and documents that incorporated both of these more limited types. The distribution of these syllabus types in our sample varied with college type and academic field. However, no single type was exclusively found in a particular college type or academic field.

The "assignment sheet" type of syllabus tended to include only basic course information, a course calendar, and a topic outline. Occasionally, this type of syllabus included a grading scale and/or a list of required textbooks. The assignment sheet type of syllabus comprised 19% (n = 14) of the syll bi analyzed. This type was mo common at Midwest Doctoral University and leas common in Denominational Liberal Arts College. It was most common in sociology courses and least common in English composition and nursing courses.

The "philosophy statement" type of syllabus tended to include basic course information, a statement of goals and objectives, a philosophy s tement, and a course rationale. Occasionally, this type of syllabus also included a list of required textbooks. This type of syllabus comprised 11% (n = 8) of the syllabi analyzed. It was most common in community colleges and Denominational Liberal Arts College and least common at Endowed Liberal Arts College. It was most common in English composition courses and least common in biology, history, mathematics, and sociology courses.

The syllabus style that incorporated both the "assignment sheet" type and the "philosophy statement" type was, of course, the most complete. Of the syllabi we analyzed,

70% (n = 51) were of this type. These syllabi were about equally distributed across institutional types and academic fields. In theory, this type could have incorporated all of the 16 syllabus categories. In practice, it rarely included any information for the categories we referred to as "learning facilities and resources," "supplementary readings," or "factors influencing course structure." Thus, effectively, only 14 categories of information were represented.

8.3.2 Syllabus Categories

There is considerable variation in the degree to which the theoretically based syllabus checklist categories were represented in the course syllabi analyzed. Although each individual element within the categories will not be discussed in this analysis, the reader may find it useful to review the categories in terms of the variables that are found in them. This can be done by referring to the checklist itself (Appendix IV). Also, Table 80 highlights certain elements (within categories) that were included in the syllabus checklist but that were rarely incorporated into course syllabi. We note that the absence of some items is readily explained. for example, since the pragmatic philosophy (Item 83) was not espoused by faculty, it would not be expected in any syllabus. In Table 80, the symbol "RE" marks those items whose absence is "readily explained," based on other data collected in the study. Table 81 summarizes the aggregate mean number of points assigned by checklist category for all syllabi reviewed.

TABLE 80

Elements Included in the Syllabus Checklist But Rarely Included in Course Syllabi

ELEMENT	ITEM NO.
Basic Information	
Types of students for whom course is intended	7
Time and place of class meeting (RE)	8-9
Electronic conference contact	13
Home phone of faculty member	14
Number of credits (RE)	15
Information about the teaching assistant (RE)	16
Instructor name	17
Information about basic textbook	
Where the text is available (RE)	27
Price of text (RE)	28
Reason text was chosen	29
Supplementary readings	
None of the items were included	38-45
Goals and objectives of course	
Relation of course to general education program	51
Relation of course to institutional mission	53
Statements or assumptions about student characteristics	
Demographic characteristics of students	66
Personal interests of students	68
Individual learning styles of student	71
Influences on course structure	
References to influence of other factors on course structure (RE)	73-78
References to instructor's educational beliefs	
Pragmatism as an educational belief (RE)	83
Rationale for choosing course material	
Material chosen because students readily learn (RE)	87
Material chosen because students enjoy (RE)	88
Rationale for way course material is sequenced	
Sequencing pragmatic (RE)	101
Feedback to student	
Electronic conference feedback	121
Feedback used by Instructors	
Feedback used is face/body language	126

Note: Numbers refer to variable numbers on syllabus checklist. RE means absence of item is "readily explained."

TABLE 81

Descriptive Statistics for Syllabi (by Category)

SYLLABUS CATEGORY	NUMBER OF ELEMENTS	MAXIMUM POSSIBLE POINTS	% PNA	% NOT INCLUDED	RANGE Minimum	RANGE Maximum	OVERALL MEAN (N=73)	% OF MEAN/MAX.
Basic information	14	28	6	0	2	18	11	38
Calendar	6	12	18	15	0	8	4	35
Text information	8	16	1	7	0	9	5	33
Learning fac/res	5	10	15	74	0	6	1	10
Supplemental readings	9	18	0	81	0	4	0	0
Goals/objectives	11	22	0	22	0	19	6	29
Discipline content	8	16	0	0	1	13	5	31
Student characteristics	7	14	0	22	0	8	3	18
Influence on structure	6	12	0	68	0	2	0	3
Educational philosophy	7	14	0	21	0	8	3	19
Rationale								
Material	9	18	0	19	0	10	3	16
Sequencing	7	14	0	34	0	5	1	10
Assignments/activities	8	16	46	41	0	14	2	16
Instructional mode	5	10	0	4	0	8	5	46
Feedback								
To student	7	14	0	5	0	12	6	43
From student	8	16	0	3	0	12	6	35
For all syllabi	130	250	5	26			59	

Note: PNA means probably not applicable.

8.3.2.1 Course Syllabi and College Type

Tables 82 and 83 disaggregate the data by institutional type.

The type of information included in the examined course syllabi varied by college type. Judging by a rough rule of thumb we used to identify those institutional types that scored higher or lower than the aggregate on any given category (see Table 83), only three categories of syllabus analysis appeared not to vary: basic information, statements or assumptions about student characteristics, and feedback from the students used by the instructor. (This summary excludes those categories on which response

TABLE 82

Mean Scores on Syllabi Categories (by College Type)

SYLLABUS CATEGORY	2-YEAR (n=22)	LA II (n=13)	COMP I (n=18)	LA I (n=6)	DOC I (n=14)	OVERALL MEAN (N=73)
Basic information	10	11	11	8	11	11
Calendar	5	4	3	5	3	4
Text information	5	5	1	6	1	5
Learning facilities/resources	1	1	1	0	1	1
Supplemental readings	0	1	0	0	0	0
Goals/objectives	7	9	5	4	5	6
Discipline content	7	8	5	6	5	5
Student characteristics	3	3	2	2	2	3
Influence on structure	0	0	0	0	0	0
Educational philosophy	3	4	2	4	2	3
Rationale						
Material	4	4	1	2	1	3
Sequencing	2	2	1	1	1	1
Assignments/activities	4	3	1	2	1	3
Instructional mode	5	6	3	5	3	5
Feedback						
To student	6	6	6	4	6	6
From student	6	6	5	4	5	6

TABLE 83

Variation in Syllabus Category Means (by College Type)

SYLLABUS CATEGORY	2-YEAR	LA II	COMP I	LA I	DOC I	OVERALL MEAN
Basic information						10.7
Calendar					a	4.2
Text information					aa	5.3
Learning facilities/resources		a	bb	aa		1.0
Supplemental readings		bb	a	a		0.5
Goals/objectives		b		a		6 3
Discipline content	bb	bb				5.1
Student characteristics						2.5
Influence on structure				aa		0.4
Educational philosophy		b		b	a	2.6
Rationale						
Material	b	b		a	aa	2.9
Sequencing	b	bb	a	a	aa	1.4
Assignments/activities	bb				aa	2.5
Instructional mode					aa	4.6
Feedback to student				a		6.0
Feedback from student						5.6

Note: Letters stand for the item's relationship to the overall mean such that a = 25% of syllabi received scores below the overall mean; aa = 50% of syllabi received scores below the overall mean; b = 25% of syllabi received scores above the overall mean; bb = 50% of syllabi received scores above the overall mean.

was so infrequent that little variation was possible.) Instructors at Endowed Liberal Arts College and Midwest Doctoral University tended to incorporate certain syllabus categories less frequently than instructors at other types of institutions.

More specifically, instructors at community colleges included rationales for the material chosen and the way the course was arranged more often than did instructors at other types of colleges. They also much more frequently included discipline content and a rationale for assignments or activities than did instructors at other institutions.

Instructors at Endowed Liberal Arts College more frequently included information about their own educational philosophy. However, they less often included statements of goals and objectives, rationale for course material chosen, or rationale for course sequencing. They much less frequently included information about learning facilities and resources than did instructors at other types of institutions; possibly because these are well-known at a small college.

Instructors at Denominational Liberal Arts College incorporated the greatest number of syllabus categories with greater frequency than did instructors at all other institution types. They more often provided information about course goals and objectives, their own educational philosophy, and a rationale for material chosen in their syllabi. Like faculty at a similarly small college (Endowed), they less often included information about learning facilities and resources. They much more frequently included information about supplementary readings, discipline content, and sequencing rationale.

Instructors at comprehensive colleges less often included a rationale for course sequencing. Possibly based on institutional size, they much more frequently included information on learning facilities and resources than instructors at other types of institutions.

Instructors at Midwest Doctoral University had the least inclusive syllabi. They were less likely than instructors at other colleges to include a course calendar, insight into their own educational philosophy, and information about the kind of feedback they would give to the students. They were much less likely to include information about

required textbooks and rationales for the material chosen, course sequencing, and assignments or activities. This finding may be related to the phenomenon of coordinated planning for introductory courses that we observed at this university. Quite possibly, instructors supplied only those materials unique to their section, and no single instructor took responsibility to share with us the overall course syllabi.

Based on other information gathered in our interviews it is tempting to speculate about the reasons for some of the differences by college type. For example, it is possible that learning laboratory and other such facilities are found more frequently in comprehensive colleges; with relatively poor financial support, liberal arts colleges may not have such facilities. We have not made a thorough attempt to compare such differences with our interview data. Rather, we believe further exploration with a specific faculty sample is needed to draw such conclusions more systematically.

8.3.2.2 Course Syllabi and Academic Field

The type of information included in course syllabi we examined varied dramatically by academic field. Based on our rough rule of detecting differences, only two categories of syllabus analysis failed to vary with discipline, namely basic information and textbook information. Nursing instructors presented, by far, the most inclusive syllabi. Business and English composition instructors also had very complete syllabi. History instructors did not have very inclusive syllabi, but mathematics and sociology instructors presented the least complete syllabi (see Tables 84 and 85). We will discuss the categories included by the different academic fields in order of approximate inclusiveness.

Nursing instructors had the most complete syllabi; this may be due, in part, to the fact that the nursing curriculum is largely prescribed by external agencies and tends to be planned at the program level. Nursing instructors more often included a course calendar and methods used for feedback from the students. Nursing faculty much more frequently included information on learning facilities and resources; a list of supplementary readings; statements of goals and objectives; discipline content; assumptions about student characteristics; information about the factors that influ-

TABLE 84

Mean Scores on Syllabi Categories (by Academic Field)

	ACADEMIC FIELD								
SYLLABUS CATEGORY	Bio (n=12)	Bus (n=6)	Comp (n=11)	Hist (n=9)	Lit (n=10)	Math (n=9)	Nurs (n=5)	Soc (n=10)	OVERALL MEAN (N=72)
Basic information	10	13	11	10	10	12	12	10	11
Calendar	6	6	2	3	5	3	6	4	4
Text information	7	5	5	5	5	5	6	6	5
Learning facilities/ resources	1	1	1	1	0	1	3	0	1
Supplemental readings	1	1	0	0	0	0	2	1	0
Goals/objectives	3	7	9	5	7	4	15	5	6
Discipline content	6	6	7	5	6	5	11	6	5
Student characteristics	2	3	3	2	3	2	5	2	3
Influences on structure	1	0	0	0	0	0	2	0	0
Educational philosophy	1	3	4	3	4	2	5	2	3
Material	3	3	2	2	3	2	6	2	3
Sequencing	1	1	2	2	1	1	3	1	1
Assignments/activities	1	3	4	1	2	1	6	1	3
Instructional mode	4	6	5	5	5	2	8	4	5
Feedback									
To student	6	8	6	6	4	5	9	6	6
From student	5	7	7	5	7	3	8	5	6

TABLE 85

Variation in Syllabus Category Means (by Academic Field)

	ACADEMIC FIELD								
SYLLABUS CATEGORY	Bio (n=12)	Bus (n=6)	Comp (n=11)	Hist (n=9)	Lit (n=10)	Math (n=9)	Nurs (n=5)	Soc (n=10)	OVERALL MEAN (N=72)
Basic information									11
Calendar	b	bb	a			a	b		4
Text information									5
Learning facilities/ resources		b	b	a	a		bb	aa	1
Supplemental readings		bb	aa		aa	aa	bb	b	0
Goals/objectives	aa	bb	bb	aa	bb	aa	bb	aa	6
Discipline content			b		b	a	bb		5
Student characteristics			b				bb	a	3
Influence on structure	bb	aa	aa	a	aa	a	bb	aa	0
Educational philosophy	a		b		b	a	bb	a	3
Rationale									
Material							bb		3
Sequencing		aa		bb	a		bb	a	1
Assignments/activities	aa		b	a		aa	bb	aa	3
Instructional mode						aa	bb		5
Feedback									
To student		b			a		bb		6
From student						a	b		6

Note: Letters stand for the item's relationship to the overall mean such that a = 25% of syllabi received scores below the overall mean; aa = 50% of syllabi received scores below the overall mean; b = 25% of syllabi received scores above the overall mean; bb = 50% of syllabi received scores above the overall mean.

enced course structure; insight into their own educational philosophy; rationales for course material, course sequencing, and course assignments/activities; instructional modes used; and methods of feedback to the student.

English composition instructors had very inclusive syllabi; this may be, in part, because composition curricula are skill oriented, the courses serve a wide range of beginning students, and standards are frequently established by programs, not individuals. English composition instructors more frequently included information about goals and objectives, learning facilities and resources, discipline content, assumptions about student characteristics, their own educational philosophy, and assignment/activity rationale. They less often included course calendars.

Although business instructors much less often included a rationale for course sequencing; they more often included information about learning facilities and resources and methods of feedback for the students than did instructors in other disciplines. Business instructors frequently included a course calendar, information about supplementary readings, and statements of goals and objectives.

Biology instructors much more often included a course calendar than did instructors in other disciplines. They less often included insight into their own educational philosophy, statements about course goals/objectives, or rationale for assignments/activities. Biology instructors much more frequently included information on the factors that influenced course structure.

Literature instructors less frequently included information about learning facilities and resources, rationale for course sequencing, and methods of feedback to students. They more often included information about course content and their own educational philosophy. Literature instructors much more frequently included statements of course goals and objectives than did instructors in other disciplines.

History instructors more frequently included rationale for course sequencing in their syllabi than did instructors in other disciplines. They less often included information about learning facilities/resources and rationale for assignments/activities. History instructors much less frequently included statements of course goals and objectives.

Mathematics instructors had the least inclusive syllabi of those examined. They less often included a course calendar, information about discipline content, insight into their own educational philosophy, or the methods of feedback from students. Mathematics instructors much less frequently included statements of goals and objectives, rationale for assignments and activities, and methods used to provide feedback to the students.

Sociology instructors also had among the least inclusive syllabi of those examined. They more often included a list of supplementary readings. However, they less often included assumptions about student characteristics, insight into their own educational philosophy, or a rationale for course sequencing. Sociology instructors much less frequently included information about learning facilities and resources, course goals and objectives, and assignment/activity rationale.

8.4 Discussion and Implications for Future Research

The syllabus checklist was useful as an experimental instrument to define some ideal parameters of syllabus construction and, in a limited way, to test those theoretical ideals against reality. The information it provided is useful as a first step in creating a guide to syllabus design that will encourage instructors to consider the syllabus as a device to communicate educational assumptions and course integrity. We believe, however, the most important outcome of the analysis of the syllabi from the cours design survey is a series of questions and issues that will guide future research on syllabus design and implementation.

It appears that the syllabus checklist in its present form has limited use as an instrument to provide valid descriptive statistics across fields and institutions. The statistics generated by the analysis can yield only general trends and characteristics exhibited in syllabi and even these may be biased by coder subjectivity and interpretive difficulties. Furthermore, the amount of time required to analyze a syllabus of even two or three pages will prevent the widespread use of the checklist. We do believe, however, that individuals knowledgeable within an academic field could use the instrument to compare syllabi from similar courses within and across institutions. In such a use, a great deal of the variability that is due to the naive coder would be removed.

The preliminary analysis of course syllabi from diverse disciplines and varied institutional types suggests that further research would be fruitful. There is much that we do not know about the linkage between course design and syllabus construction. To what extent is a course syllabus merely a reflection of course content and structure? What can we communicate to the student about the course by means of the course syllabus? Are the variations in syllabi across institution type significant? Do they reflect the same programmatic differences we see between institution types in other areas of curriculum design?

Perhaps the most important initial question to be answered is: "Do the variations in syllabi across course discipline reflect the differences between the disciplines?" Based on other aspects of our study of course planning, we believe that the answer is yes and that groups of faculty from each field could readily attach weights designating the importance of the various categories for introductory courses in their fields. This would allow use of a generic checklist that could be tailored to specific discipline needs.

What does the course syllabus tell us about course planning and design? Is the syllabus just a written version of a course plan already existing in the instructor's head? Or is it a tool through which an instructor creates a course design? Can the syllabus be used as a mechanism to highlight alternatives in course design and thus possibly to influence the final shape of course designs? To what extent are syllabi manifestations of curriculum models?

The merits of continuing to examine syllabi depend heavily on the currently unexplored linkages between the student and the syllabus. Is the syllabus merely a prepared list of things to do for the student, or is it a guide to achieving certain goals and objectives in a course? Do students in the same course perceive the syllabus differently? Are students' reactions to the courses they take affected by the quality of the syllabus they receive the first day of class? Does the syllabus possess certain qualities that allow it to communicate in a unique way with students? Or, is it just a redundant piece of paper?

These questions suggest numerous research avenues. It would be interesting to explore the difference in perception or use of a course syllabus in a given course by poor students and by good students. One would assume that the course syllabus would be used more frequently and more thoroughly by the better student. Examining the differences in perception of course syllabi through the college years would expand our knowledge of the developmental changes that take place in the college years as well as identify class-appropriate syllabus elements. One would expect that the more advanced student would be better able to use the more abstract information, such as discipline content or rationales, to increase success in the course.

Classroom experiments would help us identify the role that the course syllabus plays in establishing students' attitudes about a given course. Given the importance students attach in teaching evaluations to organization and clarity, one would expect that students would look more favorably on a course with a well-planned syllabus. Classroom experiments could also help us determine whether comprehensive syllabi actually affect student outcomes. When other factors are controlled, one would expect that students in a course with a carefully designed syllabus would more fully achieve the course goals and objectives as well as earn higher grades.

Although there has been little active study of syllabi until recently, both the emphasis on making expectations clear to students and the increasing demand for articulation among institutions and greater specification of curricular content may make this an important line of research in the near future.

9.0 Summary, Implications, and Next Steps

We began this inquiry into course planning behavior of college faculty members with questions about the activities faculty perform during course planning, the theories and beliefs that guide faculty members, the importance of situational influences upon them, the sources of their planning knowledge, and the ways that they communicate their plans to students. We were led to this research by the assumption that faculty course planning activities form a fundamental link in the cycle of events leading to student learning. We did not assume that there is any best way to plan a college course; rather, we took the position that developing the course plan requires decisions that can be improved with an understanding of available alternatives.

This study is unique since, as far as we can determine, no other research of this magnitude on course planning behavior has been conducted in higher education. As with all exploratory research that breaks new ground, we raised as many questions as we answered. The results of this study of introductory course planning caused us to revise some of our initial conceptions, consider the relationship of our findings to other research, identify possible practical applications of our findings for faculty and administrators, and discern the need for additional research. Based on the exploratory results, we have fielded a survey to a nationally representative sample of faculty teaching introductory courses. In this chapter we summarize our findings and suggest implications and practical uses for them. We conclude with comments on research methodology and new questions for continued study.

9.1 Summary of Findings

9.1.1 Course Planning Influences

Course planning influences and strategies among faculty members teaching introductory courses differed substantially by academic field but only slightly by type of institution in which the faculty members taught. Faculty members are strongly influenced in course planning by the characteristics of the field they teach, their beliefs about the purposes of education, and their backgrounds. Frequently, faculty members said it was difficult or impossible for them to separate these three influences. In fact, the combined effect of these three factors seems sufficiently strong to suggest that profiles could be constructed representing the "usual patterns" of course planning for specific academic fields. Influences characteristic of the specific teaching environment may well be secondary in importance to these basic discipline differences.

In describing their planning activities, faculty members emphasized selecting content from their field, selecting course materials, and recognizing student characteristics. Many said they were particularly influenced by their perceptions of student characteristics and by the textbooks available. Faculty barely mentioned making choices among alternative instructional strategies; most taught introductory courses by the lecture method, sometimes combined with laboratory (biology and nursing) or clinical experiences (nursing). Faculty members who lectured viewed their lectures as crucial in helping students recognize important material and relate ideas. Instructors who did not use lecture methods were primarily English composition and literature instructors who tended to use participatory modes of instruction designed to facilitate student interaction and sharing of ideas. Choices of instructional strategies were considered within these two broad structural frameworks, lecture or student participation, rather than as alternatives to them.

In certain cases, faculty members said that program goals, college goals, and objectives of external groups (such as accreditors or state agencies) influenced their planning.

For example, at a college with a religious mission, the college goals strongly influenced course planning; in a program such as nursing, that is responsive to both a professional accrediting agency and state-level examinations for its graduates, program goals influenced by external sources, in turn, influence course planning. Most faculty, however, were not very conscious of being influenced by program goals or college goals.

According to the faculty we interviewed, the advice of instructional experts, feedback from previous classes, research concepts from the disciplines, and local pragmatic factors were seldom important influences in planning introductory courses.

Faculty in the fields represented in our sample could be separated into two groups based on beliefs about educational purpose, the characteristics of the discipline and the course plans that resulted from these. One group of faculty characterized their fields as disciplines consisting of sets of concepts, principles, ideas, phenomena, or objects to be explained to students. They planned their courses to teach these concepts and principles while simultaneously trying to help students become effective thinkers or social change agents. History, biology, and sociology are examples of such fields.

A second group of faculty members believed their fields were not appropriately characterized as disciplines. These professors, most frequently teaching composition or literature, generally described their field either as consisting of an interrelated set of values or interests or as the group of people who share pursuit of those interests. This group of faculty tended to see their role as promoting student growth, skill acquisition, or personal enrichment. Similar differences between literature and other courses have been found independently by Naveh-Benjamin and Lin (1987) who worked with faculty members and students to measure the effects of explicitly teaching the instructor's cognitive structure to students. They found that students in literature classes showed smaller gains in cognitive organization, less movement toward the instructor's cognitive frame, and a reverse in correlations of grades with cognitive organization when compared with students in psychology and biology classes.

Faculty members tended to arrange course content in ways that reflected both their view of their academic field and their beliefs about educational purpose. The most common pattern, associated with the belief that the academic field is a set of concepts and operations, inclined faculty to arrange content in ways intended to help students integrate ideas from the discipline into abstract principles. Textbooks tend to be important organizers for these faculty members. A second common pattern is associated with the faculty who believe in the importance of education for personal enrichment by pursuing a set of interrelated values or an inquiry into meaning. Because of the individualized nature this second pattern typically takes when translated to teaching behavior, student characteristics are seen as important determinants of instruction.

Although we found these two fairly distinct groups of faculty in our sample, one of which emphasized student growth more frequently than the other, most instructors disavowed the assumption that subject-centered education and student-centered education are two ends of a continuum. While each group of faculty tends to attribute slightly more weight to one of the two orientations, most subscribe to both goals.

In selecting introductory course content, many faculty members choose material that represents fundamental disciplinary concepts, helps students add to their cumulative knowledge, helps them integrate their ideas, or stimulates students to search for meaning. However, most faculty members explicitly rejected the idea that they might choose content because students would enjoy it or learn it readily. For these introductory courses, most instructors also felt that it is premature to choose material specifi-

cally because it acquaints students with methods of inquiry employed in their field. In their view, such material is best reserved for more advanced courses.

9.1.2 Course Planning Levels and Themes

Faculty described five different levels of course planning activities, the most common being routine maintenance of established courses. Faculty members seemed to be dissatisfied with teaching a course if they had no role at all in planning it.

Faculty motivations for different levels of planning may be related to their level of satisfaction with a current course or courses. For example, routine maintenance is common when faculty members are satisfied with the overall objectives and framework of the course but sense the need to adjust or update materials or content. Routine review may be conducted most often when an individual faculty member or a program group has established a systematic procedure for periodic examination of courses. Major course revisions may be stimulated by dissatisfaction with course objectives, processes, or content. Finally, planning a new course may be undertaken to respond to new goals, objectives, activities, experiences, or clientele. Planning for a new course and major revision of an old course both require more intense effort than routine maintenance and may generate considerable creativity and enthusiasm. It appears that course objectives are made explicit during new course planning but are not necessarily redefined during the more routine types of planning activities.

In general, as they plan, faculty give much attention to discipline or content, less to contextual issues, and very little to speculating about how students learn best. Within this general pattern of emphasis, some planning activities appear to be field related. For example, among the faculty we interviewed, nurse educators were more likely than others to engage in routine review of courses and to articulate specific goals and objectives; literature instructors most frequently emphasized devising activities of a participatory nature for students and preferred to state broad goals rather than specific ones.

Most faculty members we interviewed had little or no formal training in course planning. They also had little knowledge of or respect for the views of instructional, educational, or psychological experts. In their planning activities, faculty members exhibit substantial knowledge that apparently has been gained informally. To support their practices, they express operating beliefs about obligations as teachers of their disciplines as well as beliefs about their roles in preparing students for future roles as citizen and workers. To help fulfill these obligations, faculty members have developed "practical knowledge" that may enable them to make choices among a limited set of alternatives. For experienced teachers, course planning is often a progressive elaboration of a course over a long period of time.

9.1.3 Special Topics of Current Interest

Although most instructors seemed unfamiliar with terms currently used by curriculum reform advocates (such as coherence, integrity, and involvement), they support similar goals using different descriptive language. Some faculty familiar with reform proposals, however, were worried that through attempts to develop the linkages among academic fields more explicitly (as in introductory core courses) some reforms might sacrifice depth for shallow breadth.

Most faculty members appeared to equate attentiveness with involvement, using ad hoc techniques during lectures to judge if students are attentive.

9.1.4 Student Interviews

Students seem to perceive their instructors' course plans and objectives in the way that the instructors intended. Paralleling our finding among faculty members, we found that students attending varied types of colleges described courses in the same field similarly; the course characterizations differed substantially, however, by field of study.

As was true of faculty members, students described intended course goals somewhat differently in open-ended discussions than in response to structured questions. When unprompted, most students tended to describe their instructors as intending to teach them the great ideas of humankind, the applications of knowledge, or specific skills. When responding to a list of cues, students also viewed their instructors as helping them to build a strong foundation for future study and to understand how things fit together. Most students reported little discrepancy between their own objectives and those they believed their instructors held for them.

Students reported that the course material and the way the instructor organizes it help them to understand the instructor's goals. Within each specific discipline, students generally identified the patterns of course organization that their instructors had described in separate interviews. On the whole, students also seemed to identify quite readily the educational beliefs their teachers held. The major discrepancy was that students overestimated the importance their instructors place on using systematic instructional techniques and on arranging knowledge according to its potential use.

When asked to suggest objectives, assignments, activities, and ways of judging success other than those determined by the teacher, students contributed a limited range of options. In general, students seemed more capable of matching prototypical descriptions with their course experiences than in describing in their own words their observations about the educational goals, the course design, or their own preferences for course structure.

9.1.5 Course Syllabi

About 70% of the course syllabi obtained from this sample of faculty teaching introductory courses included both assignment sheets and discussions of the course rationale. No syllabus included all the elements in our comprehensive trial checklist.

The categories of information included in syllabi varied slightly by institutional type and dramatically by academic field. Among the introductory courses, nursing courses presented the most complete syllabi while mathematics and sociology syllabi were the least complete. The variations in syllabi seem to reflect basic differences in educational beliefs and instructional patterns among the disciplines themselves.

9.2 Discussion and Implications

In this discussion, we speculate about the data and describe steps taken in developing a survey instrument to explore some of our observations more thoroughly. The section is organized in three parts. First, we relate our findings from these exploratory faculty interviews to previous research and theory. Second, we report some general observations and impressions based on our discussions with faculty. Third, we note observations based on our discussions with a very limited number of students.

9.2.1 Relating Findings to Prior Research and Theory

In our interviews with faculty members, the ideas of prior theorists that conceptions of educational purpose and process vary by discipline are reinforced (see Section 3.1 for initial review). Clearly, faculty members have theories about the nature of knowledge in their field and how best to transmit it to students. It is not easy to sort out, however, the extent to which these theories are influenced by the discipline itself, the graduate school socialization process, or the characteristics of individuals attracted to certain fields of study. Although the assumptions that faculty members initially hold are modified by the instructional setting, the beliefs that underlie course planning seem very enduring. The difficulty of separating the discipline-related beliefs from contextual factors becomes more complex when one extends the research scope beyond the traditional pure disciplines to career-preparation programs such as business, nursing, engineering, and education. In these fields, perceptions of professional practice must be considered as well.

We observed that neither the set of educational belief statements (initially based on Eisner and Vallance) nor the types of course sequencing patterns (initially based on Posner and Strike) were sufficiently comprehensive for use in higher education. Since we have not yet explored the planning beliefs of faculty members in humanities and fine arts (other than English composition and literature), we are aware that additional beliefs may emerge. To accommodate occupational programs, particularly those in community colleges, the belief that for some students college is primarily job preparation must be added. To accommodate colleges with religious missions, we must add a belief statement about the development of values and commitment. New sequence statements must reflect the potentially strong influence of employer requirements or a religious mission on content arrangement. We have incorporated these belief and sequencing statements into our survey.

Even though the belief systems and implicit theories that underlie course planning are strong, we continue to believe it is simplistic to argue that certain assumptions translate directly into a course structure or teaching style. While we noted among our interviewees the various teaching prototypes that others have described (Axelrod, 1973; Dressel & Marcus, 1982, pp. 10-11), we found substantial modifications in these patterns based on local context. In fact, the local factors influencing planning, rather than the more deeply embedded discipline and belief characteristics, are often the ones faculty mentioned first in our discussions.

Within the bounds of their discipline and context, faculty members consider a modest number of alternatives in planning introductory courses. To some extent, we observed that their awareness of alternatives in course design, teaching styles, and learning styles was related to having taken education courses, participated in instructional workshops, or taught at pre-college levels. Conversely, however, some faculty members reported even modest ventures into educational or psychological theory to be quite unsatisfactory. Consequently, they had developed a negative view of the utility of such knowledge. We observed that the few faculty members who currently take an active role in their discipline associations tended to consider alternatives based on new information in the field. Faculty members without doctoral training in the discipline more often had preparation in education and pre-college teaching experience. Their alternatives were more likely to involve teaching strategies and sequencing. The extent to which these patterns exist in a larger and more representative sample will be clarified from our survey.

Because of many recent reports that cite discontent and alienation among faculty members, we deliberately explored the extent to which faculty members felt constrained or discouraged about their teaching. We found very little evidence supporting

Seidman's (1985) finding that faculty are characterized by feelings of constraint, despondency, or alienation. To the contrary, we noted considerable interest and enthusiasm about teaching among most faculty we interviewed. We believe that where malaise does exist, it centers on broader working conditions, salaries, and reward options rather than on teaching.

9.2.2 Observations from Faculty Interviews

We used our findings in this exploratory study to develop the "Contextual Filters Model of Course Design." The model posits that faculty members' views of their academic field, their background, and their assumptions about educational purpose interact to form a "discipline grounded" perspective that initially influences course planning. Specific characteristics of the instructional setting act as "contextual filters," modifying, in varying degrees, faculty members' views. Thus, instructors can begin course planning at one or more decision points, building on the interaction of the discipline-grounded perspective and salient contextual factors. Since these relationships in the model form a set of interrelated hypotheses subject to empirical test, the model will be further developed through the survey data.

Discussions with faculty reinforced our belief that there are strongly embedded, distinct cultures among teaching faculty. Thus, no one should be surprised at the difficulty faculty experience in agreeing on educational purpose and process, even those teaching in small, relatively homogeneous colleges. We found that terms such as "mode of inquiry" and "search for meaning" had discipline-connected interpretations. For example, when attempting to explain our results to colleagues, we have encountered disbelief that some composition teachers see their students' work as a "mode of inquiry." To understand this, it is necessary to accept the possibility that there are many ways to "inquire." For useful discourse within a faculty, it is important to recognize that there are different, deep seated interpretations of similarly named concepts. Faculty views may not be malleable, but faculty can be helped to understand that their colleagues are not "wrong;" rather, they can understand that differing perspectives stem from different underlying beliefs.

Our interviews suggest some truth to the notion that faculty members teach as they were taught. Yet, the reason for this may rest more firmly on the nature of the discipline and its accompanying beliefs than on the imitation of specific teacher role models. We introduced in the survey a specific question about teaching models that, when correlated with other response patterns, may shed light on this issue. An important related question is whether graduate teaching assistant experiences should include both an emphasis on instructional design and a deliberate examination of discipline characteristics and their relation to introductory course design.

Most of our interviews were conducted with experienced faculty members. The small number of relatively new instructors in our sample seemed concerned about developing their identity as teachers. This suggests that there are formative stages in the development of college faculty members when they may be most open to considering alternatives and that, because of field variations in the times that professors enter college teaching, these formative stages need to be explored field by field.

We noted the general lack of awareness of instructional theory among faculty members we interviewed. Those who did cite learning theorists or experimental work mentioned ideas that educators and psychologists now consider outdated. Apparently, there is a substantial time lag in applying contemporary educational advances to college teaching. In several discussions, reference was made to discipline translators. Translators are field-specific individuals with credibility and the capability to bring new knowledge about teaching to faculty members. This concept raises a number of questions. What

makes an effective translator? Who are the individuals in various fields that can translate educational theories into practical knowledge? Can translators be encouraged or cultivated?

It seems important to understand the low status accorded to teaching experts in professorial circles. To gather evidence on this issue, we have included faculty members in educational psychology and psychology in our survey. We wonder if they view themselves in a more favorable light than others view them. Will their course planning patterns be unique?

As faculty spoke to us about their course planning, we sensed self-reflection about the planning process to be a potentially important factor for further study. Some faculty members were more able to articulate the reasons they chose certain types of course materials, content, or structure; others gave little evidence of ever having reflected on their decisions. What are the factors that contribute to self-reflection about course planning? How do reflective and non-reflective faculty differ?

9.2.3 Observations from Student Interviews

Because of the small number of student interviews we conducted, our observations for students are far more speculative than those for faculty. However, a few seem sufficiently intriguing to note.

Students seldom said that they measure their learning by test results. Rather, they ask themselves if they can apply knowledge, talk about it, or feel that they understand it.

Students expressed the view that knowing connections and relationships within and outside a discipline were important to them. They wanted to know how theories and ideas were related, but they had little interest in knowing about the current debates and disagreements among scholars. These two statements seem inconsistent and may represent either a limited student view of scholarship or poor wording of the interview question.

9.3 Practical Applications

As we analyzed what faculty members had told us and as we discussed the study results with them in small groups, several potential applications emerged. Some could form the basis for field experiments or pilot studies.

- Do instructional design seminars or workshops produce better results if they involve faculty whose customary course planning patterns are similar? Teaching and learning seminars offered by instructional developers might be most effective when geared to specific disciplines or groups of disciplines. Such seminars can introduce instructors to alternatives that fall within the bounds of familiar concepts. Surely when faculty beliefs about education diverge as substantial as, for example, those of teachers of literature and biology, institutions may generate more heat than light by sponsoring generic instructional workshops.

- Instructional developers might compare not only the impact but the nature of faculty interaction within workshop formats designed for teachers of any discipline and those that are discipline specific. For small institutions, a variation on this idea would be to evaluate the effectiveness of seminars that cluster faculty members by discipline through consortial arrangement across groups of institutions, comparing them with sessions conducted locally with faculty members from diverse fields.

- If the potentially strong patterns of discipline-related beliefs and course sequencing are confirmed in the survey, then discipline societies may wish to examine whether current patterns best convey their field in varied settings. They may also wish to learn what characterizes faculty members who depart from the prevailing wisdom into uncharted teaching territory.

- If we are able to identify a profile of course planning representing the "typical" faculty member in a given field, it might be useful for search committees. A committee might wish to characterize the current department faculty and discuss the extent to which they desire to hire someone who fits with or complements this profile.

- Based on our experiences in providing feedback to faculty participants under several types of arrangements, we believe faculty development discussions using material from these interviews are most productive when conducted with small groups of faculty who previously have been engaged in some part of the interviews. Following the interviews, many faculty expressed appreciation for the opportunity to reflect on their course planning procedures and said it raised issues they seldom deliberated. Refinement of interview materials and findings as a discussion guide for use on campuses might include sessions where faculty pairs interview each other, followed by a more general discussion.

- In the contextual filters model, we hypothesize that enduring basic beliefs about education acquired through long years of faculty socialization have more influence than contextual factors and are less easily changed. Institutions might best concentrate instructional improvement efforts on helping faculty recognize both the usefulness and availability of influences falling within the "contextual filters" area of the model. Varying the strength and salience of such influences may produce incremental changes tailored to the specific campus and academic field without necessarily challenging strongly held beliefs.

- The type of interview we used with students, after some refinement, could be used with entire classes to ascertain whether the conceptual structure the teacher intended was being understood by students. Such interviews would provide a personalized alternative to routine course evaluation instruments but could be correlated with them in validity studies.

- The trial course syllabus checklist may useful to programs that wish to discuss and assess what they are communicating to students. This would provide a springboard for a discussion of what they should be communicating.

9.4 Comments on Methodology

Our interview format was effective, in part, because the open-ended questions allowed the faculty members freedom to establish the context while allowing the interviewers the freedom to show interest in the specific course. Once rapport was established, faculty members were willing to do exercises, such as card sorts, which most seemed to enjoy. We were able to keep the interviews within the 90-minute period allocated because the protocol provided cues the interviewer could use to move the discussion along if necessary. A few faculty members had great difficulty in ranking or prioritizing items. We suspected this difficulty characterized instructors in certain fields, but our sample was too small to elaborate.

Since most of the courses under discussion were not being created for the first time, faculty comments were retrospective with all the attendant difficulties that entails.

Those interviewed were made aware of the general line of questioning through the correspondence establishing the interviews. Some instructors had given considerable thought to the issues prior to the meeting; others had not. These differences in preparation by faculty might have caused some inconsistency in the interviews.

We noted that activities and ideas mentioned in response to open-ended questions were not always the same as those emphasized in response to closed questions or requests to rank alternatives. Our impression is that some commonplace factors, such as the influence of the instructor's own background on course planning, are often overlooked in responding to open-ended questions. If this is the case, one inadequacy of our interviews, in comparison to surveys, is the lack of ability to detect such common factors.

Limiting this initial exploration to introductory courses, we interviewed faculty members in only eight fields. Based on our discovery of discipline-related planning patterns, it seems fair to say that course planning will be discipline-related in other fields. Because faculty members in the included disciplines did not always match prior stereotypes, however, we believe it unwise to speculate about the specific patterns for unstudied fields.

Our experience with the interview technique suggests that faculty members respond favorably and are the source of excellent information; the data we collected were very rich. Unfortunately, the interview technique was expensive and time consuming. In contrast, we found when pilot testing the questionnaire (a time efficient and relatively inexpensive method) that faculty members in some disciplines seemed adverse to surveys.

Because of interpretive problems, we doubt if the syllabus checklist in its present form has utility for objective rating of syllabi. It may, however, be useful as a discussion guide to raise consciousness about what might be communicated to students.

9.5 Emerging Research Questions

The following questions and issues, presented with little elaboration, seem particularly amenable to future research.

- We found great variation in the extent to which course planning is centralized and, thus, removed from the province of the individual faculty members. In our sample, we encountered a four-year institution where faculty members teaching introductory courses largely followed the same course plan and a community college with inflexible articulation agreements. Later, we discovered that some branch campuses of state universities have uniform syllabi constructed at the main campus, leaving little faculty autonomy in course planning. In our judgment, the extent to which faculty have autonomy in course planning is a variable that may be related to student outcomes. In our survey we have included questions about the degree of autonomy individual professors perceive they have. A related issue is to develop an understanding of planning autonomy for team taught courses, which occur regularly in fields such as nursing.

- We identified an unexpected congruence between what faculty members said they did to help students learn and the statistically derived dimensions (factors) of common teaching evaluation instruments. A systematic study could be done to determine how students' perceptions of the instructor's course intentions and structure serve as mediating variables between the intentions expressed by the faculty member and the students' reactions to the course on an evaluation instrument.

- We believe interesting results could be found in a study that compares how accurately students with poorly developed and well developed academic skills interpret faculty course goals and plans. In short, is communication of teacher intent a significant barrier for the underprepared student?

- A coherent course design seems to require at least three elements: a suitable plan constructed by expert educators in the academic field; effective communication of the plan to students; and students possessing the capabilities and motivations needed to carry out the plan successfully. Additional research is needed to measure educational outcomes when each of these three elements is varied. Studies of how course structure, content, and goals are effectively communicated to students seem to have been particularly neglected. Course syllabi are one possible means of communication but other means also should be studied. For example, does it matter when during a term goals and objectives are presented? Does it matter whether the goals are presented in toto or in parts.

- Longitudinal studies of beginning college instructors as they develop planning strategies would be useful to ascertain the source of beliefs and practices exhibited by experienced teachers. What is the developmental process through which young faculty members come to a sense of course planning?

- Although most faculty provide reasonably comprehensive syllabi and these syllabi seem characteristic of disciplinary goals and patterns, little is known about the relation of syllabi to course design processes, the manner in which students use syllabi, or the way students are influenced by syllabi. In light of the assumed importance of setting clear expectations for students, numerous aspects of faculty-syllabi and student-syllabi linkages should be explored.

- On some campuses in our study there were instructional development offices and on others none. It appears that even where they exist, these offices are not widely used by faculty members in course planning. Why is this the case? Are there exemplary models of such offices? What characterizes faculty who use such services?

- What influence do the emerging instructional assistance labs and the microcomputer have on course planning?

- If faculty members do not read teaching journals or education literature, is there any way at all to get information about teaching to them? Can the role of translator be created?

- Is there a two-stage faculty decision process for some or all of the contextual filters? We speculate that the first decision stage would be to acknowledge the contextual factor; the second stage would be to use it in planning.

- What can be said about the nature of the feedback loop proposed in the contextual filters model? How is feedback used by the instructor in the next course planning cycle?

- Despite national exhortations to the contrary, why do most faculty members fail to discuss modes of inquiry with introductory students?

- What mediates the apparent relationship between institutional selectivity and resistance to considering ideas from instructional experts?

- Why is it that students view their instructors as primarily conveying the great ideas of the human mind while the instructors believe they are teaching effective thinking?

- Why do students believe instructors are more concerned with the application of knowledge than instructors themselves believe they are?

- Why do students not state many views that vary from their instructors' objectives, assignments, and beliefs?

- Is there evidence for a different perceptual process for students who demonstrate the constellation of motivated learning factors isolated by McKeachie and others? That is, do students with high motivation, high effort, and highly developed learning skills perceive the course differently than students with other constellations of motivated learning strategies?

- What is the faculty view of the relationship between coherence within the individual course and within a program, that is, among courses that are linked?

- What are the characteristics of the maverick faculty member who departs from the usual course planning mode for his or her field?

- Is length of teaching experience related to considering more or fewer course planning alternatives?

9.6 Conclusion

We believe the results of this exploratory study have important implications for the following reasons:

1. While not demonstrating any relationship of course planning with effective learning, the study calls attention to the potential importance of course level planning strategies as a factor in student learning.
2. The study opens the door to a more specific focus on exploring the effect of clarity of plans, either verbal or written, on student learning.
3. The study results provide an optimistic view of faculty involvement in their teaching.
4. The study results suggest a model that can be used to approach improvement of course planning from a number of vantage points, some of which predictably will be easier than others. The model implies interrelated hypotheses that give it the potential to evolve into a theory of course planning.

APPENDIX I

FACULTY INTERVIEW PROTOCOL

CONDENSED VERSION
INTERVIEW GUIDE - FACULTY INTERVIEWS

INTRODUCTION

I REALLY APPRECIATE YOUR TAKING TIME FROM YOUR BUSY SCHEDULE TO TALK WITH ME TODAY.

AS YOU KNOW, WE ARE INTERESTED IN HOW TEACHERS OF INTRODUCTORY COURSES GO ABOUT PLANNING THOSE COURSES. THE PURPOSE OF THE INTERVIEW IS TO HELP US UNDERSTAND THE ACTIVITIES THAT TEACHERS IN VARIOUS FIELDS CARRY OUT AND THE ASSUMPTIONS THEY USE AS THEY PLAN COURSES. WE ARE NOT INTERESTED IN EVALUATING YOUR COURSE OR YOUR TEACHING.

SINCE WE EXPECT THAT SOME OF THE WAYS IN WHICH YOU GO ABOUT PLANNING YOUR COURSE ARE RELATED TO THE FIELD YOU TEACH AND TO YOUR OWN BACKGROUND, WE WILL BE ASKING ABOUT YOUR DISCIPLINE, YOUR EDUCATIONAL BELIEFS, AND RELATED QUESTIONS, AS WELL AS SPECIFICALLY ABOUT HOW YOU PLAN COURSES.

OUR DISCUSSION WILL MOVE ALONG MUCH FASTER IF I CAN TAKE FEWER NOTES AND LISTEN TO OUR CONVERSATION AGAIN LATER. DO YOU MIND IF I TAPE THE INTERVIEW? (Get consent for signed and turn on tape.)

1. SINCE WE ARE INTERVIEWING FACULTY IN VARIOUS FIELDS WHO TEACH INTRODUCTORY LEVEL COURSES, LET ME FIRST ASK YOU TO KEEP IN MIND THE COURSE YOU TEACH IN _____ AS YOU TELL ME ABOUT YOUR COURSE PLANNING.

2. ARE THE TITLE AND DESCRIPTION ESSENTIALLY CORRECT? (List modifications or interpretations that faculty member suggests as well as reasons.)

UNSTRUCTURED INTERVIEW

3. HOW WOULD YOU BRIEFLY DESCRIBE FOR A NON-EXPERT THE TYPES OF PROBLEMS, ISSUES, OR KEY CONCEPTS WITH WHICH THIS COURSE DEALS?

4. PLEASE TELL ME ABOUT THE STUDENTS WHO TYPICALLY TAKE THIS COURSE.

5. WHAT IS THE TYPICAL ENROLLMENT IN THE COURSE?

6. HOW MANY TERMS HAVE YOU TAUGHT THIS COURSE?

7. WOULD YOU DESCRIBE THE PROGRAM OR ORGANIZATIONAL UNIT THAT OFFERS THIS COURSE?

8. HOW WOULD YOU CHARACTERIZE THE GOALS OF THE PROGRAM THAT SPONSORS THIS COURSE?

9. PROBE: ON THIS SHEET THERE ARE PAIRS OF DESCRIPTORS THAT MIGHT CHARACTERIZE THE GOALS OF THE PROGRAM THAT OFFERS THE COURSE. WOULD YOU THINK OF THE TWO DESCRIPTORS AS ENDS OF A FIVE POINT SCALE AND INDICATE WHICH ONE COMES CLOSER TO CHARACTERIZING THE PROGRAM GOALS? IT WOULD BE HELPFUL TO ME IF YOU WOULD THINK OUT LOUD AS YOU TRY TO CHARACTERIZE THE PROGRAM GOALS.

(Use Response Sheet 9 and note any comments under each pair here. Explore whether wording has meaning to faculty member.)

10. AS YOU BEGIN TO PLAN FOR THIS COURSE, WHAT ARE THE STEPS THAT YOU TAKE, THE THINGS YOU THINK ABOUT, THE TIME LINE YOU USE?

I'D APPRECIATE IT IF YOU WOULD JUST GENERALLY DESCRIBE THE WAY YOU GO ABOUT PLANNING.
(Use Coding Sheet 10.) Record in order activities the faculty mentions first, second, third, etc. Use additional tally marks to note those things mentioned more than once or emphasized in some way. Record as much detail as you can about specific activities. Use general categories given on coding sheet but note additional ones that arise.)

11. IN LISTENING TO YOUR DESCRIPTION, I BELIEVE YOU MENTIONED THAT THE FIRST THING YOU MENTIONED IN PLANNING YOUR COURSE IS _____.

12. CAN YOU TELL ME MORE ABOUT WHY THAT OCCURRED TO YOU AS THE FIRST THING TO MENTION?

15. ALTHOUGH YOU MAY ALREADY HAVE MENTIONED SOME OF THEM IN DESCRIBING YOUR ACTIVITIES, I'D LIKE TO GET A BETTER UNDERSTANDING OF INFLUENCES YOU THINK ARE PARTICULARLY IMPORTANT--THOSE THAT PLAY A PART IN DETERMINING HOW YOU PLAN THE COURSE, THOSE INFLUENCES THAT HELP TO DIRECT YOUR THINKING AND YOUR ACTIVITIES.

CAN YOU MENTION SOME THINGS THAT INFLUENCE YOU?
(Use Coding Sheet 15. Record number of times mentioned. Add categories that are not included.)

STRUCTURED INTERVIEW

16. NOW I'D LIKE TO SPEND A BIT OF TIME EXPLORING SOME ASPECTS OF THE DISCIPLINE YOU TEACH. MY QUESTIONS ARE DIRECTED AT TOPICS ABOUT WHICH THERE MAY NOT BE CONSENSUS AMONG THOSE WHO TEACH IN THE SAME FIELD.

HERE IS A SHEET SHOWING WAYS IN WHICH SCHOLARS HAVE DESCRIBED AN ACADEMIC DISCIPLINE. WOULD YOU PLEASE CHOOSE UP TO THREE CHARACTERIZATIONS THAT YOU FEEL BEST FITS YOUR FIELD AND RANK THEM IN ORDER OF IMPORTANCE?
PLEASE THINK ALOUD IF YOU LIKE. (Use Response Sheet 16 and note comments here.)

17. Substantive Aspects of the discipline

DO YOU BELIEVE THERE IS AGREEMENT AMONG SCHOLARS IN YOUR FIELD ABOUT THE TYPES OF PROBLEMS WHICH SHOULD BE INCLUDED IN AN INTRODUCTORY COURSE? IF NOT, PLEASE DESCRIBE THE MAJOR ISSUES ON WHICH THERE IS DISAGREEMENT.

18. Inquiry (syntactical) Aspects

DO YOU BELIEVE THERE IS AGREEMENT AMONG SCHOLARS IN YOUR FIELD ABOUT THE WAY EVIDENCE IS COLLECTED, ORGANIZED, AND INTERPRETED IN THE FIELD—IN OTHER WORDS, THE MODE OF INQUIRY IN THE FIELD? ON WHAT ISSUES DOES THE CONSENSUS OR LACK OF CONSENSUS CENTER?

19. IF YOU WERE TO DRAW A DIAGRAM SHOWING THE RELATIONSHIP OF YOUR FIELD TO OTHER FIELDS TAUGHT IN COLLEGES, WHAT FIELDS WOULD BE CLOSEST TO YOUR FIELD? (List closest fields.)

20. WHAT FIELDS WOULD BE MOST DISTANT? (List distant fields.)

21. THERE'S BEEN A LOT OF TALK RECENTLY ABOUT "COHERENCE" IN THE COLLEGE CURRICULUM. THE TERM SEEMS TO MEAN DIFFERENT THINGS TO DIFFERENT PEOPLE. FROM YOUR PERSPECTIVE WHAT DOES IT MEAN TO HAVE A CURRICULUM THAT IS COHERENT?

23. NOW I'D LIKE TO GET A BIT MORE DETAIL ABOUT THE RELATIVE IMPORTANCE OF THE THINGS THAT INFLUENCE YOU IN YOUR COURSE PLANNING. HERE ARE SOME CARDS (GREEN) ON WHICH ARE LISTED TEN TYPES OF INFLUENCES, SOME OF WHICH YOU HAVE MENTIONED.

THERE ARE ALSO A COUPLE OF BLANK CARDS TO ADD INFLUENCES THAT YOU FEEL AREN'T COVERED IN THE CATEGORIES GIVEN.

WOULD YOU FIRST SORT THE CARDS SO THAT THE THINGS YOU BELIEVE ARE THE MOST IMPORTANT INFLUENCES IN YOUR COURSE PLANNING ARE ON TOP AND THE LEAST IMPORTANT ON THE BOTTOM OF THE PILE.

WHEN YOU HAVE THE CARDS ORDERED WOULD YOU TAKE 100 POINTS PLEASE AND WRITE A NUMBER ON EACH CARD SO THAT THE POINTS SHOW THEIR RELATIVE IMPORTANCE OF THE INFLUENCE TO YOU IN YOUR PLANNING?

AGAIN, IT WILL HELP IF YOU WILL SHARE YOUR THOUGHTS AS YOU ORDER THE CARDS. (Use Response Sheet 23.)

WOULD YOU INDICATE PLEASE WHY YOU ASSIGNED THE TOP NUMBER OF POINTS TO THE ITEM YOU DID AND WHY YOU CONSIDERED SOME OF THE ITEMS RELATIVELY UNIMPORTANT?

WOULD YOU LIKE TO ADD ANYTHING ON THE BLANK CARDS AS IMPORTANT INFLUENCES THAT WERE NOT COVERED?

24. TO OBTAIN A BIT MORE DETAIL ABOUT SOME OF THESE INFLUENCES, I'D LIKE TO ASK YOU TO RESPOND TO SOME ADDITIONAL QUESTIONS ABOUT FACTORS THAT MAY INFLUENCE YOUR COURSE PLANNING.

HERE ARE NINE CRITERIA THAT MIGHT BE IMPORTANT IN SELECTING CONTENT FOR YOUR COURSE AND A BLANK CARD FOR ANY IMPORTANT CONCERN THAT IS NOT LISTED. (yellow cards)

PLEASE ORDER THE CARDS AND DISTRIBUTE 100 POINTS ACROSS THE CRITERIA AS YOU DID BEFORE WITH THE INFLUENCES ON YOUR COURSE PLANNING. (Use Response Sheet 24.

AGAIN, WILL YOU EXPLAIN TO ME THE SIGNIFICANCE OF YOUR MOST IMPORTANT AND LEAST IMPORTANT RESPONSES?

OBVIOUSLY, FACULTY MEMBERS USUALLY HAVE SOME GOALS FOR STUDENTS IN THEIR COURSE AND SOME IDEAS ABOUT HOW STUDENTS CAN BEST ACHIEVE THOSE GOALS.

25. WHAT ARE THE PRIMARY GOALS YOU HAVE FOR STUDENTS IN YOUR COURSE?

26. AFTER YOU HAVE DEVELOPED A PLAN FOR THE COURSE AND STUDENTS HAVE ENROLLED, IN WHAT SPECIFIC WAYS DO YOU SEND MESSAGES TO STUDENTS ABOUT YOUR PLAN? (Use Coding Sheet 28.

27. IN YOUR COURSE DO YOU THINK THAT STUDENTS GENERALLY SEEM TO UNDERSTAND THE GOALS YOU HAVE IN MIND FOR THEM TO ACHIEVE?

29. QUITE POSSIBLY, EVEN AFTER SELECTING THE PARTICULAR CONTENT THAT STUDENTS SHOULD BE ASKED TO LEARN, FACULTY MEMBERS IN ONE DISCIPLINE ARE MORE LIKELY TO SELECT DIFFERENT WAYS OF ARRANGING THE CONTENT FOR PRESENTATION THAN FACULTY MEMBER IN ANOTHER DISCIPLINE. EVEN WITHIN FIELDS THERE MAY BE DIFFERENT VIEWS OF THE BEST WAYS TO ARRANGE THE COURSE CONTENT.

I'M GOING TO PROVIDE YOU WITH SIX DESCRIPTIONS OF WAYS IN WHICH CONTENT MIGHT BE ARRANGED. I'D LIKE YOU TO ARRANGE THEM IN ORDER ACCORDING TO THE WAY YOU BELIEVE CONTENT IS BEST ARRANGED FOR TEACHING IN YOUR COURSE. PLEASE DESCRIBE YOUR THINKING AS YOU CONSIDER AND ARRANGE THE CARDS.

Response cards 29. Six 5 x 8 cards

1) structural sequence !!!!!!!!!
2) conceptual sequence @@@@@@@@@
3) knowledge creation sequence #########
4) learning-based sequence $$$$$$$$$
5) knowledge utilization sequence %%%%%%%%%
6) pragmatic sequence &&&&&&&&&

Note: Get reasons for choosing at least the top and bottom ranked choices.

33. EVEN AFTER THE WAY OF ARRANGING COURSE CONTENT IS CHOSEN, THERE IS STILL A CHOICE OF THE WAY INSTRUCTION WILL BE CARRIED OUT. IN YOUR COURSE, WHAT ARE THE MOST TYPICAL MODES OF INSTRUCTION? (Record any reasons or constraints mentioned that dictate mode of instruction.)

34. WOULD YOU SAY COMMUNICATION IN THE COURSE FLOWS PREDOMINANTLY FROM YOU TO THE STUDENTS, FROM THE STUDENTS TO YOU, OR ABOUT EQUALLY IN EACH DIRECTION? (Probe for percentage.)

35. WHAT DO YOU THINK IS THE MOST IMPORTANT THING THAT YOU DO IN THE COURSE TO HELP STUDENTS LEARN?

36. WHAT INDICATORS DO YOU USE TO KNOW IF STUDENTS IN THE COURSE ARE GENERALLY ACTIVELY INVOLVED IN LEARNING?

39. IF YOU WANTED TO DEVISE SOME ADDITIONAL WAYS OF GETTING INFORMATION ABOUT WHETHER YOUR STUDENTS ARE LEARNING, IS THERE SOMEONE AT THE COLLEGE YOU MIGHT ASK FOR ASSISTANCE WITH THIS PROBLEM?

AS THE LAST THING IN OUR INTERVIEW, I WOULD LIKE TO GET SOME INFORMATION ABOUT YOUR BELIEFS ABOUT EDUCATION AND THEN A BIT OF BACKGROUND ABOUT YOU AS A TEACHER.

40. ON THESE CARDS ARE SIX VIEWS ABOUT EDUCATION. OF COURSE, THERE ARE NO RIGHT OR WRONG VIEWS, BUT FACULTY MEMBERS GENERALLY FIND THAT SOME OF THESE VIEWS ARE CLOSER TO THEIR OWN THINKING THAN OTHERS.

WOULD YOU READ EACH BRIEF PARAGRAPH AND PUT THE CARDS IN ORDER OF CONGRUENCE WITH YOUR OWN THINKING—PUT THE VIEW THAT IS CLOSEST TO YOUR OWN ON TOP OF THE PILE.

(Use Response Sheets 40—conflicting conception descriptions.)

Social Change !!!!!!!!!
Effective Thinking @@@@@@@@@
Systematic Instructional Process #########
Pragmatic/Constraints $$$$$$$$$
Personal Enrichment %%%%%%%%%
Great Ideas & Discoveries &&&&&&&&&

41. AGAIN, I'D LIKE TO LEARN ABOUT WHY YOU RANKED EACH OF THESE BELIEFS THE WAY YOU DID.
(Note: if getting reasons for each rank is difficult or you feel you already have information, get top two and bottom ranked reasons.)

I'D LIKE TO CONCLUDE BY LEARNING A FEW THINGS ABOUT YOU SO THAT WE MAY COMPARE THE VIEWS OF FACULTY IN THE SAME FIELD WITH DIFFERENT CHARACTERISTICS.

42. Interviewer circle one: MALE FEMALE

43. IN WHAT YEAR WERE YOU BORN? _____

44. WHAT IS THE HIGHEST DEGREE YOU HOLD? _____

45. WHAT SUBJECT IS THAT DEGREE IN? _____

46. IN WHAT YEAR DID YOU RECEIVE YOUR HIGHEST DEGREE? _____

46b. ACADEMIC RANK OF FACULTY MEMBER _____

47. HOW MANY YEARS HAVE YOU BEEN A REGULAR COLLEGE TEACHER? _____

48. IF AT ALL, HOW MANY YEARS A GRADUATE TEACHING ASSISTANT? _____

A HIGH SCHOOL TEACHER? _____

49. DID YOU HAVE FULL TIME WORK EXPERIENCE OUTSIDE OF COLLEGE TEACHING?
YES NO

IF YES, PLEASE DESCRIBE:

50. HAVE YOU EVER HAD ANY COURSES IN EDUCATION: YES NO

IF YES, PLEASE DESCRIBE:

51. HAVE YOU PARTICIPATED IN WORKSHOPS FOR INSTRUCTIONAL DEVELOPMENT?
YES NO

IF YES PLEASE DESCRIBE.

52. SINCE YOU HAVE BEEN A COLLEGE TEACHER, HAVE YOU PUBLISHED ANY TEXTBOOKS, LAB BOOKS OR OTHER TEACHING MATERIALS IN YOUR FIELD?

PLEASE DESCRIBE:

53. SINCE YOU HAVE BEEN A COLLEGE TEACHER, HAVE YOU PUBLISHED ANY RESEARCH ARTICLES OR BOOKS IN YOUR FIELD? YES NO

IF YES, ABOUT HOW MANY ARTICLES WOULD YOU SAY YOU HAVE PUBLISHED EVERY THREE YEARS? _____

54. IN THE THREE YEARS HAVE YOU MADE CONFERENCE PRESENTATIONS CONCERNING THE TEACHING OF YOUR SUBJECT?

55. WHAT JOURNAL DO YOU READ REGULARLY THAT YOU WOULD RECOMMEND TO A YOUNG FACULTY MEMBER IN YOUR FIELD CONCERNED WITH GETTING A START AS A GOOD TEACHER?

GET IF POSSIBLE: COURSE SYLLABUS
ASSIGNMENTS/CLASS SCHEDULE
BOOK LIST OR READING LIST
SAMPLE OF TESTS

I REALLY APPRECIATE THE ATTENTION YOU HAVE GIVEN TO THIS INTERVIEW. AS YOU KNOW, WE PLAN TO PROVIDE RESULTS TO THOSE WHO PARTICIPATED AND, WHENEVER POSSIBLE, TO HOLD A SHORT SEMINAR ON EACH CAMPUS TO SHARE AND DISCUSS THE FINDINGS. LET ME REASSURE YOU THAT WE WILL BE SHARING GENERAL ISSUES THAT SEEM TO AFFECT THE WAY FACULTY IN DIFFERENT FIELDS PLAN COURSES. NONE OF YOUR RESPONSES WILL BE IDENTIFIED WITH YOU PERSONALLY. WE HOPE TO SCHEDULE THOSE DISCUSSION IN ABOUT A MONTH OR SO.

ARE THERE ANY QUESTIONS ABOUT OUR STUDY THAT I CAN ANSWER FOR YOU AT THIS TIME? (Note any issues they raise here.)

APPENDIX II

STUDENT INTERVIEW PROTOCOL

CONDENSED INTERVIEW GUIDE/STUDENTS

INTRODUCTION

I REALLY APPRECIATE YOUR TAKING TIME FROM YOUR BUSY SCHEDULE TO TALK WITH ME TODAY.

LET ME EXPLAIN THE PURPOSE OF THIS INTERVIEW. I AM WITH A GROUP OF RESEARCHERS FROM A NATIONAL CENTER FOR THE STUDY OF COLLEGE EDUCATION AT THE UNIVERSITY OF MICHIGAN. WE ARE STUDYING HOW COLLEGE INSTRUCTORS DESIGN INTRODUCTORY COURSES IN CERTAIN FIELDS. WE ARE INTERESTED IN FINDING OUT HOW WELL STUDENTS UNDERSTAND WHAT THEIR INSTRUCTORS HOPE THEY WILL LEARN AND WHY THE INSTRUCTOR HAS CHOSEN CERTAIN COURSE ACTIVITIES AND ASSIGNMENTS.

WHILE I AM TALKING WITH YOU AS A TYPICAL STUDENT IN (COURSE)_____, ANOTHER PERSON IS TALKING WITH YOUR RECENT INSTRUCTOR MS/MR/DR ————. WE WANT TO SEE IF YOU, AS A STUDENT, SAW CERTAIN ASPECTS OF THAT COURSE IN THE WAY THAT THE INSTRUCTOR HOPED THAT YOU WOULD.

BECAUSE DIFFERENT TYPES OF STUDENTS MAY BE MORE CONSCIOUS OF DIFFERENT ASPECTS OF THE COURSE THAN OTHER TYPES OF STUDENTS, AFTER I ASK YOU SOME QUESTIONS ABOUT THE COURSE, I WILL ASK YOU TO COMPLETE SOME BRIEF QUESTIONNAIRES ABOUT YOUR OWN GOALS, INTERESTS, AND STUDY PREFERENCES.

WE BELIEVE YOU WILL FIND THE QUESTIONS INTERESTING AND THAT YOUR ANSWERS WILL EVENTUALLY HELP US TO UNDERSTAND BETTER HOW COLLEGE TEACHERS TEACH AND COLLEGE STUDENTS LEARN. HOWEVER, THIS INTERVIEW IS VOLUNTARY AND YOU DON'T NEED TO PARTICIPATE IF YOU DON'T WISH TO. IF YOU DO PARTICIPATE, ALL OF YOUR ANSWERS WILL BE CONFIDENTIAL AND WE WILL NOT SHARE THEM WITH YOUR INSTRUCTOR NOR WILL WE PUBLISH THEM IN ANY WAY THAT WOULD IDENTIFY YOU.

I WOULD LIKE TO TAPE OUR INTERVIEW SO THAT THE OTHER RESEARCHERS WHO DIDN'T MEET YOU MAY LISTEN LATER.

ARE YOU WILLING TO PARTICIPATE? YES NO

IT IS NECESSARY FOR ME TO ASK YOU TO READ AND SIGN THIS CONSENT FORM TO BE INTERVIEWED.

DO YOU HAVE ANY QUESTIONS BEFORE WE START? (List questions below as you answer.)

BEFORE WE START, LET ME MAKE IT CLEAR THAT WE ARE NOT ASKING YOU TO EVALUATE YOUR INSTRUCTOR AND WE WILL HAVE TO IGNORE ANY COMMENTS YOU MAY MAKE ABOUT THE QUALITY OF TEACHING. JUST TRY TO ANSWER THE QUESTIONS AS CLEARLY AS YOU CAN, SEPARATING YOUR ANSWERS AS MUCH AS POSSIBLE FROM ANY FEELINGS YOU MAY HAVE ABOUT THE INSTRUCTOR OR HOW WELL YOU DID IN THE COURSE.

FIRST, LET'S BE SURE WE ARE FOCUSING ON A SPECIFIC COURSE. THAT COURSE IS _____ WHICH YOU TOOK LAST TERM AND THE INSTRUCTOR WAS _____. IS THAT CORRECT?

UNSTRUCTURED INTERVIEW

1. PLEASE DESCRIBE IN YOUR OWN WAY WHAT YOU BELIEVE THAT YOUR INSTRUCTOR HOPED YOU LEARNED IN THE COURSE _____. (Record response here.)

2. CAN YOU MENTION SPECIFIC OBJECTIVES YOU BELIEVE THAT YOUR INSTRUCTOR IN COURSE _____ HOPED YOU ACHIEVED? (Use Student Coding Sheet 1 - SCS 1.)

3. WERE THESE OBJECTIVES IMPORTANT ONES FOR YOU? WHY? (Record here.)

4. DID YOU HAVE ANY ADDITIONAL OBJECTIVES FOR YOURSELF IN THE COURSE? IF SO, WHAT WERE THEY? (Use SCS 1.)

5. THUS FAR YOU HAVE LISTED THE FOLLOWING OBJECTIVES AS IMPORTANT TO YOU AND/OR THE INSTRUCTOR IN THIS COURSE. (Read them back to the student. No more than 10 total.) COULD YOU TELL ME WHICH IS MOST IMPORTANT TO YOU? (Use SCS 1.) (TRY TO GET TOTAL RANKING; AT LEAST GET TOP TWO AND BOTTOM TWO.)

6. PLEASE DESCRIBE THE TYPES OF PROBLEMS, ISSUES, OR KEY CONCEPTS WITH WHICH THE COURSE DEALS. (Use SCS 6.) (Note on SCS 6 those things that student mentions independently. Probe comes at end of interview if time.)

7. PLEASE DESCRIBE THE KINDS OF ASSIGNMENTS YOU WERE ASKED TO CARRY OUT IN THIS COURSE.

9. WHICH OF THESE TYPES OF ASSIGNMENTS DID YOU FIND MOST USEFUL IN YOUR LEARNING? (Asterisk the most useful assignment recorded above.) WHY?

STRUCTURED INTERVIEW

11. I'M GOING TO GIVE YOU A LIST OF A FEW THINGS THAT INSTRUCTORS OFTEN WANT STUDENTS TO LEARN. YOU'VE MENTIONED SOME OF THESE ALREADY. FOR EACH OF THESE, WOULD YOU CIRCLE THE NUMBER ON THE SHEET ACCORDING TO WHETHER YOU BELIEVE YOUR ACHIEVEMENT OF THIS TYPE OF LEARNING WAS

1) VERY IMPORTANT TO YOUR INSTRUCTOR;
2) OF SOME IMPORTANCE TO YOUR INSTRUCTOR;
OR 3) NOT AT ALL IMPORTANT TO YOUR INSTRUCTOR.
(Give the student SRS 11.)

12. NOW THAT YOU'VE MADE YOUR CHOICES, WOULD YOU SHARE WITH ME IF YOU CAN A SPECIFIC EXAMPLE THAT TELLS HOW YOU KNOW THE INSTRUCTOR BELIEVES THIS IS OR IS NOT AN IMPORTANT LEARNING.

(Use SRS 11. List examples on your sheet while the student refers to the identical response form. Pursue the ten most important items if possible to get examples.)

13. NOW THAT YOU HAVE COMPLETED YOUR RATINGS ARE THERE ANY THAT NEED CHANGING IN ORDER TO RATE THE LEARNINGS THAT YOU CONSIDERED IMPORTANT?

IF YES, WHICH RATINGS WOULD YOU CHANGE AND HOW?
(On your SRS 11 place a check mark next to each changed item and in the column provided list the rating (1,2, or 3) the student would give to each item.)

16. ARE YOU AWARE OF OTHER COURSES (IN OTHER DEPARTMENTS) THAT IT WOULD BE HELPFUL TO TAKE BEFORE TAKING THIS COURSE?

IF YES, WHICH COURSES AND WHY?

17. AT THE SAME TIME AS TAKING THIS COURSE?

IF YES, WHICH COURSES AND WHY?

NOW THAT WE HAVE TALKED ABOUT WHAT YOU THINK YOUR INSTRUCTOR WANTS YOU TO LEARN IN THIS COURSE, CAN YOU TELL ME A BIT MORE ABOUT THE WAYS IN WHICH YOU WERE ABLE TO KNOW WHAT GOALS OR OBJECTIVES YOUR INSTRUCTOR HOPED YOU WOULD ACHIEVE? IN OTHER WORDS, HOW DID YOUR INSTRUCTOR TELL YOU WHAT THE OBJECTIVES WERE?

18. ON THIS SHEET, INDICATE THE THREE MOST IMPORTANT WAYS YOUR INSTRUCTOR GAVE YOU MESSAGES ABOUT WHAT IS IMPORTANT?

Rank the most important "1"; the next most important "2" and the third most important "3." (Use SRS 18.)

20. FACULTY MEMBERS OFTEN SELECT DIFFERENT WAYS OF ARRANGING COURSE CONTENT IN DIFFERENT CLASSES. I'M GOING TO GIVE YOU CARDS WITH SIX DESCRIPTIONS OF WAYS IN WHICH A COURSE'S CONTENT MIGHT BE ARRANGED. WOULD YOU SELECT ALL THOSE THAT DESCRIBE THE WAY ANY OF THE CONTENT WAS ARRANGED IN YOUR COURSE?
(Use SRS 20 white cards and sheet.)

IF YOU SELECTED MORE THAN ONE CARD, PLEASE PUT THEM IN ORDER WITH THE MOST COMMONLY USED ARRANGEMENT ON TOP, THE NEXT BEST SECOND, AND SO ON. PLEASE WRITE A PERCENTAGE ON EACH CARD YOU HAVE SELECTED TO SHOW ABOUT WHAT PART OF THE COURSE WAS ARRANGED ACCORDING TO THAT DESCRIPTION.

21. IF YOU THINK OF THINGS THAT I SHOULD NOTE AS YOU DO THIS WOULD YOU TALK ALOUD ABOUT THEM?
(Record the order of the cards and the percentages as well as any comments.)

(Note: order not the same as in interview.

Knowledge creation sequence ##########
Structural sequence !!!!!!!!!!
Knowledge utilization sequence %%%%%%%%%
Conceptual sequence @@@@@@@@@@
Learning-based sequence $$$$$$$$$
Pragmatic sequence &&&&&&&&&&

22. SOME STUDENTS PREFER TO LEARN IN COURSES THAT ARE ARRANGED IN ONE OF THE WAYS THAT ARE DESCRIBED ON THESE SAME CARDS. WOULD YOU TAKE THE CARDS AND REORDER THEM SO THAT THE TOP CARD DESCRIBES THE COURSE ARRANGEMENT YOU WOULD PREFER MOST AND THE BOTTOM CARD REPRESENTS THE ARRANGEMENT YOU WOULD LIKE LEAST. (Reuse SRS 20 white cards.)

23. USING THE PROCEDURE YOU USED EARLIER, DISTRIBUTE 100 POINTS AMONG THE CARDS BY WRITING A NUMBER AT THE TOP OF EACH CARD TO REFLECT ITS RELATIVE IMPORTANCE TO YOU. REMEMBER THAT YOU CAN AWARD ZERO POINTS TO ONE OR MORE CARDS IF YOU WISH. (Collect SRS 20 white cards.)

24. YOU RANKED _____ AS THE MOST DESIRABLE ARRANGEMENT FOR YOUR OWN LEARNING. WILL YOU TELL ME WHY?

25. YOU RANKED _____ AS THE LEAST DESIRABLE ARRANGEMENT FOR YOUR OWN LEARNING. WHY?

26. IN THIS COURSE, WHAT WOULD YOU SAY WAS THE TYPICAL METHOD OF INSTRUCTION?

27. WOULD YOU SAY THAT COMMUNICATION IN THIS COURSE FLOWED PREDOMINANTLY FROM INSTRUCTOR TO STUDENTS, FROM STUDENTS TO INSTRUCTOR, OR ABOUT EQUALLY IN EACH DIRECTION? (Circle one)

28. WHAT IMPORTANT THINGS DID THE INSTRUCTOR DO TO HELP YOU LEARN?

29. DID THE INSTRUCTOR USE PARTICULAR METHODS OF FINDING OUT WHETHER YOU LEARNED WHAT YOU WERE SUPPOSED TO LEARN? WHAT WERE THEY?

29b. IN WHAT WAYS DO YOU, YOURSELF, ASSESS WHETHER YOU ARE LEARNING?

30. I'D LIKE TO GET SOME INFORMATION ABOUT YOUR PERCEPTION OF YOUR INSTRUCTOR'S BELIEFS ABOUT EDUCATION.

ON THESE CARDS ARE SIX VIEWS ABOUT EDUCATION THAT YOUR INSTRUCTOR MIGHT OR MIGHT NOT HOLD. WOULD YOU READ THE VIEWS AND PUT THEM IN AN ORDER THAT SHOWS HOW CLOSE EACH ONE IS TO YOUR PERCEPTION OF YOUR INSTRUCTOR'S BELIEFS? PUT THE

ONE CLOSEST TO YOUR INSTRUCTOR'S BELIEFS ON TOP AND THE MOST DISTANT ONE ON THE BOTTOM. (Use SRS 30 - yellow cards. Record the order of the cards below.)

Social Change !!!!!!!!!!
Effective Thinking @@@@@@@@@@
Systematic Instructional Process ##########
Pragmatic/Constraints $$$$$$$$$
Personal Enrichment %%%%%%%%%%
Great Ideas & Discoveries &&&&&&&&&&

31. NOW TAKE THE SAME CARDS AND ARRANGE THEM IN THE ORDER THAT REPRESENTS YOUR BELIEFS ABOUT EDUCATION. PLACE THE CLOSEST ONE TO YOUR BELIEFS ON TOP AND THE MOST DISTANT ONE ON THE BOTTOM. (Repeat the use of SRS 30.)

Social Change !!!!!!!!!!
Effective Thinking @@@@@@@@@@
Systematic Instructional Process ##########
Pragmatic/Constraints $$$$$$$$$$
Personal Enrichment %%%%%%%%%%
Great Ideas & Discoveries &&&&&&&&&&

WHY DID YOU RANK THE CARDS IN THE WAY THAT YOU DID?

NOW I'M GOING TO ASK YOU TO PROVIDE SOME BASIC INFORMATION ABOUT YOURSELF IN ORDER THAT WE MAY COMPARE YOUR RESPONSES TO THOSE OF OTHER STUDENTS WITH SIMILAR AND DIFFERENT BACKGROUNDS.

38. Interviewer circle one: MALE FEMALE

39. Interviewer circle whether obvious member of minority group:

BLACKNATIVE AMERICANHISPANIC ORIENTALOTHER

40. IN WHAT YEAR WERE YOU BORN? _____

41. WHAT YEAR IN COLLEGE ARE YOU NOW? _____

42. DID YOU COME TO COLLEGE DIRECTLY AFTER HIGH SCHOOL?

43. If no, WHAT DID YOU DO IN BETWEEN?

44. HOW MANY CREDITS ARE YOU TAKING THIS TERM? _____

45. DID YOUR FATHER ATTEND COLLEGE?

46. DID YOUR FATHER GRADUATE FROM COLLEGE?

47. DID YOUR MOTHER ATTEND COLLEGE?

48. DID YOUR MOTHER GRADUATE FROM COLLEGE?

49. WOULD YOU SAY THAT YOUR APPROXIMATE GRADE POINT AVERAGE THUS FAR IS:
A B C D E OR F

50. DO YOU WORK DURING THE SCHOOL TERM?

51. IF YES, HOW MANY HOURS A WEEK? _____

52. WHAT COLLEGE ARE YOU ENROLLED IN NOW? _____

53. ARE YOU ENROLLED IN ANY PARTICULAR DEPARTMENT? _____

54. WHAT DO YOU THINK YOU WILL MAJOR IN? _____
********** **********

USE THE QUESTIONS ON THIS PAGE ONLY IF THERE IS TIME TO SPARE IN THE INTERVIEW SCHEDULE. (If time is short, skip to page 17 and hand out the questionnaires.)

WE HAVE A BIT OF TIME LEFT SO LET ME GET SOME ADDITIONAL VIEWS YOU MAY HAVE.

19. IN PLANNING YOUR COURSE YOUR INSTRUCTOR WAS PROBABLY INFLUENCED BY A NUMBER OF THINGS. HERE ARE TEN CARDS, EACH WITH SOMETHING THAT MAY HAVE INFLUENCED THE SELECTION OF CONTENT IN YOUR COURSE. TWO BLANK CARDS ARE INCLUDED IF YOU THINK OF OTHER INFLUENCES THAT ARE NOT LISTED. BASED ON YOUR EXPERIENCE IN THE COURSE WOULD YOU SORT THE CARDS IN ORDER OF THEIR APPARENT INFLUENCE ON YOUR INSTRUCTOR?
(Use SRS 19-blue cards and SRS 19 coding sheet.)

PUT THE STRONGEST INFLUENCE ON TOP AND THE WEAKEST INFLUENCE ON THE BOTTOM OF THE PILE.

WHEN YOU HAVE THE CARDS ORDERED WOULD YOU TAKE 100 POINTS AND WRITE A NUMBER ON EACH CARD SO THAT THE POINTS SHOW THE RELATIVE IMPORTANCE OF THE INFLUENCES TO EACH OTHER. KEEP IN MIND THAT IT IS ACCEPTABLE TO USE ZERO FOR INFLUENCES THAT YOU BELIEVE DID NOT AFFECT YOUR INSTRUCTOR AT ALL.

WOULD YOU LIKE TO ADD ANYTHING ON THE BLANK CARD AS AN IMPORTANT THING YOU BELIEVE MIGHT HAVE INFLUENCED YOUR INSTRUCTOR?
(Only if time, otherwise skip to page 17)

LET'S TALK A BIT MORE ABOUT THE SUBSTANCE OF WHAT YOU LEARNED IN THE COURSE.

PROBES:

1. Can you tell me about three key ideas you were expected to learn or understand as a result of this course?

2. Can you describe any particular methods by which experts in this field gain more knowledge about their subject?

3. Are there particular areas of knowledge that experts in this field feel certain about? That they feel uncertain about?

4. Do you think that experts in this field have certain values that they believe in? Can you give me an example?

5. Can you give me an example of some vocabulary that is unique to this course? Did you need to learn this vocabulary at the outset or did you continue to learn it throughout the course?

FINALLY I'D LIKE YOU TO COMPLETE FOUR SHORT QUESTIONNAIRES. ONE QUESTIONNAIRE ASKS YOU TO CONSIDER SEVERAL GOALS STUDENTS MAY HAVE IN ATTENDING COLLEGE AND INDICATE WHICH ARE MOST IMPORTANT TO YOU. THE QUESTIONNAIRE ALSO ASKS YOU ABOUT YOUR SPECIFIC GOALS FOR TAKING THIS COURSE. (SRS 52)

THE SECOND QUESTIONNAIRE ASKS YOU ABOUT WHAT YOU LIKE IN A COURSE—HOW YOU BELIEVE IT IS BEST ARRANGED FOR YOU TO LEARN AND SO ON. (SRS 53)

THE THIRD QUESTIONNAIRE ASKS YOU ABOUT THE PARTICULAR LEVEL OF MOTIVATION THAT YOU HAD FOR COURSE _____ WHILE THE FOURTH QUESTIONNAIRE ASKS ABOUT THE EFFORT THAT YOU PUT INTO THE COURSE. (SRS 54-55)

THESE QUESTIONNAIRES SHOULD TAKE YOU LESS THAN ONE HALF HOUR TO COMPLETE. AN ID NUMBER RATHER THAN YOUR NAME IS WRITTEN AT THE TOP OF EACH SO THAT WE CAN PUT YOUR RESPONSES WITH YOUR INTERVIEW MATERIAL. WHEN YOU ARE FINISHED COMPLETING THE QUESTIONNAIRES, PLEASE PUT THEM BACK IN THE ENVELOPE AND SEAL IT BEFORE GIVING IT TO THE SECRETARY.

APPENDIX III

STUDENT EXPERIMENTAL QUESTIONNAIRES

IN THINKING ABOUT YOUR GOALS FOR ATTENDING COLLEGE AND IN TAKING THIS SPECIFIC COURSE, TO WHAT EXTENT IS EACH OF THE FOLLOWING IMPORTANT? USE THE FIRST SET OF SCALES TO RESPOND ABOUT YOUR GOALS IN ATTENDING COLLEGE AND THE SECOND TO RESPOND ABOUT THIS COURSE.

	IMPORTANT IN ATTENDING COLLEGE				IMPORTANT IN TAKING THIS COURSE			
	VERY MUCH	QUITE A BIT	SOME	VERY LITTLE	VERY MUCH	QUITE A BIT	SOME	VERY LITTLE
1. To gain background and specialization for further study in a professional, scientific, or scholarly field.	4	3	2	1	4	3	2	1
2. To broaden my acquaintance and appreciation of literature.	4	3	2	1	4	3	2	1
3. To improve my reasoning ability--to recognize assumptions, make logical inferences and reach correct conclusions.	4	3	2	1	4	3	2	1
4. To develop personally--understand my own abilities and limitations, interests, and standards of behavior.	4	3	2	1	4	3	2	1
5. To develop friendships and loyalties of lasting value.	4	3	2	1	4	3	2	1
6. To develop the ability to see relationships, similarities and differences among ideas.	4	3	2	1	4	3	2	1
7. As a base for improving my social and economic status.	4	3	2	1	4	3	2	1
8. To develop sensitivity, appreciation, and enjoyment of art, music and drama.	4	3	2	1	4	3	2	1
9. To gain vocabulary, facts, and skills in a field of knowledge.	4	3	2	1	4	3	2	1

Student Goals Questionnaire (Continued)

IN THINKING ABOUT YOUR GOALS FOR ATTENDING COLLEGE AND IN TAKING THIS SPECIFIC COURSE, TO WHAT EXTENT IS EACH OF THE FOLLOWING IMPORTANT? USE THE FIRST SET OF SCALES TO RESPOND ABOUT YOUR GOALS IN ATTENDING COLLEGE AND THE SECOND TO RESPOND ABOUT THIS COURSE.

	IMPORTANT IN ATTENDING COLLEGE				IMPORTANT IN TAKING THIS COURSE			
	VERY MUCH	QUITE A BIT	SOME	VERY LITTLE	VERY MUCH	QUITE A BIT	SOME	VERY LITTLE
10. To improve my writing and speaking abilities--to develop clear, correct, and effective communication.	4	3	2	1	4	3	2	1
11. To develop skepticism--the ability to withhold judgment, raise questions, and examine contrary views.	4	3	2	1	4	3	2	1
12. To understand the nature of science, experimentation, and theory.	4	3	2	1	4	3	2	1
13. To appreciate individuality and independence of thought and action.	4	3	2	1	4	3	2	1
14. To develop socially--gain experience and skill in relating to other people.	4	3	2	1	4	3	2	1
15. To develop tolerance and understanding of other people and their views.	4	3	2	1	4	3	2	1
16. To gain skills and techniques directly applicable to a job.	4	3	2	1	4	3	2	1
17. To become aware of different philosophies,cultures and ways of life.	4	3	2	1	4	3	2	1
18. To improve my quantitative thinking--understand concepts of probability, proportion, margin of error, etc.	4	3	2	1	4	3	2	1
19. To develop appreciation of religion--moral and ethical standards.	4	3	2	1	4	3	2	1
20. To get a degree or credits toward a degree that will allow me to move up in the world.	4	3	2	1	4	3	2	1

CIRCLE THE NUMBER CORRESPONDING TO THE ACTIVITIES YOU PERFORMED IN THIS COURSE

		VERY OFTEN	FAIRLY OFTEN	OCCASIONALLY	SELDOM OR NEVER
1.	I participated in class discussion.	4	3	2	1
2.	I had a conversation, lasting a half-hour or longer, with my professor.	4	3	2	1
3.	I discussed, with other students for an hour or longer, the subject-matter of this course.	4	3	2	1
4.	I spent a concentrated period of time--three hours or longer without interruption--studying for this course.	4	3	2	1
5.	I studied at least four hours or longer on this course during the weekend.	4	3	2	1
6.	I read a book related to this course that was not an assigned reading.	4	3	2	1
7.	I spent some time just browsing in the library or bookstore looking for things related to this course	4	3	2	1
8.	I participated in a research project related to this course.	4	3	2	1
9.	I spent five hours or more looking up references in the library and taking notes related to this course.	4	3	2	1
10.	I participated in a work experience related to this course.	4	3	2	1
11.	I helped another student who was having difficulty with this course.	4	3	2	1
12.	I participated in a community experience related to this course.	4	3	2	1
13.	I participated in a laboratory exercise related to this course.	4	3	2	1
14.	I took detailed notes in class or on reading assignments.	4	3	2	1

Course Effort Questionnaire (Continued)

CIRCLE THE NUMBER CORRESPONDING TO THE ACTIVITIES YOU PERFORMED IN THIS COURSE

	VERY OFTEN	FAIRLY OFTEN	OCCASIONALLY	SELDOM OR NEVER
15. I memorized facts, vocabulary, and terminology.	4	3	2	1
16. I underlined major points in the reading.	4	3	2	1
17. I made outlines from class notes or readings.	4	3	2	1
18. I attempted to explain the material to another students.	4	3	2	1
19. I thought about applications of the material in the course to other situations.	4	3	2	1
20. I tried to relate the course material to ideas and experiences of my own.	4	3	2	1
21. I looked for some basic structure or organization in the course material.	4	3	2	1
22. I tried to see how different facts and ideas fit together.	4	3	2	1
23. I postponed doing work related to the course	4	3	2	1
24. I skipped class.	4	3	2	1
25. I listened attentively in class meetings.	4	3	2	1
26. I enjoyed working in this course.	4	3	2	1
27. I took this course only because it was required.	4	3	2	1
28. I took this course because it was the least difficult of those I needed.	4	3	2	1
29. I thought that I would like more courses in this field.	4	3	2	1
30. I told friends about the interesting materials or ideas in this course.	4	3	2	1
31. I recommended this course to other students.	4	3	2	1

These questions inquire about your study habits, your learning skills and your motivation for learning. We are interested in your answers as they relate to the specific course you discussed with the interviewer. Please write the name of that course below and keep it in mind as you answer the questions. THERE ARE NO RIGHT OR WRONG ANSWERS TO THESE QUESTIONS.

Course _____ Instructor_____ Student I.D. _____

		Not at all true of me in this course						Very true of me in this course
1.	I think that what I learned in this course will be useful to me after college.	1	2	3	4	5	6	7
2.	I think that the subject matter of this course will be useful for me in my future courses.	1	2	3	4	5	6	7
3.	I was very interested in the content of this course.	1	2	3	4	5	6	7
4.	I think that the subject matter of this course is important for my own intellectual development.	1	2	3	4	5	6	7
5	It was very important to me do well in this course.	1	2	3	4	5	6	7
6.	I think my grades in this class depended upon the amount of effort I exerted.	1	2	3	4	5	6	7
7.	I think my grades in this class depended on the quality of my work.	1	2	3	4	5	6	7
8.	I think my grades in this class depended on the instructor's teaching and grading style.	1	2	3	4	5	6	7
9.	I was certain I could do an excellent job on the problems and tasks that were assigned for this course.	1	2	3	4	5	6	7
10.	I was certain that my background in the subject matter of this course would help me do well.	1	2	3	4	5	6	7
11.	Sometimes I have given up doing something because I thought too little of my ability.	1	2	3	4	5	6	7
12.	I was certain that I could understand the ideas and concepts taught in this course.	1	2	3	4	5	6	7
13.	I'm certain that my own ability resulted in my being successful in this course.	1	2	3	4	5	6	7
14.	It was sometimes hard for me to go on with my work if I was not encouraged.	1	2	3	4	5	6	7
15.	Even when I did less well than I desired, I tried to learn from my mistakes.	1	2	3	4	5	6	7
16.	I work hard to get a good grade even when I don't like a course.	1	2	3	4	5	6	7

Student Motivation Questionnaire (Continued)

		Not at all true of me in this course						Very true of me in this course
17.	Even when study materials are dull and uninteresting, I manage to keep working until I finish.	1	2	3	4	5	6	7
18.	Thinking of doing poorly interferes with my work on tests.	1	2	3	4	5	6	7
19.	When I take tests I think of the consequences of failing.	1	2	3	4	5	6	7
20.	When I take a test I think about items on other parts of the test I can t answer.	1	2	3	4	5	6	7
21.	In this course I tried to write down almost every word the instructor said when I took notes.	1	2	3	4	5	6	7
22.	I had difficulty identifying the important points in my reading.	1	2	3	4	5	6	7
23.	When I studied for an exam I integrated information from different sources.	1	2	3	4	5	6	7
24.	When I studied I often skimmed the material to see how it was organized.	1	2	3	4	5	6	7
25.	When reading I tried to relate the material to what I already knew.	1	2	3	4	5	6	7
26.	I wrote brief summaries of the main ideas in my lecture notes.	1	2	3	4	5	6	7
27.	When I studied I practiced saying the material to myself over and over.	1	2	3	4	5	6	7
28	When there were topic headings in a book, I stopped and asked myself what I knew about the topic before I read it.	1	2	3	4	5	6	7
29	When having difficulty recalling something, I made an effort to recall something else that might be related to it.	1	2	3	4	5	6	7
30.	In this class I often found that I had been reading assignments but didn t know what the reading was all about.	1	2	3	4	5	6	7
31.	When I studied a topic, I tried to make everything fit together logically	1	2	3	4	5	6	7
32.	I asked my instructor to clarify concepts that I didn t understand well.	1	2	3	4	5	6	7
33.	I tried to get help with my study skills when I m had difficulty in this course.	1	2	3	4	5	6	7
34	Sometimes I feel confused and undecided as to what my educational goals should be.	1	2	3	4	5	6	7
35	As a result of this course I feel my educational goals have changed somewhat.	1	2	3	4	5	6	7

Instructional Preferences Inventory

I.D. _____

INSTRUCTIONAL PREFERENCES INVENTORY (IPI)

Directions

Given below is a list of pairs of items which describe some common course and instructor characteristics. For each pair circle the letter of the one item that you would prefer to experience in the courses that you take. Think about college courses in general rather than the course that you have been discussing with the interviewer.

In some cases you may have difficulty deciding between alternatives. Try to respond to those pairs to the best of your ability. Please respond to each pair. Some pairs may appear repetitive. Respond to each pair without going back to other pairs that appear similar.

REMEMBER: THINK ABOUT COLLEGE COURSES IN GENERAL.

1. A. Good student discussions
   B. Well organized lectures

2. A. Instructor assigned paper topics
   B. Student selected paper topics

3. A. Simple, busywork assignments
   B. Difficult assignments

4. A. Instructors who use lecture notes
   B. Instructors who lecture without lecture notes

5. A. Courses in which students and instructor make the outline
   B. Courses that follow an outline closely

6. A. Lectures that go beyond course objectives
   B. Lectures that concentrate on course objectives

7. A. Courses that follow the outline closely
   B. Courses that stray from the outline

Instructional Preferences Inventory *(Continued)*

8. A. Frequent exams
   B. No exams

9. A. Applied course content
   B. Theoretical course content

10. A. Exams which test only lecture and text material
    B. Exams that go beyond lecture and text material

11. A. Courses that require you to think in new ways
    B. Courses that support your way of thinking

12. A. Lecture classes
    B. Discussion or question-answer classes

13. A. Assignments that permit student choice
    B. Assignments that have specific requirements

14. A. Flexible instructors
    B. Instructors who establish a routine and stick to it

15. A. Challenging courses
    B. Simple courses

16. A. Study at a pace set by your instructor
    B. Study at your own pace

17. A. High-level, or difficult lectures
    B. Low-level, or common sense lectures

18. A. Flexible due dates
    B. Set due dates

19. A. Independent study opportunities
    B. Prescribed study activities

Instructional Preferences Inventory *(Continued)*

20. A. Courses that demand original thinking
    B. Courses that emphasize factual information

21. A. Courses that review previously learned material
    B. Courses that continually introduce new material

22. A. All assignments required
    B. Optional assignments

23. A. Extra-credit assignments
    B. Required assignments only

24. A. Instructor-provided study questions for exams
    B. Relying on your class notes and text to study for exams

25. A. Instructor lectures
    B. Guest lecturer lectures

26. A. Variety in class activities
    B. Classes that emphasize one type of activity

27. A. Lectures that cover the text
    B. Lectures that extend information in the text

28. A. Assignments that have specific requirements
    B. Open-ended assignments

29. A. Individualized assignments
    B. Specific assignments required of all students

30. A. Frequent information on grades
    B. Information on the quality of work without reference to grades

Instructional Preferences Inventory *(Continued)*

31. A. Instructors who stray from the subject matter
    B. Instructors who emphasize specific subject matter continuously

32. A. Courses that demand independent thinking
    B. Courses that demand memorization

33. A. Courses taught by a single instructor
    B. Courses taught by more than one instructor

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE.

APPENDIX IV

SYLLABUS CHECKLIST

Third Revision 12/16/87

COURSE SYLLABUS CHECKLIST NCRIPTAL- PROGRAM C

INSTRUCTOR NAME_____ PROGRAM C INSTRUCTOR CODE ___

COLLEGE____ COLLEGE TYPE ____ COURSE TITLE_____

COURSE NUMBER_____ SECTION NUMBER_____ TERM_____

This is an experimental course syllabus checklist. It was constructed to be conceptually parallel to exploratory interviews and confirmatory surveys in progress at NCRIPTAL. Thus, it is likely to be more comprehensive in detailing the rationale for the instructor's course planning decisions than any existing syllabus. Experimentation with this checklist is not meant to imply that all courses should have syllabi that contain these elements nor that all possible elements that might profitably appear in a course syllabus are included here.

FOR EACH OF THE FOLLOWING MARK:

A 2 IF THE ITEM IS EXPLICIT IN THE SYLLABUS
A 1 IF THE ITEM IS IMPLIED BUT NOT EXPLICIT
A 0 IF THE ITEM IS NEITHER STATED NOR IMPLIED
PNA, PROBABLY NOT APPLICABLE, IF THE ITEM IS NOT RELEVANT TO THE COURSE

BASIC INFORMATION

_____ Course Title/Number

_____ Catalog description of course

_____ Types of students for whom course is intended

_____ Time of class meeting

_____ Place of class meeting

_____ Office of faculty member

_____ Office phone of faculty member

_____ Office hours of faculty member

_____ Electronic conference contact

_____ Home phone of faculty member

_____ Number of credits

_____ TA Office Number, Phone, Hours

_____ Instructor Name

_____ Other _____

CALENDAR

_____ Dates for major assignments

_____ Dates for exams/quizzes

_____ Dates for projects

_____ Dates for vacations

_____ Field trips, special activities

_____ Other _____

INFORMATION ABOUT A BASIC TEXTBOOK

_____ Title of textbook

_____ Author of textbook

_____ Where text is available

_____ Price of text

_____ Reason text was chosen

_____ Edition

_____ Publisher

_____ Other _____

LEARNING FACILITIES AND RESOURCES FOR STUDENTS

_____ Library policies

_____ Learning Assistance Policies

_____ Laboratory Policies

_____ Develops rationale for using resources

_____ Other _____

SUPPLEMENTARY READINGS

_____ Recommended

_____ Reserve

_____ Listed supplementary readings

_____ Annotated supplementary readings

_____ Readings keyed to student abilities/interests

_____ Location of readings identified

_____ Comprehensive bibliography

_____ Personal library available to students

_____ Other _____

GOALS AND OBJECTIVES OF COURSE

_____ General course goals

_____ Specific Objectives

_____ Behavioral Objectives

_____ Relation of course to program goals

_____ Relation of course to general education program

_____ Relation of course to other courses (prereq, coreq, recommend)

_____ Relation of course to institutional mission

_____ Relation of course to student development

_____ Relation of course goals to assignments in general

_____ Relation of objectives to specific assignments

_____ Other _____

DISCIPLINE CONTENT CONTAINED IN SYLLABUS

_____ Topic outline for course

_____ Definition of the discipline (See definitions- Appendix A-1)

_____ Substantive content or assumptions of discipline

_____ Syntactical component or mode of inquiry

_____ Conjunctive component—relation to other fields

_____ Symbolic component—vocabulary/terminology

_____ Skill component

_____ Other _____

STATEMENTS OR ASSUMPTIONS ABOUT STUDENT CHARACTERISTICS

_____ Demographic characteristics of students

_____ Prior preparation of students

_____ Personal interests of students

_____ Effort anticipated from students.

_____ Time or personal pressures on students

_____ Individual learning styles of students

_____ Other _____

REFERENCES TO INFLUENCE OF OTHER FACTORS ON COURSE STRUCTURE (green cards)

_____ Instructor's background or interests

_____ Constraints such as class size

_____ Available resources or facilities

_____ Accreditors

_____ Employers

_____ Future tests or academic hurdles

_____ Other (state) _____

REFERENCES TO INSTRUCTOR'S EDUCATIONAL PHILOSOPHY
(See various philosophies—pink cards—Appendix A-2)

_____ Social Change

_____ Effective Thinking

_____ Systematic Instruction

_____ Pragmatism

_____ Personal Enrichment

_____ Learn Great Ideas/Traditional Concepts

_____ Other _____

RATIONALE FOR THE COURSE MATERIAL THAT IS CHOSEN
(See reasons—yellow cards)

_____ Students readily learn

_____ Students enjoy

_____ Material is important in discipline

_____ Material is based on inquiry

_____ Material stimulates students in search for meaning

_____ Material encourages students to investigate further

_____ Material interrelates fundamental concepts to coherent whole

_____ Material is useful in problem solving

_____ Other _____

RATIONALE FOR THE WAY COURSE MATERIAL IS SEQUENCED
(See orange cards—Appendix A-3)

_____ Structural

_____ Conceptual

_____ Knowledge creation

_____ Learning-based

_____ Knowledge utilization

_____ Pragmatic

_____ Other _____ _____

RATIONALE FOR ASSIGNMENTS/ACTIVITIES

_____ Readings

_____ Papers

_____ Tests/Quizzes

_____ Projects

_____ Laboratories

_____ Clinics

_____ Field Experiences

_____ Other _____

INSTRUCTIONAL MODE/TEACHING STRATEGIES

_____ Methods of instruction are described

_____ Methods foster active involvement

_____ Methods include two way communication

_____ Methods foster student independence

_____ Other _____

FEEDBACK TO STUDENT

_____ Grading system is described

_____ Learning expectations made clear

_____ Non-grading feedback described

_____ Policies on assignments/tests/makeups

_____ Policies on attendance

_____ Electronic conferencing feedback

_____ Other _____

FEEDBACK USED BY INSTRUCTOR

Indicators of student learning

_____ Quizzes/tests

_____ Papers

_____ Attendance

_____ Faces/body language

_____ Asking questions in class

_____ Discussions after class

_____ Coming to instructor's office

_____ Other _____

Appendix A-1 to Syllabus Checklist

Definitions of Discipline

A mode of inquiry

An interrelated set of interests and values

A set of skills to be mastered

A set of skills to be applied

A set of objects or phenomena that humans have tried to explain

A group of individuals who share common interest in trying to understand the world

An organized body of knowledge

A set of interrelated concepts and operations

Appendix A-2 to Syllabus Checklist

Educational Philosophies

Social Change. In general, the purpose of education is to make the world a better place for all of us. Students must be taught to understand that they play a key role in attaining this goal. To do this, I organize my course to relate its content to contemporary social issues. By studying content which reflects real life situations, students learn to adapt to a changing society and to intervene where necessary.

Effective Thinking. The main purpose of education is to teach students how to think effectively. As they interact with course content, students must learn general intellectual skills such as observing, classifying, analyzing, and synthesizing. Such skills, once acquired, can transfer to other situations. In this way, students gain intellectual autonomy.

Systematic Instruction. Whatever the specific course purpose, effective teaching demands that instructors attend closely to instructional processes. Goals and objectives should be clearly specified and course procedures should be systematically designed to achieve the objectives. In part, my success as an instructor depends on the degree to which students achieve the objectives by the end of the course.

Pragmatism. The purposes of education and the types of ideas and skills that students are to learn are determined for the most part by the college mission, responsibility, and available resources. Within these parameters, I try to help students see the value of education. I would change significantly the way I arrange the content of my course if I had more flexibility.

Personal Enrichment. I organize my course so that students have a series of personally enriching experiences. To meet this broad objective, I select content which allows students to discover themselves as unique individuals and, thus, acquire personal autonomy. I discuss appropriate activities and content with students in an effort to individualize the course.

Great Ideas/Traditional Concepts. In my judgment, education should emphasize the great products and discoveries of the human mind. Thus, I select content from my field to cover the major ideas and concepts that important thinkers in the discipline have illuminated. I consider my teaching successful if students are able to demonstrate both breadth and depth of knowledge in my field.

Appendix A-3 to Syllabus Checklist

Alternatives for Sequencing Material

Structurally-Based Sequence. In planning my courses, I organize the material in a way consistent with the way relationships in my discipline occur or have occurred in the world. For example, I may use such patterns as spatial relationships, chronological relationships, physical relationships or other such natural occurrences.

Conceptually-Based Sequence. In planning my courses, I generally organize units around major ideas or concepts of the disciplines so that understanding of these concepts evolves in a manner that represents naturally occurring relationships. I am likely to organize material in patterns such as one of the following:

relationships of theory to application of theory or rule to example, and/or of evidence to conclusion.

relationships that proceed from simplest ideas to ideas of more precision, complexity, and abstractness.

relationships of logical sequence in which one idea is necessary to comprehend the next.

Knowledge Creation Sequence. In planning my course I generally organize material according to the way in which knowledge has been created in my field. I tend to structure the course around the processes of generating, discovering, and verifying knowledge. Therefore, I typically include as primary foci of the course such topics as 1) ways of drawing valid inferences and 2) ways in which scholars in my field discover relationships.

Learning-Based Sequence. In planning my course, I generally organize the material according to what I know about how students learn. For example, I may organize material according to one or more principles such as 1) students should first learn skills that are likely to be useful in later learning, 2) students should encounter familiar ideas and phenomena before those that are more unfamiliar and complex, 3) students should understand an idea or concept before attempting to interpret and use it, or 4) students should encounter material geared to their readiness to learn.

Knowledge Utilization Sequence. In planning my courses, I organize the material in ways that will help students use it in social, personal, or career settings. Thus, I create problem-solving situations and encourage students to take responsibility for solving real life problems in a logical and organized fashion. Since it is not always possible to

know the specific problems students will face, I try to select course material so that students encounter broad problem-solving strategies that may be useful in their lives and careers.

Pragmatic Sequence. In planning my course, I organize materials to take advantage of opportunities and minimize existing constraints. A variety of opportunities for learning exist on campus and in the community but in planning a course the instructor must attend to such factors as time of year, length of the term, spacing of vacations, type of classrooms and laboratories available, class size, and the beliefs and motivations of the students. As a result of these opportunities and constraints, the way I arrange the content of my course varies considerably from time to time.

APPENDIX V

INSTITUTIONAL PROFILES

Agrisuburb Community College

The campus of Agrisuburb Community College is located approximately thirty miles from either of two mid-sized midwestern cities in an area with a mixed industrial/agricultural economy. Founded in the early 1900s, development of the current modern campus was started in the mid 1960s. The college confers associate degrees as well as various certificates and diplomas.

There are 20,000 students enrolled; about 14% of these students have full-time freshman status. About 16% of the students are not residents of the state in which the college is located. The college provides no student housing. Four percent of the 362 instructors hold doctoral degrees.

Admission is characterized as non-competitive. Requirements for admission include a high school diploma or proof of having reached eighteen years of age. Tuition is $30 per credit hour for county residents and nearly $40 per credit hour for out-of-county and out-of-state students.

Denominational College

Founded as a seminary in the nineteenth century, Denominational College is now affiliated with the Free Methodist Church of North America. The college is classified by the Carnegie system as a Liberal Arts College II. This suburban college draws the majority of its students from the Middle Atlantic Region.

There are about 400 male and 600 female full-time students. The average freshman is 19 years old. Ninety-eight percent of entering freshmen are educated in the public secondary school system. Minority groups comprise eight percent of the student population and ninety percent of the students are of the Protestant faith. The freshman attrition rate is 30% and 52% of all freshman eventually graduate. Chapel attendance is compulsory; dancing, gambling, tobacco, and alcoholic beverages are prohibited. Forty-nine percent of the faculty have doctoral degrees; the student to faculty ratio is twenty-four to one.

About 80% of the students live in dormitories. There are four intercollegiate sports for men and four for women. Computer equipment is available for use by students during building hours.

Admission is characterized as competitive. In-state tuition is about $5,500. Eighty-five percent of the students receive financial aid and 35% are employed part-time on campus. The college confers B.A. and B.S. degrees as well as the associate degree. Bachelor degrees may be earned in the social sciences, preprofessional programs, math and science, philosophy, health science, English, fine and performing arts, business, and education.

Endowed College

An independent co-educational liberal arts institution, Endowed College was founded in the early 1800s. It is located about 150 miles from either of two major cities. The college is classified by the Carnegie system as a Liberal Arts College I. Seventy percent of the students are residents of the state in which the college is located. There are about 500 male and 600 female full-time students. The typical freshman is 18 years old and the average undergraduate is 20 years old. Seventy-five percent of the students graduated from public secondary schools. Nine percent of the student body are minority students.

The attrition rate for freshman is 8% and 70% of entering freshmen eventually graduate. Eighty percent of the faculty hold doctoral degrees; the student to faculty ratio is fourteen to one.

There are nine residence halls on campus. The college offers eight intercollegiate sports for men and seven for women. Microcomputers are available and students may use the forty terminals which access the main computer; these terminals are available fourteen hours a day in the academic buildings and library.

Admission to the college is characterized as highly competitive. About 75% of all applicants were accepted into the 1985-86 freshman class. Forty-six percent of the incoming freshman class had verbal SAT scores between 500 and 599; 45% had math SAT scores between 500 and 599. Tuition is about $8,000. About half of all students receive financial aid; approximately 40% work on campus part-time.

Endowed College offers the B.A. in social science, language, math and science, business, fine and performing arts, and health sciences. Undergraduate students are required to complete coursework in each of the college's four academic divisions. The college offers a special plan whereby all students may integrate a career internship, a senior independent project, and an extended foreign study experience into the liberal arts curriculum.

Industrial Area Community College

Located in a suburb of a major industrial midwestern city, Industrial Area Community College has served a 63 square mile district with a population of 320,000 since the mid 1960s. This two-year college offers diverse programs in the arts and sciences as well as in career and continuing education.

There are 26,400 students enrolled; about 20% of these students are full-time freshman. Two percent of the 1,142 instructors hold doctoral degrees. The college provides no student housing. The college offers eight intercollegiate sports for men and six for women.

Admissions is characterized as non-competitive; although not required for admission, the SAT or ACT is recommended for those seeking admission. Tuition is $22 per credit hour for district residents and about $60 per credit hour for out-of-district residents. About twelve percent of the students receive financial aid.

Emphasizing high-technology instruction, the college offers students the use of state-of-the-art equipment in robotics, C.A.D., and laser/electro optics. Training partnerships have been created to pair students with a number of professional organizations and corporations. Both short-term intensive job training programs and longer-term career preparation programs in more than eighty fields are available to students. Evening programs are also offered. Degrees conferred include the associate degree and various certificates.

Mid-Atlantic State University

Offering undergraduate programs in the liberal arts and sciences, business, education, health, and the fine arts, Mid-Atlantic State University first opened its doors in the mid 1800s. The university is classified by the Carnegie system as a Comprehensive College/ University I. The suburban campus is located less than ten miles from the downtown district of a major eastern city.

There are 4,000 male and 5,300 female full-time students. The average age of undergraduate students is 23.5. Almost all of the students are graduates of public secondary schools. Minority groups comprise 13% of the student population. The student attrition rate is 25% for first-year students and 50% of those admitted are eventually graduated by the university. There are 477 faculty members, 65% of whom hold a doctoral degree. The student to faculty ratio is twenty to one.

Approximately 30% of the student population live in single-sex or co-ed residence halls. Fraternities and sororities are represented on campus. There are eleven intercollegiate sports teams for both men and women. Tutoring and remedial instruction in reading, writing, and mathematics are available to students free of charge. The university provides computer terminals in the library, the classroom buildings, and at satellite computer centers. The main computer may be accessed by students for sixteen hour per day, seven days a week.

Admission is categorized as competitive. Approximately 65% of all applicants for admission were accepted into the 1985-86 freshman class. Seventy-three percent of the incoming freshmen had verbal SAT scores below 500 and 53% had math SAT scores below 500. In-state tuition is $1,900. Financial aid is awarded to about 51% of the students; part-time employment is held by 13% of all students attending the university.

Mid-Atlantic State University offers B.A., B.S., and B.F.A. degrees as well as the masters degree. General education requirements include: arts and humanities, science and math, social sciences, health, and physical education. Students must fulfill the general education requirement as well as completing a college writing course with a letter grade of "C" or better prior to graduation.

Mid-Eastern University

Founded in the mid 1800s, Mid-Eastern University is a multiple-purpose, state-supported institution offering a variety of colleges in which students may study. These colleges include education, business, human sciences, arts and sciences, and technology as well as a school of graduate studies. The university is classified by the Carnegie system as a Comprehensive College/University I.

Residents of the state in which the university is located make up about 91% of the student body and minority groups comprise 12% of the student population. There are about 4,800 male and 6,000 female full-time students. The average freshman is 19 years old and the average undergraduate is 23 years old. There are 613 faculty members, 71% of whom hold doctorates. The student to faculty ratio is seventeen to one.

Nearly 50% of undergraduate students live on campus. The university sponsors fraternities and sororities as well as married student housing. The college offers fifteen intercollegiate sports for men and eleven for women. Tutoring and remedial instruction are offered to students free of charge. All computer facilities, including 96 terminals located in labs and classrooms, are accessible to students.

Seventy-seven percent of all applicants were accepted for admission to the 1985-86 freshman class, the attrition rate for freshman is about 34%. Seventy-seven percent of the incoming freshman class had verbal SAT scores below 500 and 61% had math SAT scores below 500. In-state tuition is $1,500 per academic semester. Approximately 60% of all students receive financial aid; 20% of all undergraduates work part-time on campus.

Mid-Eastern University offers the B.A., B.A., B.F.A., B.B.A., B S.N., B.Mus., and B.Art degrees in addition to the masters degree. The basic studies requirement for undergraduates must be completed prior to graduation; specific requirements vary with the chosen academic concentration.

Midwest State University

Founded in the early 1900s, Midwest State University offers undergraduate, graduate, and professional programs in the liberal arts, business, and education. It is classified by the Carnegie Foundation as a Doctoral I University. The suburban campus is located about fifty miles from a major city. Ninety-three percent of the students are residents of the state in which Midwest is located; 98% of the freshman attended public secondary schools. The typical freshman is 18 years old and the typical student is 20. There are about 6,000 male and 7,300 female full-time students. Of the 830 faculty members, 65% hold doctoral degrees. The student to faculty ratio is sixteen to one.

Midwest State's main computer system may be accessed by students twenty-four hours a day; on-campus microcomputers may be used from 8:00 a.m. to 10:00 p.m. Fraternity houses and married student housing are available for the 59% of students living on campus. Various student organizations are represented on-campus and ten intercollegiate sports teams are available for both male and female students.

Admission is described as less competitive. The university accepted 89% of all applicants into the 1985-86 freshman class. Eighty percent of those applying had verbal SAT scores below 500 and 58% had math SAT scores below 500. In-state tuition is about $1,600 per term. More than 65% of the student body receives financial aid and approximately 20% of all students work on campus as part-time employees.

Undergraduate degrees awarded include the B.A., B.S , and B.F.A.; the school also offers associate, masters, and doctoral degrees. All undergraduate students must take the general studies program during the first two years of study. This program includes coursework in the humanities as well as in the social, natural, and behavioral sciences.

Strategic Community College

Strategic Community College serves the residents of two small midwestern cities. Founded in 1965, it moved to its current spacious, modern campus in 1970. About 13,500 students are enrolled in the college. Many of these students transfer to four-year institutions, often to one of the two major state universities located nearby. The college provides no housing for students. Of the 452 instructors, about three percent hold doctoral degrees.

Admission is characterized as non-competitive. Tuition is about $30 per credit hour for district residents, $45 per credit hour for out-of-district residents, and $60 per credit hour for out-of-state residents. Slightly over 15% of the students receive financial aid.

Students must complete sixty credit hours with at least a "C" average in order to graduate. A general education requirement plus completion of all specified program courses must also be satisfied. Transfer programs are available as well as occupational programs in robotics, data processing, allied health, and respiration therapy.

Explanatory Notes

Selectivity rankings are based on Barron's 1982 college admissions guidebook. Some factors accounted for in determining these admissions categories include median SAT scores, percentage of freshmen with scores above 500 and above 600 on math SAT and verbal SAT, percentage of freshmen who were in the upper forty percent of their high school graduating class, minimum high school grade point average and class rank required for admission, and percentage of applicants accepted to the most recent freshman class. The following describe Barron's selectivity rankings:

Most Competitive
- High school GPA of B+ or better
- Ranking in the top 20% of high school graduating class
- Median SAT scores of 625 to 800
- Usually less than 33% of applicants accepted

Highly Competitive
- High school GPA of B or better
- Ranking in the top 35% of high school graduating class
- Median SAT scores of 575 to 625
- 33% to 50% of applicants accepted

Very Competitive
- High school GPA of B- or better
- Ranking in the top 50% of high school graduating class
- Median SAT scores of 525 to 575
- 50% to 75% of applicants accepted

Competitive
- High school GPA of B- or better (sometimes a C or C+ or better)
- Ranking in the top 65% of high school graduating class
- Median SAT scores of 450 to 525
- 75% to 85% of applicants accepted

Less Competitive
- High school GPA of C or better (sometimes lower) - Ranking in the top 65% of high school graduating class
- Median SAT scores below 450 (if required at all)
- 85% or more of applicants accepted

Non-Competitive
- All in-state high school graduates accepted
- Non-residents may have to meet special requirements
- Enrollment capacity may limit acceptance rate

We used the 1987 Carnegie Foundation classifications to categorize institutions. These classifications group institutions according to the highest degree level offered and the comprehensiveness of the institution's mission. The following descriptions summarize the Carnegie classifications:

Research Universities I. These institutions offer a full range of baccalaureate programs. They are committed to graduate education through the doctorate level and give a high priority to research. They receive at least $33.5 million in federal support annually for research and development; they award at least fifty doctoral degrees each year.

Research Universities II. These institutions offer a full range of baccalaureate programs. They are committed to graduate education through the doctorate level and give a high priority to research. They receive between $12.5 and $33.5 million in federal support annually for research and development; they award at least fifty doctoral degrees each year.

Doctoral Universities I. In addition to offering a full range of baccalaureate programs, these institutions are committed to graduate education through the doctorate level. They award at least forty doctoral degrees annually in five or more academic disciplines.

Doctoral Universities II. In addition to offering a full range of baccalaureate programs, these institutions are committed to graduate education through the doctorate level. They award 1) twenty or more doctoral degrees annually in at least one discipline or 2) ten or more doctoral degrees annually in three or more disciplines.

Comprehensive Universities and Colleges I. These institutions offer baccalaureate programs and, with few exceptions, graduate education through the masters degree. More than half of the baccalaureate degrees are awarded in two or more occupational or professional disciplines, such as engineering or business administration. All of the institutions in this group enroll at least 2,500 full-time students.

Comprehensive Universities and Colleges II. These institutions award more than half of their baccalaureate degrees in two or more occupational or professional disciplines, such as engineering or business administration. Many also offer graduate education through the masters degree. All of the institutions in this group enroll between 1,500 and 2,500 full-time students.

Liberal Arts Colleges I. These highly selective institutions are primarily undergraduate colleges that award more than half of their baccalaureate degrees in arts and science fields.

Liberal Arts Colleges II. These institutions are primarily less selective undergraduate colleges that award more than half their degrees in the liberal arts fields. This category also includes a group of colleges that award less than half their degrees in liberal arts fields but have fewer than 1,500 students and are too small to be considered comprehensive.

APPENDIX VI

EXPLORATORY REGRESSIONS VARIABLES

Independent Variables in Regression

In hierarchical set order of entrance:

Set 1. Faculty background—personal

V110	Age
V1109	Sex (dummy V109)
V115	Length of teaching (multicollinear with age)
V1111	Ph.D. (dummy V111, yr no)
V117	Other work experience

Set 2. Faculty background—professional

V118	Education courses
V119	Instructional workshops
V120	Published about teaching
V121	Published about research
V122	Published about teaching at conferences

Set 3. V103-108 Beliefs about education

Set 4. Discipline Perceptions

V44-49	Characterization of discipline

Set 5. Actual discipline

V141-147	Dummy (Subject-V8)

Set 6. Contextual characteristics

V4	College type (dummy)
V3	Enrollment of college
V14	Class size

Not available in pilot study

Selectivity of college (survey)
Urbanness of college (survey)
Program control (survey)
Other program and course characteristics (survey)
Student preparation perception (survey)
Student effort perception (survey)
Times course has been taught

Dependent Variables

Decision Level A. 1. What to attend to in course planning (Recode missings to 1 and use things that are influential in open ended)

Variables 24 discipline mentions (1-5)
25 materials mentioned
26 activities mentioned
27 student characteristics mentioned
28 goals/objectives mentioned

Decision Level B. What factors are influential (green cards)
What content influencers (yellow cards)

Decision Level C. Sequencing Decisions
Variables 89-94

Decision Level D. Various groups for discriminant analysis
1) Group characterized by course planning activities
2) Group characterized by sequencing preferences
3) Group characterized by communication mechanisms
4) Group characterized by types of assistance given to students
5) Group characterized by types of student feedback used

APPENDIX VII

CODING SHEET FOR LEVELS OF COURSE PLANNING

Number

Field

Theme Coding Sheet

Theme	1	2	3
Discipline content			
Textbook			
Non-text materials			
Goals/objectives			
Student activities			
Student needs			
Instructional mode			
Syllabus			
Feedback			
Faculty background			
Structural factors			

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