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## DIMENSIONS OF FACULTY-COURSE EVALUATION\*

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### A. INTRODUCTION

The problem of evaluating instruction is closely tied to identifying the purposes of the university, the goals it sets for itself, the objectives it sets for its students (3). Recently, Dwyer (6) reviewed the research related to characteristics and relationships of selected criteria for evaluating teacher effectiveness. It was evident that there is a paucity of information regarding the dimensionality of faculty-course evaluation instruments. Application of multivariate procedures has supported both simplistic and manifold models. The use of factor analysis has succeeded in isolating two factors, *instructor empathy* and *instructional competence* (2, 9). However, Dick (5), Dwyer (6), and Spencer (10) support a six-factor model consisting of *general course attitude*, *method of instruction*, *course content*, *student interest and attention*, *instructor characteristics*, and *specific procedures*. Specifically, the purpose of the study was twofold: (a) to investigate the structure of faculty-course evaluation, and (b) to aim for a model useful for the construction of faculty-course rating instruments.

### B. METHOD

Ss were 1097 students enrolled in 60 sections of an introductory speech-communication course at the University of Hawaii (11). Course sections were guided by 27 faculty members with various amounts of teaching experience. S evaluated both the "activity group" instructor, as well as course content and procedures.

Sixty-seven ratings were obtained for each S from two faculty-course evaluation instruments, the Illinois Course Evaluation Questionnaire (CEQ) (10) and A Student's Rating Scale of an Instructor.<sup>1</sup> The former consisted of 50 five-point ratings dealing with the "mechanics" of teaching and course management, while the latter consisted of 17 nine-point ratings focused on attributes of the instructor.

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Scores for each  $S$  were intercorrelated and the resultant matrix factor analyzed. An initial inspection of the eigenvalues indicated 11 factors with roots greater than 1.0. However, an application of the *scree test* (4) declared nine factors as a reasonable solution. Squared multiple  $R$ 's were inserted in the principal diagonal as communality estimates and nine factors extracted. Orthogonal rotation was employed with the use of the Varimax procedure (7).

### C. RESULTS<sup>2</sup>

#### 1. Major Dimensions

First of all, it was clear from an inspection of the final rotated factor matrix that Factors 1 and 2 accounted for a substantial portion (64 percent) of the variance. The remaining seven factors contributed relatively small amounts (averaging 5 percent) to the final solution.

Factor 1 accounted for 38 percent of the rotated variance and was labeled "instructional impact." An inspection of the loading pattern indicated that the factor was marked by variables from the CEQ scale, notably, *the course was quite useful* (.85), *it was a worthwhile course* (.84), *course was not very helpful* (— .84), *not much was gained by taking this course* (— .81), *uninteresting course* (— .79), *it was quite interesting* (.76), *it was a waste of time* (— .74), *overall, the course was good* (.73), *the course material seemed worthwhile* (.73), *the content of the course was very good* (.72), *the course held my interest* (.70), *the course increased my general knowledge* (.69), *it was quite boring* (— .65), *I would take another course that was taught this way* (.63), *excellent course content* (.62), *held my attention throughout the course* (.58), *more courses should be taught this way* (.57), *it was difficult to remain attentive* (— .54), *one of my poorest courses* (— .51), *the textbook was very good* (.50), *it was easy to remain attentive* (.49), *I would have preferred another method of teaching in this course* (— .49), *generally, the course was well organized* (.48), *I think that the course was taught quite well* (.47), *another method of instruction should have been employed* (— .47), *homework assignments were helpful in understanding the course* (.44), *some days I was not very interested in this course* (— .42), and *course material was poorly organized* (— .40).

Factor 2 accounted for 26 percent of the rotated variance and was labeled "instructor impact." An inspection of the loading pattern indicated that the

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<sup>2</sup> A detailed tabulation of the results may be obtained as Document NAPS 00522, from ASIS National Auxiliary Publications Service, c/o CCM Information Sciences, Inc., 22 West 34th Street, New York, N.Y. 10001, remitting \$1.00 for microfiche or \$3.00 for photocopies.

factor was marked primarily by variables from the Eidsmoe scale with four contributions from the CEQ. The markers were *usually keeps steady interest in subject and stimulates thinking* (.74), *creates real desire and keeps things moving* (.74), *keeps up steady interest and enthusiasm* (.71), *attitude of friendliness and feeling of mutual interest* (.70), *possesses keen sense of humor* (.69), *pleasant voice and speaks distinctly* (.68), *efficient management of classroom* (.67), *excellent mastery of subject matter* (.67), *encourages students to express opinions* (.66), *usually selects important ideas* (.65), *shows definite evidence of careful preparation* (.65), *students understand the tasks of each new assignment* (.63), *well poised and sure of himself* (.62), *questions challenging and demands sound thinking* (.61), *well organized and shows thorough planning* (.60), *neat and well groomed appearance* (.55), *the instructor seemed to be interested in students as persons* (.42), *the instructor seemed to consider teaching as a chore or routine activity* (—.42), *the instructor did not synthesize, integrate or summarize effectively* (—.39), *the instructor has a thorough knowledge of his subject matter* (.38), and *examination questions thought-provoking and carefully selected* (.36).

## 2. Minor Dimensions

The remaining factors identified in the study were small and centered about the CEQ.

Factor 3 accounted for 7 percent of the rotated variance and was labeled "difficulty level." An inspection of the loading pattern indicated that the factor was marked by *the course material was too difficult* (—.65), *material in the course was easy to follow* (.59), *at times I was confused* (—.58), *ideas and concepts were developed too rapidly* (—.55), *some things were not explained very well* (—.38), and *the content of the course was too elementary* (.36).

Factor 4 accounted for 6 percent of the rotated variance and was labeled "attention value." An inspection of the loading pattern indicated that the factor was marked by *it was easy to remain attentive* (.59), *it was difficult to remain attentive* (—.56), *held my attention throughout the course* (.48), *some days I was not very interested in this course* (—.38), *it was quite boring* (—.38), and *the course held my interest* (.35).

Factor 5 accounted for 8 percent of the rotated variance and was labeled "satisfaction with instructional method." An inspection of the loading pattern indicated that the factor was marked by *I would prefer a different method of instruction* (—.68), *another method of instruction should have been employed* (—.67), *I would have preferred another method of teaching in this course*

(— .60), *more courses should be taught this way* (.48), *I learn more when other teaching methods are used* (— .48), *I would take another course that was taught this way* (.44), and *the way in which this course was taught results in better student learning* (.42).

Factor 6 accounted for 6 percent of the rotated variance and was labeled "instructor commitment." An inspection of the loading pattern indicated that the factor was marked by *the instructor did not synthesize, integrate or summarize effectively* (— .47), *the instructor seemed to be interested in students as persons* (.45), *the instructor encouraged the development of new viewpoints and appreciations* (.43), *the instructor had a thorough knowledge of his subject matter* (.40), *the instructor did not review promptly and in such a way that students could understand their weaknesses* (— .39), *the demands of the students were not considered by the instructor* (— .39), and *the instructor seemed to consider teaching as a chore or routine activity* (— .39).

Factor 7 accounted for 3 percent of the rotated variance and was labeled "appropriate evaluation." An inspection of the loading pattern indicated that the factor was marked by *the types of test questions used were good* (.54), *the examinations were too difficult* (— .40), *the textbook was very good* (.35), and *examination questions thought-provoking and carefully selected* (.34).

Factor 8 accounted for only 2 percent of the rotated variance. Since there were no loadings over  $\pm .35$ , the factor was left unidentified.

Factor 9 accounted for 4 percent of the rotated variance and was not labeled, since it was subsumed under Factor 1. However, an inspection of the loading pattern indicated that the factor was marked by *course material was poorly organized* (— .54), *generally, the course was well organized* (.45), and *the pace of the course was too slow* (— .36).

#### D. DISCUSSION

One important application of the multivariate tool of factor analysis is to partition complex concepts into smaller and, hopefully, more manageable "functional unities." When applied to the complex concept of faculty-course evaluation, the present study indicated clearly that two major ingredients must be considered in the development of a meaningful taxonomy, namely, *instructor impact* and *instructional impact*.

The delineation of these two salient factors, however, does not imply that these entities completely describe the domain. A close inspection of various rating instruments currently used in academic settings clearly suggests a need for a class of variables associated with *effects on the learner*. There is increas-

ing recognition that the measurement of unexpected or unpredictable outcomes in learning is one of the challenges of evaluation theory (8).

It is the contention of the present writer that faculty-course evaluation be embedded within a systems approach to higher education. As viewed here, evaluation is the process of identifying and quantifying the relationship between student inputs and educational outputs, along with a consideration of combination of mediating factors which maximize the outputs (1). Briefly, student inputs refer to the nature and characteristics of the students entering the course to be evaluated. Few faculty-course evaluation instruments consider the attributes of the learner.

Educational outputs refer to (a) cognitive and noncognitive changes which take place in students after they have been exposed to an instructional program, and (b) the impact of the program upon systems external to it (e.g., campus, home, community, other programs, etc.). Mediating factors refer to the description of the way in which resources are utilized with an instructional program in combination with the student inputs.

To state that faculty-course evaluation instruments should attend to *effect on the learner* is to affirm a systems approach to the problem. Future developments of faculty-course evaluation instruments must be sensitive to these sorts of measurable outcomes in higher education.

#### E. SUMMARY

The study attempted to establish the dimensionality of faculty-course evaluation. The Illinois Course Evaluation Questionnaire and A Student's Rating Scale of an Instructor was administered to 1097 students at the University of Hawaii. Sixty-seven variables were intercorrelated and factor analyzed, resulting in a nine factor solution. Two of the factors, labeled instructor impact and instructional impact, accounted for 64 percent of the rotated variance. The findings were discussed in light of a systems approach to evaluation in higher education.

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