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ABSTRACT

Intended for the classroom teacher, this review of first generation career education research is based primarily on Edwin L. Herr's comprehensive review and synthesis, "Research in Career Education: The State of the Art" (ED 149 177). Herr's major findings have been summarized in a list of statements. For example, two of these statements are as follows: (1) successful programs tended to show considerable community involvement and the bringing together of students and working adults in some way, and (2) several studies indicated that parents are still the most influential factor in students' career development. Several key observations are presented regarding the impact and nature of the research conducted. The following are representative: attitudinal and affective outcomes, such as changes in self-concept, were achieved less commonly than cognitive content; there was little evidence that institutional effects were considered; and in many projects the conceptual framework was obscure, thus making it difficult to know what changes in students or in teachers could be anticipated. The remainder of this document focuses on comments and questions teachers might want to consider and to ask researchers. These questions are based on guidelines in "Ways to Evaluate Different Types of Career Education Activities: A Handbook of Evaluation Models" (Anita Mitchell, et al.). (BM)

Information Series No. 179

WHAT "FIRST-GENERATION" RESEARCH ON CAREER EDUCATION SAYS TO THE CLASSROOM TEACHER--AND VICE VERSA

written by

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1979

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FOREWORD

The Educational Resources Information Center on Adult, Career and Vocational Education (ERIC/CE) is one of sixteen clearinghouses in a nationwide information system that is funded by the National Institute of Education. One of the functions of the Clearinghouse is to interpret the literature that is entered in the ERIC data base. This paper, needless to say, should be of particular interest to classroom teachers who are, or who shortly will be, involved in career education.

The profession is indebted to Edwin L. Herr of The Pennsylvania State University and Anita Mitchell, of the Southwest Regional Laboratory for their scholarship in the preparation of the basic source material for this paper and to Robert D. Bhaerman who wrote this version specifically for the target audience of classroom teachers. Recognition also is due David Gardner, Boston University, and Delia Neuman, The National Center for Research in Vocational Education, as well as to Dr. Herr and Dr. Mitchell, for their critical review of the manuscript prior to its final revision. Cathy Thompson assisted in the editing of the manuscript and Millie Dunning typed the final draft.

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ABSTRACT

Intended for the classroom teacher, this review of first generation career education research is based primarily on Edwin L. Herr's comprehensive review and synthesis, *Research in Career Education: The State of the Art*. (ED 149 177) Herr's major findings have been summarized in a list of statements. For example, two of these statements are as follows: (1) successful programs tended to show considerable community involvement and the bringing together of students and working adults in some way and (2) several studies indicated that parents are still the most influential factor in students' career development. Several key observations also are presented regarding the impact and nature of the research conducted. The following are representative: attitudinal and affective outcomes such as changes in self-concept were achieved less commonly than cognitive content; there was little evidence that institutional effects were considered; and in many projects the conceptual framework was obscure, thus making it difficult to know what changes in students or in teachers could be anticipated. The remainder of this document focuses on comments and questions teachers might want to consider and to ask researchers. Based on the guidelines for evaluation found in *Ways to Evaluate Different Types of Career Education Activities: A Handbook of Evaluation Models* (Anita Mitchell, et al.), these comments and questions relate to research design, supplementary activities, career education facilities, indirect interventions, staff development, product development, and curriculum implementation. (BM)

DESC:: *Career Education; State of the Art Reviews; *Educational Research; Research Design; Research Problems; Evaluation; Educational Accountability;

*Evaluation Criteria; *Program Effectiveness; Evaluation Methods; Performance Factors; *Evaluation Needs; Learning Activities; Educational Facilities; Intervention; Faculty Development; Curriculum Development

IDEN:: *Research in Career Education The State of the Art; *Ways to Evaluate Different Types of Career Education Activities

CONTENTS

"FIRST-GENERATION RESEARCH"

We all should be greatly indebted to Dr. Ed Herr of The Pennsylvania State University, who last year "delivered" a new member to the family of career education practitioners. Dr. Herr has previously written widely in the area of career education and is recognized for his scholarship in the field. (See References.)

While there have been other career education summaries written before, by and large they were relatively minor compared to Herr's comprehensive review and synthesis, *Research in Career Education: The State of the Art* (1978). I call this paper first-generation since I am certain there will be many more studies and review and syntheses to follow.

Dr. Herr reviewed career education studies of the early and mid-1970s and suggested a number of important directions for such research to take in the late 1970s and beyond. We felt that it would be very useful for teachers to know what has been done and what career education research might be concerned with when it reaches maturity.

We believe it is essential for teachers to know what some of the pluses and minuses have been, even though not all teachers might be involved in career education activities--yet. If all indications are correct, we have not heard the last of career education! Space prohibits us from reviewing all Dr. Herr's findings, but we will look at a significant part.

WHAT THE RESEARCH SAYS

MAJOR FINDINGS

What were the most important facts and findings of these first generation studies? Obviously, there were lots of bits and pieces. We will have to be extremely selective and representative, therefore, in summing up Herr's comprehensive review. (This does not mean that you shouldn't go back and read his paper in its entirety. You should! It has a lot more in it than we can report.)

Let's start with a fact probably everyone knows, namely, that career education is a dynamic concept. Since the early 1970s, it has begun, in Herr's terms, to "reset the instructional gyroscopes" from K-12 in many school districts. With the funding of new legislation--the Career Education Implementation Incentive Act, P.L. 95-207 on top of the previous Educational Amendments of 1974, P.L. 93-380, the movement to implement what already has been started will begin in earnest.

The fact that effective career education approaches vary also emerges from Herr's study. For example, some efforts involve infusion, i.e., the integration of career education concepts into traditional subject content. Some involve multiple components, e.g., infusion, field trips, career centers, and resource persons. Some concentrate on separate classes or on career centers. Since the separate contributions of each approach often are hard to pinpoint, career education is hard to study as a whole. It is sometimes difficult to know what was or was not a career education treatment.

Because of its relatively recent birth, career education research cannot yet be expected to come up with a clear picture of long-term effects on the attitudes or skills of persons involved in it. However, in spite of its short life-span, career education research has yielded a great deal of information. Of course, if one demands the absolute criterion of scientific experimentation,

relatively little can be said about whether career education "works." If one is willing to accept less precise approaches, the following findings can serve as a summary of first-generation career education research:

Finding: Many state and local career education efforts have been undertaken. Most of these have been at the elementary and junior high school levels. Career education, since 1971, has grown each year in nearly every state.

Finding: Most of the funding has been with local or state rather than federal money, although large amounts of the financial support have come through federal "flow-through" funds in vocational education, funds for cooperative research, funds for education of the handicapped, and other state-monitored funds, such as ESEA and Titles III and IV.

Finding: Surveys of parents, teachers, and students about career education have tended with few exceptions to be positive. Elementary school teachers have been more enthusiastic than secondary school teachers. In some places and among some populations, confusion about goals has prevailed. Some professional and lay persons seem to view career education as a fad.

Finding: Although some career education activities have taken place in about one-third of the country's school districts, relatively few instances of comprehensive K-12 programs have been evident.

Finding: Not much evidence is available concerning efforts specifically tailored to special populations, i.e., to the physically or mentally handicapped, women, ethnic groups, and racial minorities. With new federal priorities, this situation appears to be changing.

Finding: There is little evidence that programs were developed from specific theoretical models or concepts. No research or evaluation studies were found that directly pursued the relationship of career development theory and career

education. However, many career education projects have apparently borrowed their goals from national or state demonstration projects which may have originally used career development theory of some type. In some instances, career education projects tended to be "atheoretical," focusing on means rather than ends.

Finding: In a number of projects, the term career seems to have been misused. What occurred in these projects was an emphasis on immediate choices rather than on short- or long-term planning.

Finding: Successful programs have tended to show considerable community involvement and the bringing together of students and working adults in some way.

Finding: Many evaluations have tended to describe the types and amount of participation by teachers and students without assessing quality or the relationship of types of participation to student learning.

Finding: Several studies indicated that parents are still the most influential factors in the students' career development.

Finding: The results are mixed on most career education outcomes. On balance, career education evaluations reported generally significant changes in knowledge of a wide range of occupations and in occupational awareness, motivation, work habits and attitudes, and attitudes toward school. Self-concept changes, increases in academic achievement, and changes on several career development inventories were less certain. Some projects achieved significant differences; others did not. Similarly, while goals were titled the same way from project to project, they frequently were assessed with different measures. Since these measures often were not correlated with each other, the various measurements were hard to interpret.

Finding: On the issue in which most teachers are interested, i.e., academic achievement, some studies suggested statistically significant increases in such achievement among students who had participated in career education activities. However, other studies indicated no significant differences between treatment and control groups. But there were no studies in which significant results in academic achievement favored a *non*-career education group. In short, the studies suggested that career education is likely to increase the academic achievement of students; however, when there were not significant differences across career and non-career education groups, it suggested that career education did not affect academic achievement in any negative way.

Finding: The results of research in experience-based career education (EBCE) were not unlike those found in multi-component school-based programs. Academic achievement of EBCE students either increased or remained the same. Positive gains were reported for these students in such areas as career maturity, attitudes toward school, personal responsibility, specific career planning, self-appraisal, and sense of achievement. Students generally enjoyed the individualized, flexible, and community-based nature of these programs, although they sometimes missed their friends and felt cut off from their regular schools. Some parents felt that students were not sufficiently controlled or disciplined in the programs.

Finding: Several studies looked at the feasibility of infusing career education concepts into consumer education, reading, language, and other content areas. It was found that on measures of self-concept on the Iowa Tests of Basic Skills, other measures of academic achievement, and in school attendance, students exposed to career education did as well as or, in most studies, better than students in traditional classes.

Finding: In the several studies of specific decision-making courses or short-term individual or group vocational counseling, positive results generally were found. The more specific the career planning experience to which students were exposed, the more positive the results tended to be. Students in experimental career planning courses or counseling groups tended to have higher academic achievement, more certainty about completing their programs, higher measured career maturity, and more skill at making appropriate educational and vocational choices than students who were not in these programs. Also, there was some indication that if students learned about themselves before they were exposed to occupational information, or if they requested such information when they were ready, their learning was facilitated significantly.

Finding: There were few evaluation studies of learning resources, particularly commercial ones. The commercial materials available tended to be supplements to rather than substitutes for the regular curriculum. Noncommercial and locally developed materials tended to be substitutes for regular curriculum materials. Very few commercial or noncommercial materials were available for special groups--physically handicapped, ethnic or racial minorities, senior citizens, women or adults. Many of the commercial materials and fewer noncommercial materials were found to contain racial and sex stereotypical content.

Finding: Studies of audio-visual material as well as of career centers tended to show that films or materials used independently of planned programs did not yield results as positive as those that occurred when these materials were used in an integrated program. It was found that the existence of information was no guarantee of its use.

Finding: Studies of staff development reflected a focus on inservice rather than preservice training.

- The results of some studies suggested significant differences in vocational development for students whose teachers had had various types of inservice training compared to students whose teachers had not.

These are some of the major findings of Dr. Herr's review and synthesis. Readers are urged to think of the implications of each finding in terms of their own program.

SOME KEY OBSERVATIONS

Attempting to assess the meaning of these findings is complicated by the fact that career education, as Herr noted, is "not a singular process leading to a singular result." Rather, it is a term used for a group of activities occurring at different educational levels and producing a number of outcomes. In many instances, neither the approach nor the outcomes of the research were identified clearly.

The question most frequently asked by teachers and others is, "Does career education make any difference in student learning?" As the findings indicate, there now are some tentative answers.

A more appropriate question, however, seems to be, "What kinds of learning occur from which activities, for which students, and under what conditions?" It is clear that specific answers to this question are not yet available. Furthermore, some tentative answers that are available are tainted by problems with the research design.

With such concerns in mind, the following observations were made by Dr. Herr:

Observation: Most of the findings about career education come from evaluation reports on funded projects rather than from independent research studies. There are several reasons for this: career education's recency; the requirement for evaluative studies where project funds were allocated but restricting the types of local efforts to be evaluated; the small amounts of research funds available; the relative lack of research which normally

goes on as part of local efforts outside of those stimulated by external funding.

Observation: In many projects the conceptual framework was obscure, thus making it difficult to know what changes in students or in teachers could be anticipated. Also, the content of the career education processes generally was not well described or assessed.

Observation: Some project directors apparently used a published career education assessment instrument because they had to evaluate the program rather than because the instrument was appropriate to project intentions. The result was that nonsignificant findings could mean either that nothing was accomplished or that what was accomplished was not measured effectively.

Observation: It often was difficult to differentiate the actual changes made in educational or counseling processes. In some cases, it appeared that some nonsignificant findings reflected the fact that nothing had really been done to affect the content or opportunities to which students were exposed.

Observation: In some studies where significant results were claimed it was not clear that "statistical" significance could be equated with "educational" significance. In addition, two or three significant results out of forty or fifty tests in a particular project were sometimes given considerable credence in spite of the fact that they are likely to be chance results.

Observation: There was little evidence that institutional effects on career education were considered. The role of administrative support, likely to be important in career education effectiveness, was not given much attention. Case studies of implementation, of the effects of certain administrative styles, of resource levels, and of frequencies or forms of inservice training were not in evidence.

Observation: Some career education outcomes are easier to achieve than others. Attitudinal and affective outcomes, such as changes in self-concept, were attained less often than cognitive content was mastered.

Observation: One of the most troublesome aspects of the evaluation studies was the tendency to pool a variety of elements, describe them collectively as career education, and contrast the results against so-called non-career education comparisons. Where significant results were obtained in favor of career education, one had no way of knowing which specific elements made the most significant contributions to which behavioral changes. Thus, a whole series of reasons can be offered to explain the results obtained. The feeling persisted that "unnecessary things" were done in the name of career education, but what these were was not clearly determined.

Observation: It seemed likely that in some evaluations the effects of some potent career education processes were cancelled out by other ineffective processes. It also appeared that studying good teachers using specific treatments to obtain clearly stated objectives would be a fairer test of career education impact than would combining good and poor or uncommitted teachers using nondescript techniques in the pursuit of undifferentiated goals.

Observation: Related to the matter of "pooled effects" was the lack of knowledge about the comparative advantages of different processes to accomplish particular outcomes. For example, what are the advantages of infusion over a specific course in decision-making skill? Do the results hold for populations of different ages and at different grade levels? There was very little of this type of analysis. Complete descriptions of the activities studied are essential so that

others may replicate research in different settings.

Observation: Unless non-career education comparison groups have as much expectancy for change as the career education groups, this lack of equivalence itself normally would be enough to explain the significant differences between the two. Of similar concern is the matter of "contamination" of comparison groups. It was not clear in many of the reports whether experimental and comparison groups were the same before career education was introduced to the former. In some cases, it also was not clear whether control groups received information and other experiences similar to those received by the experimental group.

Observation: It is difficult to be confident that career education rather than the "halo effect," maturation, or other explanations produced the observed outcomes. Also, outcomes in on-going projects were not necessarily attained to the same degree each year.

Observation: Perhaps too much has been expected too quickly. Even though few studies met ideal experimental standards, a large number of studies described career education's positive impact. Given the fact that the bulk of these studies occurred under natural conditions and were conducted by relatively untrained evaluators, the results may be more impressive than they seem on first reading. Experimental rigor aside, the weight of evidence favors career education.

One additional observation: Kenneth Hoyt, Director of the Office of Career Education in the USOE, often has indicated that critics of a new idea in education typically have called for definitive research results, even prior to the time the idea has been fully developed. This appears to be the situation in career education and, throughout the years, likely has been typical of other educational innovations as well.

The next stage of career education research would seem to involve formulating and testing hypotheses aimed at discovering the best means of implementing career education. If we are to do this well, many of the observations cited here need to be considered and acted upon.

It must be remembered that career education research is not static. New studies are constantly appearing and, as might be expected, they are generally improving in design and implementation. As career education research moves to greater maturity, that is, to the second and third generations, we will likely see more positive and more comprehensive results.

SOME THINGS TEACHERS MIGHT LOOK FOR

Is there anything teachers can do to assist in the research process? What can they say to or ask of researchers who will breed the next generation of career education studies?

Recently a very worthwhile new publication that has a great deal of relevance to career education practitioners came to our attention. As indebted as we are to Dr. Herr for showing us where we have been, we are equally grateful to Dr. Anita Mitchell and her colleagues for developing a number of guidelines and models for evaluation of where we are. (*Ways to Evaluate Different Types of Career Education Activities: A Handbook of Evaluation Models*, 1978) The handbook considered a number of issues that imply several things that teachers might say to future researchers. Let us take a brief look at some of the most important ones.

THE DESIGN OF RESEARCH

Teachers might have these comments to make to future researchers regarding research design.

Comment: Before any research activity takes place, make certain that the questions to be asked have been formulated clearly enough to specify the

data requirements and that the underlying assumptions and premises are clear.

Comment: Develop a conceptual framework for evaluation by emphasizing short- or long-term goals and direct or indirect outcomes so that the results of the evaluation can be understood in the context of these goals and outcomes.

Comment: Focus on program and process rather than on individuals. "Did the program work?" rather than "Did the teacher do a good job?"

Comment: Remember that one of the major reasons for evaluation is improvement. We should not have to wait a full year for results only to find that an activity is not working. We need to know early how a program is working and we need to plan corrections to make sure we achieve the desired goals.

Comment: Be certain that we all know what we are looking for. Also, be certain that we have adequate resources to do the job effectively.

Comment: Be certain, too, that we know which components will be evaluated--and why. (The six suggested in the handbook are: supplementary activites, career education facilities, indirect interventions, staff development, product development, and curriculum implementations.)

Comment: Be sure to include us--the teachers--in your planning from the outset. Remember that evaluation will not work well if those who are affected by it are not included both before the activity is implemented and during it.

I would also suggest that teachers make this additional comment: Please study very carefully *Ways to Evaluate Different Types of Career Education Activites: A Handbook of Evaluation Models* before you proceed any further with developing your research design!

THE RESEARCH ITSELF

The following are only a few of the general questions teachers might wish to ask about supplementary activities, i.e., field trips, hands-on activities, shadowing (following or observing someone at work), supplemental curriculum and guidance projects, career days, and career fairs:

Questions: Were the objectives and implementation of these activities integrated with the regular career education activities to prepare students for the supplementary activity? to follow up the experience? to enhance motivation for learning basic skills?

Were the persons responsible for the activity properly assigned and adequately trained?

Was the planning of the activity a cooperative effort involving teachers, counselors, parents, and community resource persons?

Were the resources (time, money, materials) used to implement the activity expended efficiently and justifiable in terms of potential payoff?

Were counselors and teachers active participants in the activities?

Did students gain in occupational knowledge and improve their skills in decision making, job hunting, and/or job getting as intended by the activity? Did they gain in knowledge of the educational requirements for the occupations covered by the activity?

Did students show increased use of career education facilities as a result in one or more basic academic courses or in the value of school generally? Did they show more positive attitudes toward work and/or increased desire to work?

Did some students benefit significantly more or less than others? What were the implications for modifying the activity or for improving the assignment of students to it?.

The following are only a few of the general questions teachers might wish to ask about career education facilities i.e., self-contained career centers, community career centers, or mobile vans, referral centers, such as dial-a-career-counselor facilities, career centers housed within classrooms; library-based programs of information services; and career counseling centers:

Questions: What were the objectives of the facility and do we know if they have been accomplished?

How were students changed as a result of using the facility?

How were the equipment and materials chosen and what were they intended to accomplish?

What evidence have we that the resources are accomplishing the student growth objectives for which the resources were procured?

Were the materials timely, accurate, unbiased?

What is the relevance of the materials to the interests and needs of the students and the needs of and opportunities in the community?

Did students who completed a program in the career center choose courses of study relevant to their career goals more frequently than students not completing the program?

Were students using the career center more able than others to identify their strengths and weaknesses and to relate these to educational and occupational choices?

Were students who pursued the career center's planned decision-making program more able than others to demonstrate a consistent decision-making process in actual situations?

The following are only a few of the general questions teachers might wish to ask about indirect interventions, i.e., strategies and activities designed to affect local policy or state legislation; to encourage publishers to remove sex stereotyping and other bias factors from materials; to increase local job training options; to make available to students full and factual occupational information; to expose students to a wide range of positive role models; to increase public awareness of career education needs; and to motivate teacher, counselor, and administrator training institutions to include career education in their programs.

Questions: What actually happened? How did it differ from what was supposed to happen? What were the reasons for discrepancies? Were the plans implemented as intended?

Were there unanticipated problems in communication between the school and other agencies?

What were the reasons for success? (Consider "processes"--such as communication, assistance, product delivery, and conflicts of values--and "actors"--such as agencies, project staff members, and community members.)

Which agencies were most helpful? Did any agencies fail to cooperate? Was it necessary to modify plans in order to reach the objective?

Did the change occur? Was the law enacted? Was the policy changed? Was the printed material modified? Was the nature of the change such as reasonably to assure that it met the need for which it was intended? What, if any, were the significant side effects?

How many students benefited from the change? Does the change benefit various subpopulations differentially? How is student benefit evidenced? Does the benefit to students justify the cost of the activity?

Is one approach more effective than another? Do the benefits to students warrant pursuit of additional institutional changes?

The following are only a few of the general questions teachers might wish to ask about staff development activities, including internal staff activities, such as presentations by local school staff experts; group sharing sessions among school staff; locally prepared staff development materials; external educational resources, such as professional meetings, published staff development materials, presentations by state career education experts, presentations by experts from institutions of higher learning, summer sessions at colleges, and workshops by professional organizations and other external resources, such as visits to business/labor/industry, work experience in fields outside education, and workshops by private firms.

Questions: Was there a clearly identified need that the activity attempted to meet?

Did the activity meet its stated objectives?

Was the activity more cost effective than other alternatives under consideration?

What were the positive effects of the activity?

The following are only a few of the general questions teachers might wish to ask about product development, including textbooks, films, packages of written exercises, audio tapes, packaged staff development programs, sets of tests and evaluation instruments, and evaluation training handbooks.

Questions: Was the product implemented by users who were not under the direct control of the developer? Was the product self-sufficient? Were all the "bugs" worked out of user instructions, activity guides, and so forth?

Was the product successful in producing desired outcomes? Were these produced with a minimum of undesirable side effects with all members of the intended target audience?

Were the desired outcomes of the product appropriate for the intended audience and circumstances of use?

Were desired outcomes produced under a wide array of circumstances and situations? How generalizable was the evidence of effects?

Were desired outcomes produced within applicable cost limits and likely implementation constraints?

Were the outcomes stable over time? Can the effects of the product be sustained over time?

In the event of field testing for product utilization, how many instructional staff were involved and what were their roles? How many other persons, e.g., guidance and counseling personnel, administrators, parents, community volunteers, and members of advisory committees, were involved and what were their roles? What were the essential characteristics, e.g., specialized training or credentials, educational levels, socio-economic, and female/male compositions of the persons involved? Were the participants volunteers or conscripts? Was there an incentive for participation and/or attainment of desired outcomes? Was released time or academic credit provided?

The following are only a few of the general questions teachers might wish to ask about curriculum implementation, including such strategies as special courses, separate units or topics in existing courses, career education activities presented as enrichment options in existing courses, and career education concepts and activities used to supplement basic subject matter in existing courses.

Questions: How did curriculum activities differ among the groups of students involved in career education and from the activities of students who received little or no career education exposure?

How did the implemented career education activities differ from those originally designed in staff training workshops? How and in what ways were activities modified?

In what ways did students benefit from career education activities? How did these benefits differ among the groups of students who participated? How did they differ from outcomes experienced by students who received little or no career education?

How did career education activities relate to the benefits in those situations in which differences among groups were identified?

What are the implications for future career education curriculum activities?

THE LAST WORD

Not long ago I completed a review of thirty-eight career education studies. In one of them, a researcher included a brief section addressed to teachers. (The study was conducted by Clayton P. Omvig: *The Effects of a Program of Career Education in Kentucky's Education Region XII. Phase II.* Lexington: University of Kentucky, July 1976.) He had asked teachers several questions, including this: What was your most rewarding experience in working with students? The teachers' responses were along these lines: Because career education established relevance in the classroom and because students could then see how academic subjects would be utilized in later life, classes demonstrated greater eagerness about their schooling. Many teachers referred to increased student interest and attendance and to the fact that students were now given reasons for going to school and for setting goals. Students' concern for school seemed to result in an improved performance level. One teacher indicated that the most rewarding experience resulted from the students' improvement in grades and their changed attitudes toward work. Another

teacher saw the year as being the most rewarding in all her years of teaching. The teacher noted that the children were happy, absenteeism was at an all-time low, and achievement was higher than ever before. This improvement in the students' academic performance apparently did not preclude their growth in self-confidence and self-concept, areas that are intrinsic to career awareness and that should be inherent in any career education program.

These teachers--and others like them--are truly at the heart of the career education process. Their judgments should be earnestly regarded. Surely they should have the last word.

REFERENCES

The major *sources* for this paper were:

Herr, Edwin L. *Research in Career Education: The State of the Art.* The National Center for Research in Vocational Education, The Ohio State University, Columbus, Ohio. 1977. (ED 149 177)

Mitchell, Anita M., et al. *Ways to Evaluate Different Types of Career Education Activities: A Handbook of Evaluation Models.* Olympus Press, Salt Lake City, Utah, 1979. (ED 162 108)

In addition, the reader might wish to explore the following *representative samples* of documents in the ERIC data base that deal with research and evaluation in career education:

Career Education and Basic Academic Achievement. A Descriptive Analysis of the Research. By Robert D. Bhaerman. 1977. (ED 140 032)

> Descriptive analysis of thirty-eight studies from the 1970s, evaluating the effectiveness of career education programs focused on student achievement of competence in the basic academic skills. Provides appended data chart summarizing information on each study, including research design, instruments, statistical analysis, findings, and conclusions.

What Does Career Education Do For Kids? A Synthesis of 1975-76 Evaluation Results. New Educational Directions, Crawfordsville, Indiana. 1977. (ED 143 831)

> Synthesis of evaluation results of forty-five federally funded K-12 career education programs. Organizes and tabulates diverse individual program goals for career education released by the U.S. Office of Education.

Career Education: What Proof Do We Have That It Works? By Lois-ellin Datta and others. 1977. (ED 151 516)

> Five papers summarizing evaluation efforts and results from career education projects in Texas, Kentucky, and Florida. Includes results of individual programs and an overview of the evidence that indicates career education's ability to progress toward six well-defined goals.

A Review of Career Education Evaluation Studies. Monographs on Career Education. By Thomas E. Enderlein. 1977. (ED 141 584)

> Summary of the results of several evaluation studies of career education, with emphasis on the specific areas of career awareness, career decision-making, and academic achievement. Examines ways to determine program effectiveness, citing nine studies on attitudes of teachers, students, and volunteers toward career education.

The Efficacy of Career Education. National Advisory Council for Career Education. 1975. (Set of four: ED 121 953, ED 122 003, ED 122 004, ED 122 005)

> Series of papers addressing evaluative efforts in four areas: (1) career awareness; (2) academic achievement; (3) career decision-making; and (4) career education projects, mainly those funded by the Vocational Education Act. Includes tentative conclusions based on study samples and recommendations for follow-up studies.

Two other important studies by Dr. Herr are as follows:

The Emerging History of Career Education: A Summary View. National Advisory Council for Career Education. 1975. (ED 122 011)

Review and Synthesis of Foundations for Career Education. National Center for Research in Vocational Education. 1972. (ED 059 402)

APPENDIX

A number of programs exist for which evidence of effectiveness was sufficient to earn the JDRP (Joint Dissemination Review Panel of the Department of HEW) "exemplary" stamp. In short, there are local evaluations that present evidence of effectiveness of career education programs.

The program activity title and location are listed below for these JDRP programs:

Career Development Program	Akron, Ohio
Developmental Career Guidance Project	Pima County, Arizona
Project CAP (Career Awareness Program)	Greenland, Arkansas
Project CDCC (Career Development Centered Curriculum)	Coloma, Michigan
Project CERES (Career Education Responsive to Every Student)	Ceres, California
Project Equality	Seattle, Washington
Project MATCH (Matching Attitudes and Talents to Career Horizons)	Ontario, California

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