

Educational Leadership / RESEARCH SUPPLEMENT

EDITED BY ASCD RESEARCH COUNCIL • FREDERICK A. RODGERS, CHAIRMAN

Volume 3

January 1970

Number 3

CONTENTS

- A Model for the Evaluation of
Teacher Education Programs and
Some Illustrative Data *Fred D. Carver, Harold H. Lerch* 373
- A Call for Papers *Frederick A. Rodgers* 378
- Cognitive Levels of Teacher Objectives and Oral
Classroom Questions for Curriculum Guide
Users and Non-users *Dorothy Huenecke* 379
- An Analysis of a Student Council Workshop as a
Training Institution for High School Leaders *Jack Lavenburg* 385

A Model for the Evaluation of Teacher Education Programs and Some Illustrative Data

FRED D. CARVER *
HAROLD H. LERCH

TRADITIONAL and persistent criticism of professional education courses prompts one to ask for systematic evaluation of the learning experiences provided by colleges of education. The purpose of the study from which data reported in this article were derived was to evaluate undergraduate professional education programs which are under the auspices of the Council on Teacher Education at the University of Illinois.

The Dean of the College of Education appointed a College-wide committee to examine the problem, collect relevant data, and make recommendations for improvement in regard to the courses which are offered by the College of Education and which are required in the various programs. The committee elected to focus on six professional education

courses common to most preparation programs for secondary teachers—that is, English, social studies, mathematics, science, foreign languages, and physical education. An ambitious design for the evaluation emerged out of considerable discussion.

A Model for Evaluation

Central to the total evaluation model was the development of expected outcomes (objectives stated as behaviorally as possible)

* *Fred D. Carver, Assistant Professor, Department of Educational Administration and Supervision, University of Illinois, Urbana; and Harold H. Lerch, Professor, Department of Elementary Education, University of Illinois, Urbana*

Copyright © 1970 by the Association for Supervision and Curriculum Development, NEA.

All rights reserved.

by the instructors for the courses in question. The agreed-upon design called for prospective teachers (students), recent graduates presently teaching, and supervisors of student teachers to respond to the objectives with respect to extent of achievement and appropriateness. The initial phase of the study which is reported here focused on the perceptions of prospective teachers as respondents. Implicitly, the evaluation model is that proposed by French and associates for evaluating a program of general education in high school.¹ The major differences between our approach and the one proposed by French and associates are: (a) our use of *expected outcomes* as contrasted with the emphasis on *behavioral goals* in their model, and (b) their use of *importance* as contrasted with our use of *appropriateness*.

To make explicit the approach utilized for the evaluation, the approach is delineated as follows. The initial activity is the development and statement of expected outcomes or objectives of a course by the instructor. These objectives are edited to ensure parallel construction and are presented to respondent groups with instructions to rate, on a seven-point scale, the extent to which each was achieved in the course and the extent to which each was perceived to be appropriate for the course.

As will be explained later, the two ratings were performed at different times by different samples in this study. It is then possible to compare levels of achievement between objectives and to note whether the best achieved objectives are deemed appropriate. If more than one respondent group is surveyed, congruence of perceived achievement and appropriateness can be computed. The model, fully developed, appears in Figure 1.

By considering ratings at two different times, the approach lends itself to experimental research including longitudinal studies which, with proper controls, might be used to compare effectiveness of materials, or instructors, or change in students in a

program. Data in any one cell of the chart (other than the instructor cell) at one point in time are valuable information for the instructor in that they suggest changes in emphasis, materials, or approach. The general scheme of the model is also similar to a Lucio and McNeil model for assessing teacher performance,² although there was no intent (nor was there any concern expressed that a threat was perceived) that data obtained from prospective teachers would be used to evaluate instructors.

Objectives by Appropriateness	Objectives Rated by Achievement			
	Instructor	Student	Supervising Teacher	Recent Graduate
Instructor				
Student				
Supervising Teacher				
Recent Graduate				

Figure 1. Model for Evaluation of Teacher Education Programs *

* Note: Data in this report pertain to the cell that is shaded.

Questions To Be Answered

There were three major questions to be answered by the data:

1. What are the expected outcomes (objectives) of the common professional education courses?
2. To what extent are the objectives accomplished?
3. To what extent are the objectives appropriate?

Only two of these will be explored in this article, since the utility of the model can be demonstrated without making explicit the

¹ Will French and associates. *Behavioral Goals of General Education in High School*. New York: Russell Sage Foundation, 1957.

² William H. Lucio and John D. McNeil. *Supervision: A Synthesis of Thought and Action*. New York: McGraw-Hill Book Company, 1962. Chapter 10.

objectives to be rated. Further, while the answer to the first question is in many respects the most interesting information, it is "local." To report the objectives in an article of this nature might be interesting but would probably be immaterial.

Other questions which were of interest to the committee and to the instructors of the courses were:

1. How do ratings of achievement compare to and/or relate to ratings of appropriateness?

2. Do different types of students rate the objectives differently?

Instrumentation

An objectives instrument was developed for each of six courses from responses provided by instructors. Each consisted, for the rating of achievement, of the objectives preceded by instructions which read:

Objectives for _____ are stated
(course)
below. Indicate in each blank (____) (preceding the item) the extent to which each of the objectives was achieved. Please rate the extent of achievement on a scale of 1-7 with 1 representing lowest achievement and 7 representing highest achievement.

Personal information was also obtained from each student, for example, college of enrollment, year in school, and expected grade in the course.

The same instrument was used for the rating of appropriateness except for the instructions which preceded the items.

The following statements have been given as objectives for one of the education courses in your professional program. Indicate in each blank (____) the extent to which you think each of the objectives is appropriate for a program for preservice teachers. Please rate the extent of appropriateness on a scale of 1-7 with 1 representing the lowest degree of appropriateness and 7 representing the highest degree of appropriateness.

In this paper the courses are referred to as Courses A, B, C, D, E, and F. The courses

are described in the undergraduate catalog as follows:

Course A: Introduction to the Teaching of Secondary School Subjects. An analysis of problems and trends in the teaching of high school subjects. Special sections are provided in the usual high school fields. Standard and new programs are assessed. Research and empirical evidence are explored as they relate to effective teaching of the special subjects.

Course B: Foundations of American Education. A study of the problems of formulating and justifying aims and policies in American education, of designing and systematizing the school curriculum, of organization and support of the public school system, and of the teaching-learning process. These problems are examined in terms of relevant materials derived from sociology, social philosophy, and axiology.

Course C: Educational Psychology. The basic undergraduate course in psychology of education for prospective teachers. Materials and principles from the various areas of psychology (mental hygiene, psychology of learning, etc.) are applied to the practical problems of teaching.

Course D: Principles of Secondary Education. Designed to provide each specialized educational worker with a common orientation to the major responsibilities of the public school as a unit and his own specialized responsibilities and problems within the framework of the total educational enterprise.

Course E: Technic of Teaching in the Secondary School. Methods of teaching specific subject-matter fields in the secondary school. Special sections are provided in the usual high school subjects.

Course F: Educational Practice in Secondary Education. A course in practice teaching to meet certification requirements for teaching in the secondary school.

Sample

Responses were obtained from one sample for ratings of achievement and a different sample for ratings of appropriateness. The first sample consisted of students enrolled in the six courses on the final day of class of the spring semester, 1968—prospective teachers

Obj.	Course A		Course B		Course C		Course D		Course E*		Course F**	
	Ach.	Appr.	Ach.	Appr.	Ach.	Appr.	Ach.	Appr.	Ach.	Appr.	Ach.	Appr.
1	4.86	5.40	5.84	4.34	5.17	4.86	4.70	4.63	5.21	5.67	6.04	6.15
2	3.99	5.61	4.14	5.86	4.51	5.44	3.78	5.84	4.75	6.13	6.30	5.15
3	3.62	5.28	3.83	4.50	4.21	4.55	4.69	5.08	4.46	5.94	5.22	6.22
4	3.31	4.57	3.69	4.32	3.36	3.73	4.36	6.08	4.67	4.62	5.74	5.20
5	2.57	4.69	4.60	4.82	4.83	4.05	3.88	4.63	4.33	6.08	4.70	4.13
6	5.44	5.73	4.73	4.39	3.56	3.05	3.30	4.30			5.43	5.88
7	5.43	5.33	4.49	5.04	5.20	4.73	3.85	4.34			6.26	5.28
8	5.76	5.09	5.00	5.00	5.26	5.65	4.57	3.69			5.57	5.57
9	4.04	4.64	5.22	4.04	4.50	4.55	4.46	5.13			5.61	6.08
10	4.32	4.21	5.19	4.78	5.84	5.55	4.46	5.34			5.00	4.80
11			5.30	5.41	5.55	5.50					4.30	5.35
12					4.65	5.15					4.09	4.86
13					4.24	5.00					4.52	5.44
14					4.68	5.18						
15					4.17	4.42						
16					4.06	4.97						
17					5.47	4.97						
18					5.17	5.31						
19					4.05	4.26						
20					3.06	4.89						
21					3.83	3.39						
22					5.06	4.76						
23					4.69	5.15						
24					4.83	5.31						
25					5.49	5.50						
26					4.42	5.31						

* Ratings of achievement and appropriateness are presented for one section (one subject area) for Course E.

** Mean ratings for Course F were computed by sections or subject areas. Ratings reported are for the Course F section corresponding to the Course E section.

Table 1. Mean Ratings of Achievement and Appropriateness for Course Objectives

responded only to the instrument for the course in which they were enrolled. The number of respondents for each instrument was: Course A—184; Course B—480; Course C—139; Course D—232; Course E—17 to 24 by section for 8 sections for a total of 159; and Course F—159. Course E is sectioned according to subject areas because the content deals with specific areas and methods of instruction, and five subject areas were represented.

In the last week of the fall semester of 1968, prospective teachers in five sections of Course E comprised the sample in the appropriateness phase. Students in each section rated the appropriateness of objectives for that course. Instruments for the other five courses were randomly distributed to students in these sections so that each student responded to two instruments. The number of respondents for each instrument was: Course A—42; Course B—46; Course C—38; Course D—46; Course E—26 to 58 for the five sections corresponding to the subject area courses sampled with the Course E in-

strument in the achievement phase; and Course F—45.

Procedure

In each phase, the instructor in each class was asked to distribute the instruments to the respondents with the announcement that they were prepared by an external committee. No names were requested and no information was requested which would have enabled the instructor to identify an individual's responses. In fact, no personal information was requested at the time of the appropriateness ratings. The random assignment of instruments to Course E students for courses A-D and F was done by one of the writers. Instructors collected the instruments and forwarded them to the committee chairman. Instruments were then prepared for transfer of data to machine-processed cards by key punch operators in the computer center. Personal data were coded for inclusion on the achievement instrument data card

along with the course code. Only the course code was used for the second phase data.

Statistical Procedure

Frequency distributions of responses (1-7) to the items and mean ratings for objectives by course (and sections for Course E) were the statistical measures used. Analyses of variance were applied to selected categories of achievement data. Only frequency distributions and mean ratings by objectives were developed for appropriateness data.

Presentation of Data

To simplify data presentation, ratings of objectives for only one of the sections of Course E will be provided. Mean ratings of achievement and appropriateness are presented in Table 1. The number of course objectives ranged from 5 for one section of Course E to 26 for Course C. Mean ratings (rating range of 1-7) cannot be compared between courses since the objectives differed by course. What one is able to do is compare the relative achievement and appropriateness (as rated by prospective teachers) of each objective. Further, it is possible to note relative degrees of achievement of appropriateness between and among objectives for a particular course.

Mean achievement ratings for items were computed for respondent groups classified on the basis of personal data—year in school, teaching plans, college of enrollment, and expected grade. Since no attempt was made to obtain an equal number of respondents in the various categories of classification, the numbers were quite varied. A one-way

analysis of variance was applied to the "course means" of respondents grouped by teaching plans for Courses A, B, C, and D, since the three cells—yes, no, undecided—while not equal, contained a sufficient number of respondents to warrant the analysis. A one-way analysis of variance was also applied to "course means" for respondents by year in school for two of the courses, A and B. In these courses the number of respondents in each class (freshman through senior) was sufficiently large to stimulate interest in possible differences. F ratios obtained are reported in Table 2.

Discussion and Implications

Remembering that respondents for achievement and appropriateness ratings were different groups of prospective teachers enrolled in the professional education courses, an inspection of Table 1 reveals two remarkable consistencies. Generally, objectives rated lower in achievement were also rated lower in appropriateness—at a later time in a different semester. Conversely, objectives rated higher in achievement were also rated higher in appropriateness. Student ratings of achievement and appropriateness are unexpectedly high if one considers the stereotyped impression that *nothing of much value* is taught in professional education courses. Only five mean ratings of achievement of objectives and two mean ratings of appropriateness of the total of 75 objectives were below the midpoint (3.5) of the seven-point rating scale.

It is interesting to note that ratings of achievement were generally highest for Course F, the student teaching experience.

"Course Mean"	Ind. Variable	F Ratio	Number of Cells	N of Cells	Bet.	df	Within
A	Year in school	.44	4	10,75,72,21	3		174
A	Teaching plans	8.33*	3	135,9,40	2		181
B	Year in school	.70	4	6,157,207,109	3		475
B	Teaching plans	.54	3	390,20,68	2		475
C	Teaching plans	4.98**	3	97,18,21	2		133
D	Teaching plans	.093	3	186,12,32	2		227

* Significant < .01; P.01 = 4.71 with 2 and 181 df.

** Significant < .01; P.01 = 4.75 with 2 and 133 df.

Table 2. Analysis of Variance for Selected "Course Means"

Appropriateness ratings of objectives for courses E and F (methods and student teaching, respectively) were generally higher than for the other "earlier" courses.

An inspection of mean achievement ratings computed for students grouped by teaching plans—yes, no, undecided—for the two courses with statistically significant F values revealed a tendency for those planning to teach to have higher means than the other two groups.

Three conclusions appear to be warranted from the data:

1. The model (design) for course/program evaluation is reasonable and viable. Its application yields meaningful data; respondents are able to discriminate between objectives which are only very poorly achieved and those reasonably well achieved—or appropriate.

2. Objectives (expected outcomes) of "common" professional education courses at Illinois are perceived by students in the courses

to be, generally, appropriate—certainly more appropriate than inappropriate.

3. Objectives (expected outcomes) of "common" professional education courses at Illinois are perceived by students in the courses to be achieved better than the arithmetic average on a 1-7 scale, 3.5.

Lest one counter that better than average is hardly evidence of success, the writers make the following disclaimer. The data collected have not led the committee or the faculty of the College to feelings of complete satisfaction with the existing program. Data have given some direction for modifications and possible program improvement. Our purpose is less to demonstrate the effectiveness and appropriateness of a particular program than to demonstrate the efficacy of an approach to evaluating a course or total program. The standards (acceptable levels) of achievement and appropriateness are for local institutions to establish. □

A Call for Papers

FREDERICK A. RODGERS *

THIS RESEARCH SUPPLEMENT is *not* designed for publishing reviews of research issues, calls for needed research analysis, or analysis of widely quoted research studies. *It has been established for the reporting of data.* Criteria for selecting articles include:

1. The manuscript must report data. Included in the article must be some evidence to support the reliability of the measures used in the study.

2. The article should concern itself with the behavior of teachers (or their surrogates) and that of students as dependent variables. Behavior is taken to mean achievement scores, responses to questionnaires, etc.

3. The article should present a discussion of the results in such a manner that the meaning of the research is clear to readers. Some suggestions to meet this criterion include: a discussion of threats to the validity of the study's conclusion; an unambiguous definition of the independent variable; a distinction between the findings (data) of a study

and the conclusion pertaining to the research hypotheses; a distinction between testing research hypotheses grounded in theoretical frameworks and answering research questions for which there exists no known theoretical base; and finally establishing a basis for qualified conclusions.

Authors are invited to submit manuscripts to Frederick A. Rodgers, Teacher Corps Office, 4 Washington Square Village, Room 1-0, New York, New York 10012.

Manuscripts are welcome in all lengths, from 500 to 8800 words, typed, double-spaced. Three copies of each manuscript are required. All manuscripts will be submitted to panels drawn from the membership of the ASCD Research Council, and prompt decisions will be made regarding their publication. □

* *Frederick A. Rodgers, Director, Teacher Corps (Harlem Institute for Teachers), and Associate Professor of Early Childhood and Elementary Education, New York University, New York City*

Copyright © 1970 by the Association for Supervision and Curriculum Development. All rights reserved.