

Handbook of Vocational Education Evaluation

edited by

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contents

Acknowledgments	8
Introduction	9
Part I. Vocational Education: History and Goal-Setting	
1. Vocational Education Programs at the Secondary Level: A Review of Development and Purpose JOHN GALLINELLI	19
2. Better Luck this Time: From Federal Legislation to Practice in Evaluating Vocational Education LOIS-ELLIN DATTA	37
3. Evaluation and Decision Making: Defining Program Impact for Funding Decisions CAROL KEHR TITTLE	79
4. Funding Education Projects: Applying Decision Theory to the Problem ALAN L. GROSS	111

Part II. Evaluation Approaches and Special Design Issues

- | | |
|--|-----|
| 5. Issues and Models in Vocational Education Evaluation
THEODORE ABRAMSON | 133 |
| 6. Methodological Considerations: Experimental and
Non-Experimental Designs and Causal Inference
EDGAR F. BORGATTA | 161 |
| 7. Documentation of Program Implementation
ELIZABETH C. PROPER | 179 |
| 8. Cost-Benefit Analysis of Vocational Education
TEH-WEI HU and ERNST W. STROMSDORFER | 195 |
| 9. Follow-Up Research as an Evaluation Strategy: Theory
and Methodologies
JONATHAN MORELL | 217 |

Part III. Program Development and Evaluation Concepts: Linkages in Vocational Education

- | | |
|---|-----|
| 10. An Overview of Job Analysis: Methods, Procedures
and Uses in Vocational Education
CHARLES J. TERYEK | 255 |
| 11. Occupational Analysis: An Automated Approach
B. MICHAEL BERGER and HELMUT H. HAWKINS | 275 |
| 12. Air Force Performance Ratings: Assessment Methods
for Occupational Education and Evaluation
DALE F. CAMPBELL and HENRY C. LINDSEY | 303 |
| 13. Content Validity of Behavioral Objectives
PAUL G. WHITMORE | 331 |
| 14. Instructional Support Systems: Curriculum Development
and Evaluation by Occupational Education Teachers
THEODORE ABRAMSON and ADRIENNE VOGRIN | 353 |

Part IV. Evaluation Measures and Testing Issues

- | | |
|---|-----|
| 15. Attitude Measurement
EDGAR F. BORGATTA | 383 |
|---|-----|

16. A Consumer's Guide to Job Satisfaction Measures ROBERT P. QUINN and THOMAS A. GONZALES	403
17. CETA's Challenge to the Evaluation of Vocational Education DAVID BRESNICK	435
18. Measuring Student Learning in Career Education DEBORAH G. BONNET	447
19. Interest Measures, Career Guidance and Sex Bias: Issues for Program Evaluation CAROL KEHR TITTLE	481
20. Test Bias: Current Methodology and Implications for Evaluators CAROL KEHR TITTLE	497
 Part V. Politics and the Evaluator's Role: The Real World of Evaluation	
21. Evaluation Research in the Political Context CAROL H. WEISS	525
22. Determinants of the Evaluator's Role: Political and Programmatic Motives THEODORE ABRAMSON and GAIL R. BANÇHIK	541
23. Evaluation Politics in Large City School Districts ANTHONY J. POLEMENI and MICHAEL H. KEAN	551
24. Industry-Education Councils: A Case Study GAIL R. BANÇHIK, HENRY H. COORDS, THEODORE ABRAMSON and DOROTHEA STERNE	559
 Conclusion	 573
Selected Annotated Bibliography: Evaluation and Measurement MARA ZIBRIN and CAROL KEHR TITTLE	579
About the Authors and Editors	593
Author Index	601
Subject Index	609

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Theodore Abramson
Carol Kehr Tittle

introduction

The past five years has seen an upsurge of interest in occupational education at all levels of the educational system. At the elementary and secondary school levels career education has become part of the curriculum, and at the secondary and postsecondary school levels increasing numbers of students are enrolling in courses which prepare them for the world of work. As part of this trend there has been increased emphasis on vocational and technical education programs at the high school and junior college levels, accompanied by and perhaps encouraged by greater state and federal levels of funding for such programs.

Concomitantly, in part because of the current economic status of the country there has been a greater stress on the need for accountability and evaluation of social and educational programs. Attempts to meet this need have led to the conclusion that evaluation is a developing field that requires scientific inquiry and rigorous investigation. The recent publication of the *Handbook of Evaluation Research* and the *Annual Review of Evaluation Studies*, as well as new evaluation journals, attests to this need for explicating the philosophy, procedures, methodology, and problems inherent in the evaluation enterprise.

To date, there has been little work that examines evaluation issues in the context of current vocational education programs and practices. The purpose of this book is to help bridge this gap in the literature by providing a series of chapters designed to assist evaluators, administrators, and policy makers concerned with the evaluation of vocational education programs. Other

10 INTRODUCTION

audiences for the book are those faculty and graduate students concerned with vocational education and evaluation.

This volume is divided into five parts which describe vocational education and its evaluation in terms of: history and goals, evaluation designs and approaches, use of evaluation concepts in program development, measurement and testing issues, and political context and evaluation roles.

We have excluded chapters dealing with some important issues in evaluation and measurement because they have received excellent treatments in other recent publications, and we have provided a selected annotated bibliography in these areas for the reader. For example, there is a chapter on field research methods by Bouchard in the *Handbook of Industrial and Organizational Psychology* (Dunnette, 1976), and chapters on interviewing by Weiss, and on validity, reliability, and special problems of measurement in evaluation research by Nunnally and Durham in the *Handbook of Evaluation Research* (Struening and Guttentag, 1975).

Part One, *Vocational Education: History and Goal Setting*, describes the development and growth of vocational education from the early apprentice system to today, and the role of the Federal government in this progression. The changing approach to and the different roles of the Federal government vis-à-vis evaluation of vocational education are placed in historical perspective. In addition, the setting of goals and allocation of resources at the state and local level are discussed in this section.

Part Two, *Evaluation Approaches and Special Design Issues*, explicates some of the major issues in designing and implementing evaluation studies to provide data that can be usefully, meaningfully, and validly interpreted for program modification or termination. The section also includes chapters on cost-benefit analysis as a means of evaluating vocational education and on conducting follow-up studies. Both of these chapters describe problems with which evaluators deal in conducting studies of vocational education programs.

Part Three, *Program Development and Evaluation Concepts: Linkages in Vocational Education*, discusses methods of carrying out job and task analyses, and the use of behavioral objectives and performance ratings in the development and evaluation of vocational training programs. Although two of these chapters are based on developments by the military, the approach is readily generalizable to civilian programs at the secondary and postsecondary levels. In fact, this work has in large measure been the basis for much of the work undertaken by the Vocational-Technical Consortium of States (V-TECS). The section also includes a discussion of the use, development, and content validity of behavioral objectives in instruction and evaluation of occupational education programs. The last chapter in the section describes the progress and problems associated with attempting to evolve a "grass-roots" competency-based vocational curriculum with teachers who had little experience in writing behavioral objectives and performance measures.

Part Four, *Evaluation Measures and Testing Issues*, includes discussions of general approaches to attitude measurement, and the definitions and uses of job satisfaction measures in evaluating vocational education programs. This latter chapter also describes facet specific and facet free measures, and technical and administrative issues in the use of these measures. Implications of the National Institute of Education's *Guidelines for assessment of sex bias and sex fairness in career interest inventories* for evaluation of vocational education and career guidance programs are presented, including recent research in the areas of the guidelines. A similar discussion is provided of test bias, in general, and its implications for vocational education evaluation in terms of the *Uniform guidelines on employee selection procedures*. Two related areas of concern to vocational education are discussed—evaluation of programs funded under the Comprehensive Employment Training Act (CETA) and Career Education programs. Special problems identified are obtaining appropriate longitudinal outcome data for CETA trainees and the measurement of each USOE learner outcome goal for career education.

The last part of the volume, *Politics and the Evaluator's Role: The Real World of Evaluation*, contains a reprint of Weiss' seminal paper on the political context in which the evaluation research process is embedded. This chapter is followed by a discussion of the evaluator's role when viewed in terms of the motives of the agency or personnel commissioning the evaluation, and a description of the problems frequently faced by evaluators who work as central staff in large city school districts. This section concludes with a case study of an industry-education council, a new approach to the industry-education partnership for the educator and evaluator to consider.

Each of the chapters in the volume, except for the chapter by Carol H. Weiss, were commissioned by the editors and undertaken by each author according to a set of general specifications for the chapter. The editors have also provided concluding remarks for the reader, and a selected annotated bibliography.

The ideas presented in the majority of the chapters should permit evaluators to concern themselves with advancing the state of the art in vocational education evaluation rather than being tied only to the current topics in other areas of educational evaluation. We hope that the concepts, methods, and discussion of issues presented in this volume will help set the course of future developments in vocational education evaluation for the next several years.

Theodore Abramson
Carol Kehr Tittle

VOCATIONAL EDUCATION History and Goal-Setting

PART I

Major influences in vocational education evaluation for the next decade will be the result of historical issues in vocational education, federal legislation that includes evaluation mandates, and the translation of these issues and mandates into state and local evaluation efforts. Part One provides an overview of the history and goals of vocational education in the chapter by John Gallinelli, *Vocational Education Programs at the Secondary Level: A Review of Development and Purpose*. Federal priorities in vocational education are described by Lois-ellin Datta in her chapter, *Better Luck This Time: From Federal Legislation to Practice in Evaluating Vocational Education*. Federal goals are described in legislation—the Education Amendments of 1976—and made more explicit in evaluation requirements at the federal and state levels. In conjunction with the Education Amendments of 1976, PL 94-482, the National Institute of Education (NIE) will carry out an analysis of state and local compliance efforts for the Act and will examine evaluation practices in vocational education.

The series of studies that form the scope of work for the analysis of state and local compliance and evaluation practice are broader than an input-output model of effectiveness in program evaluation. In the first place, the focus in the studies, as well as in the funding legislation, is on special populations and on coordinating efforts among the various agencies and institutions concerned with vocational education. Second, in addition to describing certain status variables, the methodology for the research includes case studies (NIE, Attachment B, 1978:4). The methods and focus of the NIE studies

14 VOCATIONAL EDUCATION: HISTORY AND GOAL-SETTING

may be contrasted with those federal level studies carried out under Title I, ESEA, and in the follow-through evaluations. The work to be carried out for the congress through NIE will examine a series of compliance research issues and also the assessments of program quality and their effectiveness as a management tool. In this latter area, the objective of the inquiry is to examine the use of assessments (evaluation) in program management and improvement, the criteria that are being used, and also to examine how the various and overlapping federal requirements for evaluation interact with one another. These were stated in the following series of objectives (NIE, 1978):

- (1) "Thus, the first objective of this study is to describe the means now being used to assess program quality and effectiveness and to ascertain whether the results of such assessments are used to manage or improve programs and with what results (p. 19).
- (2) "The second objective of the study is to examine the criteria being used to evaluate program effectiveness at the state and local level and to determine what the consequences are of specifying particular criteria in the Act (p. 21).
- (3) "Discerning just how the various and overlapping Federal requirements for evaluation will interact with one another, whether they will be complimentary and reinforcing or conflicting and redundant, and what their combined effects on program quality may be constitutes the third objective of the study" (p. 22).

These objectives, along with the compliance objectives, are to be described through the following projects:

- (1) "an inventory of information about State legal, administrative fiscal and evaluative practices for the 56 state level jurisdictions;
- (2) "a series of ten in depth State case studies focusing upon matters of compliance and State and local administration of vocational education; and a series of ten in depth State case studies focusing upon State and local evaluation practices and their consequences. Five of the States studied for compliance will overlap with five of the States selected for studies of evaluation, while five States will in each instance be different.
- (3) "an analysis conducted annually of the implications for matters of compliance, evaluation, and state and local administration of the information to be found in state 5 year plans, annual program plans and accountability reports, SACVE evaluations and other documents produced annually at the state or federal level under the requirements of the Vocational Education Act as amended" (NIE, 1978:23).

The case studies are intended to develop themes, presumably reflecting major issues in vocational education. The themes that appear to be identified

by the legislation and the NIE document are legislative compliance, "outputs" of vocational education, and the use of evaluation in rational management. However, there are other themes or issues to be raised in relation to vocational education. These themes are reflected in the historical perspective provided by Gallinelli in the first chapter of this Handbook.

Historically, there was a dichotomy between the traditional classical education which served certain groups as society developed and the apprenticeship or work training that served other groups within western cultures. Gallinelli traces this development and the resulting view of academic versus vocational or practical education in the schools. The attempts to merge the two types of education within the secondary school (and more recently in postsecondary education) have led to a concern with such issues as the purpose of vocational education, its expected outcomes, and the extent to which the schools should serve the industrial or technological society by the preparation of workers. An evaluation of vocational education at the most general level must be concerned with the manner in which vocational education is integrated, or not integrated, into the secondary and postsecondary curricula, and the resulting status of vocational education both within the student's and teacher's perspectives of its outcomes and importance. If vocational educators and evaluators are concerned with the major goals of vocational education as these are reflected in specific programs, the tension between vocational education as *education* and the more specific goal of *education for work* will be reflected in the institutional support for and attitudes toward vocational education.

Another issue that arises within this context is that of the equipment required to teach the practical skills within vocational education, where this equipment should be housed, who should pay for it, and how costs should be entered in cost/benefit analyses. The tension here in costing of equipment is between schools and industry. Gallinelli points out that support for the industrial arts in general education is based on the idea that industry has become more complex and it is difficult for the average person to comprehend the organization, products, processes, and occupations in industry. How, therefore, do schools give students, and do they give *every* student, the opportunity and background to gain such an understanding? This objective, in contrast to the legislated goal of vocational education to provide students with entry level skills, poses a tension for evaluators and schools that arises out of the historical development of vocational education. As there is increasing pressure to evaluate vocational education and to examine its linkages with the goal of employability as reflected in both VEA and CETA programs, evaluators and administrators need to examine again whether all the goals of vocational education are being considered and whether, in fact, evaluation takes place within the broader context of the goals of secondary and postsecondary education.

A second set of issues is reflected in Lois-ellin Datta's chapter examining evaluation requirements in federal legislation and the three federal roles she has described for evaluation in vocational education. One issue is reflected in the theme she has identified as underlying the current federal role in evaluation in vocational education. This theme is the congressional belief that the Executive Branch, state and local agencies "need prodding to keep up with the times and to respond to the needs of diverse groups of citizens." As with earlier federal evaluation requirements in such programs as ESEA, this belief imposes a tension between federal influence exerted through funding and the determination of educational priorities and practices by local education authorities. The evaluation requirements also reflect a belief in rational management and rational decision-making. (An examination of current methodology related to rational decision-making is presented in the last two chapters in Part One.)

A second issue has been delineated by Datta in the three federal evaluation roles that can be identified historically. This issue is concerned with the "state of the art" of evaluation, both conceptually and technically. Evaluation is a newly developing applied social science and many decision makers and evaluators believe evaluation can serve the goals of program change and improvement that are *externally* derived, rather than those goals arising (or not arising) from the problem-solving efforts of local organizations, including schools. Datta's analysis of the federal legislation helps to focus this issue more clearly for evaluators.

According to Datta, the first federal evaluation role is that of gathering information to establish national needs, the second is accountability for legal expenditure of funds, and the third is "galvanizing changes" for program improvement and redirection. Datta provides an optimistic view of the federal effort to insure that evaluation data will be used for planning, improvement and redirection through a variety of attempts to require state and local use of evaluation data. While Datta recognizes the current limitations to evaluation methodology, the reader concerned with vocational education may find it useful to consider other ways of assisting local and state education agencies to identify their own priorities in vocational education. Some of the methods for doing this are provided in a chapter by Carol Kehr Tittle, *Evaluation and Decision-Making: Defining Program Impact for Funding Decisions*, and in the chapter by Alan L. Gross, *Funding Education Projects: Applying Decision Theory to the Problem*.

If federal and state priorities in vocational education are at least partially defined in the programs funded, then an examination of the state level decision process may provide guidance to both evaluators and administrators in vocational education. The chapter by Tittle provides a description of the state level decision-making process for one state, the results of a pilot study