Individual Development and Educational Assessment

Technical Report No. 13

Disciplinary Differences in Student Ratings

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The Individual Development and
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Introduction

Participants in the IDEA student rating system frequently ask whether or not results differ significantly among disciplines. Do disciplines emphasize different objectives? Do their students report similar levels of progress on objectives selected by the instructor? Do teaching "approaches" differ across disciplines? Do specific disciplines enroll students with distinctive characteristics? All of these questions are of inherent interest; their answers could also have an important impact on the interpretation of results from the IDEA system. The purpose of this report is to examine such questions by analyzing data obtained by The IDEA Center from August 1998, through August 2001. Technical Report #12[1] describes this database more completely.

Procedure

Faculty participants select a "Department Code" from a list of modified CIP[2] codes provided by the Center. These codes were used to identify the disciplines included in this study. To ensure reasonable stability in the statistics, only departments/disciplines for which the Center had processed at least 500 classes were included in the study. The sample was further restricted to classes for which there were at least 10 student responses with a response rate of at least 75 percent.

Disciplinary differences were studied for the following ratings:

1. Faculty ratings of the importance of each of the 12 learning objectives included on the IDEA Student Rating forms.

2. Student ratings of progress on each objective that was identified as "Important" or "Essential" by the instructor.

3. Scores on five "Teaching Approach" scales derived from the 20 teaching methods items.

4. Three "Course Characteristics": Amount of reading; Amount of other (non-reading) work; and Difficulty.

5. Three "Student Characteristics": Effort ("I worked harder on this course than on most courses I have taken"); Course motivation ("I really wanted to take this course regardless of who taught it"); and Work habits ("As a rule, I put forth more effort than other students on my academic work").

6. Three "Global outcome" measures: Increased positive attitude ("As a result of taking this course, I have more positive feelings toward this field of study"); Excellent instructor ("Overall, I rate this instructor an excellent teacher"); and Excellent course ("Overall, I rate this course as excellent").

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[1] Hoyt, D. P. and Lee, EJ. (2002). Basic Data for the Revised IDEA System. *Technical Report* #12. The IDEA Center, Manhattan, Kansas.

[2] Classification of Instruction Programs, U.S. Department of Education, 1990.

The first two of these involve the list of 12 objectives included on both the Diagnostic (long) and Short Forms of the instrument. Therefore, the 28 disciplines/departments for which at least 500 classes were rated on either form were included in these analyses. The remaining analyses involved items included only on the Diagnostic Form[3]. This reduced the number of qualifying disciplines/departments to 20.

For each discipline, averages were computed for each of the measures. "All disciplines" averages and standard deviations were computed by combining results for all classes in the 28 (or 20 in the case of measures available only on the Diagnostic Form[4]). To highlight the distinctiveness of each discipline, *z* (deviation) scores were also computed. These required a computation of the "mean of the means" (the average of the mean scores of the 28 disciplines) as well as the standard deviation of these means. The *z* score describes the number of standard deviations a given measure was above (positive scores) or below (negative scores) the "all disciplines" average.

Interpreting the Measures

1. Learning Objectives (faculty ratings of "importance;" student ratings of "progress.")

Of the 12 learning objectives included in the IDEA system, the three most frequently rated by instructors as "important" or "essential" stress cognitive development. The two most popular ones, *Gaining factual knowledge* and *Learning fundamental principles, generalizations, or theories*, focus on acquiring a basic cognitive background. The third, *Learning to apply course material*, while involving cognitive activity, centers on applications that are frequently related to professional preparation. As such, it shares a focus with the fourth most frequently chosen objective, *Developing specific skills, competencies, and points of view needed by professionals in the field most closely related to this course.* One way to characterize disciplines involves making a "basic vs. applied" comparison [i.e., contrasting the emphasis placed on the first two objectives (basic cognitive background) with that placed on the next two (professionally-oriented cognitive development)].

Other ways of identifying a discipline's distinctiveness involves comparing it with the "all disciplines" average on four other combinations of objectives: (a) emphasis on "life-long learning" objectives (*Learning how to find and use resources for answering questions or solving problems* and *Acquiring an interest in learning more by asking questions and seeking answers*); (b) emphasis on "general intellectual/academic skills" objectives (*Developing skill in expressing oneself orally or in writing* and *Learning to analyze and critically evaluate ideas, arguments, and points of view*); (c) emphasis on "personal development" objectives (*Gaining a broader understanding and appreciation of intellectual/cultural activity* and *Developing a clearer understanding of, and commitment to, personal values*); and (d) emphasis on objectives stressing "specific skills" (*Acquiring skills in working with others as a member of a team* and *Developing creative capacities*).

[3] The Short Form includes the "global outcomes" measures, but results on these were not considered so that an identical database could be used to derive all figures on Part II of disciplinary results.

[4] The "all disciplines" averages were slightly different from those reported for "all classes" in *Technical Report #12* because disciplines with fewer than 500 classes were excluded.

2. Teaching Approach.

By combining selected items from the 20 that describe teaching methods, the IDEA system provides results on five scales indicative of teaching approach[5]. Each describes a distinct learning environment. These environments are not independent; a technique that establishes rapport may also encourage student involvement, etc.

The first scale, *A--Stimulating Student Interest*, emphasizes teaching techniques designed to arouse student interest and excitement about the subject; for most objectives, scores on this scale are more closely related to student ratings of progress than are scores on the other four scales. *Scale B--Fostering Student Collaboration,* features methods that encourage students to learn from each other; scores are especially related to progress on "team skills" and on objectives related both to personal development and to general intellectual skills. The third scale, *C--Establishing Rapport*, assesses the degree to which instructors seek to encourage academic effort and commitment by establishing positive personal relationships with students; it is especially relevant to progress on "creative capacities," "communication skills," and on objectives related to "lifelong learning." *Scale D--Encouraging Student Involvement,* is based on teaching methods that stress student responsibility for their learning; scores on this scale are related to progress on creative capacities, objectives related to professional development, and the "lifelong learning" objectives. The final scale, *E--Structuring Classroom Experiences*, consists of items that stress clear communication of both the subject matter and of the instructor's expectations; scores on this scale are predictive of progress on objectives describing basic cognitive development.

3. Course Characteristics

Three ratings are summarized: *F--Amount of reading*, *G--Amount of work in other (non-reading) assignments*, and *H--Difficulty of subject matter*. "Difficulty" ratings are significantly related to ratings of the other two characteristics. Therefore, it is meaningful to compare the three ratings. If the "Difficulty" rating is substantially above the other two, it can be inferred that the discipline's content is particularly challenging. Similarly, if the "Difficulty" rating is substantially below the other two, the inference is that students found the concepts and content of the discipline relatively easy to grasp.

4. Student Characteristics

Three additional ratings are summarized. Two of these assess student motivation (*I--I really wanted to take this course regardless of who taught it* and *J--As a rule, I put forth more effort than other students on my academic work*). Ratings on these scales are generally related to student ratings of progress[6]. The other rating (*K--I worked harder on this course than on most courses I have taken*) describes student effort in the class. Results on this item can be compared meaningfully with those on the motivation items. When "motivation" is substantially higher than "effort," it can be inferred that the discipline's demands are

[5] These scales are described more completely in *Teaching "Styles" and Learning Outcomes* by Donald P. Hoyt and Eun-Joo Lee, Research Report #4, Manhattan, Kansas: The IDEA Center, 2002.

[6] Both are used in adjusting progress ratings to take into account factors that influence progress ratings but are beyond the instructor's control.

minimal; conversely, when "effort" is substantially higher than motivation, it can be inferred that the discipline makes unusually heavy demands. This "index of demands" is related to, but not identical with, the index of disciplinary difficulty described in the section on "Course characteristics."

5. Global Outcomes

In addition to student ratings of progress on instructor-chosen objectives, the IDEA system includes three overall measures of teaching effectiveness. Two of these (*L--As a result of taking this course, I have more positive feelings toward this field of study* and *N--Overall, I rate this course as excellent*) are highly correlated; ratings on these items are related principally to scores on *Stimulating Student Interest* and, to a lesser degree, to scores on *Structuring Classroom Experiences*; they are also positively related to student motivation and effort (I, J, K), but are unrelated to the three course characteristics (F, G, and H). The other rating (*M--Overall, I rate this instructor as an excellent teacher*) reflects a teaching style that places equal emphasis on three approaches: *Stimulating Student Interest, Establishing Rapport,* and *Structuring Classroom Experiences*. The IDEA measures of student motivation and effort were only slightly related to ratings on this global outcome and those assessing course characteristics were unrelated.

Format of the Report

Two sets of data are provided for each discipline[7]. The first set focuses on the 12 learning objectives. The percent of instructors choosing each objective as "important" or "essential" is shown for the discipline and for all classes included in this study. Mean progress ratings and standard deviations for those classes where the objective was "important" or "essential" are also shown for the discipline and for the combined group.

In addition, a graph of *z* scores compares results for the discipline with those of all disciplines. On the vertical axis, instructor ratings of "Importance" are plotted. On the horizontal axis, student ratings of progress are plotted. The figure makes it possible to examine simultaneously the relative degree of emphasis given to each objective and the relative amount of progress reported on relevant objectives[8]. A commentary on these results is provided on the following page.

Part II results include findings for 14 other measures derived from classes where the Diagnostic Form was employed. As before, means and standard deviations for both the discipline and for the "all disciplines" group are provided along with plots of *z* scores to provide a graphic description of how a given discipline compared with the combined group. The shaded area on the graph shows the "average range" (the mean ± ½ standard deviation). A commentary on these results is also provided.

[7] Only one set of information is provided for the eight disciplines where the IDEA database included over 500 Short and Diagnostic (long) Form classes (combined), but fewer than 500 classes for the Diagnostic Form alone.

[8] In general, there is a positive relationship between the frequency with which an objective was chosen in a given discipline and the amount of progress reported by the discipline's students.

Limitations

1. Representativeness. Results are based on classes processed between August, 1998, and August, 2001. Excluded from this data base were classes for which fewer than 10 student ratings were provided (to ensure reasonable reliability), those for which the response rate was less than 75 percent (to ensure that results were reasonably representative of the class), and those obtained from institutions that were in their first year of participation in the IDEA program (to ensure that instructors were sufficiently familiar with the system to make sound judgments about objectives). Most of the institutions participating in the IDEA program are four-year liberal arts colleges, community colleges, or universities whose highest degree offering is the master's degree. Although some doctoral-offering institutions participate, very few large research institutions are included. In addition, by participating in the IDEA program, an institution demonstrates a commitment to teaching and learning that is not characteristic of all colleges and universities. **There is no way to know how disciplinary differences found in this study would be affected if a more representative sample of institutions was available.**

2. Impact of Audience. Previous studies[9] have shown that indices of teaching effectiveness differed depending on the student audience. In general, lower division classes were rated less favorably than upper division classes that, in turn, were rated less favorably than graduate classes. Similarly, those intended to satisfy general/liberal education or distribution requirements were rated less favorably than those related to the student's major interest. **Additional studies, requiring very large data sets, will be required before these potentially confounding effects can be eliminated from disciplinary comparisons.**

3. Judgment Standards. The reports for individual disciplines describe a large number of differences that are significant both statistically and practically. The degree to which these differences might affect judgments about teaching effectiveness can be inferred from data provided in the appendix. For some disciplines, both progress ratings and ratings of teaching approaches are much more favorable than those for all disciplines. For others, the opposite is true. At this stage, it is impossible to know whether low progress ratings are the result of poor teaching approaches, if students in some disciplines employ unusually severe rating standards, or if there are disciplinary differences in the adequacy of students' academic background. In general, both progress ratings and ratings of teaching approaches were much lower for the "hard" sciences, mathematics, and engineering; they were much higher in disciplines directed to specific professions (e.g., education, nursing, health related professions). **Additional research is needed before effects due to differences in teaching skills, student standards, student background, and discipline can be disentangled.**

4. Incomplete Survey. The IDEA form is too brief to provide a comprehensive assessment of all possible teaching objectives and strategies; thus the data more adequately describe some disciplines more than others. In addition, this study provides information about 28 disciplines. It provides no information about many others simply because too few classes were processed to assure stable results. Especially noteworthy is the lack of information about disciplines in specialized colleges like Agriculture, Veterinary Medicine, Architecture,

[9] Hoyt, D. P. and Perera, S. "Are Student Ratings of Courses and Instructors Fair to Faculty Teaching General/Liberal Education Classes?," *Research Report #5*, The IDEA Center, Manhattan, Kansas, December 2002.

Law, and Medicine. Similarly, because of the relatively small number of classes processed, it was unable to examine potentially important departmental differences or specialty areas in a number of disciplines (including education, engineering, business administration, and home economics).

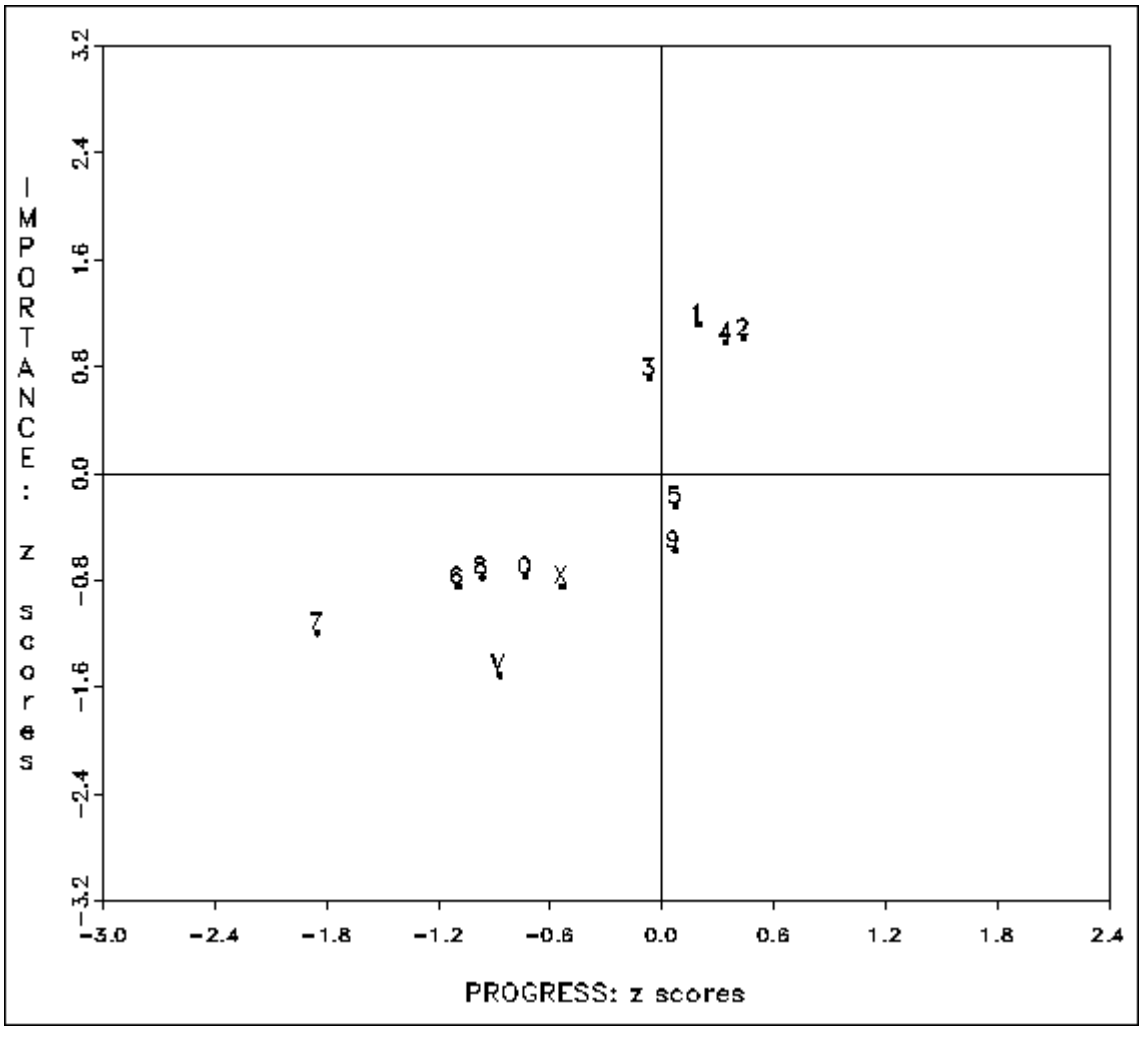
5. Potential Institutional Biases. The study of disciplinary differences should, ideally, exclude institutional differences. Despite the fact that the study utilized a database consisting of over 70,000 classes, a much larger database is required to eliminate the potential dominance of one or two institutions in the compilation of disciplinary results. While this is not a major concern in disciplines taught at nearly every college (the basic liberal arts and sciences), it is problematical in such specializations as engineering, design/applied arts, health professions/related sciences, nursing, and religion.

6. Progress on Infrequently Selected Objectives. In many disciplines, lower progress ratings were reported for objectives that were less frequently judged to be relevant ("important" or "essential") by the instructor. It is not known whether low progress ratings on infrequently chosen objectives is due to faculty errors in identifying objectives, student errors in judging progress on non-traditional objectives, or teacher ineffectiveness in promoting learning on such objectives.

Given these limitations, it seems prudent to treat the information provided on the following pages as a highly tentative indicator of differences among academic disciplines. The IDEA Center intends to conduct additional studies to reduce the ambiguities introduced by the limitations described above. Hopefully, other researchers will join in this effort.

Discipline 1: Accounting (1095 classes, 56 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. +Ess.	Imp.	Ess.	Imp. +Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	28	68	96	33	45	78	4.12	.48	4.10	.10
2. Principles and theories	37	54	93	35	39	74	4.09	.45	4.04	.11
3. Application of learning	50	32	82	39	34	73	4.03	.48	4.04	.14
4. Professional skill/views	49	26	75	31	25	56	4.10	.48	4.04	.18
5. Team skills	22	3	25	23	8	31	3.94	.60	3.92	.22
6. Creative capacities	5	0	5	15	11	26	3.06	.80	3.59	.48
7. Broad liberal education	3	0	3	17	10	27	2.58	.61	3.52	.51
8. Communication skills	22	3	25	27	19	46	3.23	.79	3.60	.39
9. Find and use resources	21	7	28	28	9	37	3.72	.61	3.70	.17
0. Values development	9	1	10	17	6	23	3.43	.70	3.66	.33
X. Critical analysis	23	6	29	28	18	46	3.64	.65	3.80	.30
V. Interest in learning	20	6	26	29	10	39	3.66	.59	3.81	.18



[10] "Relevant" means the instructor rated the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graphic gave equal weight to each discipline.

Commentary

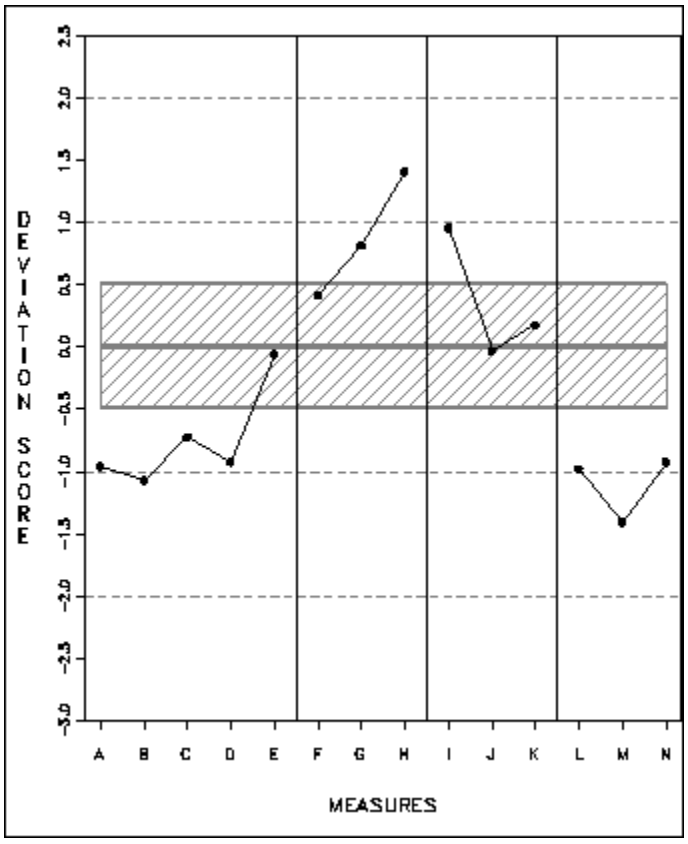
The graph compares accounting classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

The accounting discipline focused largely on basic cognitive objectives (1. Factual knowledge, chosen more frequently in accounting than in any other discipline; and 2. Principles and theories, chosen as relevant much more frequently than for all disciplines combined). Objectives related to professional preparation (3 and 4) were also selected as important or essential more often in accounting than in most other disciplines. In contrast, two objectives were stressed in fewer than 10 percent of accounting classes: 6. Creative capacities and 7. Broad liberal education. Relative to other disciplines, accounting instructors gave a low emphasis to these two objectives as well as those concerned with V. Increasing interest in learning, 8. Communication skills, 0. Values development, and X. Critical analysis.

Progress ratings were above 4.0 and generally well above the "all disciplines" figure on objectives that were stressed most frequently; they were well below average on those stressed the least.

Discipline 1: Accounting (602 classes, 42 institutions)
Part II: Other Ratings

	This Discipline		All Disciplines[11]	
	Mean	**s. d.**	**Mean**	**s. d.**
Teaching Approach				
A. Stimulate Interest	3.86	.50	4.01	.15
B. Foster Collaboration	3.33	.66	3.67	.32
C. Establish Rapport	3.97	.49	4.05	.11
D. Encourage Student Involvement	3.67	.54	3.91	.26
E. Structuring Class	4.19	.46	4.19	.10
Class Characteristics				
F. Amount of reading	3.42	.46	3.23	.46
G. Amount of other work	3.65	.48	3.45	.24
H. Difficulty	3.90	.45	3.47	.30
Student Characteristics3.60				
I. Effort in class	3.79	.43	3.60	.20
J. Wanted course	3.34	.39	3.34	.24
K. Usually work hard	3.68	.28	3.66	.09
Global Outcomes				
L. Increased positive attitude	3.66	.57	3.88	.23
M. Excellent teacher	4.03	.71	4.20	.12
N. Excellent course	3.77	.55	3.94	.18



Commentary

In terms of teaching approaches, accounting classes were unusual in that none of the five assessed by the IDEA system was employed as frequently as the "all disciplines" average. The approaches most predictive of progress on the objectives stressed by accounting were *A. Stimulating Student Interest* (primary), *D. Encouraging Student Involvement* (tertiary), and *E. Structuring the Classroom* (tertiary). Accounting classes were average on the latter, but well below average on the other two. The challenge to teachers in this discipline is to stimulate interest and elicit student involvement in a discipline whose course content is typically highly structured.

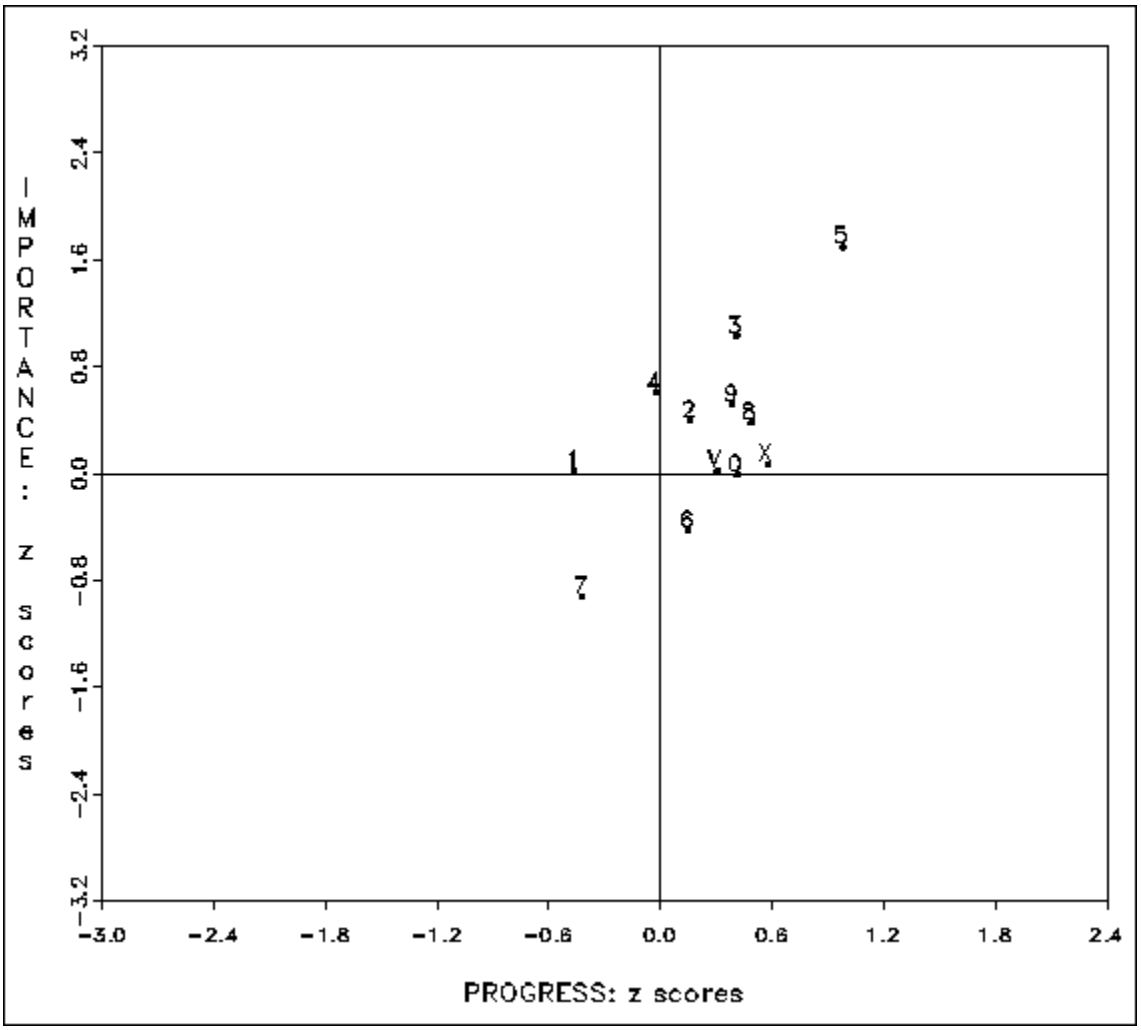
Students regarded accounting classes as demanding. Although rated only slightly above average on F. Amount of reading, they were well above average on G. Amount of other (non-reading) work and, especially, on H. Difficulty; these findings are consistent with the well-above average ratings on I. Student effort despite only average ratings on motivation (J and, indirectly, K). Content of accounting courses appears to offer a significant intellectual challenge.

Overall (global) outcomes, although all above 3.6 on the 5.0 rating scale, were relatively low—about one standard deviation below the average for all disciplines. These outcomes are influenced primarily by the teaching approach related to stimulating interest on which accounting ratings were relatively low.

[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Discipline 2: Administration/Management (2403 classes, 67 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	38	42	80	33	45	78	4.06	.48	4.10	.10
2. Principles and theories	39	43	82	35	39	74	4.06	.47	4.04	.11
3. Application of learning	41	46	87	39	34	73	4.10	.49	4.04	.14
4. Professional skill/views	41	25	66	31	25	56	4.04	.50	4.04	.18
5. Team skills	30	17	47	23	8	31	4.14	.55	3.92	.22
6. Creative capacities	12	3	15	15	11	26	3.66	.64	3.59	.48
7. Broad liberal education	7	2	9	17	10	27	3.31	.70	3.52	.51
8. Communication skills	34	15	49	27	19	46	3.80	.62	3.60	.39
9. Find and use resources	31	8	39	28	9	37	3.77	.53	3.70	.17
0. Values development	17	5	22	17	6	23	3.80	.62	3.66	.33
X. Critical analysis	28	18	46	28	18	46	3.98	.54	3.80	.30
V. Interest in learning	29	9	38	29	10	39	3.87	.55	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Commentary

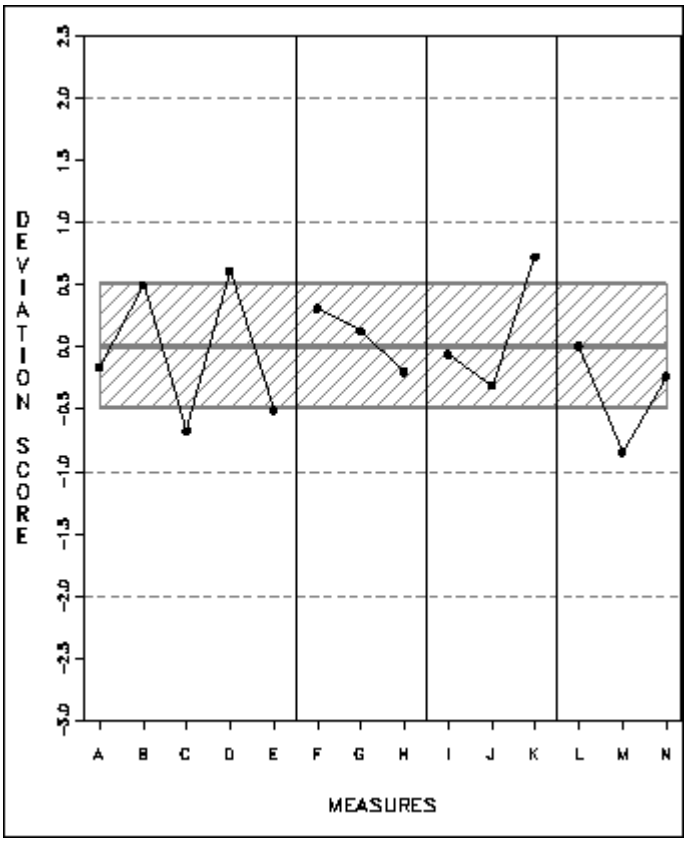
The graph compares administration/management classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

In absolute terms, the three objectives most often selected for administration/management classes were 1. Factual knowledge, 2. Principles and theories, and 3. Applications; 4. Professional skills and viewpoints was also selected in the majority of such classes. Almost half of all administration/management classes stressed 5. Team skills; no other discipline chose this objective so frequently.

In general, progress ratings paralleled importance ratings. Relative to classes in other disciplines, those in administration/management received very high progress ratings on 5. Team skills; ratings on eight other objectives were somewhat above those for all disciplines. The only objectives for which progress ratings were distinctly below the "all disciplines" average were 7. Broad general education (of little significance since this objective was chosen as relevant in only 9% of the classes) and 1. Factual knowledge. This is only of minor concern, since this discipline's average was 4.06 on the 5-point rating scale.

Discipline 2: Administration/Management (1485 classes, 53 institutions)
Part II: Other Ratings

	This Discipline		All Disciplines[11]	
	Mean	**s. d.**	**Mean**	**s. d.**
Teaching Approach				
A. Stimulate Interest	3.98	.52	4.03	.50
B. Foster Collaboration	3.83	.65	3.76	.71
C. Establish Rapport	3.98	.50	4.08	.48
D. Encourage Student Involvement	4.06	.51	3.97	.56
E. Structuring Class	4.15	.49	4.21	.47
Class Characteristics				
F. Amount of reading	3.37	.53	3.25	.76
G. Amount of other work	3.49	.55	3.47	.59
H. Difficulty	3.41	.51	3.44	.61
Student Characteristics				
I. Effort in class	3.59	.53	3.61	.57
J. Wanted course	3.27	.44	3.34	.56
K. Usually work hard	3.73	.29	3.68	.30
Global Outcomes				
L. Increased positive attitude	3.88	.57	3.90	.60
M. Excellent teacher	4.10	.68	4.21	.63
N. Excellent course	3.89	.61	3.95	.60



Commentary

Classes in administration/management were characterized by relatively high scores on two of the teaching approaches; *B. Fostering Student Collaboration* and *D. Encouraging Student Involvement*, both of which are associated with progress ratings on 5. Team skills, an objective featured in this discipline. Ratings were somewhat below average on *C. Establishing Rapport* and *E. Structuring the Classroom*. The latter, together with *A. Stimulating Student Interest* (rated average) are most relevant to progress on 1. Factual knowledge, an important objective in this discipline (see previous page).

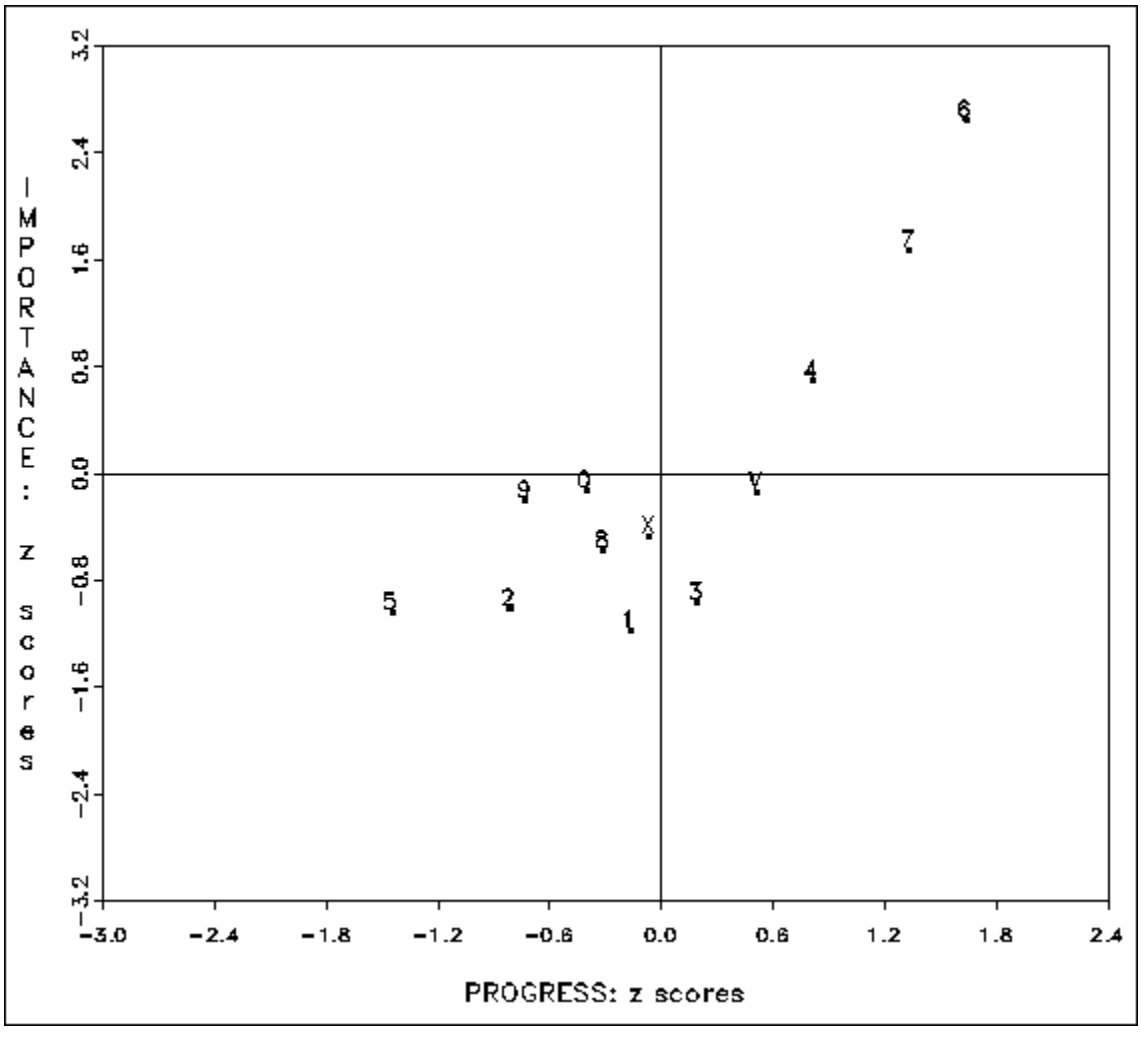
Administration/management classes required an above average F. Amount of reading, but were considered a little less difficult (H) than the "all disciplines" average. Students believed they generally work harder on academics than do their friends (K), and reported making a "normal" effort (I) on classes in administration/management. Their motivation to enroll (J) was slightly below average.

The overall rating of the teacher's excellence (M) was well below the "all disciplines" average. This rating is most closely related to the three teaching approaches in which administration/management classes scored average or below. The other global outcome ratings were about average.

[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graphic gave equal weight to each discipline.

Discipline 3: Art (1149 classes, 64 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	37	27	64	33	45	78	4.09	.50	4.10	.10
2. Principles and theories	37	24	61	35	39	74	3.96	.50	4.04	.11
3. Application of learning	34	22	56	39	34	73	4.07	.50	4.04	.14
4. Professional skill/views	42	27	69	31	25	56	4.19	.44	4.04	.18
5. Team skills	14	2	16	23	8	31	3.61	.75	3.92	.22
6. Creative capacities	17	66	83	15	11	26	4.38	.42	3.59	.48
7. Broad liberal education	37	23	60	17	10	27	4.20	.45	3.52	.51
8. Communication skills	22	7	29	27	19	46	3.48	.60	3.60	.39
9. Find and use resources	25	7	32	28	9	37	3.58	.60	3.70	.17
0. Values development	15	6	21	17	6	23	3.53	.63	3.66	.33
X. Critical analysis	24	12	36	28	18	46	3.78	.56	3.80	.30
V. Interest in learning	27	10	37	29	10	39	3.90	.53	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Commentary

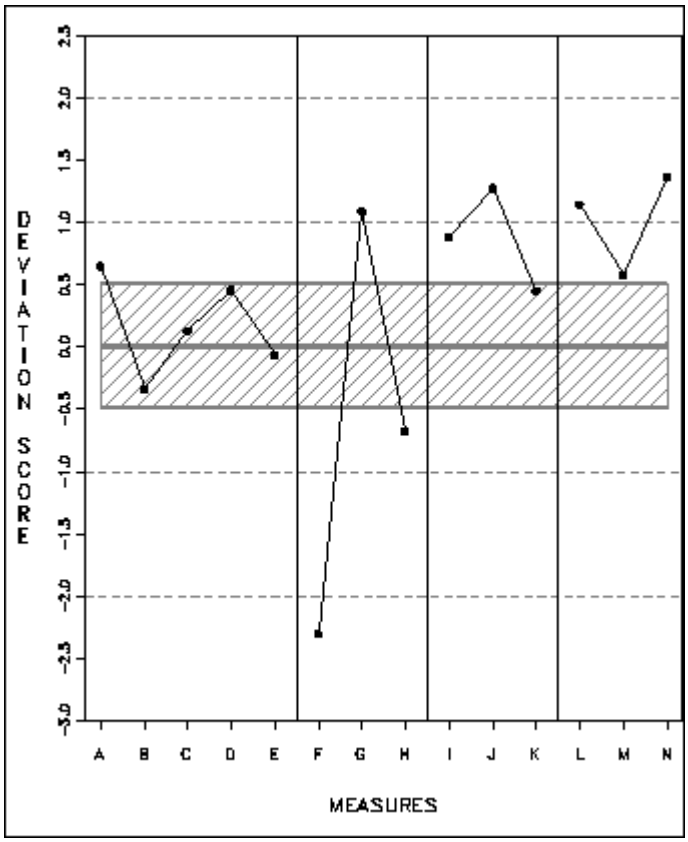
The graph compares art classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

Over half of all art classes stressed one or more of six objectives: 6. Creative capacities (selected as relevant in 83% of art classes, more frequently than for any other discipline), 4. Professional skills/viewpoints (69%), 1. Factual knowledge (64%), 2. Principles and theories (61%), 7. Broad liberal education (60%), and 3. Applications (56%). Relative to other disciplines, art instructors gave especially high ratings to the importance of 6. Creative capacities and 7. Broad liberal education. In contrast, three cognitive objectives (1, 2, and 3), although relevant in most art classes, was selected less frequently than the "all disciplines" average.

Progress ratings tended to parallel relevance ratings, with unusually high scores on 6. Creative capacities and 7. Broad liberal education. Although progress ratings on several objectives were below the "all disciplines" average, except for 2. Principles and theories these were on objectives infrequently stressed in art.

Discipline 3: Art (659 classes, 45 institutions)
Part II: Other Ratings

	This Discipline		All Disciplines[11]	
	Mean	**s. d.**	**Mean**	**s. d.**
Teaching Approach				
A. Stimulate Interest	4.11	.44	4.01	.15
B. Foster Collaboration	3.56	.65	3.67	.32
C. Establish Rapport	4.07	.45	4.05	.11
D. Encourage Student Involvement	4.03	.50	3.91	.26
E. Structuring Class	4.19	.42	4.19	.10
Class Characteristics				
F. Amount of reading	2.17	.83	3.23	.46
G. Amount of other work	3.72	.66	3.45	.24
H. Difficulty	3.27	.47	3.47	.30
Student Characteristics				
I. Effort in class	3.77	.52	3.60	.20
J. Wanted course	3.65	.49	3.34	.24
K. Usually work hard	3.70	.29	3.66	.09
Global Outcomes				
L. Increased positive attitude	4.15	.47	3.88	.23
M. Excellent teacher	4.26	.56	4.20	.12
N. Excellent course	4.18	.51	3.94	.18



Commentary

In terms of teaching approaches, classes in art were well above the "all disciplines" average on *A. Stimulating Student Interest* and *D. Encouraging Student Involvement,* but somewhat below average on *B. Fostering Student Collaboration*. *Stimulating Student Interest* was a primary predictor of progress ratings on the six objectives chosen most frequently by art instructors; *Encouraging Student Involvement* was also related to progress on three other relevant objectives—6. Creative capacities and, to a lesser degree, 4. Professional skills/viewpoints and 3. Applications (see previous page).

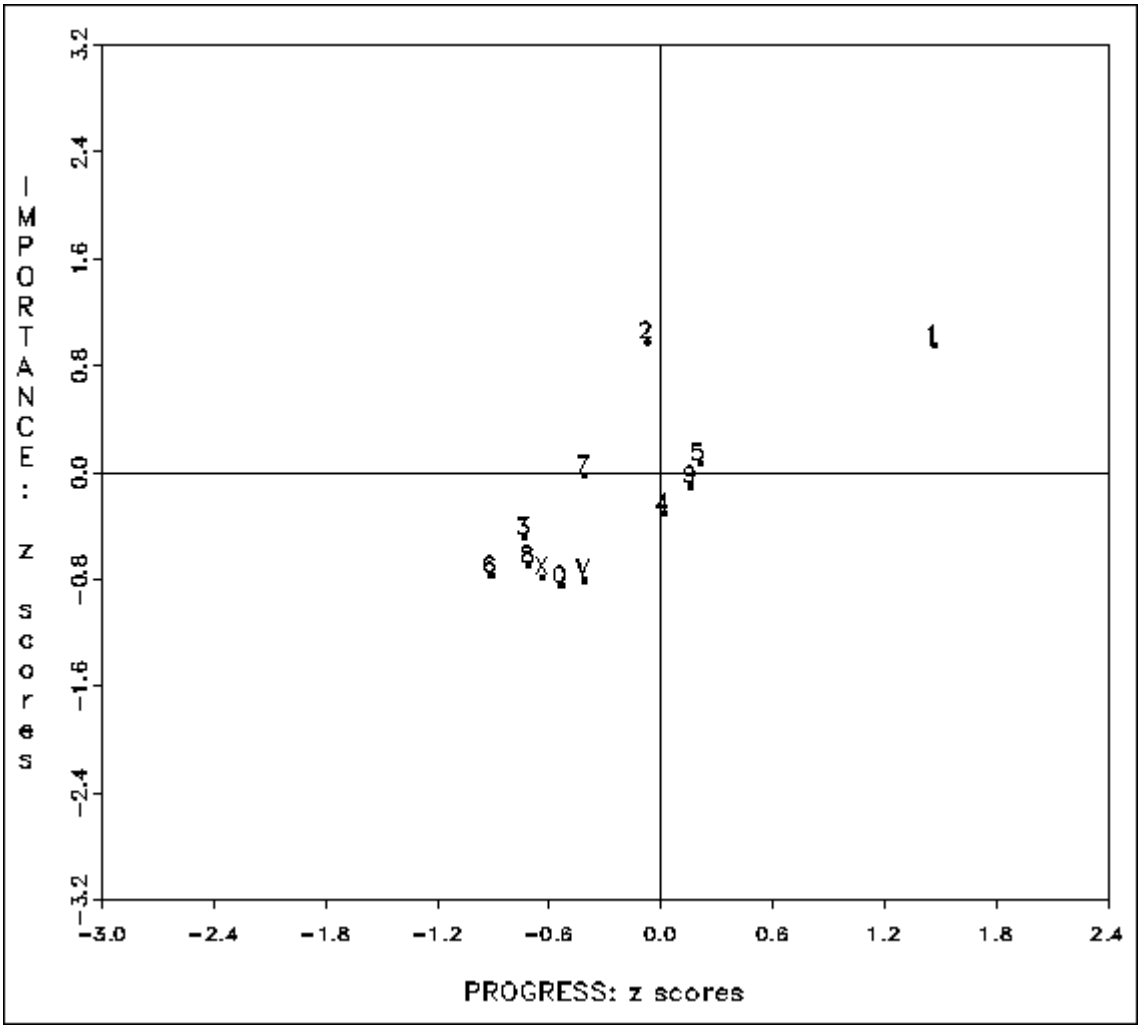
Art classes required much less reading (F), but much more work of other kinds (G), than did classes in other disciplines. They were also considered somewhat below average in difficulty (H).

Students in art classes were exceptionally well motivated (J and, indirectly, K) which may explain the high effort they put forth in these classes (I). The combination of high motivation and high effort is probably related to the positive ratings on all three global outcomes (improved attitude toward the discipline, excellence of teacher, and excellence of course).

[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Discipline 4: Biology/Life Science (1763 classes, 66 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	20	74	94	33	45	78	4.25	.47	4.10	.10
2. Principles and theories	39	52	91	35	39	74	4.04	.44	4.04	.11
3. Application of learning	42	22	64	39	34	73	3.94	.52	4.04	.14
4. Professional skill/views	33	14	47	31	25	56	4.05	.50	4.04	.18
5. Team skills	24	5	29	23	8	31	3.97	.60	3.92	.22
6. Creative capacities	6	1	7	15	11	26	3.15	.60	3.59	.48
7. Broad liberal education	21	5	26	17	10	27	3.31	.56	3.52	.51
8. Communication skills	22	5	27	27	19	46	3.33	.66	3.60	.39
9. Find and use resources	28	5	33	28	9	37	3.73	.54	3.70	.17
0. Values development	7	2	9	17	6	23	3.49	.60	3.66	.33
X. Critical analysis	23	7	30	28	18	46	3.61	.56	3.80	.30
V. Interest in learning	26	6	32	29	10	39	3.74	.52	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Commentary

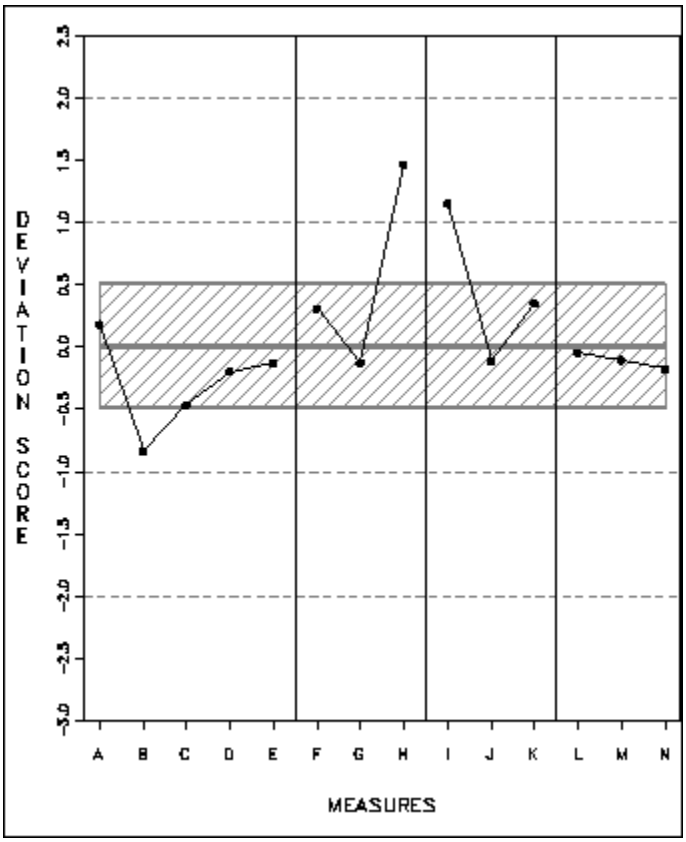
The graph compares biology/life sciences classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

Over 90% of the classes in this discipline focused on the two basic cognitive objectives (1. Factual knowledge and 2. Principles and theories)—well above the average for all disciplines. The only other objective stressed by more than half of the classes (3. Applications) was selected less frequently than the "all disciplines" average, as were six other objectives. Three objectives (5. Team skills, 7. Broad liberal education, and 9. Finding and using resources) were regarded as "important" or "essential" in 25-35% of classes both for this discipline and for "all disciplines."

Progress ratings were substantially above the "all disciplines" average on 1. Factual knowledge, and about average on 2. Principles and theories, the two most emphasized objectives. Although they tended to be below average on all objectives whose importance was also below average in this discipline, they were still above 3.5 (on a 5-point scale) for all objectives except 6. Creative capacities, 7. Broad liberal education, 8. Communication skills, and 0. Values development.

Discipline 4: Biology/Life Science (1176 classes, 53 institutions)
Part II: Other Ratings

	This Discipline		All Disciplines[11]	
	Mean	**s. d.**	**Mean**	**s. d.**
Teaching Approach				
A. Stimulate Interest	4.03	.45	4.01	.15
B. Foster Collaboration	3.40	.68	3.67	.32
C. Establish Rapport	4.00	.46	4.05	.11
D. Encourage Student Involvement	3.86	.50	3.91	.26
E. Structuring Class	4.18	.47	4.19	.10
Class Characteristics				
F. Amount of reading	3.37	.67	3.23	.46
G. Amount of other work	3.42	.59	3.45	.24
H. Difficulty	3.92	.56	3.47	.30
Student Characteristics				
I. Effort in class	3.82	.57	3.60	.20
J. Wanted course	3.32	.54	3.34	.24
K. Usually work hard	3.69	.28	3.66	.09
Global Outcomes				
L. Increased positive attitude	3.87	.58	3.88	.23
M. Excellent teacher	4.18	.63	4.20	.12
N. Excellent course	3.91	.60	3.94	.18



Commentary

In terms of teaching approaches, biology/life science teachers were rated as slightly above average on *A. Stimulating Student Interest* but below average on the other four approaches; averages on *B. Fostering Student Collaboration* and *C. Establishing Rapport* were especially low. For the two objectives stressed most frequently in this discipline, the major teaching approaches related to progress ratings were those where the discipline's scores compared most favorably to the "all disciplines" average: *A. Stimulating Student Interest* (primary) and *E. Structuring the Classroom* (tertiary); techniques related to *B. Fostering Student Collaboration*, the approach that was most under-emphasized in this discipline, generally had a negative affect on these two progress ratings.

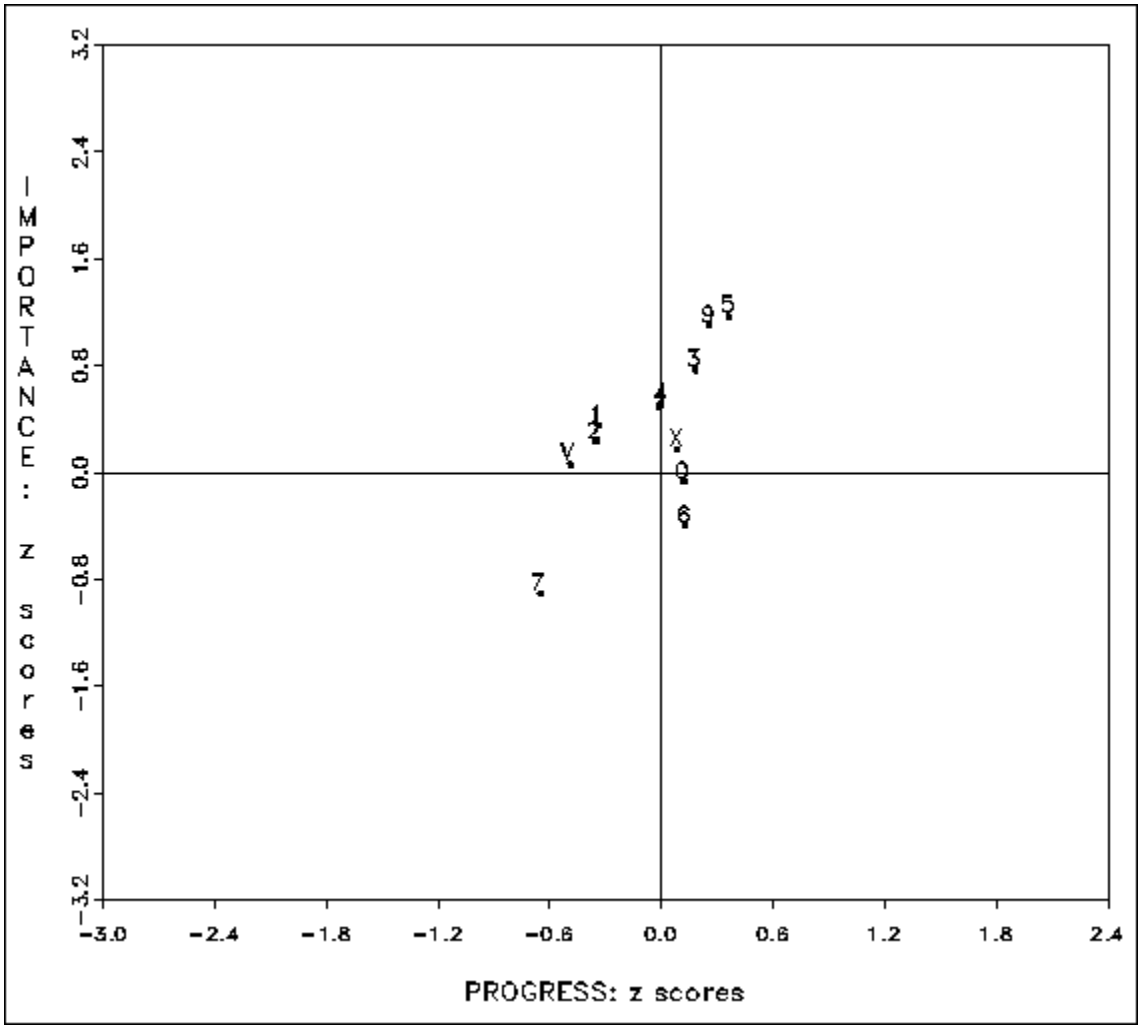
Classes in this discipline were perceived as much more difficult than those in other disciplines (H), a finding which may explain why students claimed to have worked unusually hard (I) despite having only an average amount of motivation to enroll (J). "Difficulty" ratings are most closely related to requirements in reading (F) and other work (G). Since these were in the average range, the high difficulty rating is best attributed to the inherent intellectual challenges posed by the discipline.

All three ratings of global outcomes were in the average range. The generally low ratings on progress and on teaching approaches may have been compensated for by high ratings on 1. Factual knowledge (see previous page) and effort (I).

[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Discipline 5: Business/General (605 classes, 60 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	40	45	85	33	45	78	4.07	.44	4.10	.10
2. Principles and theories	35	45	80	35	39	74	4.01	.44	4.04	.11
3. Application of learning	41	43	84	39	34	73	4.07	.45	4.04	.14
*4. Professional skill/views	35	30	65	31	25	56	4.04	.44	4.04	.18
5. Team skills	31	10	41	23	8	31	4.00	.56	3.92	.22
6. Creative capacities	12	4	16	15	11	26	3.65	.68	3.59	.48
7. Broad liberal education	7	2	9	17	10	27	3.19	.72	3.52	.51
*8. Communication skills	33	18	51	27	19	46	3.60	.65	3.60	.39
9. Find and use resources	34	11	45	28	9	37	3.75	.49	3.70	.17
0. Values development	15	6	21	17	6	23	3.70	.57	3.66	.33
X. Critical analysis	32	16	48	28	18	46	3.83	.48	3.80	.30
V. Interest in learning	30	9	39	29	10	39	3.73	.58	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.
* The plots for these measures overlap; only the first is shown on the graph.

Commentary

The graph compares business/general classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

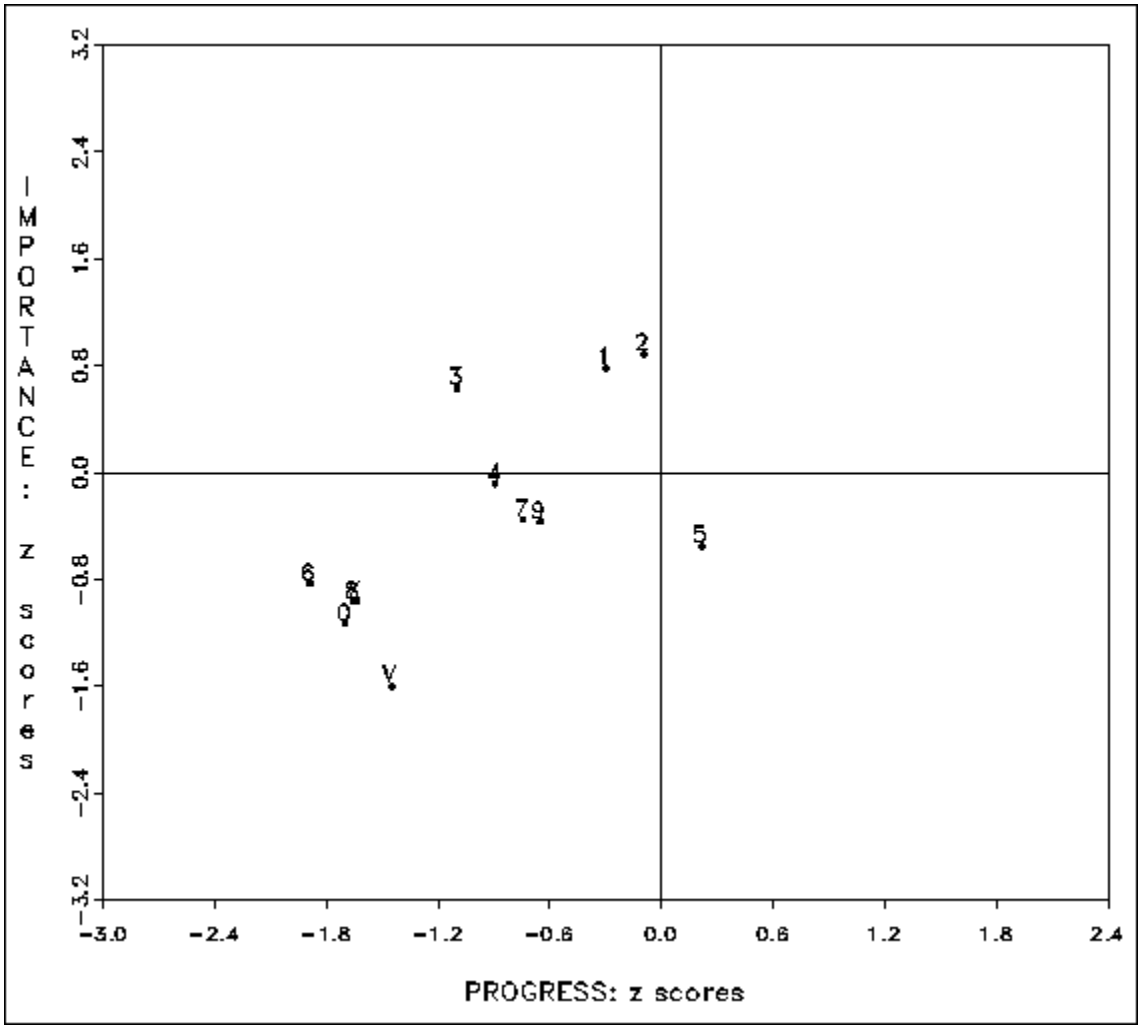
The four most commonly chosen objectives in this discipline were all cognitively oriented—either basic cognitive understandings (1 and 2) or those more applied/professionally oriented (3 and 4). Compared to all other classes, the emphasis on the latter was especially strong. Slightly over half of the classes in business/general also emphasized the development of 8. Communication skills, but this did not distinguish the discipline from others. Over 40% of the classes emphasized 5. Team skills and/or 9. Finding and using resources; these percentages were much higher than the "all disciplines" average.

Progress ratings were somewhat below the "all disciplines" average on basic cognitive objectives (1 and 2), but still above 4.0; for other objectives commonly stressed, these ratings were at or slightly above the "all disciplines" average.

Because only 350 classes used the Diagnostic Form, results for Part II are not reported.

Discipline 6: Chemistry (969 classes, 64 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	37	54	91	33	45	78	4.07	.47	4.10	.10
2. Principles and theories	32	57	89	35	39	74	4.03	.45	4.04	.11
3. Application of learning	45	36	81	39	34	73	3.89	.48	4.04	.14
4. Professional skill/views	37	15	52	31	25	56	3.89	.46	4.04	.18
5. Team skills	18	5	22	23	8	31	3.97	.58	3.92	.22
6. Creative capacities	5	1	6	15	11	26	2.67	.82	3.59	.48
7. Broad liberal education	16	4	20	17	10	27	3.14	.60	3.52	.51
[*]8. Communication skills	17	4	21	27	19	46	2.96	.75	3.60	.39
9. Find and use resources	25	6	31	28	9	37	3.60	.52	3.70	.17
0. Values development	4	1	5	17	6	23	3.11	.72	3.66	.33
[*]X. Critical analysis	21	6	27	28	18	46	3.31	.59	3.80	.30
V. Interest in learning	20	5	25	29	10	39	3.56	.56	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.
[*] The plots for these measures overlap; only the first is shown on the graph.

Commentary

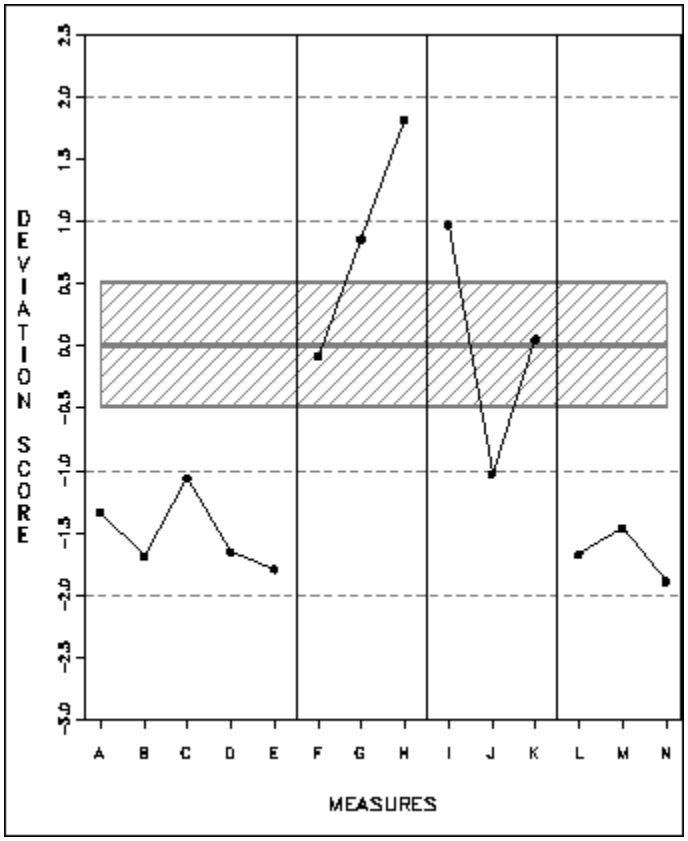
The graph compares chemistry classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

Three cognitively-oriented objectives were stressed in over 80% of chemistry classes—1. Factual knowledge, 2. Principles and theories, and 3. Applications; these emphases were well above the "all disciplines" averages. Just over half of the chemistry classes emphasized gaining 4. Professional skills and viewpoints, which was about average for all disciplines. The amount of emphasis on other objectives was well below the "all disciplines" average.

Progress ratings were generally lower than the "all disciplines" average, although only slightly so on the objectives stressed most frequently (1 and 2). On these two objectives, average progress ratings were still above 4.0 on the 5-point scale.

Discipline 6: Chemistry (728 classes, 53 institutions)
Part II: Other Ratings

	This Discipline		All Disciplines[11]	
	Mean	**s. d.**	**Mean**	**s. d.**
Teaching Approach				
A. Stimulate Interest	3.80	.51	4.01	.15
B. Foster Collaboration	3.12	.65	3.67	.32
C. Establish Rapport	3.93	.49	4.05	.11
D. Encourage Student Involvement	3.49	.54	3.91	.26
E. Structuring Class	4.02	.51	4.19	.10
Class Characteristics				
F. Amount of reading	3.19	.69	3.23	.46
G. Amount of other work	3.66	.60	3.45	.24
H. Difficulty	4.02	.56	3.47	.30
Student Characteristics				
I. Effort in class	3.79	.59	3.60	.20
J. Wanted course	3.10	.50	3.34	.24
K. Usually work hard	3.67	.30	3.66	.09
Global Outcomes				
L. Increased positive attitude	3.49	.57	3.88	.23
M. Excellent teacher	4.02	.73	4.20	.12
N. Excellent course	3.60	.57	3.94	.18



Commentary

Chemistry teachers were rated well-below average on all five of the teaching approaches assessed by the IDEA student rating form; the learning atmosphere, as assessed by the IDEA items describing teaching methods, had few of the attributes normally associated with effective instruction.

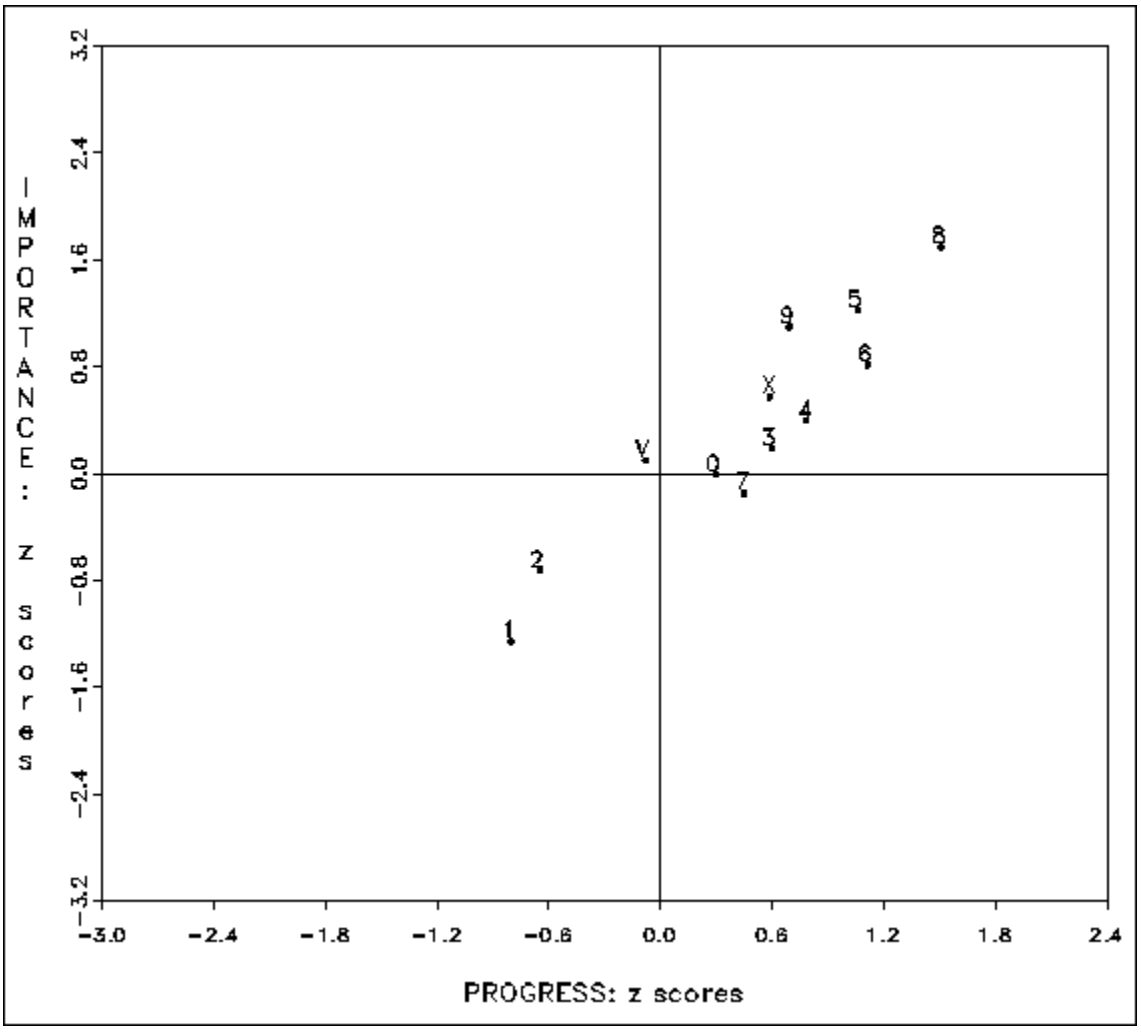
The teaching challenge in chemistry appears to be a considerable one. On average, students were poorly motivated to take the class (J) and found chemistry classes to be more difficult than those in any other discipline (H). These findings, coupled with an average amount of reading (F) and well-above average amount of other work (G) may account for the high effort put forth in these classes (I).

Global ratings (L, M, N) were all well below average. These disappointing outcomes probably reflect a combination of factors – a non-facilitative learning environment, poorly motivated students, and a difficult, academically challenging discipline.

[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Discipline 7: Communications (1885 classes, 69 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	37	25	62	33	45	78	4.02	.48	4.10	.10
2. Principles and theories	38	27	65	35	39	74	3.97	.48	4.04	.11
3. Application of learning	40	35	75	39	34	73	4.12	.47	4.04	.14
4. Professional skill/views	29	33	62	31	25	56	4.18	.48	4.04	.18
5. Team skills	29	12	41	23	8	31	4.16	.56	3.92	.22
6. Creative capacities	24	19	43	15	11	26	4.13	.51	3.59	.48
7. Broad liberal education	17	7	24	17	10	27	3.75	.64	3.52	.51
8. Communication skills	23	53	76	27	19	46	4.20	.48	3.60	.39
9. Find and use resources	34	11	45	28	9	37	3.82	.49	3.70	.17
0. Values development	18	4	22	17	6	23	3.76	.60	3.66	.33
X. Critical analysis	31	25	56	28	18	46	3.98	.50	3.80	.30
V. Interest in learning	29	10	39	29	10	39	3.80	.55	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Commentary

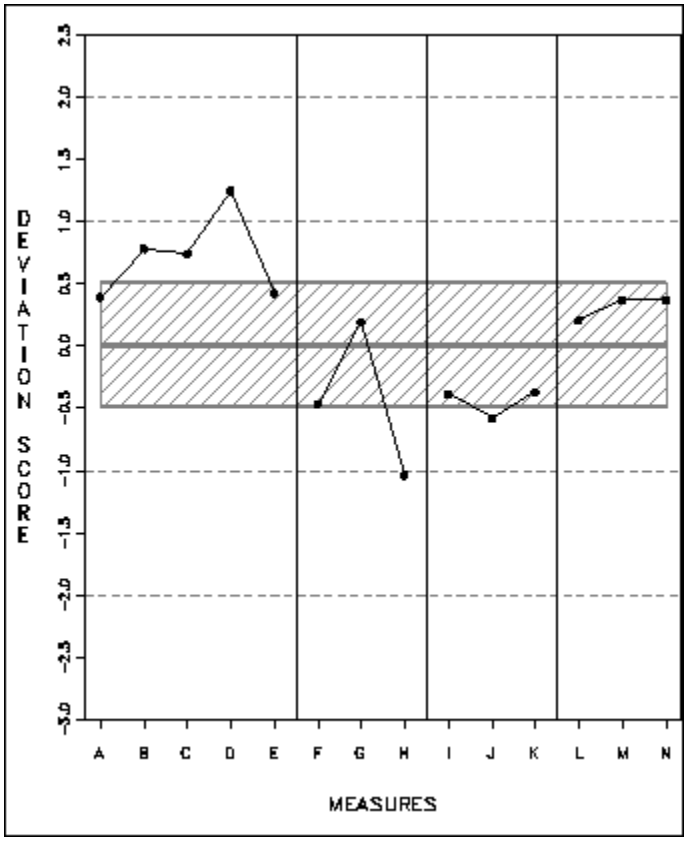
The graph compares communications classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

This discipline was unusual in terms of the number of objectives (9 of 12) that were "important" or "essential" in at least 40% of classes. As expected, relative to other disciplines, this one placed a heavy emphasis on learning to speak and write (8). It was also well above average on 5. Team skills, 9. Finding and using resources, and 6. Creative capacities. Although over 60% of communications classes emphasized 1. Factual knowledge and/or 2. Principles and theories, these were well below the "all disciplines" average.

Progress ratings tended to parallel importance ratings. In relative terms, the more an objective was emphasized, the higher the progress rating. Except for the two basic cognitive objectives (1 and 2) and the objective concerned with increasing interest in learning (V), all progress ratings were above average. The average progress rating for relevant (chosen) objectives was 3.75 or higher for all twelve objectives, a highly positive finding given the discipline's propensity to select multiple objectives.

Discipline 7: Communications (947 classes, 51 institutions)
Part II: Other Ratings

	This Discipline		All Disciplines[11]	
	Mean	**s. d.**	**Mean**	**s. d.**
Teaching Approach				
A. Stimulate Interest	4.07	.45	4.01	.15
B. Foster Collaboration	3.93	.57	3.67	.32
C. Establish Rapport	4.13	.44	4.05	.11
D. Encourage Student Involvement	4.23	.40	3.91	.26
E. Structuring Class	4.23	.42	4.19	.10
Class Characteristics				
F. Amount of reading	3.02	.57	3.23	.46
G. Amount of other work	3.50	.53	3.45	.24
H. Difficulty	3.16	.47	3.47	.30
Student Characteristics				
I. Effort in class	3.52	.54	3.60	.20
J. Wanted course	3.20	.49	3.34	.24
K. Usually work hard	3.63	.29	3.66	.09
Global Outcomes				
L. Increased positive attitude	3.93	.51	3.88	.23
M. Excellent teacher	4.24	.58	4.20	.12
N. Excellent course	4.00	.53	3.94	.18



Commentary

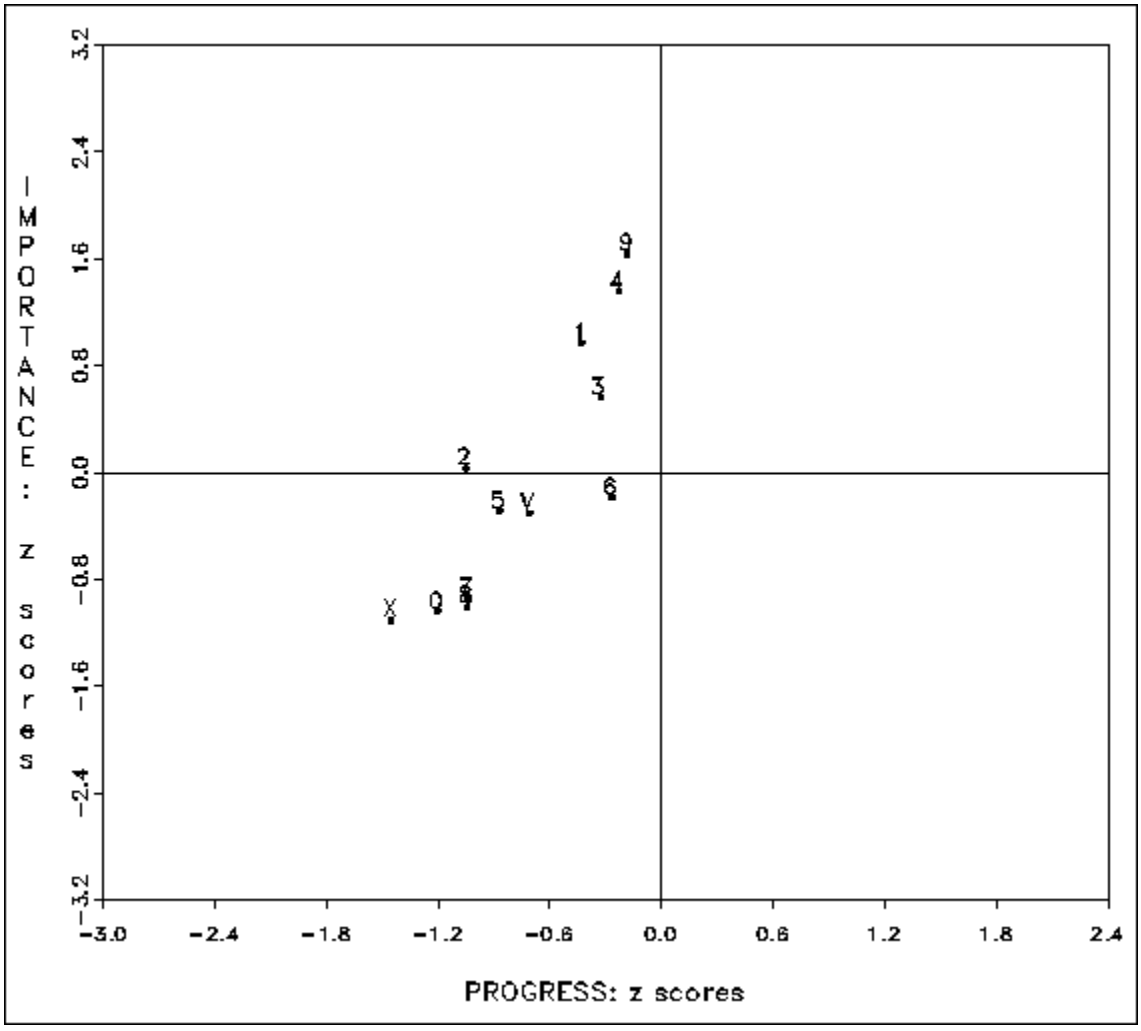
Above average ratings were obtained on all five of the scales used to assess teaching approach. The average for *D. Encouraging Student Involvement* was especially high, suggesting that teachers were very successful in getting students personally involved in the learning process. This teaching approach was positively related to progress ratings on several objectives stressed in the communications discipline, including 9. Finding and using resources, 8. Communication skills, 6. Creative capacities, and 5. Team skills.

Classes in this discipline were perceived as not very difficult (H) and only above average in terms of the demands they made (F, G), which may help explains why students reported making a below average effort (I). Even though students were not very motivated to enroll in these classes (J) and apparently did not work very hard, all three of their global outcome ratings (L, M, N) were somewhat above average—a finding that is probably attributable to the faculty's success in employing positive teaching approaches which resulted in above average progress on relevant objectives.

[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Discipline 8: Computer/Information Sciences (1409 classes, 71 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	32	61	93	33	45	78	4.06	.45	4.10	.10
2. Principles and theories	38	38	76	35	39	74	3.93	.47	4.04	.11
3. Application of learning	43	37	80	39	34	73	4.00	.46	4.04	.14
4. Professional skill/views	37	46	83	31	25	56	4.00	.45	4.04	.18
5. Team skills	18	7	25	23	8	31	3.74	.66	3.92	.22
6. Creative capacities	17	3	20	15	11	26	3.46	.64	3.59	.48
*7. Broad liberal education	7	2	9	17	10	27	2.99	.72	3.52	.51
*8. Communication skills	17	4	21	27	19	46	3.20	.69	3.60	.39
9. Find and use resources	39	11	50	28	9	37	3.67	.52	3.70	.17
0. Values development	5	1	6	17	6	23	3.27	.61	3.66	.33
X. Critical analysis	19	5	24	28	18	46	3.37	.58	3.80	.30
V. Interest in learning	29	7	36	29	10	39	3.69	.52	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.
* The plots for these measures overlap; only the first is shown on the graph.

Commentary

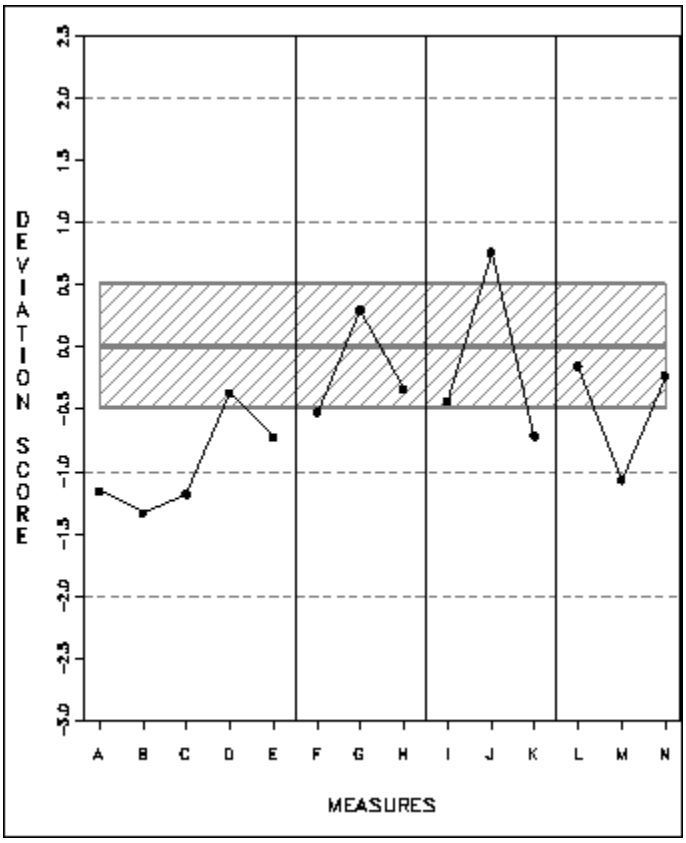
The graph compares computer/information science classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

Classes in this discipline focused on the four cognitively-oriented objectives (1. Factual knowledge, 2. Principles and theories, 3. Applications, and 4. Professional skills/viewpoints). In addition, over half of them selected 9. Finding and using resources as an important or essential objective. Relative to other disciplines, the emphasis on 9. Finding and using resources, 4. Professionals skills/viewpoints, and 1. Factual knowledge were especially strong.

All progress ratings were below the "all disciplines" averages (although, with the exception of 2. Principles and theories, they were near average for the most relevant objectives in the discipline). Although students reported less learning in computer/information science classes than in other classes, average ratings on the four most frequently chosen objectives were above 3.9 on the 5-point scale. On the other commonly selected objective (9. Finding and using resources), the discipline's average progress rating (3.67) was only slightly below the average for all disciplines.

Discipline 8: Computer/Information Sciences (887 classes, 57 institutions)
Part II: Other Ratings

	This Discipline		All Disciplines[11]	
	Mean	**s. d.**	**Mean**	**s. d.**
Teaching Approach				
A. Stimulate Interest	3.83	.51	4.01	.15
B. Foster Collaboration	3.24	.67	3.67	.32
C. Establish Rapport	3.92	.47	4.05	.11
D. Encourage Student Involvement	3.81	.51	3.91	.26
E. Structuring Class	4.12	.47	4.19	.10
Class Characteristics				
F. Amount of reading	2.99	.61	3.23	.46
G. Amount of other work	3.53	.54	3.45	.24
H. Difficulty	3.37	.59	3.47	.30
Student Characteristics				
I. Effort in class	3.51	.57	3.60	.20
J. Wanted course	3.52	.47	3.34	.24
K. Usually work hard	3.60	.28	3.66	.09
Global Outcomes				
L. Increased positive attitude	3.85	.52	3.88	.23
M. Excellent teacher	4.07	.63	4.20	.12
N. Excellent course	3.90	.55	3.94	.18



Commentary

Below average scores were obtained on all five of the "teaching approach" scales; the lowest ratings were made on *A. Stimulating Student Interest*, *B. Fostering Student Collaboration*, and *C. Establishing Rapport*. The first of these is closely related to progress ratings on the four most important objectives in this discipline. Progress on 9. Finding and using resources, another objective commonly emphasized in this discipline (see previous page), was most closely related to *D. Encouraging Student Involvement*, where, on a relative basis, computer/information sciences had its highest score (though still below average).

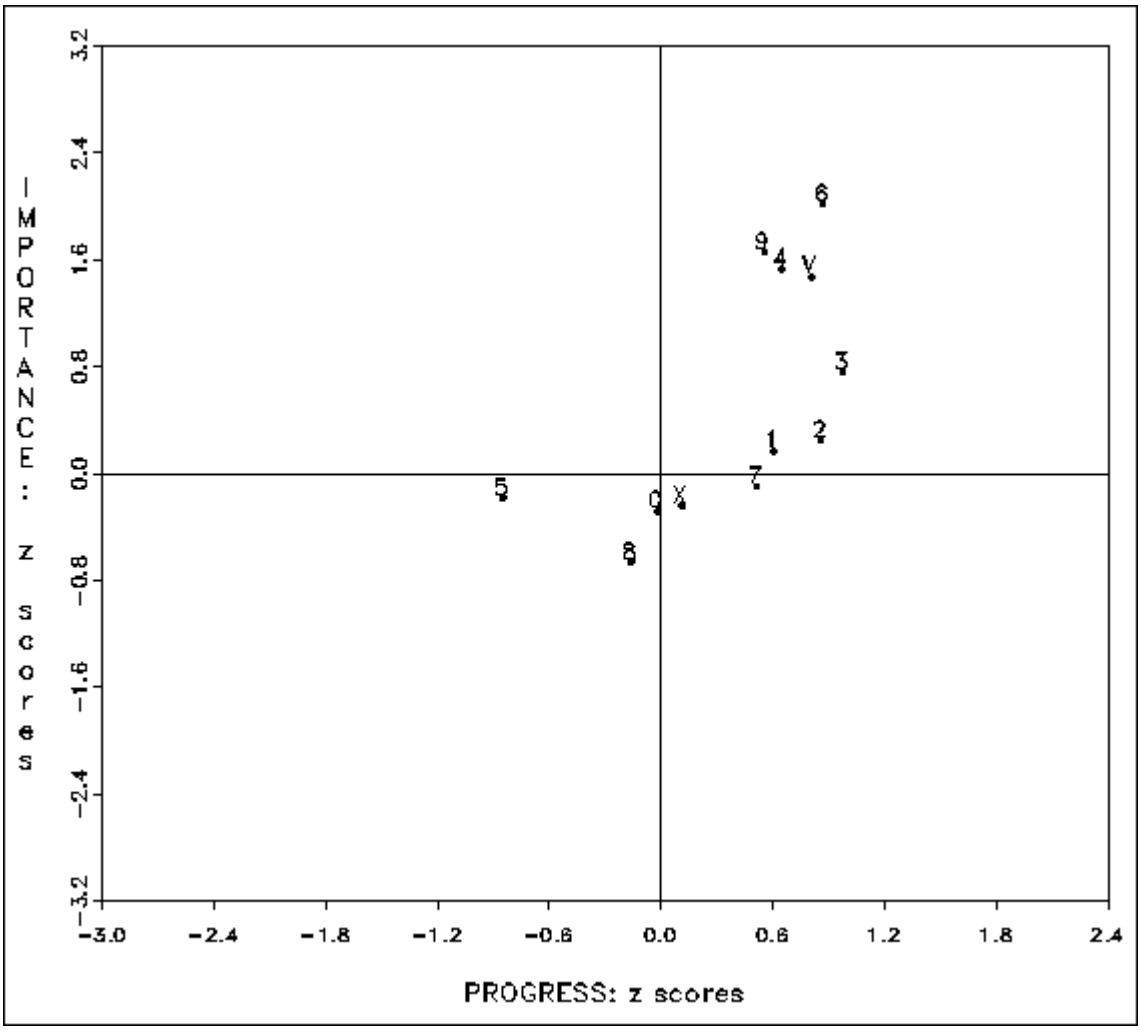
Courses in this discipline required less reading (F), but more other work (G), than the "all disciplines" average. Students regarded them as slightly less difficult than most of their courses (H). Although students were highly motivated to enroll in these classes (J) they were not accustomed to working hard in their classes (K) and made a below average effort in their computer/information sciences classes (I).

Overall, ratings were about average in terms of an increased positive attitude toward the field of study (L) and the excellence of the course (N). Consistent with the low ratings on teaching approach and academic progress, the overall rating of the excellence of the teacher was well below average (M); on an absolute basis, this average rating was 4.07 on a 5-point scale.

[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Discipline 9: Design/Applied Arts (1601 classes, 23 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	35	47	82	33	45	78	4.12	.47	4.10	.10
2. Principles and theories	39	41	80	35	39	74	4.13	.44	4.04	.11
3. Application of learning	37	46	83	39	34	73	4.18	.44	4.04	.14
4. Professional skill/views	34	53	87	31	25	56	4.16	.46	4.04	.18
5. Team skills	20	6	26	23	8	31	3.74	.63	3.92	.22
6. Creative capacities	30	39	69	15	11	26	4.01	.49	3.59	.48
7. Broad liberal education	18	7	25	17	10	27	3.78	.57	3.52	.51
8. Communication skills	22	6	28	27	19	46	3.54	.57	3.60	.39
9. Find and use resources	37	13	50	28	9	37	3.80	.53	3.70	.17
0. Values development	15	3	18	17	6	23	3.66	.51	3.66	.33
X. Critical analysis	26	14	40	28	18	46	3.84	.51	3.80	.30
V. Interest in learning	35	15	50	29	10	39	3.96	.49	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Commentary

The graph compares design/applied arts classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

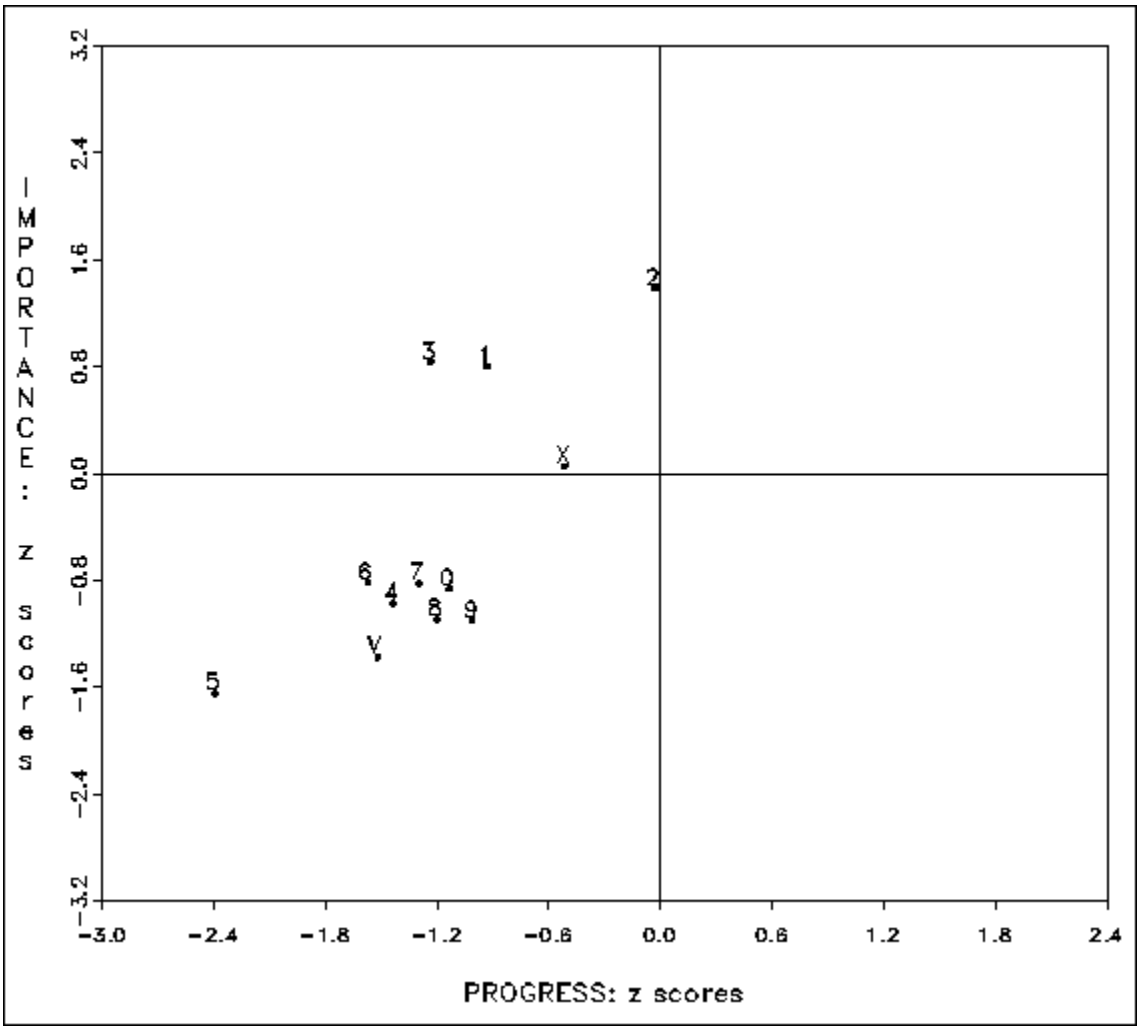
Like most disciplines, design/applied arts placed heavy emphasis on the four cognitively oriented objectives: (1. Factual knowledge, 2. Principles and theories, 3. Applications, and 4. Professional skills/viewpoints). Three other objectives were stressed in the majority of classes in this discipline—6. Creative capacities, 9. Finding and using resources, and V. Increasing interest in learning. Compared to other classes, those in this discipline were most distinguished by their high emphasis on 6. Creative capacities, V. Increased interest in learning, 4. Professional skills/viewpoints, and 9. Finding and using resources.

Progress ratings were well above the "all disciplines" average on most objectives. The exceptions were the average ratings for 0. Values development, X. Critical analysis, and 8. Communication skills together with a well below average rating on 5. Team skills.

Because only 421 classes used the Diagnostic Form, results for Part II are not reported.

Discipline 10: Economics (792 classes, 62 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	46	45	91	33	45	78	4.01	.45	4.10	.10
2. Principles and theories	24	72	96	35	39	74	4.04	.42	4.04	.11
3. Application of learning	46	38	84	39	34	73	3.87	.46	4.04	.14
4. Professional skill/views	26	7	33	31	25	56	3.79	.47	4.04	.18
5. Team skills	8	2	10	23	8	31	3.40	.81	3.92	.22
6. Creative capacities	5	1	6	15	11	26	2.82	.59	3.59	.48
7. Broad liberal education	9	1	10	17	10	27	2.86	.61	3.52	.51
8. Communication skills	16	3	19	27	19	46	3.13	.81	3.60	.39
9. Find and use resources	19	4	23	28	9	37	3.54	.64	3.70	.17
0. Values development	8	1	9	17	6	23	3.29	.64	3.66	.33
X. Critical analysis	30	16	46	28	18	46	3.65	.54	3.80	.30
V. Interest in learning	23	4	27	29	10	39	3.55	.54	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Commentary

The graph compares economics classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

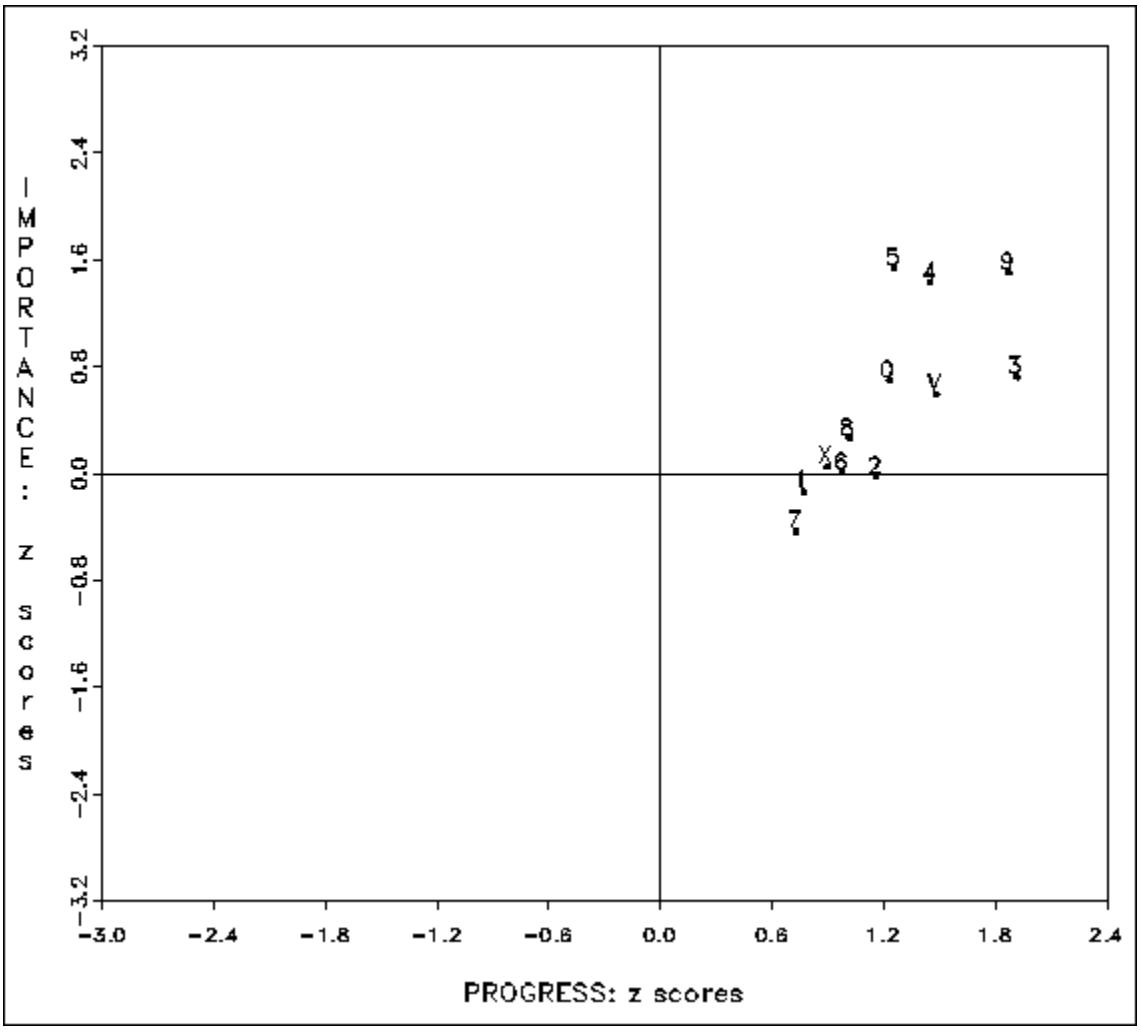
Three objectives were chosen as relevant in over 80% of classes in economics—1. Factual knowledge, 2. Principles and theories, and 3. Applications. No other objective was addressed in the majority of classes; although in 46% of them X. Critical analysis was regarded as important or essential. The frequency of the latter was average for all classes; but the first three were chosen much more frequently in economics than in other disciplines.

Progress ratings on all objectives were well below the "all disciplines" average except for 2. Principles and theories where an average rating was found. In general, students reported less learning in these classes than in their classes in other disciplines. Nonetheless, on an absolute basis, progress ratings on the four most frequently chosen objectives were reassuring, varying from 3.79 to 4.04 on a 5-point rating scale.

Because only 489 classes used the Diagnostic Form, results for Part II are not reported.

Discipline 11: Education/General (4424 classes, 67 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	36	42	78	33	45	78	4.18	.52	4.10	.10
2. Principles and theories	40	36	76	35	39	74	4.17	.50	4.04	.11
3. Application of learning	37	46	83	39	34	73	4.30	.49	4.04	.14
4. Professional skill/views	39	45	84	31	25	56	4.30	.49	4.04	.18
5. Team skills	31	14	45	23	8	31	4.20	.52	3.92	.22
6. Creative capacities	17	7	24	15	11	26	4.06	.57	3.59	.48
7. Broad liberal education	12	7	19	17	10	27	3.89	.67	3.52	.51
8. Communication skills	34	13	47	27	19	46	4.00	.53	3.60	.39
9. Find and use resources	33	16	49	28	9	37	4.01	.56	3.70	.17
0. Values development	23	10	33	17	6	23	4.07	.55	3.66	.33
X. Critical analysis	29	17	46	28	18	46	4.07	.55	3.80	.30
V. Interest in learning	29	14	43	29	10	39	4.07	.54	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Commentary

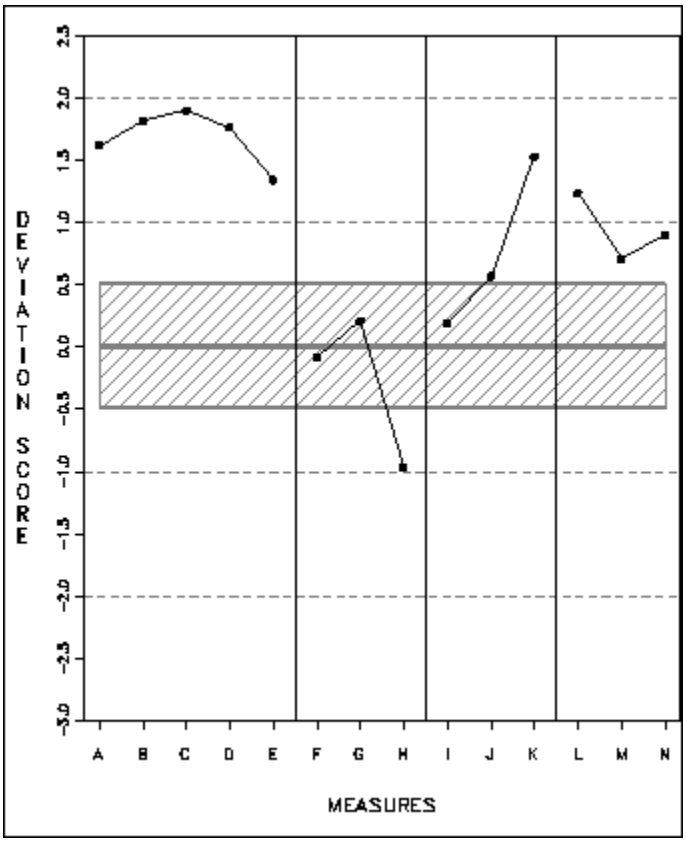
The graph compares education/general classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

Like most disciplines, education/general classes most frequently emphasized the four cognitively-oriented objectives; those related to professional development (3. Applications and 4. Professional skills/viewpoints) were addressed in over 80% of classes in this discipline, while the two concerned with basic cognitive background (1. Factual knowledge and 2. Principles and theories) were relevant in over 70% of such classes. The discipline was unusual in that over 40% of the classes also emphasized one or more of five other objectives. Compared to classes in other disciplines, those in education/general selected a large number of objectives. The discipline was most differentiated by its high emphasis on 4. Professional skills/viewpoints, 5. Team skills, and 9. Finding and using resources.

Progress ratings were highest on the three "most differentiating" objectives and they were at least average on all other objectives except 7. Broad liberal education, an objective rated "important" or "essential" in only 18% of classes in this discipline.

Discipline 11: Education/General (3011 classes, 56 institutions)
Part II: Other Ratings

	This Discipline		All Disciplines[11]	
	Mean	**s. d.**	**Mean**	**s. d.**
Teaching Approach				
A. Stimulate Interest	4.25	.50	4.01	.15
B. Foster Collaboration	4.26	.52	3.67	.32
C. Establish Rapport	4.26	.48	4.05	.11
D. Encourage Student Involvement	4.36	.44	3.91	.26
E. Structuring Class	4.32	.50	4.19	.10
Class Characteristics				
F. Amount of reading	3.19	.64	3.23	.46
G. Amount of other work	3.51	.55	3.45	.24
H. Difficulty	3.18	.49	3.47	.30
Student Characteristics				
I. Effort in class	3.64	.58	3.60	.20
J. Wanted course	3.48	.50	3.34	.24
K. Usually work hard	3.80	.30	3.66	.09
Global Outcomes				
L. Increased positive attitude	4.17	.56	3.88	.23
M. Excellent teacher	4.28	.66	4.20	.12
N. Excellent course	4.10	.63	3.94	.18



Commentary

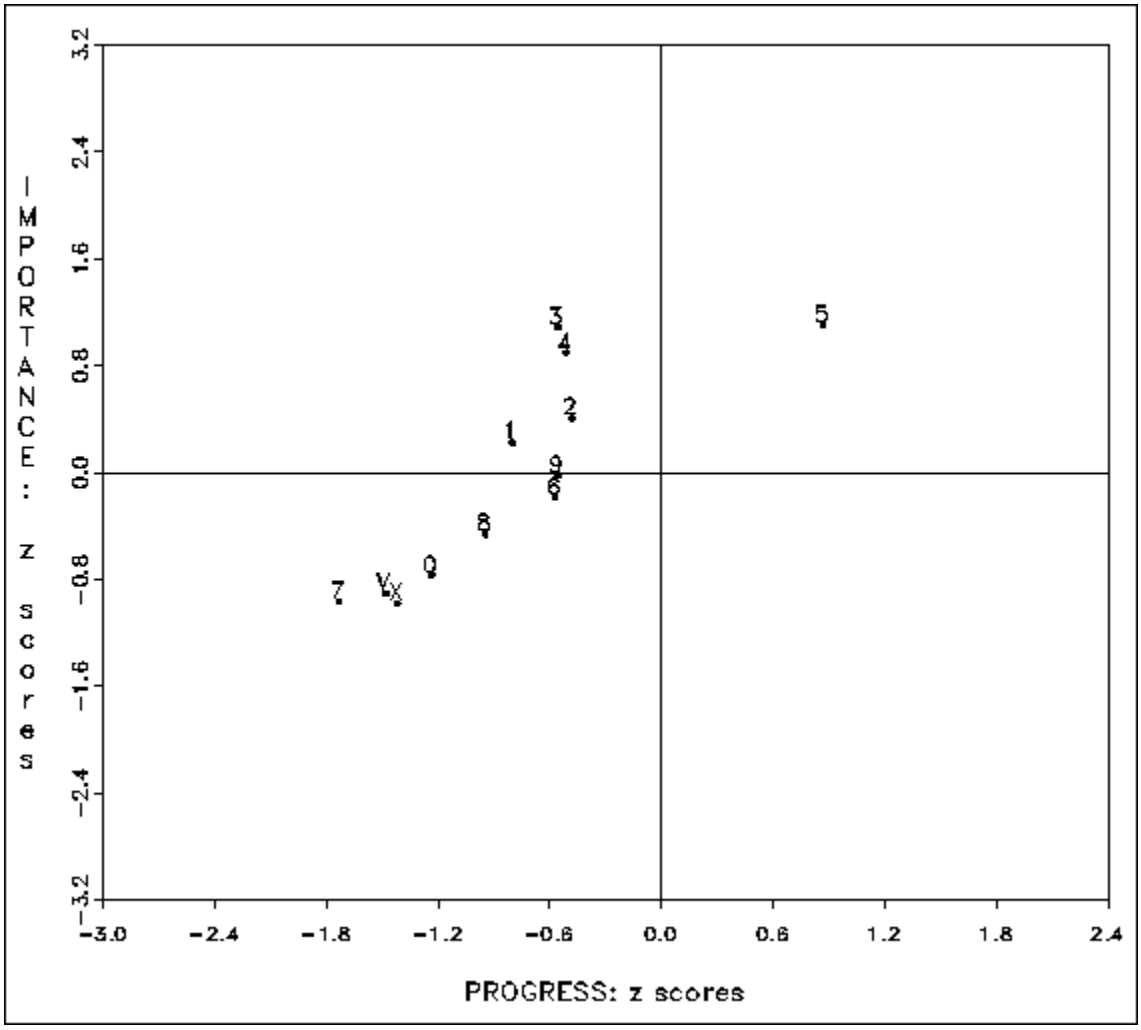
Exceptionally high ratings were obtained on all five of the scales assessing teaching approaches; it can be inferred that positive learning climates were established in these classes. They were rated about average in their demands (F. Reading, G. Other work) and well below average in difficulty (H). Student motivation was above average (J and, indirectly, K), which may account for the above average rating on effort (I) despite the low difficulty of these classes.

All three global ratings (increased positive attitude, excellence of teacher, excellence of course) were well above the "all disciplines" average. Students felt most classes in this discipline were well taught and valuable.

[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Discipline 12: Engineering (1249 classes, 26 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	32	51	83	33	45	78	4.02	.49	4.10	.10
2. Principles and theories	29	53	82	35	39	74	3.99	.50	4.04	.11
3. Application of learning	48	41	89	39	34	73	3.97	.50	4.04	.14
4. Professional skill/views	46	27	73	31	25	56	3.95	.49	4.04	.18
5. Team skills	25	15	40	23	8	31	4.11	.57	3.92	.22
6. Creative capacities	12	8	20	15	11	26	3.31	.76	3.59	.48
7. Broad liberal education	6	1	7	17	10	27	2.64	.65	3.52	.51
8. Communication skills	27	5	32	27	19	46	3.23	.72	3.60	.39
9. Find and use resources	27	7	34	28	9	37	3.61	.59	3.70	.17
0. Values development	9	2	11	17	6	23	3.26	.66	3.66	.33
X. Critical analysis	18	9	27	28	18	46	3.38	.59	3.80	.30
V. Interest in learning	26	5	31	29	10	39	3.55	.53	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Commentary

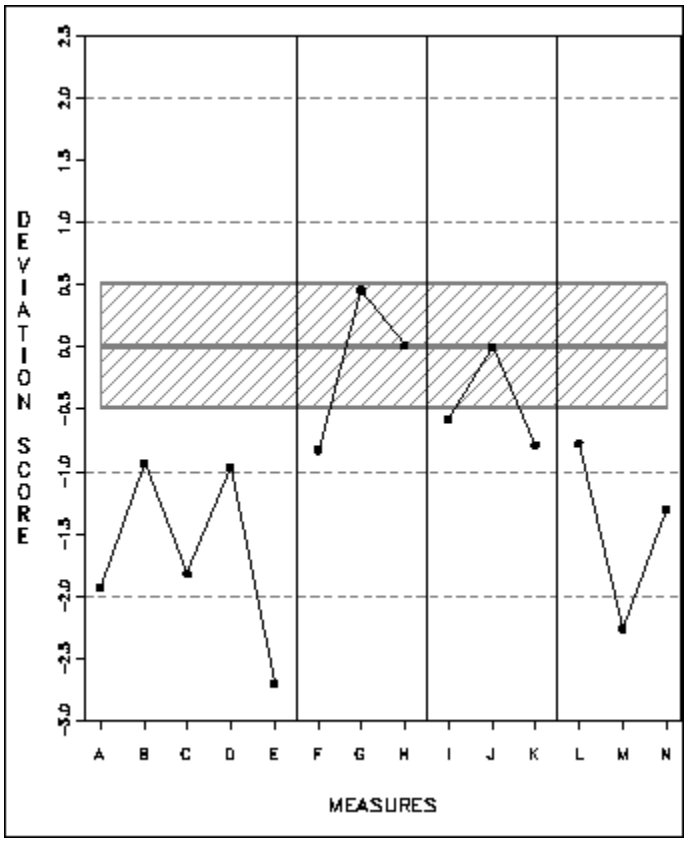
The graph compares engineering classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

Over 80% of engineering classes stressed at least one of the first three objectives, all of which were cognitively oriented (1. Factual knowledge, 2. Principles and theories, and 3. Applications). And over 70% chose 4. Professional skills/viewpoints). Only a minority of engineering classes selected any of the other objectives. Compared with other disciplines, classes in engineering were more likely to stress the two professionally oriented objectives (3 and 4); they were also much more likely to emphasize 5. Team skills, even though this was relevant in only 40% of the classes in engineering.

Except for the well above average ratings on 5. Team skills, progress ratings were all below the average for all disciplines. The lowest progress ratings were on objectives that were seldom pursued by engineering classes; but they were also somewhat below average on the four most frequently selected objectives. Even though students in engineering classes consistently reported less progress on relevant objectives than did those in other types of classes, on an absolute basis, progress ratings on the most frequently chosen objectives averaged about 4.0 on a 5-point rating scale.

Discipline 12: Engineering (795 classes, 23 institutions)
Part II: Other Ratings

	This Discipline		All Disciplines[11]	
	Mean	**s. d.**	**Mean**	**s. d.**
Teaching Approach				
A. Stimulate Interest	3.71	.50	4.01	.15
B. Foster Collaboration	3.37	.73	3.67	.32
C. Establish Rapport	3.85	.50	4.05	.11
D. Encourage Student Involvement	3.66	.56	3.91	.26
E. Structuring Class	3.93	.48	4.19	.10
Class Characteristics				
F. Amount of reading	2.85	.69	3.23	.46
G. Amount of other work	3.57	.72	3.45	.24
H. Difficulty	3.48	.71	3.47	.30
Student Characteristics				
I. Effort in class	3.48	.67	3.60	.20
J. Wanted course	3.34	.53	3.34	.24
K. Usually work hard	3.59	.27	3.66	.09
Global Outcomes				
L. Increased positive attitude	3.70	.60	3.88	.23
M. Excellent teacher	3.93	.69	4.20	.12
N. Excellent course	3.71	.60	3.94	.18



Commentary

Engineering classes averaged very low on all five scales describing teaching approaches designed to establish a positive learning climate; they appeared to be especially deficient in clearly communicating content and expectations (E), fostering student interest and excitement (A), and creating positive instructor/student relationships (C). Given these ratings, the very low overall rating of "excellence of teacher" (M) was expected.

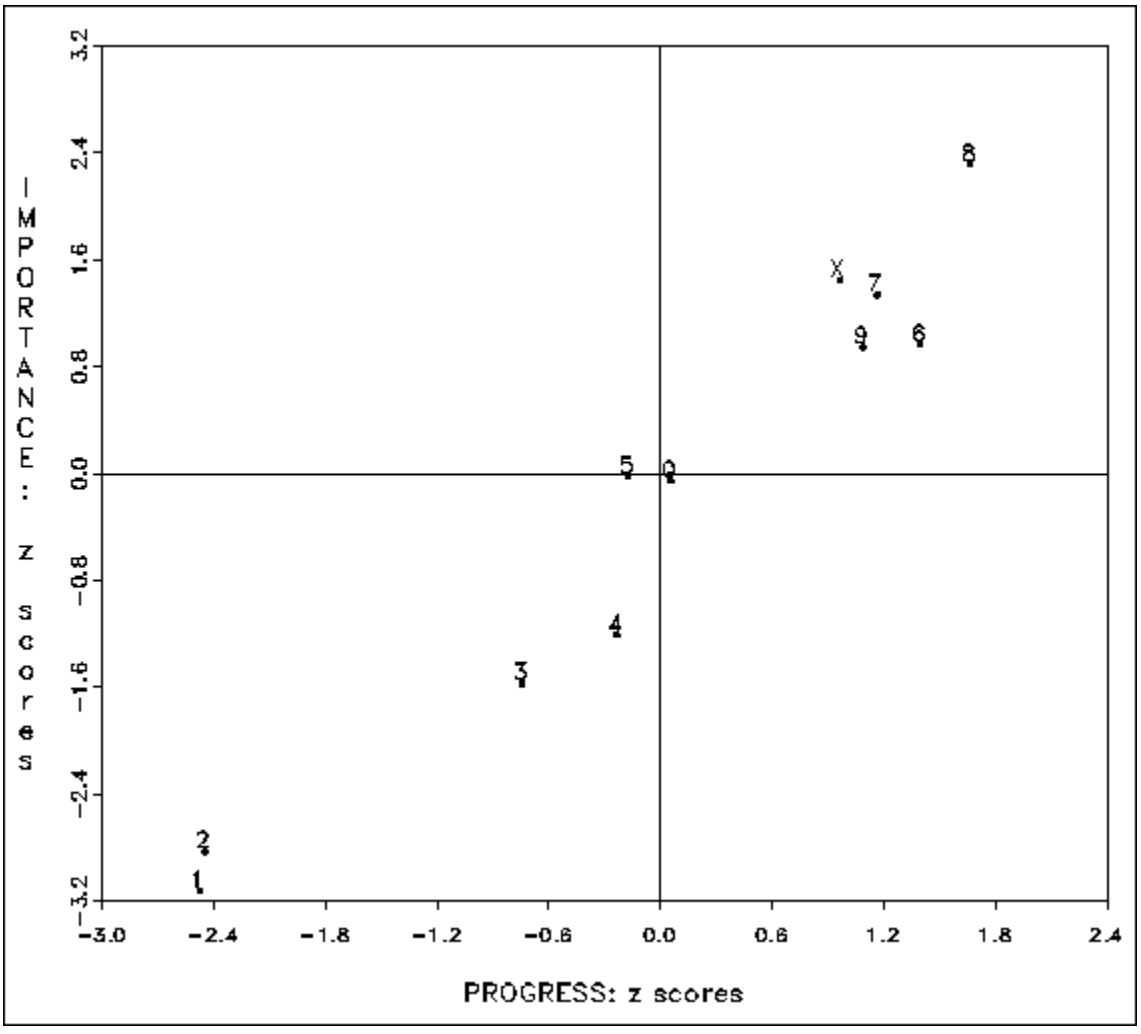
Although ratings of course difficulty of these were only "average" (H) compared to other courses the students have taken, it is important to note that these "other courses" in the engineering curriculum are generally acknowledged to provide a high level of academic challenge. Below average reading requirements (F) were offset by above average requirements in other types of assignments (G).

Student motivation as inferred by desire to enroll in engineering classes (J) was about average; as inferred from effort (I and, indirectly, K) it was below average. This, together with low ratings on the scales assessing teaching approaches, may help account for relatively low overall ratings on the global outcomes of L. Increased appreciation for the field and N. Excellence of course.

[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The z scores on the graph gave equal weight to each discipline.

Discipline 13: English Literature (3777 classes, 85 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	25	10	35	33	45	78	3.86	.53	4.10	.10
2. Principles and theories	23	12	35	35	39	74	3.78	.54	4.04	.11
3. Application of learning	30	18	48	39	34	73	3.94	.48	4.04	.14
4. Professional skill/views	18	9	27	31	25	56	4.00	.51	4.04	.18
5. Team skills	24	4	28	23	8	31	3.89	.56	3.92	.22
6. Creative capacities	24	22	46	15	11	26	4.27	.46	3.59	.48
7. Broad liberal education	24	29	53	17	10	27	4.11	.54	3.52	.51
8. Communication skills	23	66	89	27	19	46	4.26	.44	3.60	.39
9. Find and use resources	34	9	43	28	9	37	3.88	.49	3.70	.17
*0. Values development	18	4	22	17	6	23	3.68	.57	3.66	.33
X. Critical analysis	39	33	72	28	18	46	4.09	.44	3.80	.30
*V. Interest in learning	30	8	38	29	10	39	3.82	.52	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.
* The plots for these measures overlap; only the first is shown on the graph.

Commentary

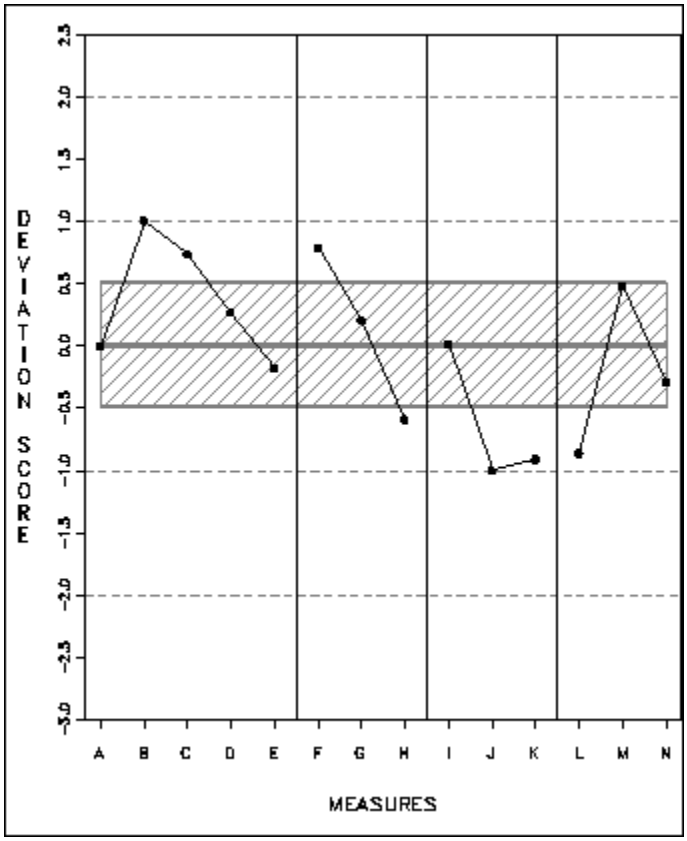
The graph compares English literature classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

Classes in this discipline were quite distinctive. They gave relatively high emphasis to five objectives—8. Communication skills, X. Critical analysis, 7. Broad liberal education, 6. Creative capacities, and 9. Finding and using resources. Almost all classes emphasized 8. Communication skills, and nearly three-fourths selected X. Critical analysis. On these five "most popular" objectives, progress ratings were well above average. Whereas the four cognitively-oriented objectives (1. Factual knowledge, 2. Principles and theories, 3. Applications, and 4. Professional skills/viewpoints) were chosen most often when all disciplines were combined, they were considered "relevant" in only a minority of English literature classes. When these objectives were chosen in literature classes, progress ratings were well below average. For the other three objectives (5. Team skills, 0. Values development, and V. Increased interest in learning) both relevance and progress ratings were about average.

English literature courses exposed students to objectives not featured in most other disciplines; and students reported high progress on these objectives.

Discipline 13: English Literature (2458 classes, 73 institutions)
Part II: Other Ratings

	This Discipline		All Disciplines[11]	
	Mean	**s. d.**	**Mean**	**s. d.**
Teaching Approach				
A. Stimulate Interest	4.01	.47	4.01	.15
B. Foster Collaboration	4.00	.55	3.67	.32
C. Establish Rapport	4.13	.44	4.05	.11
D. Encourage Student Involvement	3.98	.47	3.91	.26
E. Structuring Class	4.18	.42	4.19	.10
Class Characteristics				
F. Amount of reading	3.59	.67	3.23	.46
G. Amount of other work	3.50	.48	3.45	.24
H. Difficulty	3.29	.45	3.47	.30
Student Characteristics				
I. Effort in class	3.60	.46	3.60	.20
J. Wanted course	3.10	.51	3.34	.24
K. Usually work hard	3.58	.30	3.66	.09
Global Outcomes				
L. Increased positive attitude	3.68	.57	3.88	.23
M. Excellent teacher	4.25	.58	4.20	.12
N. Excellent course	3.88	.56	3.94	.18



Commentary

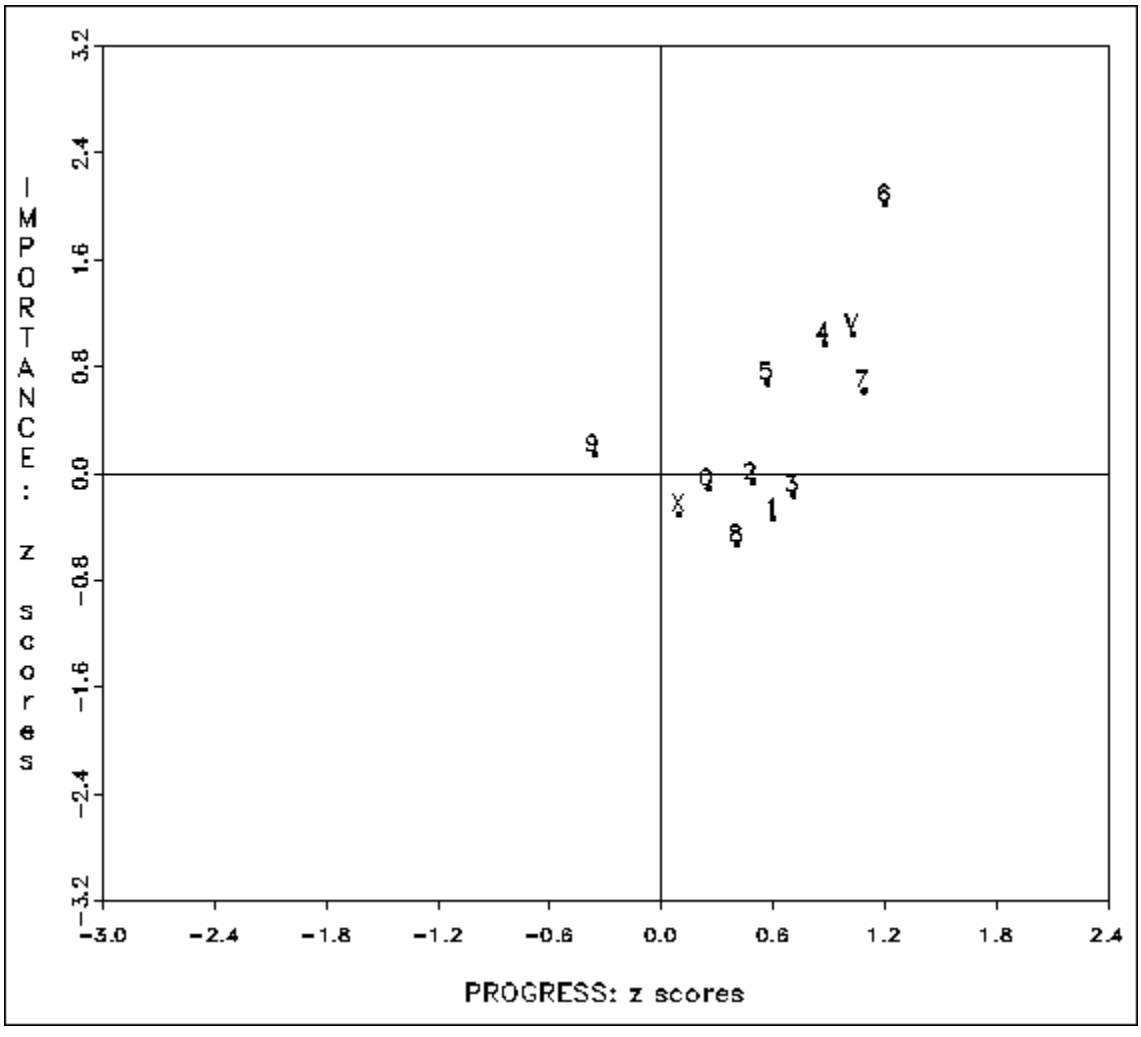
Instructors in English literature classes appeared to be especially proficient in *B. Fostering Student Collaboration* and *C. Establishing Rapport*. These teaching approaches are positively related to progress ratings on the four objectives most frequently stressed in this discipline (8. Communication skills, X. Critical analysis, 7. Broad liberal education, and 6. Creative capacities; see previous page).

English literature classes required more reading than those in other disciplines, and also somewhat more in non-reading (probably writing) assignments. Despite these requirements, students reported only an average effort (I) and rated the classes as below average in difficulty (H). Students were not well motivated (J and, indirectly, K) which may help explain the relatively low rating on "improved appreciation for the discipline" (L) and the somewhat below average rating on N. Excellence of the course. The above average rating on M. Excellence of teacher is consistent with positive ratings on the teaching approach scales (A-E).

[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Discipline 14: Fine and Applied Arts (1093 classes, 60 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	35	40	75	33	45	78	4.16	.49	4.10	.10
2. Principles and theories	40	35	75	35	39	74	4.10	.50	4.04	.11
3. Application of learning	39	30	69	39	34	73	4.14	.49	4.04	.14
4. Professional skill/views	29	46	75	31	25	56	4.20	.45	4.04	.18
5. Team skills	24	12	36	23	8	31	4.05	.64	3.92	.22
6. Creative capacities	30	40	70	15	11	26	4.17	.54	3.59	.48
7. Broad liberal education	22	17	39	17	10	27	4.08	.60	3.52	.51
8. Communication skills	22	8	30	27	19	46	3.76	.64	3.60	.39
9. Find and use resources	27	8	35	28	9	37	3.64	.58	3.70	.17
0. Values development	18	3	21	17	6	23	3.75	.62	3.66	.33
X. Critical analysis	28	12	40	28	18	46	3.83	.59	3.80	.30
V. Interest in learning	34	13	47	29	10	39	3.99	.54	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Commentary

The graph compares fine and applied arts classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

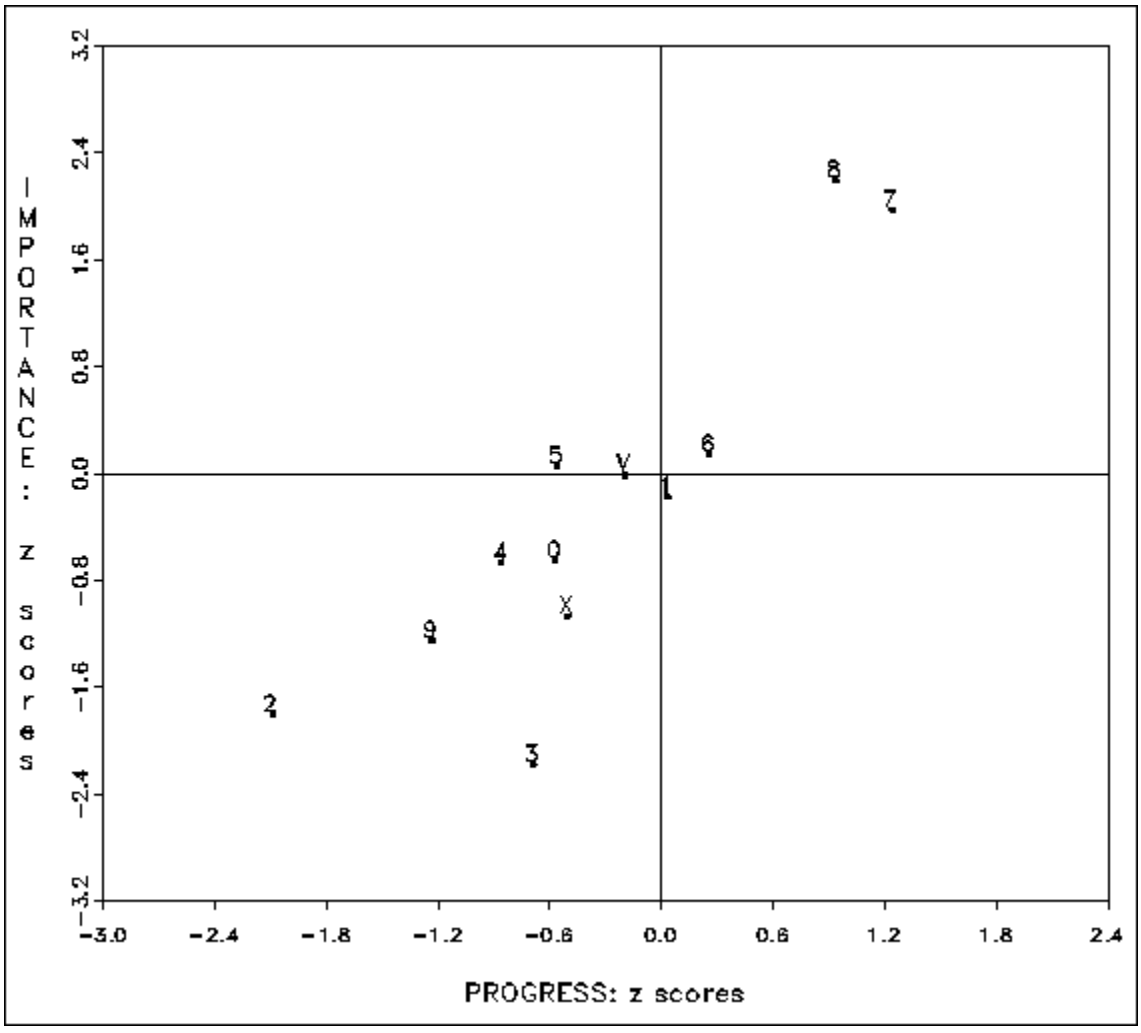
More than 60% of classes in this discipline stressed one or more of five objectives—1. Factual knowledge, 2. Principles and theories, 3. Applications, 4. Professional skills/viewpoints, and 6. Creative capacities. But, relative to other disciplines, emphasis was above average for only two of these—6. Creative capacities (the emphasis which most distinguished this discipline) and 4. Professional skills/viewpoints. Three other objectives were stressed more often in fine and applied arts than in most other disciplines—V. Increased interest in learning, 5. Team skills, and 7. Broad liberal education.

Progress ratings were above average on almost all objectives considered important or essential. Especially favorable results were found on the four objectives chosen with unusually high frequency in this discipline (6. Creative capacities, 7. Broad liberal education, V. Increased interest in learning, and 4. Professional skills/viewpoints).

Because only 405 classes used the Diagnostic Form, results for Part II are not provided.

Discipline 15: Foreign Language and Literature (1086 classes, 64 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	36	41	77	33	45	78	4.11	.45	4.10	.10
2. Principles and theories	33	17	50	35	39	74	3.82	.50	4.04	.11
3. Application of learning	25	13	38	39	34	73	3.95	.48	4.04	.14
4. Professional skill/views	22	17	39	31	25	56	3.89	.50	4.04	.18
5. Team skills	24	5	29	23	8	31	3.80	.60	3.92	.22
6. Creative capacities	20	8	28	15	11	26	3.71	.61	3.59	.48
7. Broad liberal education	40	27	67	17	10	27	4.15	.46	3.52	.51
8. Communication skills	27	60	87	27	19	46	3.97	.50	3.60	.39
9. Find and use resources	18	3	21	28	9	37	3.50	.59	3.70	.17
0. Values development	10	3	13	17	6	23	3.48	.70	3.66	.33
X. Critical analysis	18	7	25	28	18	46	3.65	.72	3.80	.30
V. Interest in learning	29	9	38	29	10	39	3.78	.50	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Commentary

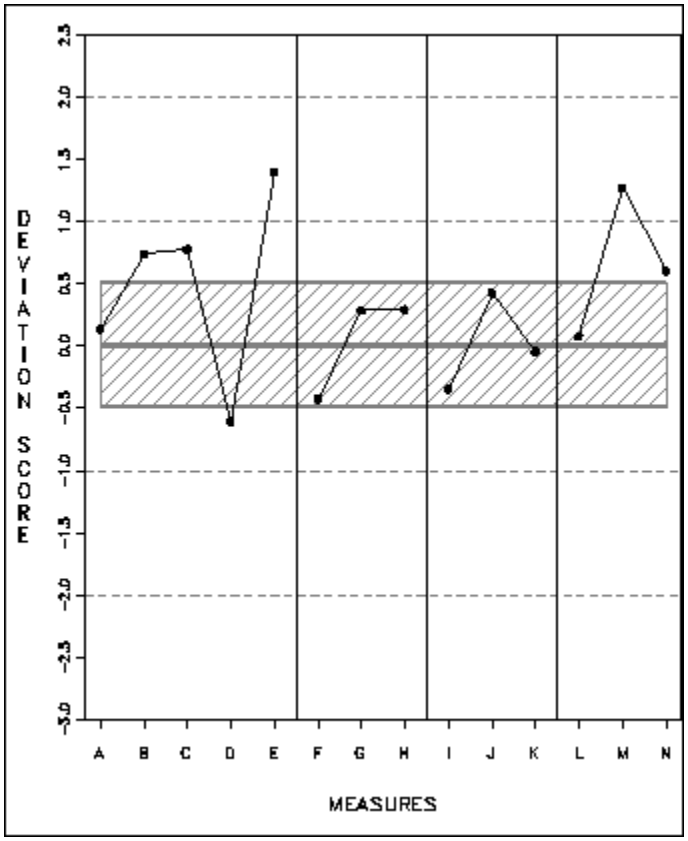
The graph compares foreign language and literature classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

More than 60% of the classes in this discipline stressed one or more of 7 of the objectives included in the IDEA system. The 4 that were cognitively oriented (1. Factual knowledge, 2. Principles and theories, 3. Applications, and 4. Professional skills/viewpoints), though commonly chosen as relevant to foreign language and literature classes, were selected much less frequently than in most other disciplines. Two of the other three (8. Communication skills and 7. Broad liberal education) were chosen more often in foreign language and literature classes than in 95% of all other classes.

For objectives that were relatively important, progress ratings were relatively high; and vice versa. Very high ratings were found on 8. Communication skills and 7. Broad liberal education; but very low progress was reported on 2. Principles and theories, an objective chosen relatively infrequently in this discipline.

Discipline 15: Foreign Language and Literature (666 classes, 51 institutions)
Part II: Other Ratings

	This Discipline		All Disciplines[11]	
	Mean	**s. d.**	**Mean**	**s. d.**
Teaching Approach				
A. Stimulate Interest	4.03	.45	4.01	.15
B. Foster Collaboration	3.91	.57	3.67	.32
C. Establish Rapport	4.14	.44	4.05	.11
D. Encourage Student Involvement	3.75	.53	3.91	.26
E. Structuring Class	4.33	.41	4.19	.10
Class Characteristics				
F. Amount of reading	3.03	.58	3.23	.46
G. Amount of other work	3.52	.50	3.45	.24
H. Difficulty	3.56	.41	3.47	.30
Student Characteristics				
I. Effort in class	3.53	.46	3.60	.20
J. Wanted course	3.44	.57	3.34	.24
K. Usually work hard	3.66	.30	3.66	.09
Global Outcomes				
L. Increased positive attitude	3.90	.57	3.88	.23
M. Excellent teacher	4.34	.58	4.20	.12
N. Excellent course	4.04	.56	3.94	.18



Commentary

Instruction in foreign language classes was characterized by clear communication of content and expectations (E), encouragement of student collaboration (B), and the establishment of positive student-teacher relationships (C); efforts to involve students in the instructional process (D) were below the "all disciplines" average. This pattern of approaches is related to progress ratings on both 6. Creative capacities and 8. Communication skills, two of the objectives frequently emphasized in this discipline.

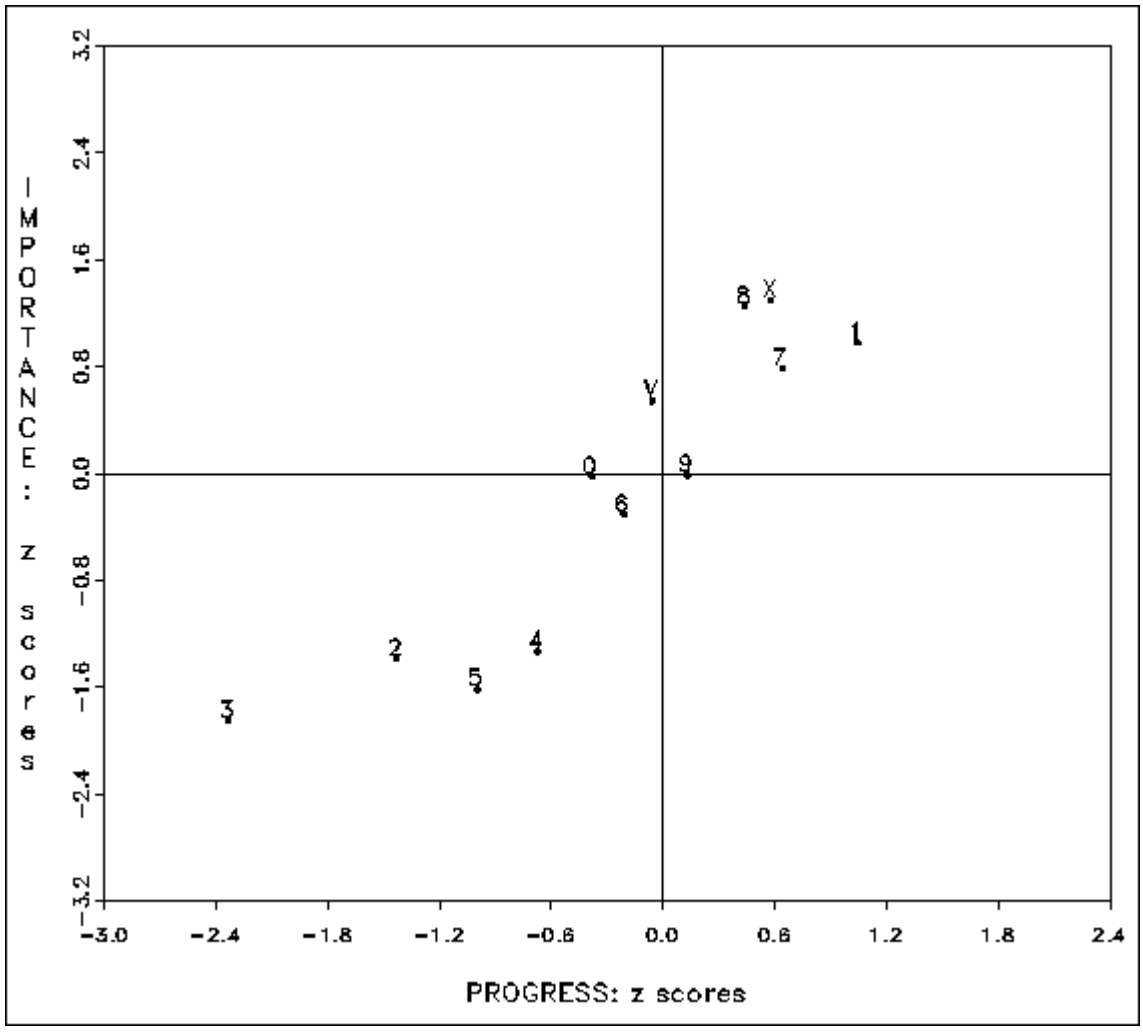
Although the amount of reading (F) was somewhat below the "all disciplines" average, the amount of other work (G) was slightly above average as was the rating of difficulty (H). Students were generally well motivated for these classes (J), but reported a below average amount of effort (I).

The three global outcome ratings were above average, distinctively so for M. Excellence of teacher. Ratings on this item are related to teaching approach *E. Structuring Classroom Experiences*, on which this discipline was rated especially high.

[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Discipline 16: History (1058 classes, 72 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	28	65	93	33	45	78	4.21	.42	4.10	.10
2. Principles and theories	31	25	56	35	39	74	3.89	.47	4.04	.11
3. Application of learning	31	12	43	39	34	73	3.72	.52	4.04	.14
4. Professional skill/views	20	5	25	31	25	56	3.92	.53	4.04	.18
5. Team skills	9	2	11	23	8	31	3.71	.63	3.92	.22
6. Creative capacities	15	3	18	15	11	26	3.48	.65	3.59	.48
7. Broad liberal education	30	12	42	17	10	27	3.85	.55	3.52	.51
8. Communication skills	46	21	67	27	19	46	3.78	.54	3.60	.39
9. Find and use resources	25	9	34	28	9	37	3.73	.58	3.70	.17
0. Values development	19	3	22	17	6	23	3.54	.61	3.66	.33
X. Critical analysis	37	32	69	28	18	46	3.98	.51	3.80	.30
V. Interest in learning	32	10	42	29	10	39	3.80	.53	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Commentary

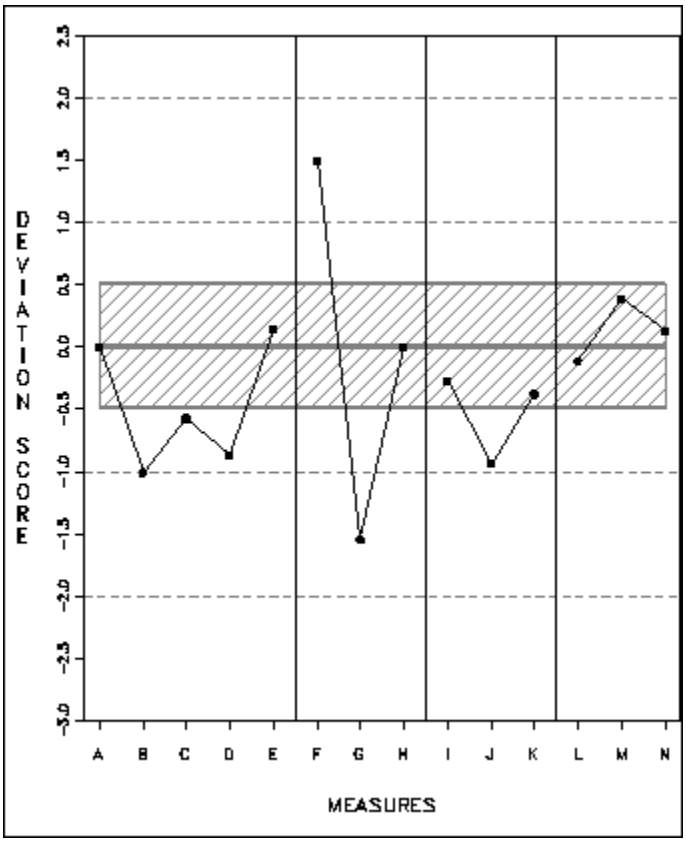
The graph compares history classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

Over 80% of history classes emphasized 1. Factual knowledge and over half identified X. Critical analysis, 8. Communication skills, and/or 2. Principles and theories as relevant. All but 2. Principles and theories were chosen much more frequently in this discipline than for the "all disciplines" group. Broad liberal education (7), though chosen as "important" or "essential" in only 43% of history classes, was rated as much more important in this discipline than in all disciplines combined. Except for 1. Factual knowledge, this discipline gave less emphasis to cognitively-oriented objectives than did most other disciplines; the same was true of 5. Team skills.

Progress ratings corresponded closely with importance ratings. Compared to other classes, students in history classes rated their progress as above average on factual knowledge, broad liberal education, critical analysis, and communication skills. But ratings were well below the "all disciplines" average on the four objectives which, on a relative basis, were selected less frequently (3. Applications, 2. Principles and theories, 5. Team skills, and 4. Professional skills/viewpoints).

Discipline 16: History (634 classes, 58 institutions)
Part II: Other Ratings

	This Discipline		All Disciplines[11]	
	Mean	**s. d.**	**Mean**	**s. d.**
Teaching Approach				
A. Stimulate Interest	4.01	.47	4.01	.15
B. Foster Collaboration	3.35	.78	3.67	.32
C. Establish Rapport	3.99	.46	4.05	.11
D. Encourage Student Involvement	3.69	.56	3.91	.26
E. Structuring Class	4.21	.41	4.19	.10
Class Characteristics				
F. Amount of reading	3.91	.51	3.23	.46
G. Amount of other work	3.08	.53	3.45	.24
H. Difficulty	3.47	.40	3.47	.30
Student Characteristics				
I. Effort in class	3.54	.44	3.60	.20
J. Wanted course	3.12	.45	3.34	.24
K. Usually work hard	3.63	.26	3.66	.09
Global Outcomes				
L. Increased positive attitude	3.86	.55	3.88	.23
M. Excellent teacher	4.24	.57	4.20	.12
N. Excellent course	3.96	.56	3.94	.18



Commentary

History instruction was rated about average in the clarity of content and expectations (E) and in inducing student excitement about the subject (A). On the other hand, well below average ratings were obtained on three other approaches—*B. Fostering student collaboration*, *D. Encouraging student involvement*, and establishing positive student-faculty relationships (C). Despite these ratings, overall ratings of teacher excellence (M) were slightly above average. Ratings on this item are positively influenced by the teaching approaches that were appraised most favorably; but, because these were no higher than the average for all disciplines, the positive impression of the instructor probably reflects student satisfaction with the progress they made on the objectives most emphasized in this discipline.

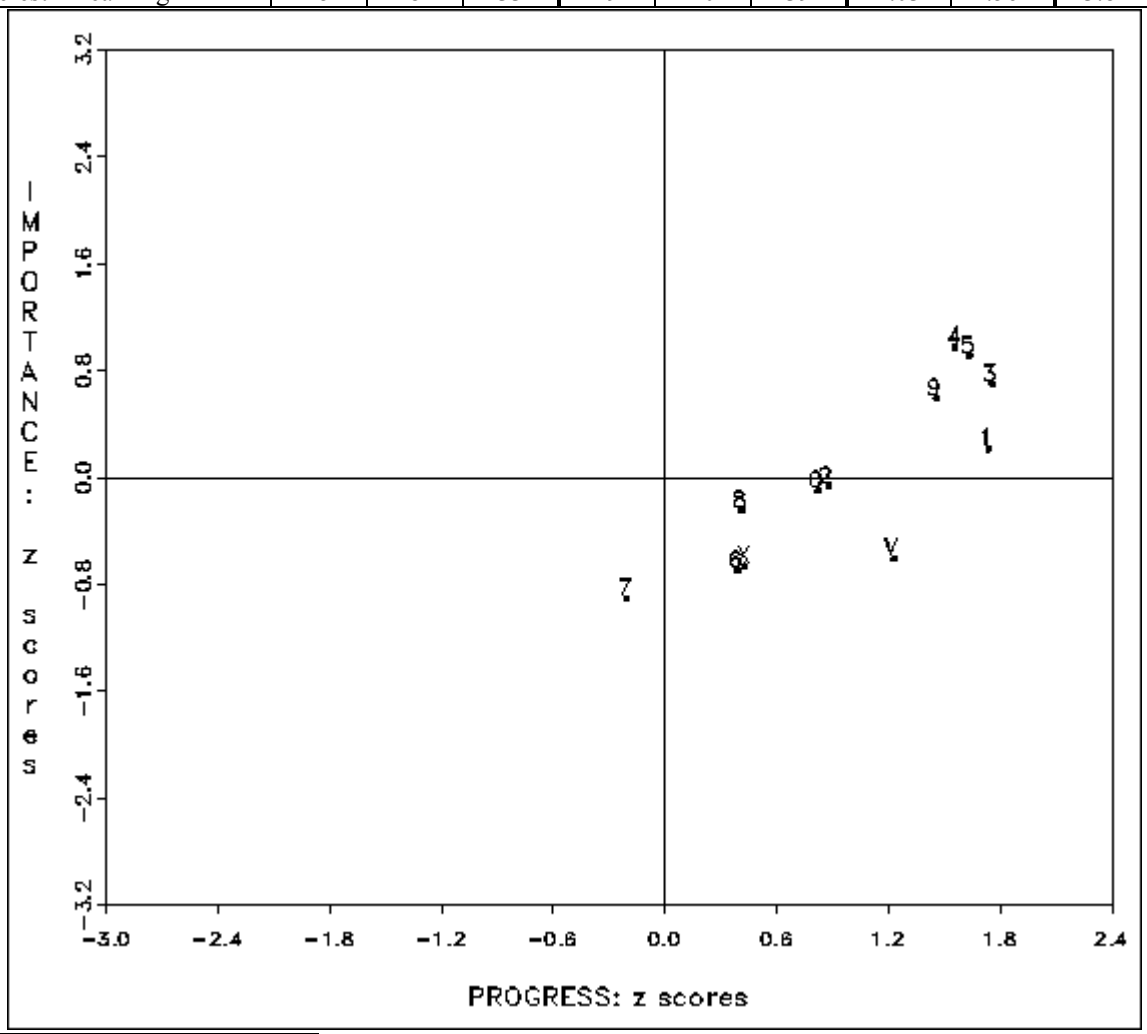
History classes required an unusual amount of reading (F) but little in the way of other work (G). They were considered about average in difficulty (H).

Enrollees were generally not well motivated to take these classes (J). When considered with the generally below average ratings on the teaching approaches scales, it is surprising that ratings as high as "average" were obtained on overall course excellence (N) and increased appreciation for the discipline (L).

[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Discipline 17: Health Professions/Related Sciences (1412 classes, 44 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	24	59	83	33	45	78	4.28	.48	4.10	.10
*2. Principles and theories	38	37	75	35	39	74	4.14	.48	4.04	.11
3. Application of learning	38	44	82	39	34	73	4.28	.48	4.04	.14
4. Professional skill/views	35	40	75	31	25	56	4.32	.47	4.04	.18
5. Team skills	28	10	38	23	8	31	4.28	.47	3.92	.22
**6. Creative capacities	7	2	9	15	11	26	3.78	.63	3.59	.48
7. Broad liberal education	7	2	9	17	10	27	3.42	.68	3.52	.51
8. Communication skills	31	5	36	27	19	46	3.77	.61	3.60	.39
9. Find and use resources	31	9	40	28	9	37	3.94	.54	3.70	.17
*0. Values development	14	7	21	17	6	23	3.93	.64	3.66	.33
**X. Critical analysis	21	11	32	28	18	46	3.93	.56	3.80	.30
V. Interest in learning	25	8	33	29	10	39	4.03	.56	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.
* The plots for these measures overlap; only the first is shown on the graph.
** The plots for these measures overlap; only the first is shown on the graph.

Commentary

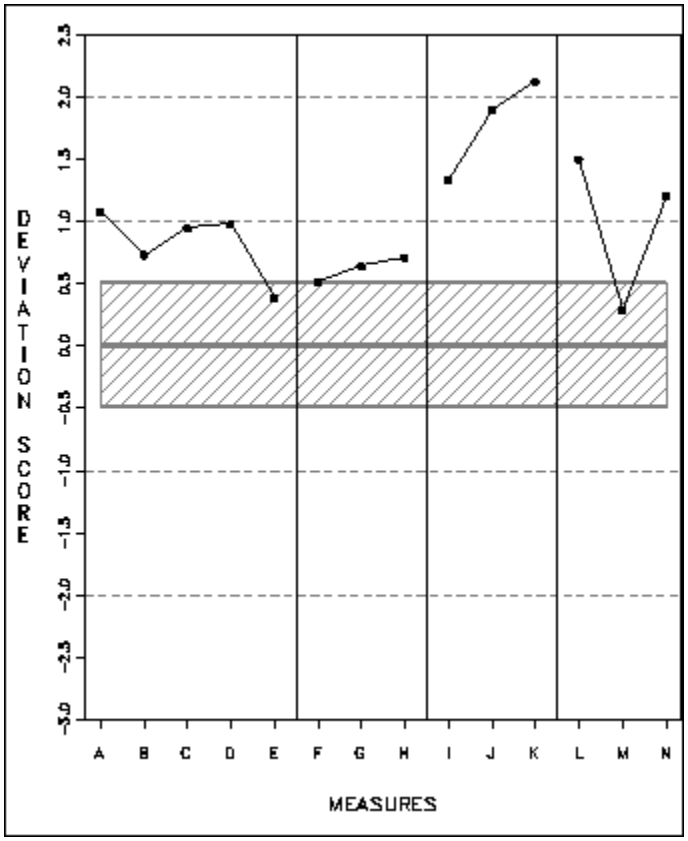
The graph compares health professions/related sciences classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

Over 70% of classes in this discipline stressed one or more of the four cognitively-oriented objectives (1. Factual knowledge, 2. Principles and theories, 3. Applications, and 4. Professional skills/viewpoints); no other objective was rated important or essential in more than 40% of health professions classes. Compared to all classes in the IDEA database, the stress on the two professionally-oriented objectives (3 and 4) was well above average; the same was true of 5. Team skills and 9. Finding and using resources although only a minority of classes emphasized these objectives.

Progress ratings were well above the "all disciplines" average on all objectives except 7. Broad liberal education, an objective relevant in less than 10% of classes in this discipline. Progress ratings were highest on the objectives that most distinguished health professions/related sciences from other disciplines in terms of their relative importance.

Discipline 17: Health Professions/Related Sciences (1150 classes, 35 institutions)
Part II: Other Ratings

	This Discipline		All Disciplines[11]	
	Mean	**s. d.**	**Mean**	**s. d.**
Teaching Approach				
A. Stimulate Interest	4.17	.48	4.01	.15
B. Foster Collaboration	3.91	.58	3.67	.32
C. Establish Rapport	4.16	.50	4.05	.11
D. Encourage Student Involvement	4.16	.47	3.91	.26
E. Structuring Class	4.23	.52	4.19	.10
Class Characteristics				
F. Amount of reading	3.46	.70	3.23	.46
G. Amount of other work	3.61	.56	3.45	.24
H. Difficulty	3.69	.62	3.47	.30
Student Characteristics				
I. Effort in class	3.86	.64	3.60	.20
J. Wanted course	3.80	.59	3.34	.24
K. Usually work hard	3.85	.32	3.66	.09
Global Outcomes				
L. Increased positive attitude	4.23	.52	3.88	.23
M. Excellent teacher	4.23	.65	4.20	.12
N. Excellent course	4.15	.59	3.94	.18



Commentary

Regardless of the type of measure displayed by this graph—teaching approach, course characteristics, student characteristics, or global outcomes—scores for the health professions/related sciences discipline were well above the average for all disciplines.

Of the 5 measures of teaching approach, this discipline's average was especially high on *A. Stimulating Student Interest, C. Establishing Rapport,* and *D. Encouraging Student Involvement*—approaches related closely to progress on the objectives it emphasized more than most other disciplines (see previous graph).

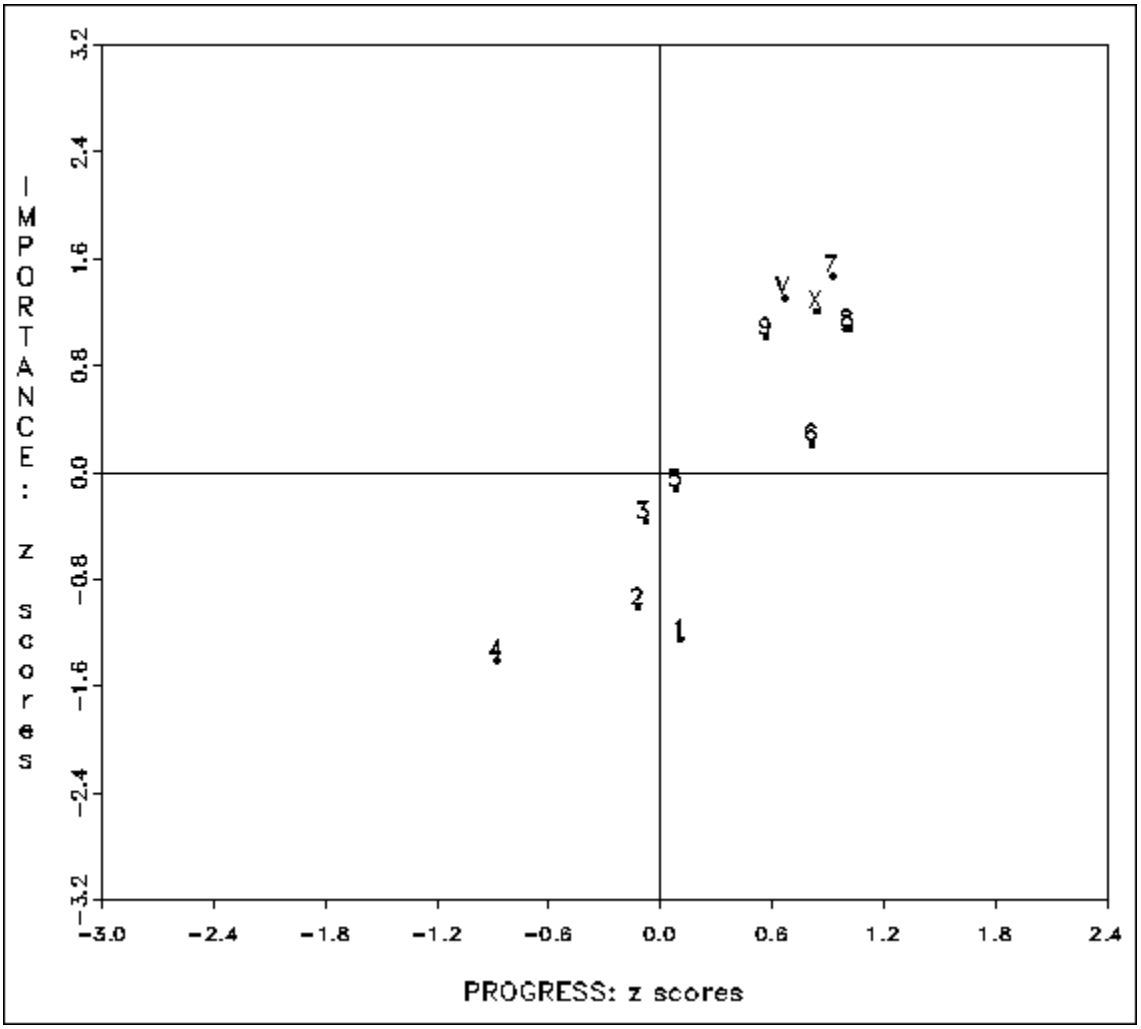
Classes were considered quite demanding in terms of F. Reading, G. Amount of other work, and H. Difficulty. But the level of student motivation was extremely high (J and, indirectly K) and students reported working harder in these classes than in others they have taken (I).

Overall, students reported a substantial increased appreciation for the field of study and gave high overall ratings to the course. Overall ratings of the excellence of the teacher were only slightly above average.

[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Discipline 18: Liberal Arts/General Studies/Humanities (1720 classes, 74 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	30	33	63	33	45	78	4.11	.48	4.10	.10
2. Principles and theories	31	31	62	35	39	74	4.03	.47	4.04	.11
3. Application of learning	38	28	66	39	34	73	4.03	.49	4.04	.14
4. Professional skill/views	15	8	23	31	25	56	3.89	.54	4.04	.18
5. Team skills	21	6	27	23	8	31	3.94	.57	3.92	.22
6. Creative capacities	18	11	29	15	11	26	3.98	.56	3.59	.48
7. Broad liberal education	30	26	56	17	10	27	3.99	.60	3.52	.51
[*]8. Communication skills	32	31	63	27	19	46	4.00	.54	3.60	.39
9. Find and use resources	29	15	44	28	9	37	3.80	.50	3.70	.17
[*]0. Values development	25	13	38	17	6	23	3.99	.57	3.66	.33
X. Critical analysis	34	33	67	28	18	46	4.06	.51	3.80	.30
V. Interest in learning	34	15	49	29	10	39	3.93	.52	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.
[*] The plots for these measures overlap; only the first is shown on the graph.

Commentary

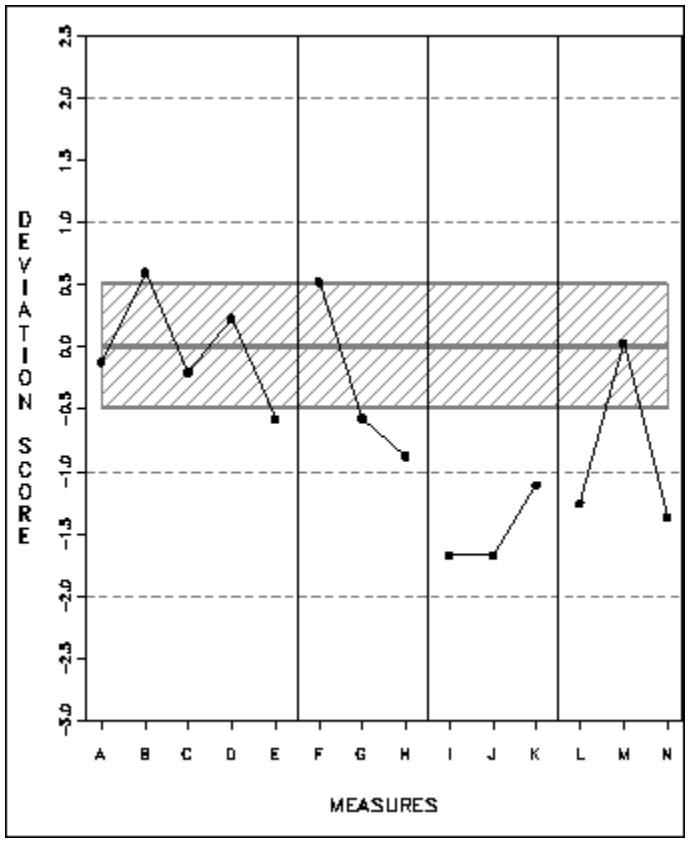
The graph compares liberal arts/general studies/humanities classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

Perhaps because this discipline includes a wide variety of "general education" classes, none of the twelve objectives covered by the IDEA system were considered "important" or "essential" by more than 69% of such classes; but a majority of classes stressed at least one of six objectives—1. Factual knowledge, 2. Principles and theories, 3. Applications, 8. Communication skills, X. Critical analysis, and 7. Broad liberal education. When compared with importance ratings for "all disciplines," those in this discipline were relatively low on the two objectives related to basic cognitive development (1 and 2) and on 4. Professional skills/viewpoints; but they were much higher on other objectives, including three that were commonly stressed in this discipline (7, 8, and X).

Progress ratings paralleled relative importance ratings. They were highest on the five objectives that this discipline stressed much more than did other disciplines. And they were somewhat below average on the two basic cognitive objectives (1 and 2) and on 4. Professional skills and viewpoints.

Discipline 18: Liberal Arts/General Studies/Humanities (790 classes, 59 institutions)
Part II: Other Ratings

	This Discipline		All Disciplines[11]	
	Mean	**s. d.**	**Mean**	**s. d.**
Teaching Approach				
A. Stimulate Interest	3.99	.49	4.01	.15
B. Foster Collaboration	3.87	.65	3.67	.32
C. Establish Rapport	4.03	.46	4.05	.11
D. Encourage Student Involvement	3.97	.51	3.91	.26
E. Structuring Class	4.14	.46	4.19	.10
Class Characteristics				
F. Amount of reading	3.47	.79	3.23	.46
G. Amount of other work	3.31	.50	3.45	.24
H. Difficulty	3.21	.56	3.47	.30
Student Characteristics				
I. Effort in class	3.27	.54	3.60	.20
J. Wanted course	2.94	.59	3.34	.24
K. Usually work hard	3.57	.29	3.66	.09
Global Outcomes				
L. Increased positive attitude	3.59	.65	3.88	.23
M. Excellent teacher	4.20	.62	4.20	.12
N. Excellent course	3.70	.69	3.94	.18



Commentary

The "teaching approach" profile of this discipline featured above average scores on *B. Fostering Student Collaboration* and *D. Encouraging Student Involvement* but a below average score on *E. Structuring Classroom Experiences*. Teachers appeared to place much more stress on giving students responsibility for learning than on clearly communicating course content and expectations.

These courses required an above average amount of reading (F), but less "other work" (G) than most classes. They were also considered less difficult (H) than most classes.

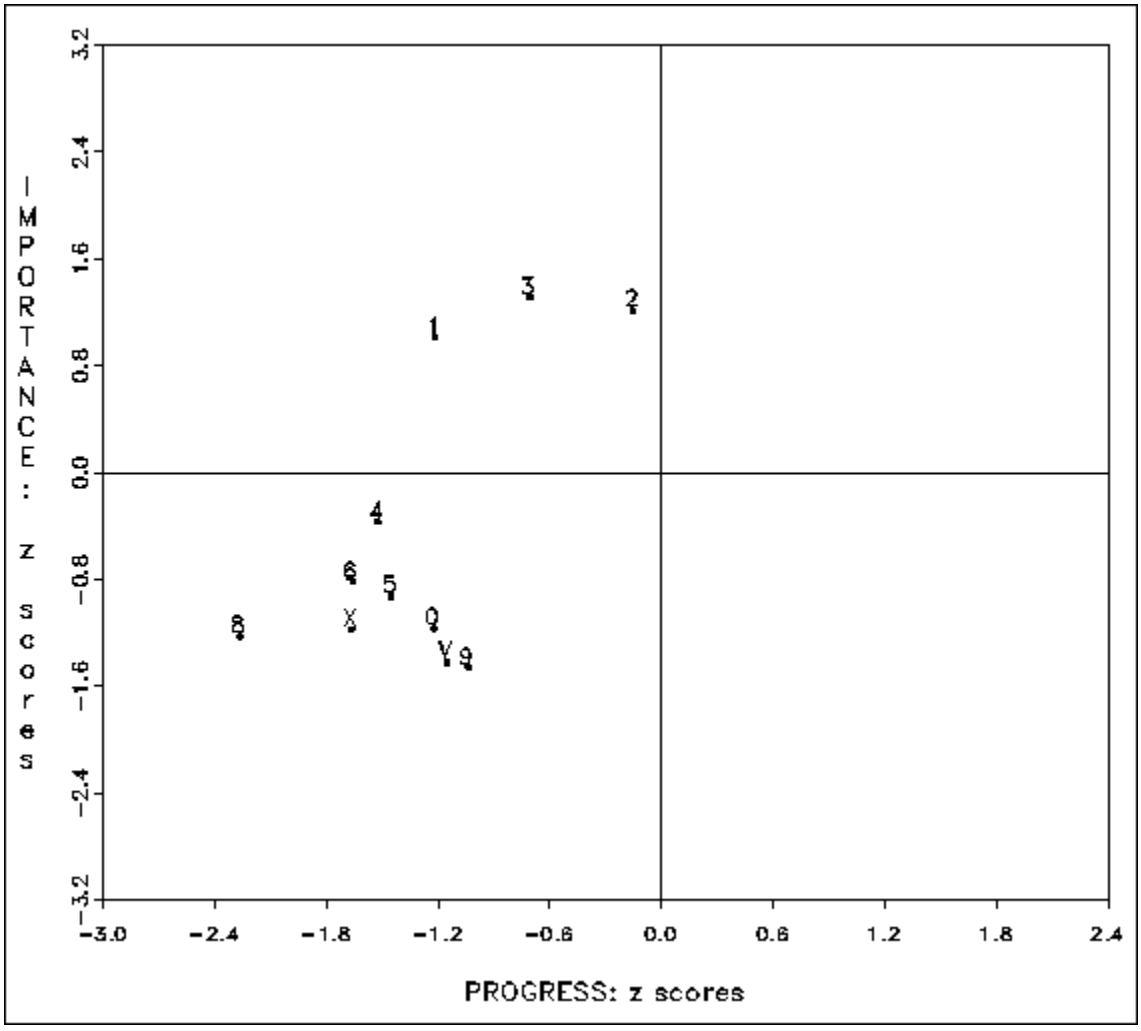
Student motivation was extremely low (J and, indirectly, K) which, coupled with low ratings of difficulty, may account for an effort rating (I) that was well below average.

Although the overall rating of the teacher was average, global ratings of course excellence (N) and increased appreciation for the field of study (L) were substantially below the average for all disciplines. Given the utilitarian nature of the academic motivation of many students, it is not surprising that global ratings were low for classes in this discipline.

[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Discipline 19: Mathematics/Statistics (1895 classes, 79 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	29	65	94	33	45	78	3.98	.47	4.10	.10
2. Principles and theories	37	57	94	35	39	74	4.03	.44	4.04	.11
3. Application of learning	49	43	92	39	34	73	3.95	.47	4.04	.14
4. Professional skill/views	33	13	46	31	25	56	3.77	.51	4.04	.18
5. Team skills	16	2	18	23	8	31	3.61	.69	3.92	.22
*6. Creative capacities	6	1	7	15	11	26	2.78	.75	3.59	.48
*7. Broad liberal education	10	2	12	17	10	27	2.67	.74	3.52	.51
8. Communication skills	14	2	16	27	19	46	2.72	.74	3.60	.39
9. Find and use resources	16	4	20	28	9	37	3.53	.58	3.70	.17
0. Values development	4	1	5	17	6	23	3.27	.69	3.66	.33
X. Critical analysis	17	6	23	28	18	46	3.30	.63	3.80	.30
V. Interest in learning	22	5	27	29	10	39	3.61	.56	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.
* The plots for these measures overlap; only the first is shown on the graph.

Commentary

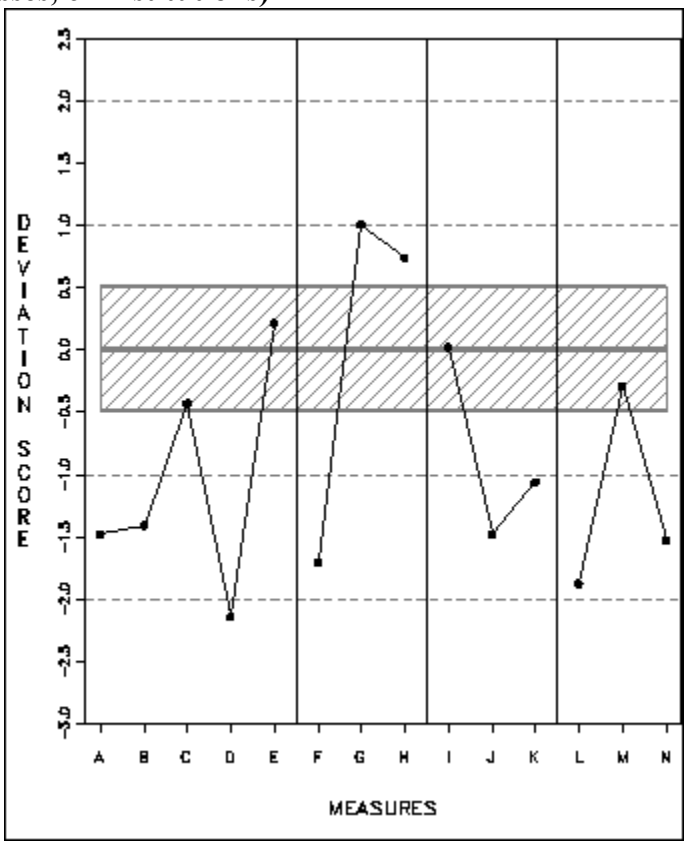
The graph compares mathematics/statistics classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

More than 90% of the classes in this discipline focused on one or more of three cognitive objectives—1. Factual knowledge, 2. Principles and theories, and 3. Applications. No other objective was stressed in a majority of mathematics/statistics classes. When compared with other disciplines, the emphasis given to various objectives was well above average for the three most stressed objectives and below average on all others.

All ratings of progress were below the average for all disciplines, although that for 2. Principles and theories was just slightly so. Students consistently reported that they learned less in these classes than in most others they have taken. Nonetheless, on an absolute basis, progress ratings on the most relevant objectives were 3.98, 4.03, and 3.95. Since these ratings were made on a 5-point scale, they support that classes in mathematics/statistics generally produced satisfactory outcomes.

Discipline 19: Mathematics/Statistics (1106 classes, 62 institutions)
Part II: Other Ratings

	This Discipline		All Disciplines[11]	
	Mean	**s. d.**	**Mean**	**s. d.**
Teaching Approach				
A. Stimulate Interest	3.78	.50	4.01	.15
B. Foster Collaboration	3.22	.71	3.67	.32
C. Establish Rapport	4.00	.47	4.05	.11
D. Encourage Student Involvement	3.36	.62	3.91	.26
E. Structuring Class	4.21	.45	4.19	.10
Class Characteristics				
F. Amount of reading	2.45	.49	3.23	.46
G. Amount of other work	3.70	.42	3.45	.24
H. Difficulty	3.70	.51	3.47	.30
Student Characteristics				
I. Effort in class	3.60	.46	3.60	.20
J. Wanted course	2.99	.52	3.34	.24
K. Usually work hard	3.57	.28	3.66	.09
Global Outcomes				
L. Increased positive attitude	3.45	.58	3.88	.23
M. Excellent teacher	4.16	.66	4.20	.12
N. Excellent course	3.67	.57	3.94	.18



Commentary

Except for the teaching approach stressing class organization and planning (E), teachers of mathematics/statistics classes appeared to be notably unsuccessful in establishing learning climates generally associated with student learning. This was especially true of approaches related to engendering student interest (A), eliciting student participation (D), and encouraging collaboration/ team work (B). Since progress ratings on the three objectives most stressed by this discipline were closely related to scores on *A. Stimulating Student Interest*, but inversely to scores on *B. Fostering Student Collaboration*, improvement in relevant progress ratings might best be encouraged by directing teaching efforts to stimulating more student interest and curiosity; efforts to increase student collaboration may have an adverse affect on relevant progress ratings in this discipline.

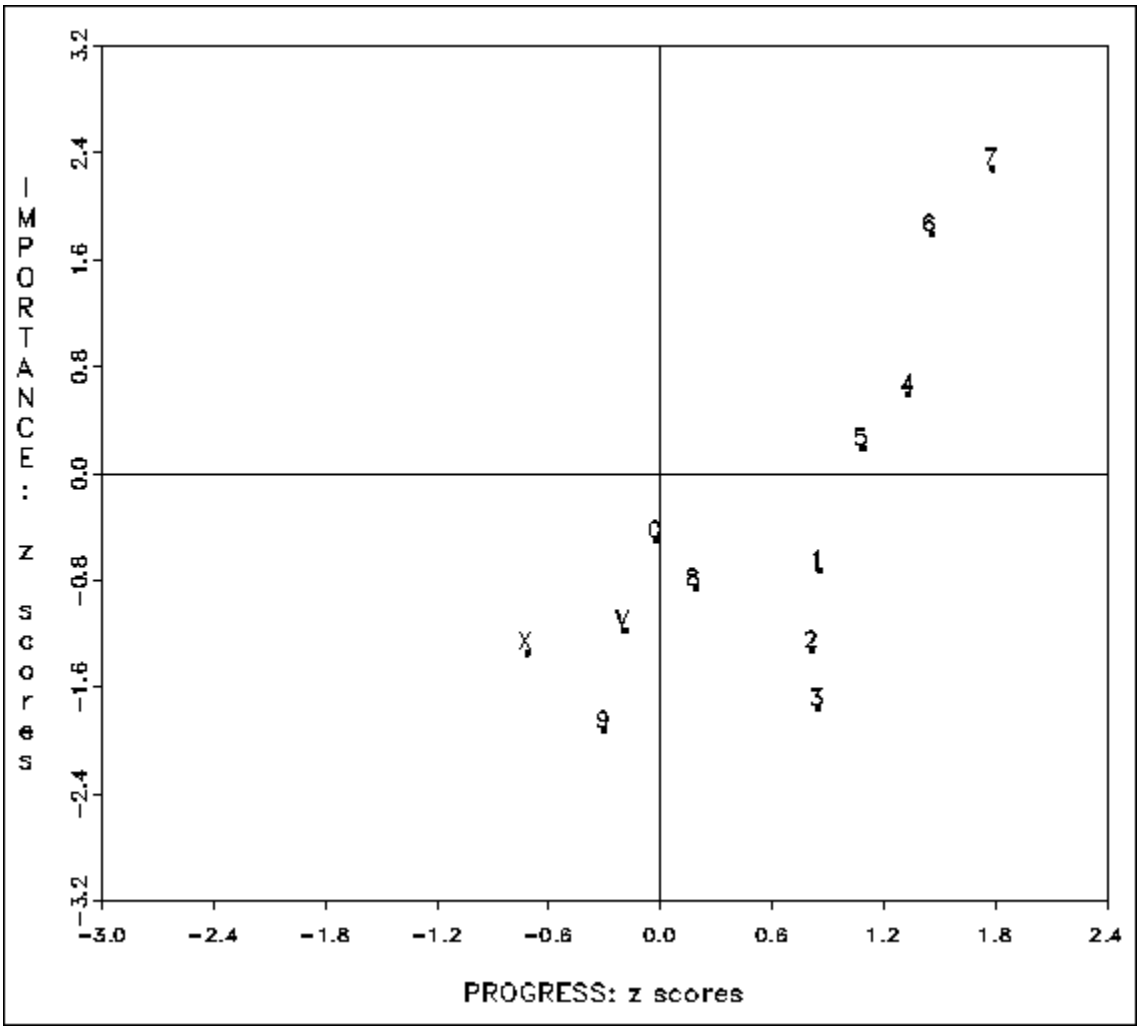
Classes in this discipline were distinctive in terms of their low emphasis on reading (F), high demands for other kinds of work (G; presumably, heavy homework assignments as well as stress on understanding complex matters such as the derivation of formulas or problem solving), and a high difficulty rating (H).

Enrollees were generally poorly motivated (J and, indirectly, K) which may explain why, despite the discipline's high level of difficulty, effort ratings (I) were only average. Low motivation, combined with poor success in stimulating much student interest/curiosity (A), probably accounts for the relatively low overall ratings of both the course (N) and of student appreciation for the discipline (L). The overall rating of the teacher (M) was only slightly below average; this global rating is related to teaching approach E (clear structuring of class content and expectations), the only approach where scores in mathematics/statistics were above average.

[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Discipline 20: Music (790 classes, 54 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	34	36	70	33	45	78	4.19	.46	4.10	.10
2. Principles and theories	32	25	57	35	39	74	4.13	.50	4.04	.11
3. Application of learning	23	22	45	39	34	73	4.16	.52	4.04	.14
4. Professional skill/views	27	39	66	31	25	56	4.28	.47	4.04	.18
5. Team skills	19	12	31	23	8	31	4.16	.68	3.92	.22
6. Creative capacities	24	40	64	15	11	26	4.29	.53	3.59	.48
7. Broad liberal education	33	40	73	17	10	27	4.43	.40	3.52	.51
8. Communication skills	18	6	24	27	19	46	3.68	.59	3.60	.39
9. Find and use resources	11	4	15	28	9	37	3.65	.77	3.70	.17
0. Values development	12	2	14	17	6	23	3.66	.67	3.66	.33
X. Critical analysis	15	4	19	28	18	46	3.59	.69	3.80	.30
V. Interest in learning	23	6	29	29	10	39	3.78	.58	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Commentary

The graph compares music classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

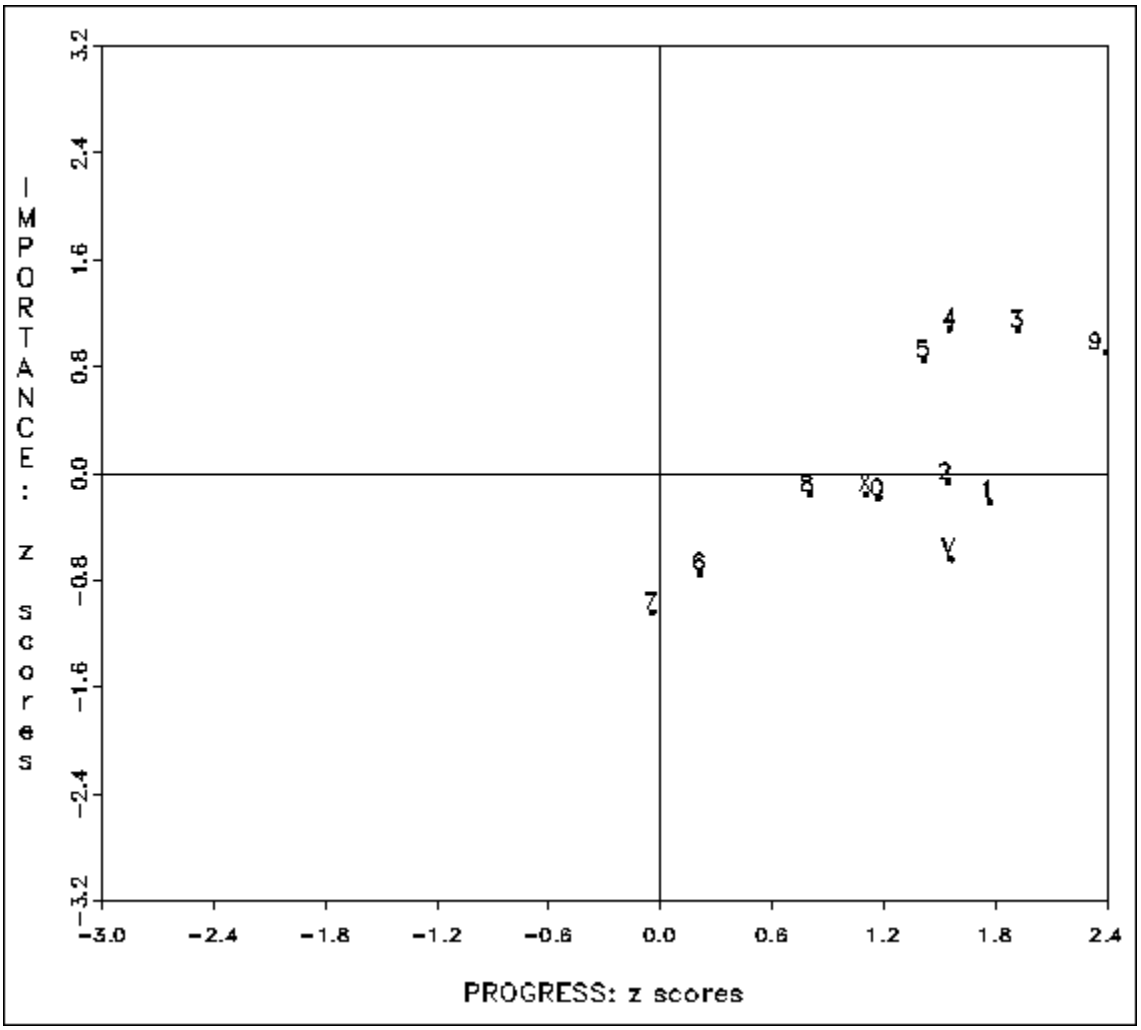
About two-thirds of music classes emphasized one or more of four objectives—1. Factual knowledge, 4. Professional skills/viewpoints, 6. Creative capacities, and 7. Broad liberal education. When compared with classes in other disciplines, music placed much more emphasis on 6 and 7, but less emphasis on 1.

Progress ratings tended to be generally high in this discipline. The only exceptions were on objectives that were rarely chosen as important or essential. Ratings on 7. Broad liberal education, 6. Creative capacities, 4. Professional skills/viewpoints, and 5. Team skills were all substantially above the average for all disciplines.

Because only 487 classes used the Diagnostic Form, results for Part II are not reported.

Discipline 21: Nursing (1069 classes, 38 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	28	49	77	33	45	78	4.28	.45	4.10	.10
2. Principles and theories	36	39	75	35	39	74	4.21	.44	4.04	.11
3. Application of learning	35	53	88	39	34	73	4.31	.45	4.04	.14
4. Professional skill/views	32	45	77	31	25	56	4.32	.46	4.04	.18
5. Team skills	30	8	38	23	8	31	4.23	.43	3.92	.22
6. Creative capacities	7	1	8	15	11	26	3.69	.60	3.59	.48
7. Broad liberal education	5	1	6	17	10	27	3.50	.54	3.52	.51
8. Communication skills	30	8	38	27	19	46	3.92	.52	3.60	.39
9. Find and use resources	32	11	43	28	9	37	4.10	.44	3.70	.17
0. Values development	16	4	20	17	6	23	4.05	.46	3.66	.33
X. Critical analysis	27	15	42	28	18	46	4.14	.47	3.80	.30
V. Interest in learning	24	9	33	29	10	39	4.09	.48	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Commentary

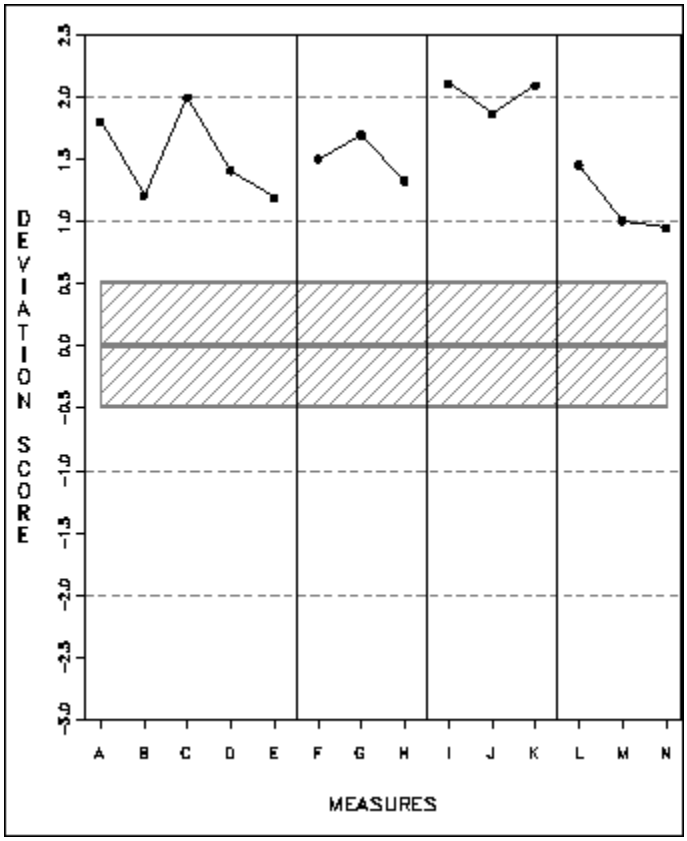
The graph compares nursing classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

In over 70% of nursing classes, one or more of the four cognitively-oriented objectives was rated as important or essential—1. Factual knowledge, 2. Principles and theories, 3. Applications, and 4. Professional skills and viewpoints. Compared to other classes, the amount of stress on the last two of these was well above average. The degree of emphasis on 5. Team skills and 9. Finding and using resources, although not high in an absolute sense, was also well above the average for all disciplines.

Progress ratings were relatively high on most objectives, although only average on two objectives infrequently chosen for nursing classes: 6. Creative capacities and 7. Broad liberal education. For all of the discipline's most important objectives (on either an absolute or relative basis), average progress ratings were extremely high.

Discipline 21: Nursing (828 classes, 33 institutions)
Part II: Other Ratings

	This Discipline		All Disciplines[11]	
	Mean	**s. d.**	**Mean**	**s. d.**
Teaching Approach				
A. Stimulate Interest	4.28	.49	4.01	.15
B. Foster Collaboration	4.07	.57	3.67	.32
C. Establish Rapport	4.28	.48	4.05	.11
D. Encourage Student Involvement	4.27	.47	3.91	.26
E. Structuring Class	4.31	.50	4.19	.10
Class Characteristics				
F. Amount of reading	3.92	.71	3.23	.46
G. Amount of other work	3.87	.56	3.45	.24
H. Difficulty	3.88	.65	3.47	.30
Student Characteristics				
I. Effort in class	4.01	.64	3.60	.20
J. Wanted course	3.79	.65	3.34	.24
K. Usually work hard	3.85	.28	3.66	.09
Global Outcomes				
L. Increased positive attitude	4.22	.52	3.88	.23
M. Excellent teacher	4.31	.63	4.20	.12
N. Excellent course	4.10	.59	3.94	.18



Commentary

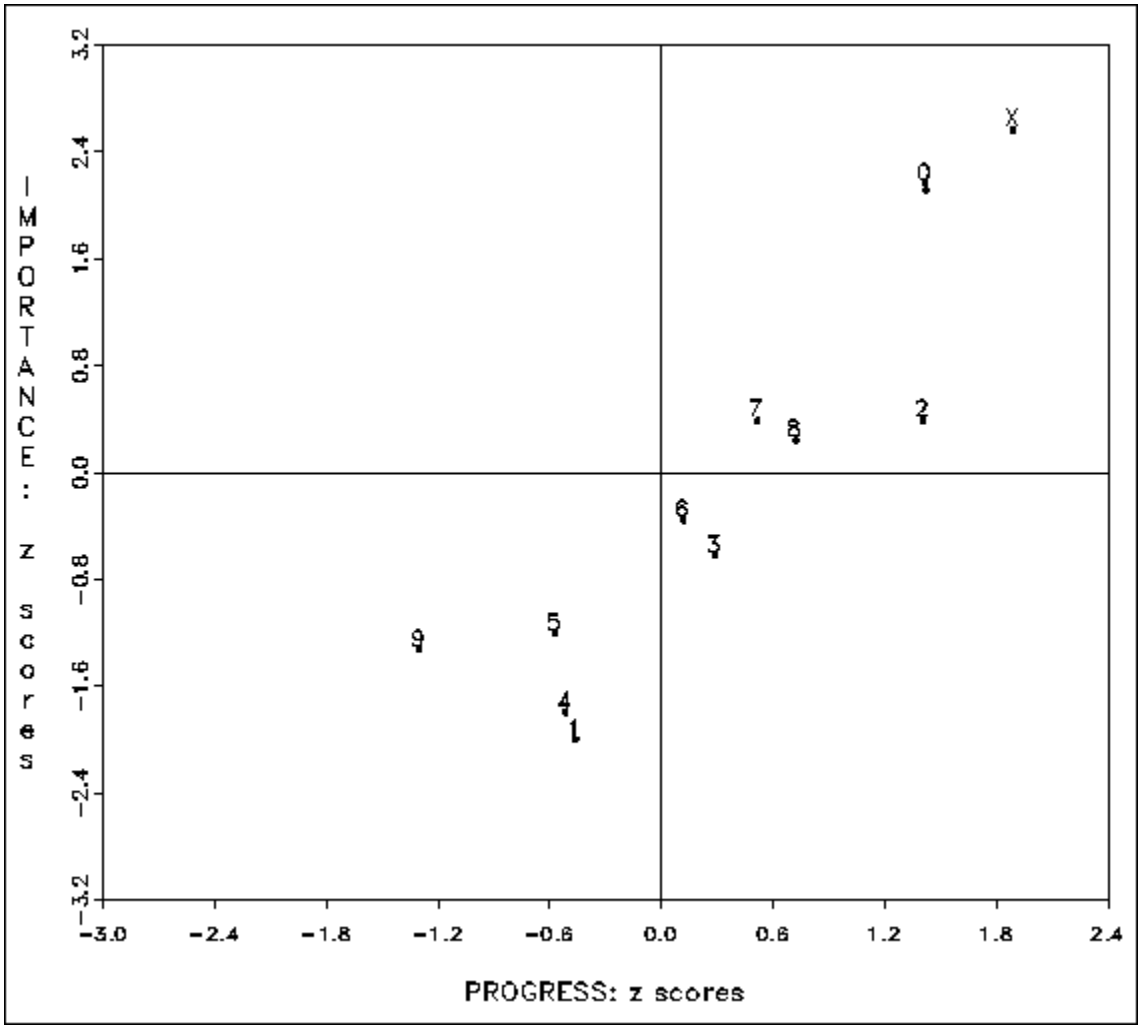
The overall rating of teaching excellence (M) was well above average. This probably reflects the very high scores obtained on all five of the "teaching approach" scales (A-E) as well as high progress ratings (see previous graph). Nursing instructors were successful in establishing a highly positive learning environment that aroused student interest, stressed teamwork, encouraged student involvement, promoted student-faculty rapport, and clearly communicated course content and expectations.

Nursing classes were rated as very demanding. Both amount of reading (F) and of other work (G) were well above the "all disciplines" average, as was the rating of course difficulty (H). However, student motivation was exceptionally high (J and, indirectly, K) and students reported working very hard (I). Coupled with high ratings on instructional approaches, these results are consistent with the generally high ratings of progress, high overall ratings of the course (N), and high ratings of increased appreciation for the field of study (L).

[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Discipline 22: Philosophy (651 classes, 52 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	36	15	51	33	45	78	4.06	.49	4.10	.10
2. Principles and theories	36	46	82	35	39	74	4.19	.43	4.04	.11
3. Application of learning	35	27	62	39	34	73	4.08	.50	4.04	.14
4. Professional skill/views	12	3	15	31	25	56	3.95	.54	4.04	.18
5. Team skills	14	1	15	23	8	31	3.80	.68	3.92	.22
6. Creative capacities	14	3	17	15	11	26	3.64	.62	3.59	.48
7. Broad liberal education	22	12	34	17	10	27	3.78	.58	3.52	.51
8. Communication skills	36	10	46	27	19	46	3.89	.50	3.60	.39
9. Find and use resources	17	4	21	28	9	37	3.49	.58	3.70	.17
*0. Values development	34	22	56	17	6	23	4.13	.48	3.66	.33
X. Critical analysis	30	64	94	28	18	46	4.37	.36	3.80	.30
*V. Interest in learning	39	16	55	29	10	39	4.06	.46	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.
* The plots for these measures overlap; only the first is shown on the graph.

Commentary

The graph compares philosophy classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

Over 90% of philosophy classes rated X. Critical analysis as an important or essential objective; no other discipline gave so much emphasis to this objective. Over 80% of classes stressed 2. Principles and theories, but this was only about average for all disciplines combined. Over half of all philosophy classes rated 0. Values development as a relevant objective; except for religion, no other discipline stressed this objective so much.

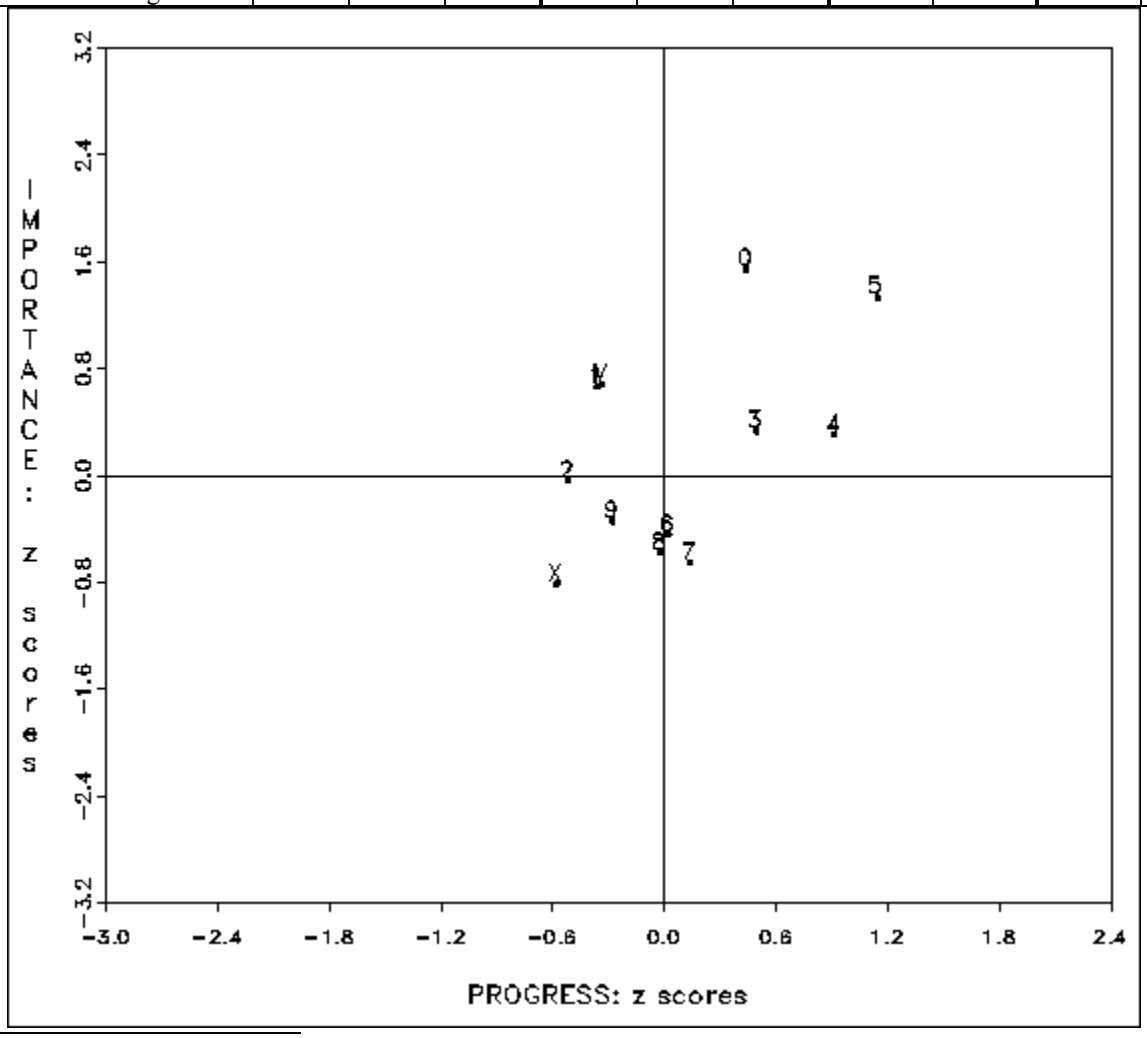
Progress ratings were substantially above average on 0. Values development and X. Critical analysis, both of which distinguished philosophy from other disciplines. They were also very high on 2. Principles and theories and somewhat above average on both 7. Broad liberal education and 8. Communication skills. The only below average progress ratings were on objectives that this discipline stressed infrequently.

Because only 348 classes used the Diagnostic Form, results for Part II are not reported.

Discipline 23: Physical Education/Health/Safety Education (1315 classes, 51 institutions)

Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
*1. Factual knowledge	38	51	89	33	45	78	4.07	.53	4.10	.10
2. Principles and theories	44	31	75	35	39	74	3.99	.53	4.04	.11
3. Application of learning	44	33	77	39	34	73	4.11	.49	4.04	.14
4. Professional skill/views	29	31	60	31	25	56	4.20	.47	4.04	.18
5. Team skills	30	13	43	23	8	31	4.17	.54	3.92	.22
6. Creative capacities	11	4	15	15	11	26	3.60	.76	3.59	.48
7. Broad liberal education	11	3	14	17	10	27	3.59	.74	3.52	.51
8. Communication skills	24	5	29	27	19	46	3.60	.66	3.60	.39
9. Find and use resources	24	7	31	28	9	37	3.66	.67	3.70	.17
0. Values development	33	13	46	17	6	23	3.81	.56	3.66	.33
X. Critical analysis	21	8	29	28	18	46	3.63	.71	3.80	.30
*V. Interest in learning	33	10	43	29	10	39	3.75	.61	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."

[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

* The plots for these measures overlap; only the first is shown on the graph.

Commentary

The graph compares physical education/health/safety education classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

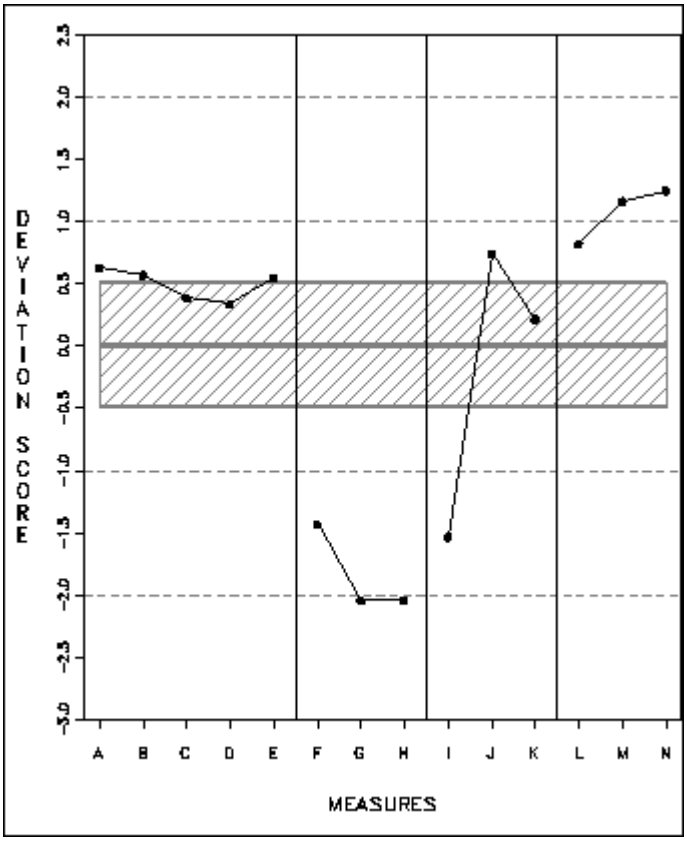
The emphasis in this discipline was on the first four (cognitively-oriented) objectives—1. Factual knowledge, 2. Principles and theories, 3. Applications, and 4. Professional skills/viewpoints. However, relative to all other disciplines, the degree to which these objectives were stressed was only slightly above average. Although stressed in only about 45% of classes, objectives related to 5. Team skills and 0. Values development were chosen much more frequently in this discipline than in most others.

Progress ratings were well above average on 5. Team skills; they were also somewhat above average on the two professional development objectives (3 and 4) and on 0. Values development. On a relative basis, they were slightly below average on the two basic cognitive objectives (1 and 2); but on an absolute scale, progress ratings averaged about 4.0 on a 5-point scale, indicating at least a satisfactory level of success. For several other objectives, all selected as relevant only infrequently, both relative and absolute measures of progress tended to be on the low side.

Discipline 23: Physical Education/Health/Safety Education (826 classes, 44 institutions).

Part II: Other Ratings

	This Discipline		All Disciplines[11]	
	Mean	**s. d.**	**Mean**	**s. d.**
Teaching Approach				
A. Stimulate Interest	4.10	.45	4.01	.15
B. Foster Collaboration	3.86	.63	3.67	.32
C. Establish Rapport	4.09	.46	4.05	.11
D. Encourage Student Involvement	3.99	.53	3.91	.26
E. Structuring Class	4.25	.45	4.19	.10
Class Characteristics				
F. Amount of reading	2.57	.86	3.23	.46
G. Amount of other work	2.95	.72	3.45	.24
H. Difficulty	2.85	.81	3.47	.30
Student Characteristics				
I. Effort in class	3.30	.66	3.60	.20
J. Wanted course	3.52	.59	3.34	.24
K. Usually work hard	3.68	.31	3.66	.09
Global Outcomes				
L. Increased positive attitude	4.07	.50	3.88	.23
M. Excellent teacher	4.33	.56	4.20	.12
N. Excellent course	4.16	.59	3.94	.18



Commentary

Instructors were relatively successful in creating positive learning environments; scores on each of the five scales assessing teaching approaches (A-E) were about a half standard deviation above average.

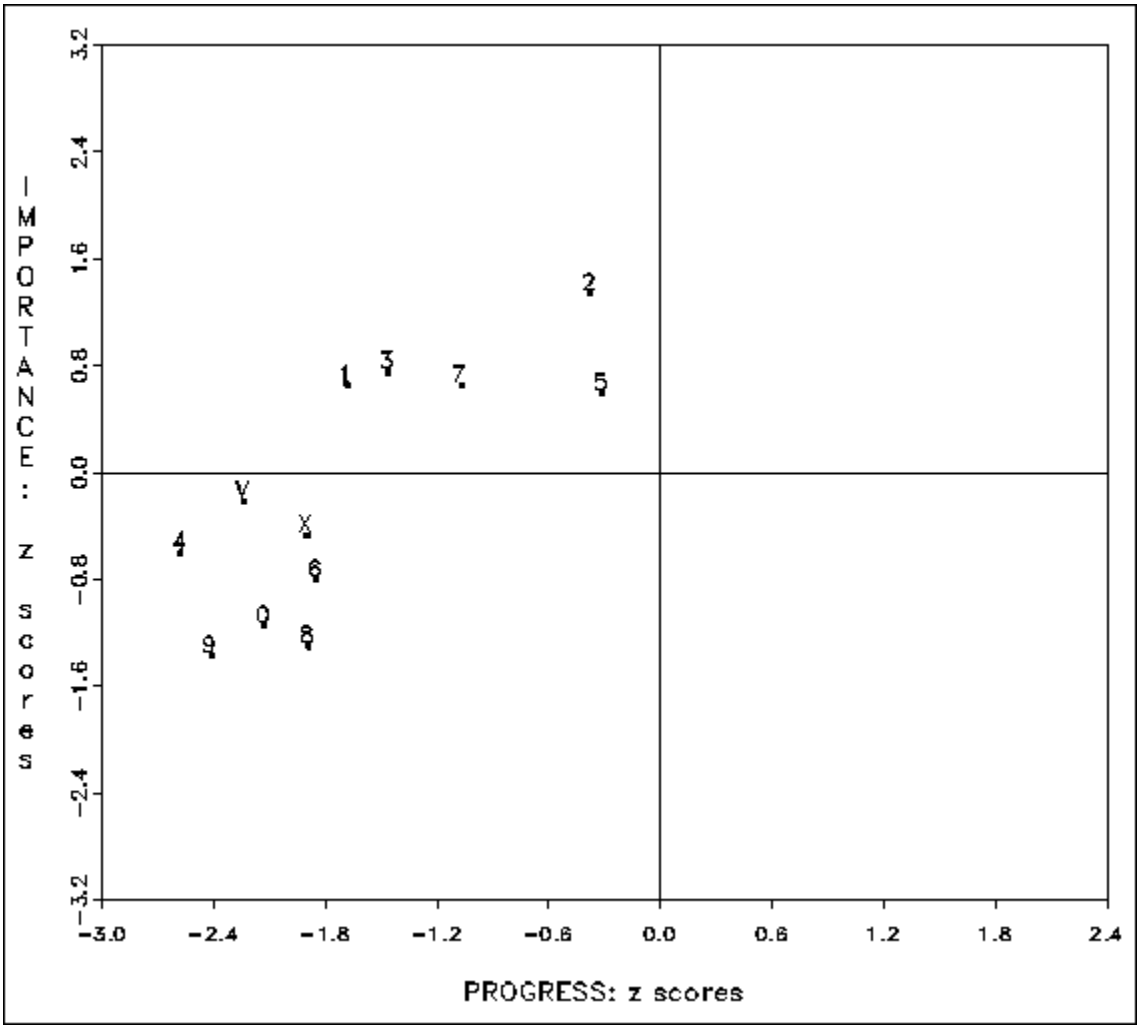
Classes were perceived as making low demands. Ratings of both reading (F) and other kinds of academic work assignments (G) were well below average, as was the perception of class difficulty (H). These findings probably account for the low level of effort reported by students (I) despite their above average motivation to enroll (J and, indirectly, K).

Overall ratings (L, M, N) were well above average. Ratings of both teacher and course excellence were in the top 15% of all disciplines, and students also reported a well above average increased appreciation for this field of study. Such positive outcomes are probably more a function of the positive learning climate established in these classes (A-E) than of their relatively "easy" nature.

[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Discipline 24: Physics (530 classes, 54 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	53	36	89	33	45	78	3.94	.49	4.10	.10
2. Principles and theories	25	70	95	35	39	74	4.00	.48	4.04	.11
3. Application of learning	38	45	83	39	34	73	3.84	.52	4.04	.14
4. Professional skill/views	31	9	40	31	25	56	3.59	.55	4.04	.18
5. Team skills	28	7	35	23	8	31	3.86	.58	3.92	.22
6. Creative capacities	6	0	6	15	11	26	2.69	.45	3.59	.48
7. Broad liberal education	30	10	40	17	10	27	2.98	.62	3.52	.51
8. Communication skills	13	2	15	27	19	46	2.86	.83	3.60	.39
9. Find and use resources	17	3	20	28	9	37	3.30	.46	3.70	.17
0. Values development	4	1	5	17	6	23	2.97	.83	3.66	.33
X. Critical analysis	28	8	36	28	18	46	3.23	.59	3.80	.30
V. Interest in learning	28	8	36	29	10	39	3.42	.55	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Commentary

The graph compares physics classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

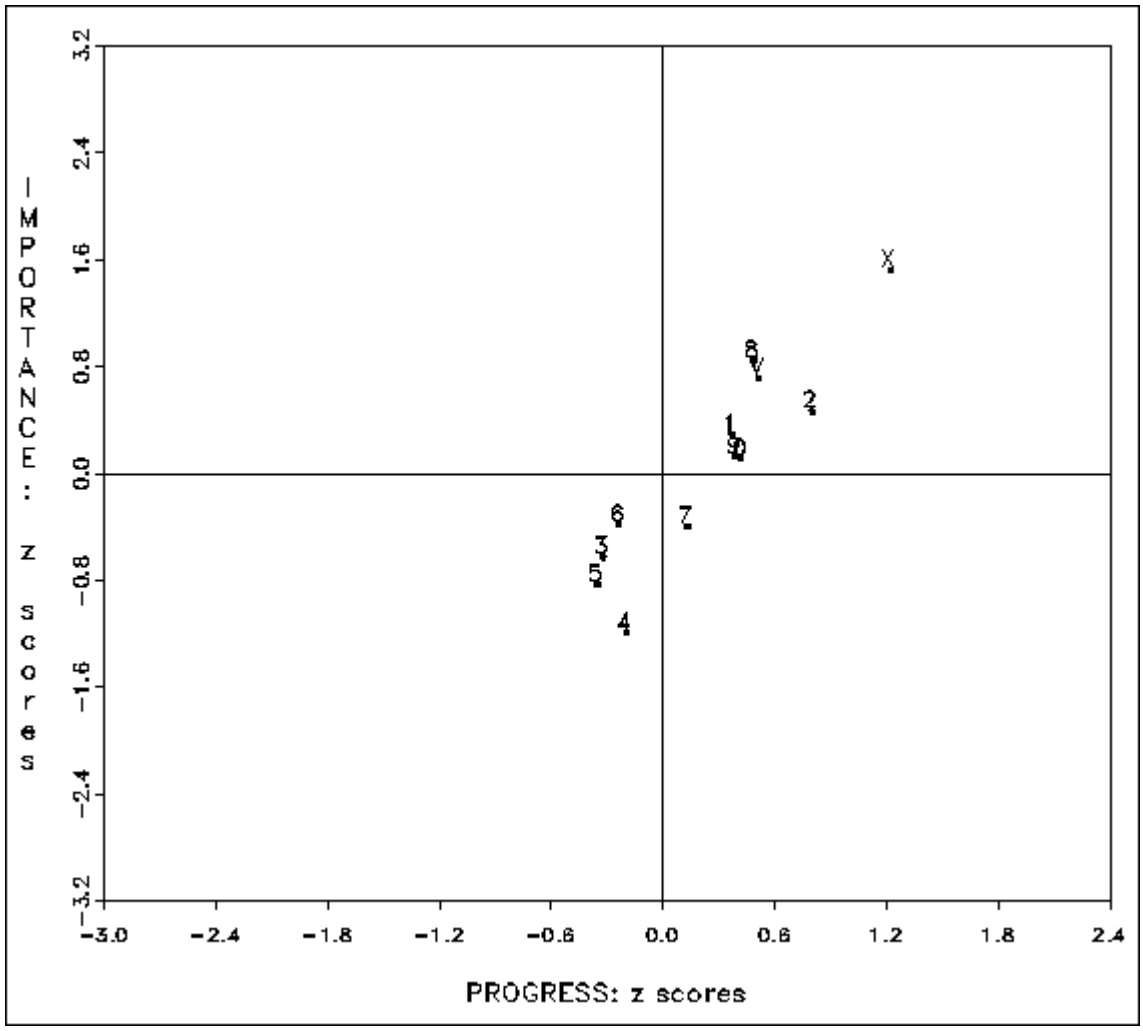
Classes in physics focused heavily on three objectives—two stressing building a basic cognitive background (1. Factual knowledge and 2. Principles and theories) and one emphasizing applications of this background (3). These objectives were commonly stressed in most disciplines; but the degree of emphasis was especially high in physics. Although 5. Team skills and 7. Broad liberal education were selected as "important" or "essential" objectives in only a minority of physics classes, the degree of emphasis was above the "all disciplines" average reflecting, perhaps, the teamwork expectations of laboratory assignments as well as the "general education" responsibilities that are commonly assigned to physics.

Relative to other disciplines, progress ratings were significantly below average on all objectives except for 2. Principles and theories and 5. Team skills. On an absolute level, however, progress ratings on the three most commonly chosen objectives (1, 2, and 3) and on 5. Team skills were all between 3.85 and 4.0 on a 5-point scale; ratings that typically are regarded as at least "satisfactory." Those emphasizing 7. Broad liberal education averaged only 2.98, indicating a general lack of success in addressing this objective. In general, students reported learning less in their physics classes than in others, a finding that may be related to the reputation of the discipline for its high level of academic challenge.

Because only 361 classes used the Diagnostic Form, results for Part II are not reported.

Discipline 25: Political Science/Government (677 classes, 56 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	31	53	84	33	45	78	4.14	.45	4.10	.10
2. Principles and theories	38	45	83	35	39	74	4.13	.45	4.04	.11
3. Application of learning	40	22	62	39	34	73	4.00	.52	4.04	.14
4. Professional skill/views	21	7	28	31	25	56	4.01	.52	4.04	.18
5. Team skills	15	4	19	23	8	31	3.85	.67	3.92	.22
6. Creative capacities	11	5	16	15	11	26	3.47	.63	3.59	.48
7. Broad liberal education	13	6	19	17	10	27	3.59	.68	3.52	.51
8. Communication skills	44	15	59	27	19	46	3.80	.57	3.60	.39
[*]9. Find and use resources	25	10	35	28	9	37	3.77	.58	3.70	.17
[*]0. Values development	17	7	24	17	6	23	3.80	.58	3.66	.33
X. Critical analysis	36	37	73	28	18	46	4.17	.49	3.80	.30
V. Interest in learning	32	12	44	29	10	39	3.90	.56	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.
[*] The plots for these measures overlap; only the first is shown on the graph.

Commentary

The graph compares physical science/government classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

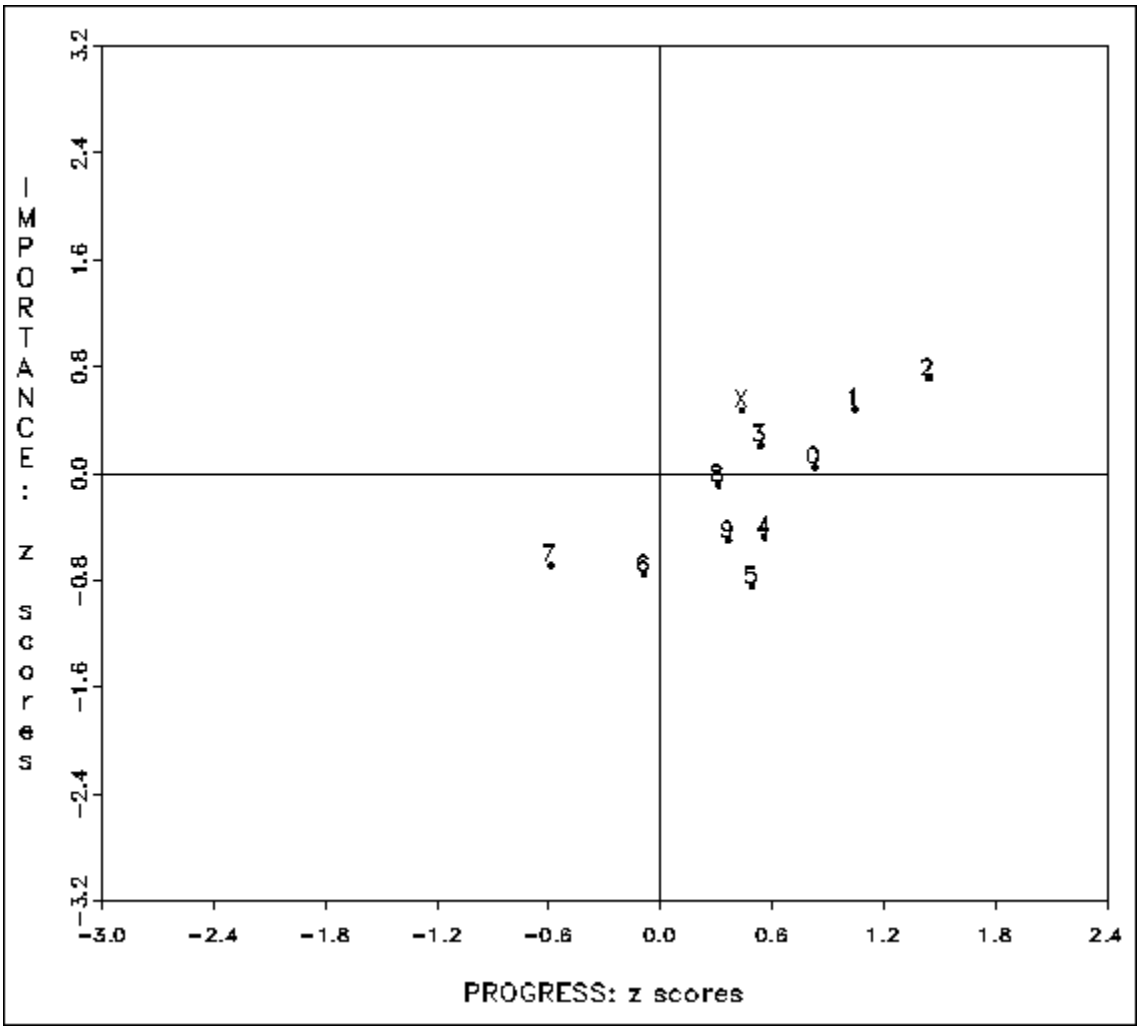
Over 80% of classes in this discipline emphasized the two basic cognitive objectives (1. Factual knowledge and 2. Principles and theories), a figure that was slightly above the average for all disciplines. Almost three-fourths of these classes stressed X. Critical analysis; only philosophy gave this objective more emphasis. Unusually high emphasis was also placed on 8. Communication skills (59% of classes) and V. Increased interest in learning (44% of classes). Only 28% of classes emphasized 4. Professional skills and viewpoints, one of the lowest percentages of the 28 disciplines included in the study.

Progress ratings on objectives corresponded to ratings of their relative degree of importance. They were especially high on X. Critical analysis and slightly above average on all other objectives where political science's emphasis exceeded that of other disciplines. They were slightly below average on objectives stressed less frequently by political science than by other disciplines; but for "applied cognitive" objectives (3 and 4), the average progress rating of 4.0 (on a 5-point scale) suggests that progress was at least satisfactory.

Because only 400 classes used the Diagnostic Form, results for Part II are not reported.

Discipline 26: Psychology (1767 classes, 76 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	31	56	87	33	45	78	4.21	.43	4.10	.10
2. Principles and theories	33	54	87	35	39	74	4.20	.41	4.04	.11
3. Application of learning	46	29	75	39	34	73	4.12	.47	4.04	.14
4. Professional skill/views	28	15	43	31	25	56	4.14	.47	4.04	.18
5. Team skills	15	4	19	23	8	31	4.03	.61	3.92	.22
6. Creative capacities	6	2	8	15	11	26	3.54	.62	3.59	.48
7. Broad liberal education	10	3	13	17	10	27	3.22	.59	3.52	.51
8. Communication skills	32	7	39	27	19	46	3.73	.57	3.60	.39
[*]9. Find and use resources	23	6	29	28	9	37	3.76	.55	3.70	.17
0. Values development	16	7	23	17	6	23	3.94	.59	3.66	.33
X. Critical analysis	35	19	54	28	18	46	3.93	.50	3.80	.30
[*]V. Interest in learning	26	8	34	29	10	39	3.88	.52	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.
[*] The plots for these measures overlap; only the first is shown on the graph.

Commentary

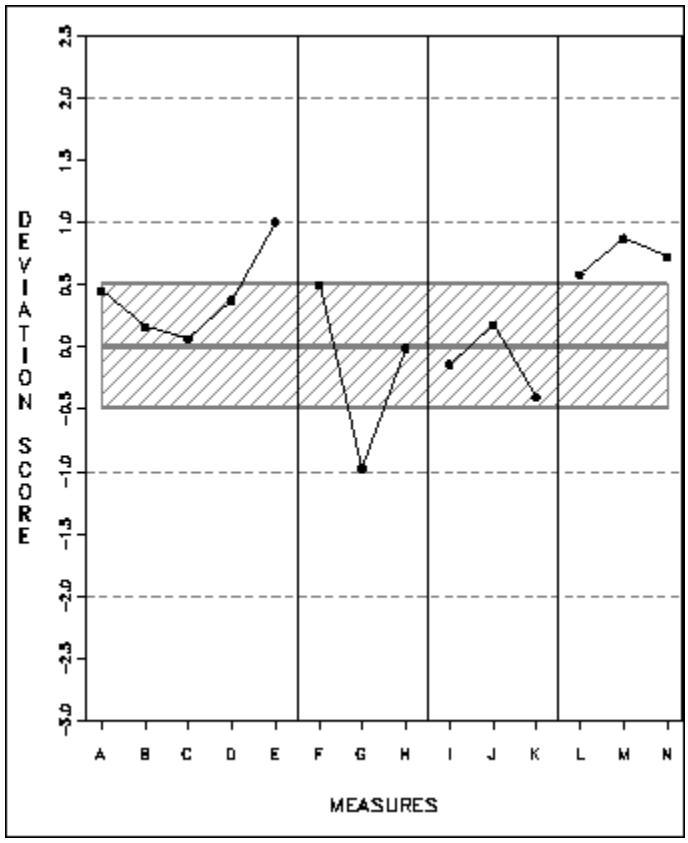
The graph compares psychology classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

This discipline differed only slightly from the "all disciplines" average in its emphases on objectives. Slightly above average emphasis was placed on the two concerned with basic cognitive development (1. Factual knowledge and 2. Principles and theories) as well as on X. Critical analysis. Compared with other disciplines, psychology classes placed less emphasis on 6. Creative capacities, 5. Team skills, 7. Broad liberal education, 9. Finding and using resources, and 4. Professional skills/viewpoints.

Progress ratings were well above average of both basic cognitive objectives and somewhat above average on all but two other objectives. They were about average on 6. Creative capacities and below average on 7. Broad liberal education, neither of which were chosen as "important" or "essential" in most psychology classes.

Discipline 26: Psychology (1114 classes, 58 institutions)
Part II: Other Ratings

	This Discipline		All Disciplines[11]	
	Mean	**s. d.**	**Mean**	**s. d.**
Teaching Approach				
A. Stimulate Interest	4.08	.43	4.01	.15
B. Foster Collaboration	3.73	.67	3.67	.32
C. Establish Rapport	4.06	.44	4.05	.11
D. Encourage Student Involvement	4.00	.48	3.91	.26
E. Structuring Class	4.29	.40	4.19	.10
Class Characteristics				
F. Amount of reading	3.46	.57	3.23	.46
G. Amount of other work	3.22	.64	3.45	.24
H. Difficulty	3.47	.53	3.47	.30
Student Characteristics				
I. Effort in class	3.57	.53	3.60	.20
J. Wanted course	3.38	.48	3.34	.24
K. Usually work hard	3.63	.28	3.66	.09
Global Outcomes				
L. Increased positive attitude	4.02	.50	3.88	.23
M. Excellent teacher	4.30	.54	4.20	.12
N. Excellent course	4.06	.53	3.94	.18



Commentary

Psychology instructors had above average success in employing teaching approaches designed to create a positive learning environment. They were rated as well above average on the scale depicting clear communication of content and expectations (E); scores on this scale are related to progress ratings on several objectives commonly stressed in psychology classes (1, 2, and 3; see preceding page).

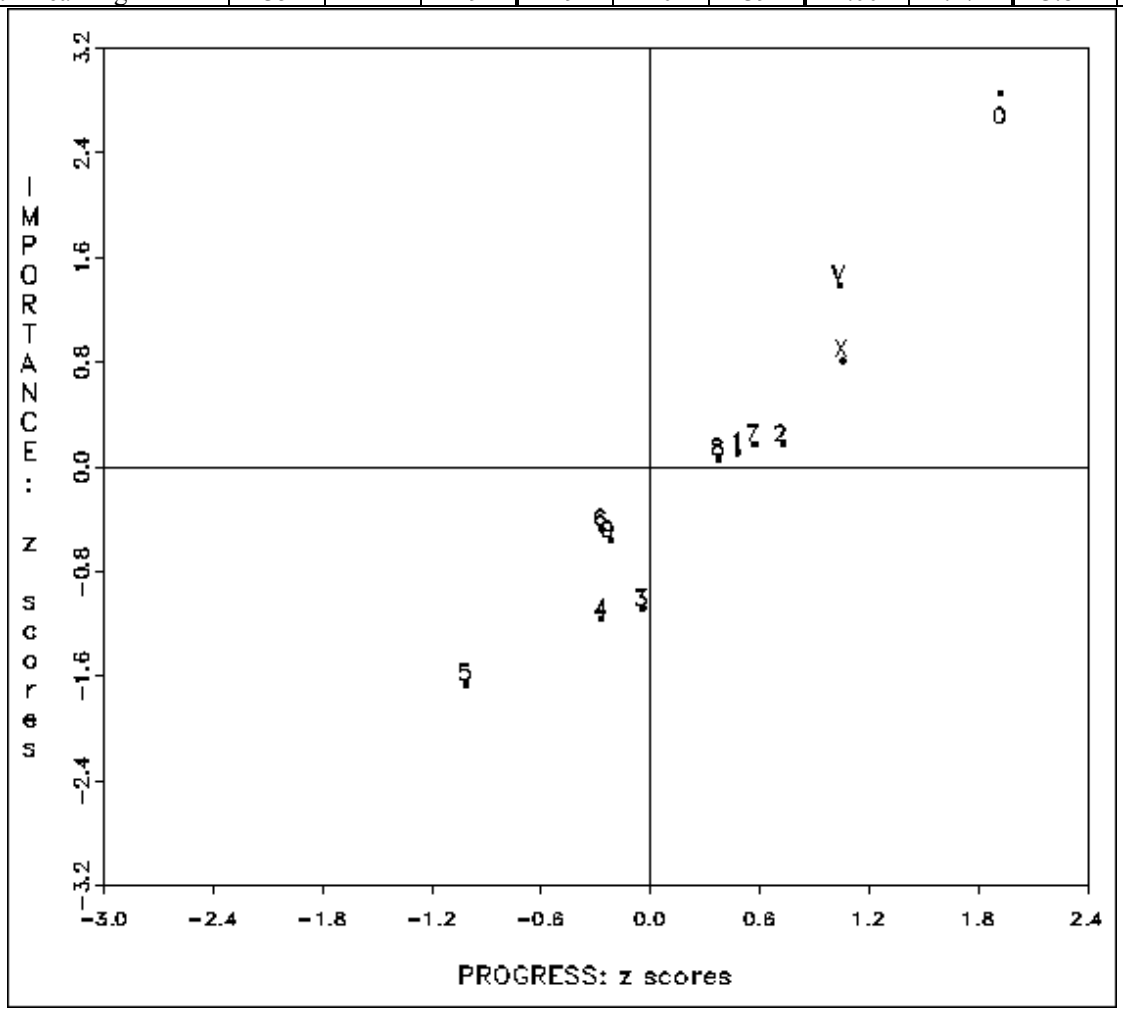
Academic demands appeared to be about average—above average in reading (F); below average in amount of other work (G); and average in difficulty (H). These demands, coupled with student motivation levels that were about average (J and, indirectly, K) probably explain the average rating on amount of student effort (I).

All three overall ratings (L. Increased positive attitude toward the discipline, M. Excellence of teacher, and N. Excellence of course) were above average; a finding consistent both with the above average ratings of progress on relevant objectives (preceding page) and those describing teaching approaches (A-E).

[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Discipline 27: Religion (1039 classes, 35 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	33	48	81	33	45	78	4.15	.46	4.10	.10
2. Principles and theories	38	41	79	35	39	74	4.12	.44	4.04	.11
3. Application of learning	31	24	55	39	34	73	4.04	.49	4.04	.14
4. Professional skill/views	19	10	29	31	25	56	4.00	.47	4.04	.18
5. Team skills	8	2	10	23	8	31	3.70	.74	3.92	.22
*6. Creative capacities	11	3	14	15	11	26	3.46	.75	3.59	.48
7. Broad liberal education	19	11	30	17	10	27	3.81	.60	3.52	.51
8. Communication skills	33	9	42	27	19	46	3.75	.60	3.60	.39
*9. Find and use resources	24	5	29	28	9	37	3.67	.59	3.70	.17
0. Values development	39	27	66	17	6	23	4.29	.43	3.66	.33
X. Critical analysis	34	26	60	28	18	46	4.12	.47	3.80	.30
V. Interest in learning	35	14	49	29	10	39	4.00	.47	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.
* The plots for these measures overlap; only the first is shown on the graph.

Commentary

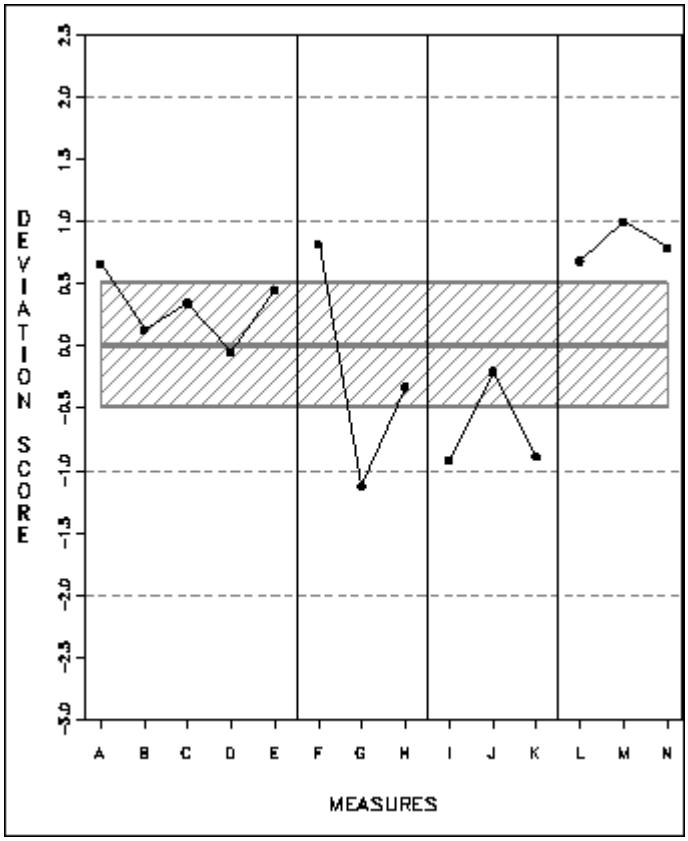
The graph compares religion classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

The most frequently selected objectives in religion classes were the two concerned with basic cognitive development (1. Factual knowledge and 2. Principles and theories). The amount of stress on these objectives was about average for all disciplines. Religion classes were most distinguished from those in other disciplines principally by the high importance attached to 0. Values development, X. Critical analysis, and V. Interest in learning more. Over 60% stressed 0. Values development and/or X. Critical analysis while about half identified V. Increased interest in learning as "important" or "essential." The stress placed on 0. Valued development exceeded that of all other disciplines.

Progress ratings corresponded closely to the relative importance of each objective. They were exceptionally high on 0. Values development and well above average for both X. Critical analysis and V. Increased interest in learning. Although progress ratings were below the average for all disciplines on several objectives, none of these was chosen as relevant for a large percentage of classes in religion. Furthermore, when "absolute" rather than "relative" figures are considered, average progress ratings on all objectives except 6. Creative capacities, were 3.67 or higher (on a 5-point scale).

Discipline 27: Religion (642 classes, 30 institutions)
Part II: Other Ratings

	This Discipline		All Disciplines[11]	
	Mean	**s. d.**	**Mean**	**s. d.**
Teaching Approach				
A. Stimulate Interest	4.11	.41	4.01	.15
B. Foster Collaboration	3.72	.68	3.67	.32
C. Establish Rapport	4.09	.44	4.05	.11
D. Encourage Student Involvement	3.90	.51	3.91	.26
E. Structuring Class	4.24	.39	4.19	.10
Class Characteristics				
F. Amount of reading	3.60	.54	3.23	.46
G. Amount of other work	3.18	.53	3.45	.24
H. Difficulty	3.37	.46	3.47	.30
Student Characteristics				
I. Effort in class	3.42	.45	3.60	.20
J. Wanted course	3.29	.47	3.34	.24
K. Usually work hard	3.59	.25	3.66	.09
Global Outcomes				
L. Increased positive attitude	4.04	.49	3.88	.23
M. Excellent teacher	4.31	.56	4.20	.12
N. Excellent course	4.08	.53	3.94	.18



Commentary

Ratings of all five teaching approaches were at or above the average for all disciplines. Scores on Scales *A. Stimulating Student Interest* and *E. Structuring Classroom Experiences* were somewhat higher than those on the other three scales.

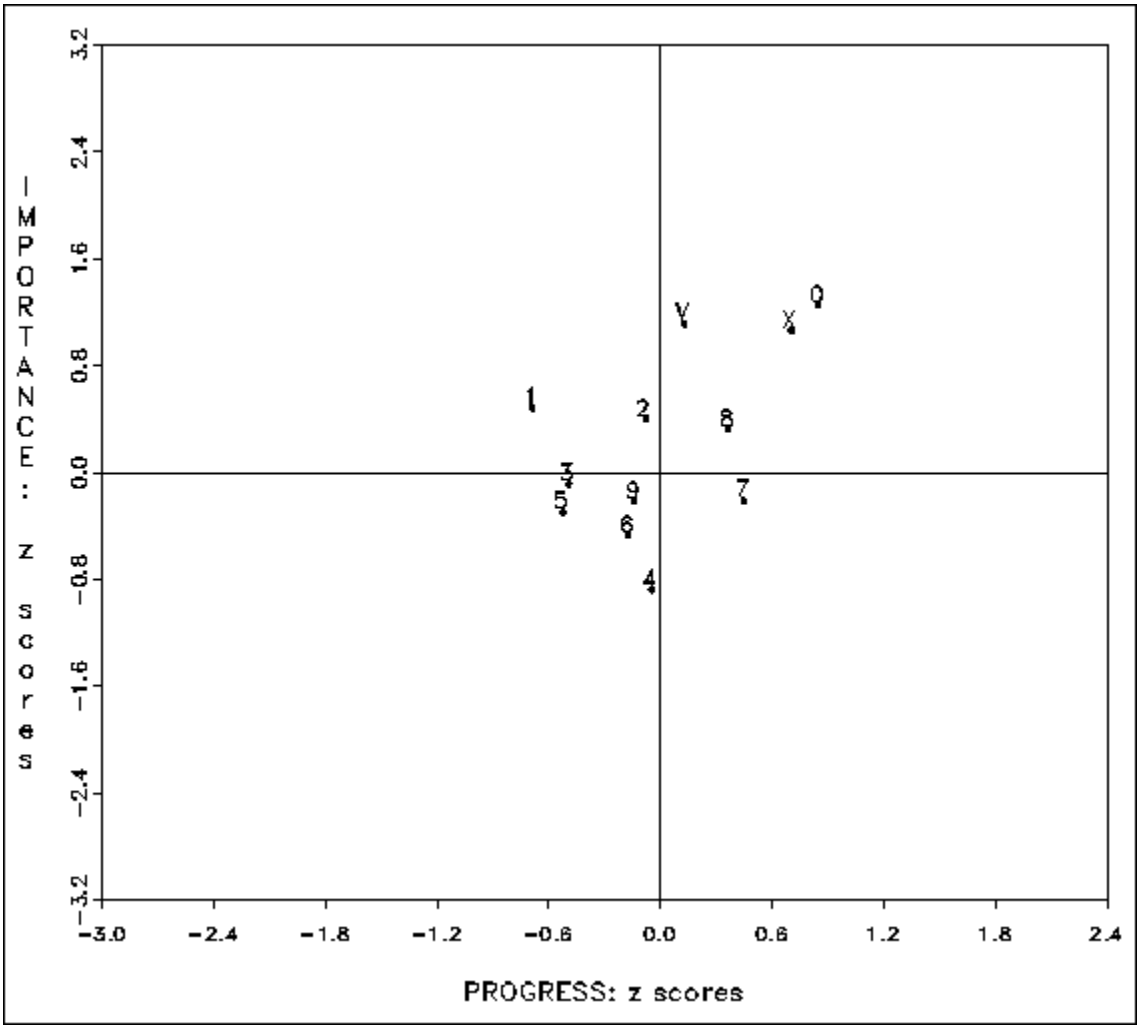
Religion classes generally required a lot of reading (F), but a below average amount of other work (G). Their difficulty rating (H) was somewhat below average; a finding that, coupled with somewhat below average student motivation (J and, indirectly, K), may explain the relatively low rating of student effort (I).

All three global ratings (L. Increased interest in the discipline, M. Excellence of teacher, and N. Excellence of course) were well above average. These high ratings probably reflect high student satisfaction with their progress on the discipline's most distinctive objectives (0, X, and V; preceding page). The excellence of teacher rating placed religion in the top 15% of all disciplines.

[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Discipline 28: Sociology (871 classes, 60 institutions)
Part I: Individual Objectives

	% of Classes with Objective as Relevant[10]						Progress on Relevant[10] Objectives			
	This Discipline			All Disciplines			This Discipline		All Disciplines[11]	
	Imp.	Ess.	Imp. + Ess.	Imp.	Ess.	Imp. + Ess.	Mean	s.d.	Mean	s.d.
1. Factual knowledge	40	47	87	33	45	78	4.03	.48	4.10	.10
2. Principles and theories	37	45	82	35	39	74	4.04	.48	4.04	.11
3. Application of learning	41	30	71	39	34	73	3.97	.51	4.04	.14
4. Professional skill/views	24	11	35	31	25	56	4.03	.51	4.04	.18
5. Team skills	18	7	25	23	8	31	3.81	.62	3.92	.22
6. Creative capacities	11	3	14	15	11	26	3.50	.62	3.59	.48
7. Broad liberal education	13	10	23	17	10	27	3.75	.59	3.52	.51
8. Communication skills	36	11	47	27	19	46	3.75	.54	3.60	.39
9. Find and use resources	26	6	32	28	9	37	3.68	.58	3.70	.17
0. Values development	28	14	42	17	6	23	3.94	.48	3.66	.33
X. Critical analysis	34	31	65	28	18	46	4.01	.51	3.80	.30
V. Interest in learning	33	15	48	29	10	39	3.84	.54	3.81	.18



[10] "Relevant" means the instructor rate the objective as "Important" or "Essential."
[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Commentary

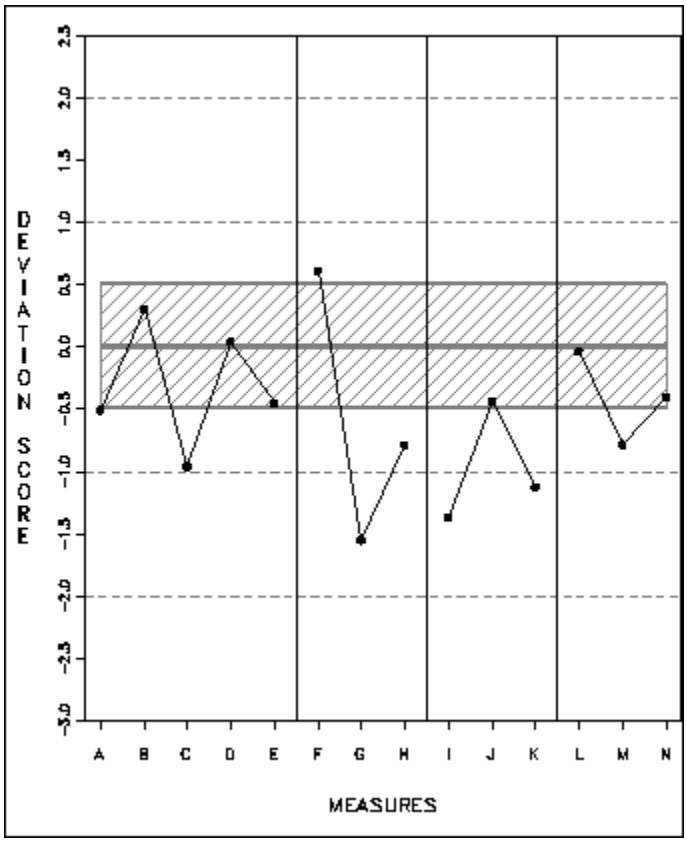
The graph compares sociology classes with those in all 28 disciplines included in this study. It reports the degree to which each objective was emphasized (horizontal axis) and the degree to which progress was reported on each emphasized objective (vertical axis). Plots are made in terms of deviation *z* scores.

Sociology classes focused most often on 1. Factual knowledge, 2. Principles and theories, and 3. Applications, although the amount of emphasis on these objectives was only about average for all disciplines. On a relative basis, sociology classes stressed three objectives with unusual frequency—0. Values development, X. Critical analysis, and V. Increased interest in learning. The emphasis on 4. Professional skills/viewpoints was well below the "all disciplines" average.

Well above average progress ratings were obtained on the 0. Values development and X. Critical analysis objectives. These ratings were also somewhat above average on 7. Broad liberal education (relevant in only 23% of sociology classes) and 8. Communication skills (relevant in 48% of the discipline's classes). The above average progress rating on 1. Factual knowledge, although substantially below the "all disciplines" average, was still 4.03 on a 5-point scale, a rating generally considered to be satisfactory.

Discipline 28: Sociology (513 classes, 45 institutions)
Part II: Other Ratings

	This Discipline		All Disciplines[11]	
	Mean	**s. d.**	**Mean**	**s. d.**
Teaching Approach				
A. Stimulate Interest	3.93	.48	4.01	.15
B. Foster Collaboration	3.77	.62	3.67	.32
C. Establish Rapport	3.94	.48	4.05	.11
D. Encourage Student Involvement	3.92	.48	3.91	.26
E. Structuring Class	4.15	.44	4.19	.10
Class Characteristics				
F. Amount of reading	3.51	.53	3.23	.46
G. Amount of other work	3.07	.50	3.45	.24
H. Difficulty	3.23	.47	3.47	.30
Student Characteristics				
I. Effort in class	3.33	.51	3.60	.20
J. Wanted course	3.24	.46	3.34	.24
K. Usually work hard	3.56	.28	3.66	.09
Global Outcomes				
L. Increased positive attitude	3.87	.52	3.88	.23
M. Excellent teacher	4.10	.61	4.20	.12
N. Excellent course	3.87	.56	3.94	.18



Commentary

Sociology instructors placed slightly above average emphasis on teaching approaches that foster student collaboration (B) but below average emphasis on those which establish rapport (C), stimulate student interest (A), or clearly communicate content and expectations (E). Because gaining 1. Factual knowledge (see previous page) is facilitated much more by *A. Stimulating student interest* than by B. *Fostering student collaboration*, the relatively low progress rating on this objective (1, see previous page) is consistent with the pattern of teaching approaches that characterize this discipline.

Although sociology classes required a somewhat above average amount of reading (F), non-reading requirements were very low (G), and difficulty (H) was well below the average for all disciplines. These findings, coupled with below average ratings of student motivation (J and, indirectly, K) probably explain the very low rating of how hard students worked in sociology classes (I).

Overall ratings of the excellence of the course (N) and teacher (M) were below the "all disciplines" average, a finding that may be related to below average ratings on several "teaching approach" scales (A, C, E) as well as the relatively low progress rating on the important objective of 1. Factual knowledge (previous page).

[11] Means and standard deviations of "all disciplines" were computed by combining classes included in the 28 disciplines. The *z* scores on the graph gave equal weight to each discipline.

Appendix

Overview

Tables in the Appendix provide a practical way of observing the magnitude of differences among disciplines. For each discipline, the percentage of classes in each of five categories is shown. The categories were defined by T Scores, a statistical way of describing how far a given rating deviated from average. Conventionally, these categories are called "Low" (T Score of 37 or below, roughly the lowest 10 percent), "Low Average" (T Score of 38-44, about the next 20 percent), "Average" (T Score of 45-55, about the middle 40 percent), "High Average" (T Score of 55-62, the next 20 percent), and "High" (T Score 63 or higher, the highest 10 percent).

The first 12 tables show, by discipline, the percentage of classes in each of these five categories; figures were derived only from those classes where the objective was identified by the instructor as "Important" or "Essential." The last four tables include data from all classes; they describe results on the four IDEA "global" measures (i.e., overall or summary measures) of effectiveness – increase positive attitudes toward the discipline, overall excellence of the teacher, overall excellence of the course, and Progress on Relevant Objectives, a measure combining student ratings of progress on objectives emphasized by the instructor.

Results for a given discipline are considered "atypical" if the percentage of classes in the five categories departs markedly from the "typical" distribution (10%, 20%, 40%, 20%, 10%, from Low to High, respectively, as described above). Fluctuations of ±5% from the "typical" percentage for a category are too small to have practical significance. In some disciplines, there were fewer than 100 classes for which a given objective was selected as "Important" or "Essential." Results from such small samples are generally not stable enough to permit dependable generalizations.

Table 1: Percentage of Classes Within T Score[1] Categories
Objective 1. Gaining factual knowledge

Discipline	Number of Classes[2]	Unadjusted T Score				
		≤ 37	38-44	45-54	55-62	63 +
Accounting	981	9.4	9.3	37.1	33.6	10.6
Administration/Management	1699	11.1	13.3	36.7	30.0	8.9
Art	650	11.4	13.1	32.5	32.0	11.1
Biology/Life Science	1584	5.6	8.5	28.7	36.8	20.4
Business/General	480	8.3	11.7	41.7	31.9	6.5
Chemistry	847	10.4	11.1	38.3	32.4	7.9
Communications	1074	11.8	13.5	40.0	26.2	8.5
Computer/Information Sciences	1267	9.8	11.4	42.2	29.6	7.0
Design/Applied Arts	1147	8.0	8.9	35.6	32.7	14.8
Economics	693	12.1	14.3	40.3	27.7	5.6
Education/General	3135	8.8	9.1	30.2	33.8	18.2
Engineering	987	12.3	13.5	39.9	26.2	8.1
English Literature	1189	21.6	18.0	35.7	20.0	4.6
Fine and Applied Arts	738	10.0	7.7	32.4	35.4	14.5
Foreign Language and Literature	777	6.4	12.2	39.9	33.0	8.5
History	946	4.7	8.4	35.3	38.2	13.5
Health Professions/Related Sciences	1108	5.7	6.1	26.7	40.6	20.9
Liberal Arts/General Studies/Humanities	972	8.7	11.4	36.7	31.4	11.7
Mathematics/Statistics	1733	12.5	15.4	41.6	25.8	4.8
Music	522	7.7	9.6	32.8	33.9	16.1
Nursing	762	6.0	5.5	29.4	38.3	20.7
Philosophy	316	10.1	11.4	42.1	26.0	10.4
Physical Education/Health/ Safety Education	1093	13.4	10.0	33.6	31.3	11.8
Physics	447	14.3	17.2	41.6	22.2	4.7
Political Science/Government	550	7.8	9.8	36.4	35.3	10.7
Psychology	1443	5.1	8.1	35.8	37.1	13.9
Religion	791	8.1	11.9	31.2	36.3	12.5
Sociology	728	11.5	14.8	37.9	27.5	8.2

[1]A standardized score with an average of 50 and a standard deviation of 10.
[2]Refer to the tables provided in the report to determine how frequently this objective was selected relative to other objectives within a discipline (Part I for each discipline).

Table 2: Percentage of Classes Within T Score[1] Categories
Objective 2. Principles and theories

Discipline	Number of Classes[2]	Unadjusted T Score				
		≤ 37	38-44	45-54	55-62	63 +
Accounting	936	6.9	10.7	41.9	32.2	8.3
Administration/Management	1702	7.9	12.6	40.2	31.3	8.0
Art	602	13.3	15.0	39.7	24.9	7.1
Biology/Life Science	1474	6.8	14.5	44.2	27.2	7.3
Business/General	432	7.2	14.1	45.4	30.1	3.2
Chemistry	811	8.1	13.3	43.3	29.1	6.2
Communications	1099	11.4	15.2	42.5	24.8	6.1
Computer/Information Sciences	967	12.6	15.6	44.9	23.1	3.8
Design/Applied Arts	1126	4.8	11.1	39.5	33.1	11.5
Economics	726	7.0	14.2	45.2	27.8	5.8
Education/General	2995	7.3	9.5	31.8	35.2	16.3
Engineering	958	11.7	15.5	37.3	28.9	6.7
English Literature	1097	22.9	18.9	35.7	18.0	4.6
Fine and Applied Arts	712	9.0	11.4	34.4	33.6	11.7
Foreign Language and Literature	443	19.2	17.2	42.0	20.5	1.1
History	530	12.8	19.1	43.6	20.6	4.0
Health Professions/Related Sciences	982	6.3	10.3	34.5	37.9	11.0
Liberal Arts/General Studies/Humanities	924	8.0	13.6	42.3	28.1	7.9
Mathematics/Statistics	1673	7.4	14.8	43.0	29.8	5.0
Music	407	8.1	10.1	34.9	31.2	15.7
Nursing	713	4.9	8.3	32.7	41.9	12.2
Philosophy	497	4.0	8.5	39.2	34.6	13.7
Physical Education/Health/ Safety Education	862	12.8	12.3	38.5	28.2	8.2
Physics	471	8.9	16.6	41.0	28.0	5.5
Political Science/Government	527	5.3	11.0	38.5	34.9	10.3
Psychology	1431	3.2	8.5	38.3	38.2	11.7
Religion	741	5.4	12.7	37.5	33.7	10.7
Sociology	667	9.0	13.9	40.5	27.3	9.3

[1]A standardized score with an average of 50 and a standard deviation of 10.
[2]Refer to the tables provided in the report to determine how frequently this objective was selected relative to other objectives within a discipline (Part I for each discipline).

Table 3: Percentage of Classes Within T Score[1] Categories
Objective 3. Application of learning

Discipline	Number of Classes[2]	Unadjusted T Score				
		≤ 37	38-44	45-54	55-62	63 +
Accounting	825	9.3	12.1	42.8	29.0	6.8
Administration/Management	1824	8.1	11.6	35.9	32.7	11.7
Art	557	11.0	11.7	35.9	29.8	11.7
Biology/Life Science	999	12.8	18.0	38.4	24.0	6.7
Business/General	452	7.5	10.6	44.0	31.6	6.2
Chemistry	684	12.9	19.0	42.4	22.2	3.5
Communications	1244	6.7	10.5	37.1	34.9	10.9
Computer/Information Sciences	1018	8.5	15.4	43.4	27.9	4.8
Design/Applied Arts	1193	5.1	9.0	35.1	38.1	12.7
Economics	612	14.2	19.4	43.5	19.8	3.1
Education/General	3279	4.9	6.4	25.3	36.1	27.3
Engineering	1016	12.6	15.5	39.0	26.1	6.9
English Literature	1578	11.9	17.2	42.3	23.2	5.5
Fine and Applied Arts	666	8.0	10.8	32.9	35.1	13.2
Foreign Language and Literature	351	11.4	17.1	42.7	24.5	4.3
History	383	25.3	21.2	35.5	15.4	2.6
Health Professions/Related Sciences	1096	4.2	6.8	26.6	39.9	22.5
Liberal Arts/General Studies/Humanities	1010	9.7	14.0	39.1	28.8	8.4
Mathematics/Statistics	1645	10.9	16.0	46.0	22.7	4.4
Music	319	6.9	11.6	32.6	29.8	19.1
Nursing	875	3.7	5.9	28.2	38.7	23.4
Philosophy	376	8.2	10.9	38.8	32.7	9.3
Physical Education/Health/ Safety Education	887	8.1	12.1	34.3	33.2	12.4
Physics	389	15.7	21.1	37.8	22.4	3.1
Political Science/Government	389	10.5	13.9	40.1	28.3	7.2
Psychology	1189	6.5	11.2	36.7	34.5	11.2
Religion	491	8.2	15.1	37.5	31.8	7.5
Sociology	552	13.2	17.0	35.7	25.7	8.3

[1]A standardized score with an average of 50 and a standard deviation of 10.
[2]Refer to the tables provided in the report to determine how frequently this objective was selected relative to other objectives within a discipline (Part I for each discipline).

Table 4: Percentage of Classes Within T Score[1] Categories
Objective 4. Professional skill/views

Discipline	Number of Classes[2]	Unadjusted T Score				
		≤ 37	38-44	45-54	55-62	63 +
Accounting	760	9.7	9.1	38.0	34.3	8.8
Administration/Management	1371	11.3	12.3	39.0	29.4	8.1
Art	702	6.6	10.3	34.1	35.6	13.5
Biology/Life Science	749	11.2	13.2	38.1	26.8	10.7
Business/General	357	8.7	12.0	46.2	28.9	4.2
Chemistry	442	16.1	22.6	37.8	19.5	4.1
Communications	1063	8.1	9.3	32.4	36.0	14.2
Computer/Information Sciences	1117	10.1	16.6	41.2	27.3	4.8
Design/Applied Arts	1233	8.2	8.6	35.0	36.5	11.8
Economics	226	26.6	15.9	41.2	15.0	1.3
Education/General	3390	6.5	6.6	24.2	37.8	25.0
Engineering	856	14.6	16.5	39.7	23.5	5.7
English Literature	906	14.4	13.9	36.2	27.6	8.0
Fine and Applied Arts	737	6.2	8.7	33.8	37.5	13.8
Foreign Language and Literature	354	17.5	18.4	39.0	20.9	4.2
History	233	17.2	18.5	35.2	22.3	6.9
Health Professions/Related Sciences	1001	5.0	5.6	25.2	40.2	24.1
Liberal Arts/General Studies/Humanities	344	18.9	18.0	35.8	22.1	5.2
Mathematics/Statistics	803	23.3	19.8	39.1	15.6	2.2
Music	494	4.5	8.3	30.2	36.0	21.1
Nursing	747	5.6	5.5	24.5	39.9	24.5
Philosophy[3]	91	18.7	16.5	33.0	22.0	9.9
Physical Education/Health/ Safety Education	702	8.7	7.0	30.1	38.8	15.5
Physics	190	41.1	22.1	24.2	12.1	0.5
Political Science/Government	181	13.3	10.5	40.3	29.3	6.6
Psychology	684	7.2	9.9	39.5	30.1	13.3
Religion	263	10.3	20.2	39.2	22.4	8.0
Sociology	279	13.6	14.0	31.9	31.5	9.0

[1]A standardized score with an average of 50 and a standard deviation of 10.
[2]Refer to the tables provided in the report to determine how frequently this objective was selected relative to other objectives within a discipline (Part I for each discipline).
[3]Fewer than 100 classes identified this objective as "Important" or "Essential." Results from such small samples are generally not stable enough to permit dependable generalizations.

Table 5: Percentage of Classes Within T Score[1] Categories
Objective 5. Team skills

Discipline	Number of Classes[2]	Unadjusted T Score				
		≤ 37	38-44	45-54	55-62	63 +
Accounting	241	12.5	7.1	45.6	31.5	3.3
Administration/Management	943	6.0	7.5	36.6	39.9	10.0
Art	153	30.1	9.2	37.3	19.0	4.6
Biology/Life Science	451	11.5	10.6	39.3	31.9	6.7
Business/General	210	9.5	8.1	41.9	38.1	2.4
Chemistry	185	8.7	10.3	46.0	29.2	6.0
Communications	693	6.8	5.9	33.9	42.3	11.1
Computer/Information Sciences	315	20.6	12.1	42.9	21.6	2.9
Design/Applied Arts	329	18.8	17.6	40.1	18.8	4.6
Economics[3]	66	30.3	19.7	36.4	12.1	1.5
Education/General	1732	4.3	6.5	35.5	40.8	13.1
Engineering	451	6.7	6.7	37.7	37.7	11.3
English Literature	909	10.6	12.3	47.4	26.3	3.4
Fine and Applied Arts	322	10.9	9.6	31.7	37.6	10.3
Foreign Language and Literature	256	14.8	13.7	45.7	23.1	2.7
History[3]	96	20.8	11.5	47.9	19.8	0
Health Professions/Related Sciences	486	2.3	3.7	35.8	44.0	14.2
Liberal Arts/General Studies/Humanities	391	10.0	10.5	46.8	28.1	4.6
Mathematics/Statistics	304	21.7	15.5	45.4	15.5	2.0
Music	217	9.7	6.0	24.0	44.2	16.1
Nursing	341	2.6	3.5	40.5	45.5	7.9
Philosophy[3]	89	12.4	14.6	48.3	20.2	4.5
Physical Education/Health/ Safety Education	485	4.1	7.2	36.5	38.6	13.6
Physics	159	12.6	10.1	51.6	18.2	7.6
Political Science/Government	121	14.1	14.9	37.2	29.8	4.1
Psychology	292	9.9	9.9	37.0	35.6	7.5
Religion[3]	88	17.1	14.8	42.1	19.3	6.8
Sociology	199	17.6	12.6	44.2	22.6	3.0

[1]A standardized score with an average of 50 and a standard deviation of 10.
[2]Refer to the tables provided in the report to determine how frequently this objective was selected relative to other objectives within a discipline (Part I for each discipline).
[3]Fewer than 100 classes identified this objective as "Important" or "Essential." Results from such small samples are generally not stable enough to permit dependable generalizations.

Table 6: Percentage of Classes Within T Score[1] Categories
Objective 6. Creative capacities

Discipline	Number of Classes[2]	Unadjusted T Score				
		≤ 37	38-44	45-54	55-62	63 +
Accounting	50	50.0	20.0	20.0	10.0	0
Administration/Management	284	20.1	18.3	36.3	22.9	2.5
Art	888	1.2	3.6	17.2	60.9	17.0
Biology/Life Science	104	44.2	26.0	26.9	1.9	1.0
Business/General[3]	79	17.7	15.2	40.5	26.6	0
Chemistry[3]	49	73.5	10.2	8.2	6.1	2.0
Communications	709	3.7	8.3	35.1	43.7	9.2
Computer/Information Sciences	243	27.6	23.9	32.5	15.6	0.4
Design/Applied Arts	916	4.6	11.1	40.3	40.3	3.7
Economics[3]	39	64.1	25.6	10.3	0	0
Education/General	923	5.6	11.4	31.5	41.0	10.5
Engineering	214	39.3	16.4	29.4	14.5	0.5
English Literature	1521	1.8	4.7	27.9	51.2	14.3
Fine and Applied Arts	656	4.0	7.5	31.4	43.0	14.2
Foreign Language and Literature	238	14.3	21.4	35.3	27.3	1.7
History	156	28.2	16.0	41.7	13.5	0.6
Health Professions/Related Sciences	107	14.0	16.8	40.2	24.3	4.7
Liberal Arts/General Studies/Humanities	429	7.0	11.9	39.2	36.8	5.1
Mathematics/Statistics	104	67.3	15.4	13.5	3.9	0
Music	474	2.7	4.6	24.3	48.5	19.8
Nursing[3]	67	14.9	23.9	38.8	20.9	1.5
Philosophy[3]	96	19.8	18.8	40.6	19.8	1.0
Physical Education/Health/ Safety Education	158	26.0	16.5	31.7	21.5	4.4
Physics[3]	30	83.3	10.0	6.7	0	0
Political Science/Government[3]	94	27.7	21.3	34.0	16.0	1.1
Psychology	110	16.4	30.9	31.8	20.9	0
Religion	123	28.5	21.1	29.3	21.1	0
Sociology	108	27.8	23.2	30.6	16.7	1.9

[1]A standardized score with an average of 50 and a standard deviation of 10.
[2]Refer to the tables provided in the report to determine how frequently this objective was selected relative to other objectives within a discipline (Part I for each discipline).
[3]Fewer than 100 classes identified this objective as "Important" or "Essential." Results from such small samples are generally not stable enough to permit dependable generalizations.

Table 7: Percentage of Classes Within T Score[1] Categories
Objective 7. Broad liberal education

Discipline	Number of Classes[2]	Unadjusted T Score				
		≤ 37	38-44	45-54	55-62	63 +
Accounting[3]	29	75.9	17.2	3.5	3.5	0
Administration/Management	160	30.6	20.0	30.0	16.9	2.5
Art	617	1.1	3.4	27.4	52.8	15.2
Biology/Life Science	396	23.0	30.8	34.6	11.1	0.5
Business/General[3]	43	30.2	20.9	34.9	14.0	0
Chemistry	158	32.3	31.0	28.5	7.6	0.6
Communications	387	9.6	15.8	37.5	31.0	6.2
Computer/Information Sciences	104	47.1	17.3	29.8	4.8	1.0
Design/Applied Arts	317	7.6	12.0	43.5	32.8	4.1
Economics[3]	68	54.4	26.5	14.7	4.4	0
Education/General	684	8.3	9.7	35.2	33.8	13.0
Engineering[3]	83	67.5	16.9	14.5	0	1.2
English Literature	1790	2.7	6.2	29.5	45.1	16.5
Fine and Applied Arts	360	3.3	9.2	27.8	44.4	15.3
Foreign Language and Literature	627	1.8	3.2	31.4	50.1	13.6
History	399	5.3	10.3	46.1	34.3	4.0
Health Professions/Related Sciences	105	22.9	19.1	34.3	21.9	1.9
Liberal Arts/General Studies/Humanities	844	4.7	9.0	31.6	41.8	12.8
Mathematics/Statistics	186	67.7	14.0	12.4	5.9	0
Music	541	0.7	0.9	12.0	54.0	32.4
Nursing[3]	51	9.8	23.5	52.9	13.7	0
Philosophy	211	8.1	10.0	49.3	27.5	5.2
Physical Education/Health/ Safety Education	154	17.5	14.3	38.3	22.7	7.1
Physics	179	44.7	25.1	25.7	3.9	0.6
Political Science/Government	120	16.7	13.3	41.7	25.8	2.5
Psychology	195	29.2	26.2	35.4	9.2	0
Religion	281	8.2	12.5	38.4	33.5	7.5
Sociology	178	9.0	14.6	41.6	32.0	2.8

[1]A standardized score with an average of 50 and a standard deviation of 10.
[2]Refer to the tables provided in the report to determine how frequently this objective was selected relative to other objectives within a discipline (Part I for each discipline).
[3]Fewer than 100 classes identified this objective as "Important" or "Essential." Results from such small samples are generally not stable enough to permit dependable generalizations.

Table 8: Percentage of Classes Within T Score[1] Categories
Objective 8. Communication skills

Discipline	Number of Classes[2]	Unadjusted T Score				
		≤ 37	38-44	45-54	55-62	63 +
Accounting	229	34.9	20.5	27.5	15.3	1.8
Administration/Management	957	9.8	14.9	36.3	33.1	5.9
Art	279	20.8	24.4	34.4	18.3	2.2
Biology/Life Science	397	31.5	25.2	28.5	12.3	2.5
Business/General	266	16.2	16.2	41.0	24.4	2.3
Chemistry	171	49.1	25.7	17.0	7.0	1.2
Communications	1324	2.3	5.4	25.3	51.1	16.0
Computer/Information Sciences	247	40.9	22.3	24.3	11.7	0.8
Design/Applied Arts	341	15.5	22.9	41.4	18.8	1.5
Economics	123	42.3	17.9	23.6	13.8	2.4
Education/General	1782	4.4	10.3	32.8	43.7	8.8
Engineering	342	35.1	18.1	34.2	11.7	0.9
English Literature	3207	1.2	3.4	22.0	54.4	19.1
Fine and Applied Arts	269	9.7	19.3	32.0	33.1	6.0
Foreign Language and Literature	864	3.1	10.8	36.0	43.6	6.5
History	644	7.0	14.6	44.9	30.0	3.6
Health Professions/Related Sciences	443	9.3	14.7	40.2	30.7	5.2
Liberal Arts/General Studies/Humanities	959	4.5	9.4	34.9	41.8	9.4
Mathematics/Statistics	263	70.3	12.2	11.8	5.3	0.4
Music	163	11.0	19.6	37.4	27.0	4.9
Nursing	339	5.0	10.3	38.4	40.7	5.6
Philosophy	276	4.4	12.7	39.1	38.8	5.1
Physical Education/Health/ Safety Education	323	16.7	18.9	38.7	22.6	3.1
Physics	62	54.8	22.6	11.3	11.3	0
Political Science/Government	367	7.6	15.0	39.2	34.6	3.5
Psychology	598	9.5	19.9	39.6	26.3	4.7
Religion	391	10.7	16.1	39.1	29.7	4.4
Sociology	384	9.4	15.9	42.7	28.7	3.4

[1]A standardized score with an average of 50 and a standard deviation of 10.
[2]Refer to the tables provided in the report to determine how frequently this objective was selected relative to other objectives within a discipline (Part I for each discipline).

Table 9: Percent of Classes Within T Score[1] Categories
Objective 9. Find and use resources

Discipline	Number of Classes[2]	Unadjusted T Score				
		≤ 37	38-44	45-54	55-62	63 +
Accounting	258	12.0	10.9	39.5	26.0	11.6
Administration/Management	742	9.8	13.5	36.0	31.1	9.6
Art	300	20.3	16.3	32.3	21.3	9.7
Biology/Life Science	493	11.8	15.4	34.5	30.0	8.3
Business/General	224	8.0	14.3	38.4	32.6	6.7
Chemistry	247	15.0	22.7	37.7	20.2	4.5
Communications	731	6.0	13.3	38.6	32.8	9.3
Computer/Information Sciences	605	11.9	17.9	39.7	25.0	6.6
Design/Applied Arts	637	8.5	11.9	37.7	31.4	10.5
Economics	148	25.0	16.9	26.4	25.0	6.8
Education/General	1828	5.3	8.3	27.2	34.6	24.7
Engineering	367	20.7	17.4	28.3	25.3	8.2
English Literature	1453	5.9	11.2	33.2	38.9	10.9
Fine and Applied Arts	317	17.7	13.9	34.4	26.5	7.6
Foreign Language and Literature	188	21.3	23.4	29.3	22.3	3.7
History	314	12.1	17.5	32.8	28.0	9.6
Health Professions/Related Sciences	495	5.9	9.3	30.5	37.4	17.0
Liberal Arts/General Studies/Humanities	638	7.5	12.9	38.2	32.8	8.6
Mathematics/Statistics	333	20.7	16.8	37.8	19.8	4.8
Music	104	23.1	18.3	19.2	20.2	19.2
Nursing	394	2.5	3.3	26.9	44.9	22.3
Philosophy	119	21.9	20.2	35.3	20.2	2.5
Physical Education/Health/ Safety Education	340	17.4	10.0	36.2	28.2	8.2
Physics[3]	90	34.4	24.4	33.3	7.8	0
Political Science/Government	218	11.5	11.0	33.9	34.4	9.2
Psychology	437	12.6	12.1	32.5	31.4	11.4
Religion	251	15.9	17.1	30.7	26.3	10.0
Sociology	238	14.7	16.8	32.4	25.6	10.5

[1]A standardized score with an average of 50 and a standard deviation of 10.
[2]Refer to the tables provided in the report to determine how frequently this objective was selected relative to other objectives within a discipline (Part I for each discipline).
[3]Fewer than 100 classes identified this objective as "Important" or "Essential." Results from such small samples are generally not stable enough to permit dependable generalizations.

Table 10: Percentage of Classes Within T Score[1] Categories
Objective 10. Values development

Discipline	Number of Classes[2]	Unadjusted T Score				
		≤ 37	38-44	45-54	55-62	63 +
Accounting	100	29.0	21.0	28.0	16.0	6.0
Administration/Management	433	13.4	13.4	34.6	27.9	10.6
Art	200	22.0	22.0	34.5	17.0	4.5
Biology/Life Science	144	25.7	21.5	31.3	18.8	2.8
Business/General	110	10.9	16.4	45.5	21.8	5.5
Chemistry[3]	42	52.4	16.7	21.4	7.1	2.4
Communications	369	14.4	16.8	32.3	28.5	8.1
Computer/Information Sciences[3]	81	40.7	22.2	24.7	11.1	1.2
Design/Applied Arts	228	14.0	16.7	45.2	21.9	2.2
Economics[3]	62	29.0	29.0	30.7	8.1	3.2
Education/General	1249	5.2	8.4	28.2	39.9	18.3
Engineering	118	37.3	17.0	37.3	7.6	0.9
English Literature	706	13.3	19.7	39.4	22.4	5.2
Fine and Applied Arts	189	14.3	16.4	32.8	28.0	8.5
Foreign Language and Literature	109	25.7	18.4	32.1	22.9	0.9
History	205	21.5	23.9	32.7	16.6	5.4
Health Professions/Related Sciences	257	9.3	11.7	28.4	36.6	14.0
Liberal Arts/General Studies/Humanities	571	6.1	10.3	34.3	33.1	16.1
Mathematics/Statistics[3]	78	35.9	24.4	26.9	9.0	3.9
Music	106	18.9	22.6	27.4	19.8	11.3
Nursing	174	4.0	6.9	33.3	44.3	11.5
Philosophy	341	2.4	7.0	29.9	41.6	19.1
Physical Education/Health/ Safety Education	528	9.3	15.7	38.1	29.7	7.2
Physics[3]	22	50.0	13.6	31.8	0	4.6
Political Science/Government	154	11.7	13.0	40.3	27.9	7.1
Psychology	359	7.5	12.0	32.0	35.4	13.1
Religion	627	1.4	3.0	21.4	43.1	31.1
Sociology	330	3.9	10.9	40.3	36.1	8.8

[1]A standardized score with an average of 50 and a standard deviation of 10.
[2]Refer to the tables provided in the report to determine how frequently this objective was selected relative to other objectives within a discipline (Part I for each discipline).
[3]Fewer than 100 classes identified this objective as "Important" or "Essential." Results from such small samples are generally not stable enough to permit dependable generalizations.

Table 11: Percentage of Classes Within T Score[1] Categories
Objective 11. Critical analysis

Discipline	Number of Classes[2]	Unadjusted T Score				
		≤ 37	38-44	45-54	55-62	63 +
Accounting	284	21.8	19.7	35.2	16.2	7.0
Administration/Management	918	7.7	11.9	38.5	39.2	12.8
Art	360	13.9	18.9	39.2	20.8	7.2
Biology/Life Science	466	19.7	25.8	36.3	14.4	3.9
Business/General	250	9.2	15.6	47.6	23.2	4.4
Chemistry	227	37.9	27.8	26.4	5.7	2.2
Communications	940	7.0	10.5	41.4	30.2	10.9
Computer/Information Sciences	303	36.3	23.8	30.0	8.6	1.3
Design/Applied Arts	526	10.3	16.9	43.0	24.3	5.5
Economics	330	17.6	23.9	40.3	13.0	5.2
Education/General	1758	6.5	10.6	31.7	31.3	19.9
Engineering	298	38.6	23.2	27.2	10.4	0.7
English Literature	2542	3.0	8.3	40.7	33.1	14.9
Fine and Applied Arts	364	12.9	16.2	37.4	23.1	10.4
Foreign Language and Literature	224	24.6	17.4	28.1	21.4	8.5
History	685	5.7	13.1	41.9	27.0	12.3
Health Professions/Related Sciences	408	8.6	12.5	40.2	27.2	11.5
Liberal Arts/General Studies/Humanities	1041	5.3	11.2	35.8	30.6	17.0
Mathematics/Statistics	399	39.1	23.8	28.6	6.8	1.8
Music	141	27.7	14.9	37.6	12.1	7.8
Nursing	388	4.1	6.4	34.5	38.4	16.5
Philosophy	582	1.2	1.9	19.1	44.0	33.9
Physical Education/Health/ Safety Education	334	20.7	19.8	35.0	17.7	6.9
Physics	166	47.0	23.5	22.3	6.6	0.6
Political Science/Government	477	3.4	8.4	29.1	35.9	23.3
Psychology	861	7.0	13.4	44.1	25.4	10.1
Religion	571	4.2	6.1	37.3	34.9	17.5
Sociology	534	5.8	9.9	40.5	30.7	13.1

[1]A standardized score with an average of 50 and a standard deviation of 10.
[2]Refer to the tables provided in the report to determine how frequently this objective was selected relative to other objectives within a discipline (Part I for each discipline).

Table 12: Percentage of Classes Within T Score[1] Categories
Objective 12. Interest in learning

Discipline	Number of Classes[2]	Unadjusted T Score				
		≤ 37	38-44	45-54	55-62	63 +
Accounting	248	18.6	19.0	36.7	21.0	4.8
Administration/Management	751	11.7	14.1	32.6	31.6	10.0
Art	370	8.7	16.0	35.1	28.4	11.9
Biology/Life Science	487	13.1	21.6	38.2	21.6	5.5
Business/General	199	13.1	19.6	37.2	24.1	6.0
Chemistry	212	21.2	23.6	37.3	14.2	3.8
Communications	646	11.8	19.2	34.5	27.7	6.8
Computer/Information Sciences	449	14.3	24.7	34.7	22.1	4.2
Design/Applied Arts	652	5.8	14.3	32.7	39.0	8.3
Economics	186	25.3	25.3	30.7	17.2	1.6
Education/General	1630	6.1	9.9	27.1	36.5	20.4
Engineering	344	22.7	27.6	28.2	20.1	1.5
English Literature	1253	10.5	18.5	34.3	29.1	7.6
Fine and Applied Arts	430	7.2	12.6	29.1	38.6	12.6
Foreign Language and Literature	342	10.8	20.8	37.7	26.3	4.4
History	406	11.6	15.8	40.2	26.4	6.2
Health Professions/Related Sciences	415	8.2	10.1	27.7	36.6	17.4
Liberal Arts/General Studies/Humanities	721	7.9	14.7	31.5	35.5	10.4
Mathematics/Statistics	465	17.6	25.6	34.4	18.9	3.4
Music	206	15.5	17.5	32.0	27.2	7.8
Nursing	293	4.8	7.5	27.7	46.1	14.0
Philosophy	338	3.6	11.0	30.5	40.5	14.5
Physical Education/Health/ Safety Education	493	16.6	16.0	32.3	26.2	8.9
Physics	170	32.9	25.9	27.7	12.4	1.2
Political Science/Government	282	11.7	10.6	31.9	36.2	9.6
Psychology	533	9.0	16.7	34.2	31.7	8.4
Religion	460	5.0	10.2	34.6	40.0	10.2
Sociology	377	11.1	17.0	33.2	32.1	6.6

[1]A standardized score with an average of 50 and a standard deviation of 10.
[2]Refer to the tables provided in the report to determine how frequently this objective was selected relative to other objectives within a discipline (Part I for each discipline).

Table 13: Percentage of Classes Within T Score[1] Categories
Global Outcome Measure: Increased positive attitude

Discipline	Number of Classes[2]	Unadjusted T Score				
		≤ 37	38-44	45-54	55-62	63 +
Accounting	1095	15.6	18.9	38.7	23.7	3.1
Administration/Management	2403	9.6	12.4	38.5	33.5	6.0
Art	1149	3.0	8.0	31.2	42.9	15.0
Biology/Life Science	1763	10.4	14.8	35.3	31.7	7.9
Business/General	605	8.9	14.4	46.0	26.9	3.8
Chemistry	969	23.6	24.6	37.6	12.8	1.4
Communications	1885	9.3	12.2	39.6	31.4	7.6
Computer/Information Sciences	1409	10.0	13.4	43.7	29.2	3.8
Design/Applied Arts	1601	4.6	8.9	33.7	41.6	11.1
Economics	792	18.2	20.3	41.8	17.9	1.8
Education/General	4424	5.1	6.9	25.1	40.0	22.9
Engineering	1249	18.3	16.1	38.3	22.9	4.5
English Literature	3776	15.5	19.7	38.5	21.5	4.8
Fine and Applied Arts	1093	4.8	7.4	29.6	41.5	16.7
Foreign Language and Literature	1086	9.9	13.2	37.8	30.6	8.7
History	1058	8.3	14.2	40.9	30.6	6.0
Health Professions/Related Sciences	1412	4.6	7.2	25.0	43.7	19.5
Liberal Arts/General Studies/Humanities	1720	16.4	19.6	37.4	21.6	4.9
Mathematics/Statistics	1895	24.8	25.3	37.9	11.4	0.5
Music	790	6.3	7.9	34.8	35.4	15.6
Nursing	1068	4.4	6.4	27.9	39.8	21.5
Philosophy	651	9.2	14.1	44.4	25.0	7.2
Physical Education/Health/ Safety Education	1315	4.7	7.4	33.1	42.4	12.5
Physics	525	32.0	23.1	33.5	10.3	1.1
Political Science/Government	677	8.9	10.6	38.0	36.0	6.5
Psychology	1767	5.3	8.7	37.2	40.0	8.9
Religion	1039	3.8	6.1	34.4	43.0	12.8
Sociology	871	8.5	13.0	38.6	32.4	7.6

[1]A standardized score with an average of 50 and a standard deviation of 10.
[2]Refer to the tables provided in the report to determine how frequently this objective was selected relative to other objectives within a discipline (Part I for each discipline).

Table 14: Percentage of Classes Within T Score[1] Categories
Global Outcome Measure: Excellent teacher

Discipline	Number of Classes[2]	Unadjusted T Score				
		≤ 37	38-44	45-54	55-62	63 +
Accounting	1070	14.3	12.2	36.5	35.0	2.1
Administration/Management	2352	12.9	12.8	33.8	38.1	2.5
Art	1127	7.5	11.8	34.5	41.3	5.0
Biology/Life Science	1727	10.4	11.8	31.7	41.7	4.5
Business/General	600	10.0	16.0	37.8	34.8	1.3
Chemistry	940	16.3	13.2	32.1	35.9	2.6
Communications	1851	10.1	11.8	32.6	41.9	3.6
Computer/Information Sciences	1371	13.3	15.5	37.0	32.2	2.1
Design/Applied Arts	1571	8.9	8.2	33.4	45.3	4.4
Economics	779	11.9	14.3	39.4	33.4	1.0
Education/General	4353	9.7	9.0	26.1	47.2	8.0
Engineering	1207	18.0	17.1	37.2	25.7	2.1
English Literature	3709	8.1	11.0	33.7	43.3	3.9
Fine and Applied Arts	1071	7.0	9.6	33.0	45.8	4.7
Foreign Language and Literature	1071	7.0	8.7	28.9	50.7	4.8
History	1039	6.8	11.6	36.5	42.3	2.9
Health Professions/Related Sciences	1374	10.8	10.9	31.1	42.2	5.0
Liberal Arts/General Studies/Humanities	1692	7.6	9.7	36.3	43.1	3.3
Mathematics/Statistics	1854	11.2	11.8	34.3	38.9	3.8
Music	781	6.0	9.2	33.6	43.9	7.3
Nursing	1056	9.0	8.7	31.3	45.7	5.2
Philosophy	644	4.4	9.2	36.7	46.0	3.9
Physical Education/Health/ Safety Education	1303	6.0	8.1	31.2	48.9	5.9
Physics	510	20.2	16.3	34.7	28.0	0.8
Political Science/Government	668	6.0	10.5	32.3	48.7	2.5
Psychology	1737	6.7	10.2	32.1	47.5	3.6
Religion	1023	5.7	7.6	32.0	50.5	4.2
Sociology	851	11.1	11.2	34.4	41.0	2.4

[1]A standardized score with an average of 50 and a standard deviation of 10.
[2]Refer to the tables provided in the report to determine how frequently this objective was selected relative to other objectives within a discipline (Part I for each discipline).

Table 15: Percentage of Classes Within T Score[1] Categories
Global Outcome Measure: Excellent course

Discipline	Number of Classes[2]	Unadjusted T Score				
		≤ 37	38-44	45-54	55-62	63 +
Accounting	1070	12.3	14.4	41.4	26.6	5.2
Administration/Management	2356	11.2	10.1	35.1	34.6	9.0
Art	1137	4.6	6.6	27.8	42.2	18.8
Biology/Life Science	1708	10.3	12.8	32.5	34.3	10.1
Business/General	594	8.8	11.1	43.1	32.7	4.4
Chemistry	930	20.2	15.3	44.2	18.4	1.9
Communications	1847	8.7	9.2	36.7	35.7	9.7
Computer/Information Sciences	1373	9.9	12.6	39.3	31.2	7.1
Design/Applied Arts	1570	6.0	7.7	32.6	41.2	12.6
Economics	767	16.3	15.4	42.4	23.6	2.4
Education/General	4349	8.2	7.5	24.9	36.8	22.5
Engineering	1203	19.3	13.8	38.8	23.1	5.0
English Literature	3681	10.3	11.3	39.1	30.6	8.7
Fine and Applied Arts	1080	6.4	7.8	29.4	39.2	17.2
Foreign Language and Literature	1071	7.3	8.2	32.7	39.3	12.5
History	1040	7.3	9.8	36.6	36.4	9.8
Health Professions/Related Sciences	1398	7.2	7.7	27.8	38.1	19.2
Liberal Arts/General Studies/Humanities	1667	15.7	12.9	36.8	26.4	8.3
Mathematics/Statistics	1828	16.9	16.4	43.8	21.6	1.5
Music	781	6.3	6.3	32.1	33.4	21.9
Nursing	1057	8.5	7.3	28.8	38.4	17.0
Philosophy	639	7.4	8.5	39.4	33.5	11.3
Physical Education/Health/ Safety Education	1297	6.2	5.8	24.7	40.4	23.0
Physics	503	26.2	16.7	37.4	18.7	1.0
Political Science/Government	661	7.9	8.9	34.8	38.6	9.8
Psychology	1744	6.2	7.1	33.9	39.4	13.5
Religion	1027	4.2	6.7	30.1	41.4	17.6
Sociology	850	10.4	11.3	35.9	32.4	10.1

[1]A standardized score with an average of 50 and a standard deviation of 10.
[2]Refer to the tables provided in the report to determine how frequently this objective was selected relative to other objectives within a discipline (Part I for each discipline).

Table 16: Percentage of Classes Within T Score[1] Categories
Progress on Relevant Objectives[2]

Discipline	Number of Classes[3]	Unadjusted T Score				
		≤ 37	38-44	45-54	55-62	63 +
Accounting	1040	8.9	10.3	43.5	31.0	6.4
Administration/Management	2192	7.8	11.5	40.0	32.8	8.1
Art	1097	3.7	7.8	38.7	42.2	7.6
Biology/Life Science	1700	6.8	13.1	40.6	31.1	8.4
Business/General	574	6.5	11.9	49.8	29.4	2.4
Chemistry	923	10.3	17.3	42.4	25.1	4.9
Communications	1809	3.9	7.6	38.5	40.7	9.3
Computer/Information Sciences	1347	8.2	17.0	47.1	24.2	3.5
Design/Applied Arts	1518	5.5	9.6	42.1	35.1	7.8
Economics	756	11.8	16.3	44.1	23.3	4.6
Education/General	4156	4.7	7.4	30.6	39.5	17.8
Engineering	1208	10.8	18.9	41.5	25.2	3.7
English Literature	3658	2.4	7.2	38.3	40.7	11.5
Fine and Applied Arts	1023	4.1	10.1	36.8	39.1	10.0
Foreign Language and Literature	1024	5.2	12.4	46.5	31.5	4.4
History	1005	5.5	12.3	46.8	29.6	5.9
Health Professions/Related Sciences	1365	3.7	6.7	33.0	43.4	13.2
Liberal Arts/General Studies/Humanities	1654	4.6	9.0	42.6	35.6	8.3
Mathematics/Statistics	1821	12.3	17.0	44.8	23.2	2.8
Music	767	3.5	5.2	33.0	43.2	15.1
Nursing	1026	3.5	5.5	31.7	42.3	17.1
Philosophy	629	3.0	5.3	34.8	43.6	13.4
Physical Education/Health/ Safety Education	1222	9.8	11.5	40.5	30.4	7.8
Physics	492	14.4	20.1	41.9	21.5	2.0
Political Science/Government	644	5.3	9.6	42.1	34.9	8.1
Psychology	1691	3.8	9.3	41.7	35.4	9.9
Religion	991	2.5	9.1	38.7	38.6	11.2
Sociology	847	8.7	12.9	40.7	30.1	7.6

[1]A standardized score with an average of 50 and a standard deviation of 10.
[2]Weighted T Score average for objectives selected as "Important" or "Essential." "Essential" objectives are double weighted; a single weight is given to "Important" objectives.
[3]Refer to the tables provided in the report to determine how frequently this objective was selected relative to other objectives within a discipline (Part I for each discipline).