DOCUMENT RESUME

ED 021 813 24 SP 001 586

By- Gordon, Ira J.

PILOT TRAINING PROGRAM IN UNDERGRADUATE EDUCATIONAL RESEARCH; SPRING TRIMESTER RESEARCH TRAINING PROJECT (MAY-AUGUST 1966).

Florida Univ., Gainesville. Coll. of Education.

Spons Agency- Office of Education (DHEW), Washington, D.C. Bureau of Research.

Bureau No- BR-6-1979

Pub Date 20 Oct 66

Grant- OEG-2-6-001978; OEG-2-6-001979

Note- 33p.

EDRS Price MF-$0.25 HC-$1.40

Descriptors- CAREER CHOICE, CHANGING ATTITUDES, *COLLEGE STUDENTS, COURSES, *EDUCATIONAL RESEARCH, EDUCATION MAJORS, INDIVIDUAL STUDY, *INSTITUTES (TRAINING PROGRAMS), LIBERAL ARTS MAJORS, PROGRAM CONTENT, RESEARCH APPRENTICESHIPS, *RESEARCH METHODOLOGY, *UNDERGRADUATE STUDY

Identifiers- University of Florida

A 36-week pilot training program for 20 outstanding undergraduates in education and in the behavioral and social sciences was conducted in 1966. It was designed to assist students (1) to develop basic competencies in measurement techniques and statistical research designs appropriate to educational research, (2) to engage in individual study in relation to a specific discipline and its application to educational research, (3) to participate actively as members of educational research projects, (4) to come in contact with professors from a wide variety of orientations who are concerned with and conducting educational research, (5) to develop substantive knowledge of behavioral and social science principles which impinge upon the conduct of effective educational research, (6) to develop familiarity with data processing, and (7) to come in contact with students from other disciplines and exchange ideas as to how these disciplines bear on education. The program consisted of course work in educational research, psychology, and anthropology; a choice of a seminar in issues and problems in education or one in political science; and individual study and on-the-job participation in an educational research project. The major objectives were substantially achieved. Modifications, based upon evaluation, are proposed. Evaluation data is included. (Author/JS).

FINAL REPORT
Grant Nos. OE 2-6-001978, OE 2-6-001979

PILOT TRAINING PROGRAM IN UNDERGRADUATE EDUCATIONAL RESEARCH: SPRING TRIMESTER RESEARCH TRAINING PROJECT

October 20, 1966

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

OK Arnold 9/20/67

Pilot Training Program in Undergraduate Educational Research: Spring Trimester Research Training Project

Grant Nos. OE 2-6-001978, OE 2-6-001979

Ira J. Gordon

May, 1966 through August, 1966

The training program reported herein was conducted pursuant to a grant from the Office of Education, U.S. Department of Health, Education, and Welfare. Grantees undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment of the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy

University of Florida

Gainesville, Florida

TABLE OF CONTENTS

ORIENTATION OF PROGRAM

A major concern of the College of Education in the field of educational research is the recruitment of bright undergraduate students into the field. Classically, undergraduate majors in education have been trained to be classroom teachers and all programs have led to certification. There has been no requirement for course work in measurement, statistics, or educational research. When these undergraduates go out to teach, they are ill-equipped to participate in research in the local school districts or to evaluate the results of research in order to modify practice. In addition, their attitudes toward research often make it extremely difficult for the educational research worker to conduct effective research in school systems. Because of a lack of understanding of research techniques and problems, teachers and other school personnel often, even with the best aims in the world, behave in a manner which makes the conduct of research difficult, often placing limits on field research which exceed even ethical considerations and thus they affect the type of testing and experimentation that can be conducted. They do not understand the nature of experimental and control groups and often bias results. They fail to interpret to the local community the need for research and thus handicap utilization of the school as a laboratory.

Research training for outstanding teachers who return for graduate work often does not begin even in the master's program. Consequently, potential research talent and time is lost to the profession by the type of professional education which directs people away from research or delays their entry into it.

Concomitantly, the usual programs within the disciplines of the behavioral and social sciences such as psychology, sociology, anthropology, history and political science do not provide students majoring in these fields with any exposure to the utilization of these disciplines in solving the educational problems of the day. Further, these students usually take no work in education and often develop biases against education as a field of endeavor. Bright students who then go on to graduate school are often lost to research in education both because of lack of any exposure to it and lack of knowledge about it.

Some of these liberal arts graduates, particularly in psychology, do drift toward educational psychology

and educational research. However, this usually comes so late in their training that they have to be "retrained" into understanding psychological or behavioral research in an educational setting. Consequently, several years are lost in the utilization of these graduates in research.

We face, therefore, the problems of recruitment and selection of undergraduate students who, either because of their teacher-preparation program or their basic discipline majors, would normally not be involved in educational research. Further, we face the problem of early training of these students. This pilot project was designed to try out an approach to these problems. Within its structure, the program brought together both categories of students and began their training in the field of educational research.

The goals of this undergraduate training program were (A) to introduce outstanding undergraduates in the behavioral and social science fields to educational research in relation to their disciplines and (B) to introduce outstanding undergraduates currently preparing for teaching careers in elementary and secondary education to educational research as a future career.

In relation to these objectives, it was planned that students would (1) develop basic competencies in measurement techniques and statistical research designs appropriate to education at the beginning research level; (2) conduct individual research in relation to a specific discipline and its application to educational research; (3) participate actively as members of an educational research project; (4) come in contact with professors who are concerned with and conducting educational research from a wide variety of orientations; (5) develop substantive knowledge of behavioral and social science principles which impinge upon the conduct of effective educational research; (6) become familiar with beginning data processing; and (7) come in contact with students from other disciplines and exchange ideas as to how these disciplines bear on education and are useful in the conduct of educational research.

SELECTION OF TRAINEES

The number of trainees was limited to twenty, approximately half drawn from students in the College of Education who were prospective elementary and secondary teachers and half from students in the College of Liberal Arts who were not seeking teacher certification. Four of the prospective teachers were planning careers in elementary education and

nine were planning secondary-school careers. All of the latter had strong subject-matter majors jointly planned by subject-matter specialists and professional educators.

A major criterion for eligibility was high-level undergraduate achievement and recommendation by the respective department. In those departments which conduct honors programs, such as the psychology department, students were eligible for the training program if they would normally be recommended for honors work in the department. In those departments having no such program, a B average (3.0 on a 4.0 scale) was deemed the equivalent of eligibility for honors. Generally, admission was limited to juniors and seniors. In the case of the group preparing for teaching, first priority was given to those who had completed their internship (student teaching) since this experience had brought them into immediate contact with many of the problems confronting the schools.

Because of the delay in formal notification of the grant and the consequent limitation of time in which to publicize the program adequately before students had made other plans, it was not possible to maintain the 3.0 average as a decisive criterion. Teaching interns had been off-campus until two weeks prior to the initiation of the program and had, as a function of time, received very limited advance notification. In spite of this difficulty, over 29 recommended students applied, and some selectivity was possible.

An additional criterion was evidence of interest in research. Information from faculty members indicating investigative interests, analytic orientations, and creativity was used, as well as any related job experience and brief autobiographical statements. An interview committee screened all applicants who met the basic requirements for eligibility.

The number was set at twenty in order to provide sufficient students to represent a wide variety of backgrounds and yet be a small enough group to allow for extended interaction among students themselves and between the program faculty and students. All trainees were selected from present University of Florida students.

DESCRIPTION OF THE PROGRAM

The program consisted of three main areas: (1) course work, (2) individual study, and (3) on-the-job experience within an educational research project.

(1) Course Work:

A. Seminar in Educational Research. Edf 450, Measurement and Evaluation in Education (specifically modified for this program.)
   1. Forty-five contact hours of class (three semester hours credit.)
   2. Dr. Vynce A. Hines, Professor of Education.
   3. Introduction to measurement and evaluation as part of educational research.
      a. Characteristics of scientific method
      b. Problems and hypotheses
      c. Using research literature
      d. Descriptive survey studies
      e. Developmental and growth studies
      f. Clinical and case studies
      g. Experimental designs
      h. Statistical concepts basic to understanding and interpreting educational research.

B. Seminar in Problems in Educational Anthropology, (a modification of Apy 561, Methods in Field Ethnology.) Students received credit for Anthropology 430, individual study.
   1. Forty-five contact hours (three semester hours credit.)
   2. Dr. Sarah Robinson, Assistant Professor of Anthropology.
   3. Instruction in the use of various data-collecting techniques; practice given in interviewing and in observing differerent aspects of behavior.
      a. Introduction: the history of ethnological field work.
      b. Units of behavior and the logic of observation.
      c. What to look for in cultures. Practice in observation.
      d. Verbalization and problems of veracity. Practice in observation.
      e. Interview techniques.
      f. Practice in interviewing.
      g. Maps and mapping.
      h. Problems in sampling and quantification.
      i. Census and questionnaires.
      j. Attitude measurement.
      k. Content analysis.

C. Seminar in Psychological Principles in Educational Research. Students received credit for Psychology 430, Individual Study.
   1. Forty-five contact hours (three semester hours credit.)
   2. Dr. Wayne Bartz, Asst. Prof. of Psychology. Psychology relevant to classroom learning and problems. It emphasized the cognitive approach in psychology because of its obvious relevance

to classroom learning and problems. It was divided into four content areas of approximately equal length:

a. General-Experimental
   1. Research methodolory in psychology
   2. Perception, memory and motivation
b. Cognition
   1. The process of cognitive growth with emphasis upon the view and research of Piaget and Bruner.
   2. Language, including the development of language, and theories and research in concept learning.
c. Personality
   1. The course of personality development from the cognitive point of view
   2. Information on personality dynamics and behavior pathology.
d. Social Psychology
   1. The influences of the group on the individual in learning and problem solving.
   2. Attitudes and attitude change.

Each student had a choice of either of the following two seminars for a total of four courses for each student.

D. Seminar in Issues in Problems in Education (Ed 400).
   1. Forty-five contact hours (three semester hours credit.)
   2. Dr. I. J. Gordon, Professor of Education, Program Director.
   3. A group approach to dealing with problems and issues in education including a critical examination of current research and involving, where pertinent, simple research procedures. Specifically designed for the program, this course highlighted;
      a. Delineation of issues which are researchable rather than issues which are philosophical and focus on the former.
      b. Within this seminar, development by each student of an individual area of research and presentation of a paper to the group.
      c. A series of seminar presentations by active researchers in education. Listed alphabetically, they were: William Alexander (Curriculum and School Organization), J. R. Clarke (School Desegration), A. W. Combs (Teacher Effectiveness and Teacher Education), Myron Cunningham (Special Education), Wilson Guertin (Graduate Programs in Educational Research), Ralph Kimbrough (Power Structure).

or E. Seminar in Urban, Suburban and Metropolitan Government (Pol. 512) specially modified for this program.
   1. Forty-five contact hours (three semester hours credit.)

2. Mr. T.A. Henderson, Assistant Professor of Political Science.
3. Decision-making in the Urban setting.
   a. Decision-making: theoretical framework.
   b. Political monopolies: the boss.
   c. Community power structures - monopolistic systems, pluralist systems, competitive systems, relationship between size and power structure.
   d. Professionalism and community power structures; case studies - the reform movement, planning commissions, urban renewal, and education.

Both elective seminars had a heterogeneous student population. Choice within the electives allowed students to gain either more general exposure to the field of education or more specific information in relation to the nature of the political climate in which educational decisions are made.

(2) Individual Study:

Each student engaged in an individual study project stressing the relationship between his field and research in education. Table 1 lists students, supervisors, and topics:

Table 1. Individual Study Activies.

Student	Supervisor	Topic
Joe Brannon	Dr. Entner	Development of Science Program as Teaching Technique in Florida
Bill Cliett	Miss Tiegland	Measure of Teacher Open Mindedness
Alan Dakan	Mr. Henderson	Investigation of Influence of Self Discovery Program on Grade Point Average and Class Attendance of Number of Underachieving High School Students
Reid Farrow	Mr. Henderson	Case Study of Florida Blue Key Society

Table 1. Individual Study Activities. Continued.

Student	Supervisor	Topic
Tom Freijo	Dr. Curran	Relation Between Student Interest and Achievement in High School
Bob Gallup	Mr. Henderson	Married Student Village Vote and Candidate Preference in 1965
Su Hiltz	Miss Tiegland	Values Related to Negro and White Children
Bev Johnson	Dr. Bartz	Comparison of Effect of Home vs. Hospital Childbirth on Family
Linda Kramer	Dr. Bartz	Understanding Concepts of Ratio in Volume
Nancy Pastore	Dr. Curran	Relation Between High School Preparation and Actual College Experience at the University of Florida
Bruce Raskin	Mr. Henderson	Expected Classroom Methods and Procedures of High School Students
Edna Saffy	Mr. Henderson	Relationship of Social Identification to Academic Achievement
Susan Schuller	Dr. Bartz	Analysis of Bartz Value Study
Lewis Shelley	Dr. Entner	History of Black Mountain College
Shari Thieman	Dr. Entner	Seminole Education in Southern Florida
Bill Wallace	Miss Tiegland	Reason for Poor Achievement of Specific Slow Learners
Chuck Wilson	Dr. Entner	Changing Role of Social Fraternities at the University of Florida since 1925
Bev Zlotshewer	Dr. Curran	Newberry, Florida: White Community Resistance to Head Start

In connection with their individual study many of the students made data-gathering field trips. These field trips are listed in Appendix A

Students received a total of fifteen hours credit toward graduation for participation in the program; the respective departments applied credit earned toward degrees.

(3) On-The-Job Experience - Field Work:

Each student was required to spend ninety hours in field work on an educational research project. The duties of each student in relation to the project were to be designed so that he would not be used in a non-professional or clerical way. The field work was to enhance his participation in an understanding of at least one definitive aspect of educational research. Students were assigned to projects on the basis of training, interest, and the number of students a project could absorb and use in an internship capacity. Listed below in Table 2 are the projects.

Table 2. Projects and Project Directors.

Title	Investigator	Support	No. of Apprentices
Investigation of Observer-Judge Rating of Teacher Competence	B. B. Brown Education	United States Office of Education	3
Programming for Mental Health in Campus Marriage & Preventive Action in College Mental Health	Carl Clarke Ben Barger Psychology	National Institute of Mental Health	3
Patterns of Educational Philosophy Expressed and Characteristics of School Personnel	R. L. Curran Education	Florida Educational Research and Development Council	2
Biological Science Curriculum Study Project on Special Methods	I. J. Gordon Education	National Science Foundation	2

Table 2. Projects and Project Directors. (Continued)

Title	Investigator	Support	No. of Apprentices
High School Self Evaluation and Curriculum Change	V. A. Hines Wm. Alexander Education	United States Office of Education	2
Self Discovery Through Independent Study: A Project for Able but Underachieving High School Students	W. W. Purkey Education	United States Office of Education	1
Mother-Infant Relationship & Community Study on Campus Marriage	Carol Taylor Anthropology	College of Nursing University of Florida	5

EVALUATION OF THE PROGRAM

The evaluation section of this report is organized in three main sections: first, each of the stated objectives and the experiences designed to meet them; second, staff considerations; third, organization.

Objectives:

Recruitment. The first goal was recruitment of bright undergraduates from education and arts and sciences. As reported above, this objective was largely accomplished. However, late award of the contract and subsequent lack of publicity reduced the selection pool. Interns (student teachers) were not notified of the existence of the project until their return to campus in the last week of school; arts college majors were not reached before many of them had made prior commitments. Under the circumstances the following tables and faculty responses to an evaluation questionnaire indicate the level of success.

Table 3. Apprentice Directors' Evaluation.

1. How does the work of the students compare with the work of new graduate students?
   Egual or better.....4
   No basis for judgement.....1
   Less sophisticated.....1

2. Was the student's time used effectively, or should it have been approached differently?
   Yes.....5
   No.....1
   No comment.....0

3. Did the student display commitment to the apprenticeship projects?
   Yes.....3
   No.....1
   No comment.....2

4. Was the student able to function without persistent supervision?
   Yes.....4
   No.....0
   No comment.....2
   (N = 6 Apprenticeship Directors)

Table 4. Total Faculty Responses.

	Yes	No	No comment
1. Was the caliber of the students as high and as good as you were led to expect?	8	2	0
2. Do you have any suggestions for recruiting students into a program like this in the future?	7	2	1

The suggestions made were:
"Recruitment should start sooner -- even though the obtaining of federal contracts might still be in doubt."

"Stay clear of the humanities."

"It seems to me that the students valued small classes, the chance to express their opinions about the programs, and contact with interesting teachers. I think students tend to be short changed at the undergraduate level in these things and are eager for it. This would be your best recruiting point."

"I believe there are qualities other than academic excellence that are vital to research. I would look for the student who is flexible and imaginative, who is able to see both the ludicrous and unexpected as well as the logical and relative."

"It would be easier to recruit arts and science people if the program were not full time so non-social science requirements could be filled simultaneously."

"Arts and Sciences college office and departments might be pressured somewhat harder."

Student Attitudes and Goals:

Another way this goal was evaluated was through assessment of change in students' attitudes and goals. Table 5 indicates these.

Table 5. Students' Future Plans.

Student No.	Plan
1.	"M.A. in zoology and teach high school biology."
2.	"Teach and work on M.A. in research specialization."
3.	"Ph.D. in educational research at the University of Florida."
4.	"Graduate school, research oriented."
5.	"M.A. in education in January."
6.	"Seriously considered educational research or education in some form other than teaching but gave up the idea in the last few weeks."
7.	"Teaching in high school."

8. "Graduate school -- where before I had given it only a brief thought."

9. "Law school -- University of Florida."

10. "Teach and return to the University of Florida for a degree in research -- before this summer I wanted to do work in guidance."

11. "Teach in Alaska -- I would like to go into educational research if I had more money."

12. "M.A. and Ph.D. -- Yes, I wish to go into research in my area. Perhaps I can."

13. "Plans are wishy-washy. This program has emphasized my desire to go on to graduate school. By pointing up areas of weakness, this program has been a push toward more education."

14. "M.Ed. or Ed.D. in research, curriculum, or political science."

15. "M.A. and Ph.D. eventually -- only in that the necessary research that is ahead of me doesn't seem totally unbearable."

16. "Graduate work in psychology and education possibly. I wish I could tell you what this program has been to awaken me to a broad spectrum of things that interest me and thus succeed in confusing me. If perhaps I've lost the security of knowing for sure I've gained the excitement of truly becoming aware."

17. "I plan to go into some form of educational research, probably from an anthropological point of view. This program had made these plans what they are."

18. "M.A. and teaching and research at the junior college level."

(N = 18 students who completed the program.)

Of the 18 respondents, 16 plan to go on to graduate school, 9 express a desire to continue a research orientation beyond what might normally be expected in graduate professional education, and 5 specifically express the desire to continue in educational research. One of the group who would otherwise not have been in this field at all was awarded a stipend in graduate educational research training.

Table 6 indicates the change in attitude toward educational research as a result of the program.

Table 6. Change in Attitude Toward Educational Research

Attitude	Before	After
Favorable	2	15
Naive	6	0
Unfavorable	10	0
No comment	0	3

(N = 18 students who completed the program.)

These comments were all elicited after the program completion so that students were freer to reflect upon their initial attitudes. They could report them without fear that they might be weeded out of the program. Negative comments were of the order of:

"I didn't really have any attitudes at all for I wasn't sure what it entailed."

"I knew very little about research..."

"Attitudes about educational research were non-existant."

"I was extremely vague about what educational research was about."

The beginning favorable responses were to the field rather than to specifics:

"I saw educational research as an area serving the future needs of education."

"A career with much potential."

"It was an up and coming field that I needed to know more about."

The "after" favorable responses were tallied on the basis of replies to the questions, "What are your feelings toward research and researchers now? Has the program affected your interest in research?" Some sample replies were:

"It certainly has. I now feel that research is not a cut and dried operation and that researchers are not cold people. To the contrary I now feel that research is dynamic and researchers are people who are vitally interested in other people and the things that happen to them."

"I have gained a new respect for the field of educational research -- for what they are doing now and for where they are going. The 'mickey mouse' picture of education is no more and this has happened through contact with people this summer who are not 'mickey mouse' and who for them, as now for me, the issues are alive and important, and this is from the elementary school teacher to the statistical analyzer."

"My attitude toward research was negative when I entered the program. As a result of my individual work I have almost an entirely different view now. I also see the great need for serious, well designed educational research."

"I will take as great a part in it as I possibly can; the utilization and application of it. If I had more background in mathematics I would have fought to get into a graduate-level research program. It is only my statistical failing that kept me from making research my career."

"I am now very interested in research. I plan to go into it. I would like to take my graduate work in this field. Previous research has not been what it should be. I would like to attempt to improve it. Team research, combining many disciplines, seems to be very beneficial."

The students also were asked for their suggestions concerning recruitment. They favored interviews in depth as the determining factor in selection beyond academic achievement and also suggested:

"Interest in the program and the recommendation of faculty members."

"Three-point (on a 4-point scale) or above grade point average, submission of paper on research previously done. Degree of difficulty of work completed. PProfessional quality as determined from personal interviews."

Active Participation in a Research Program:

Each trainee was expected to spend 90 clock hours on an assigned research project, under the supervision of an

experienced investigator. Table 2 indicated the projects and project directors. Table 7 presents the analysis of time utilization.

Table 7. Apprentice Time Utilization

Task	Hours
1. Data collection	474
2. Data processing	456
3. Conferences	220
4. Design of research	209
5. Data analysis	155
6. Data reporting	66

(N = 1580 apprentice hours reported.)

The total hours here, as shown above, do not average ninety hours per student. It was the director's decision during the program that the specific content of 90 hours should not be held as a rigid requirement but rather as a norm and should be somewhat flexible to accord with the variations within the projects to which the apprentices were assigned. Even so the average number of hours in the apprenticeship studies was close to ninety with a range from 63 to 115 hours indicating the variablity possible.

In addition, each student was provided with a description of the project to study on his own. Only three students did not receive experience in data collection within the assigned research projects and this was because of the stage of work of the project to which they were assigned.

Data collection consisted primarily of observing in schools, interviewing teachers, and interviewing families in relation to Head Start programs.

The data processing experiences included the preparation of materials for the IBM 709 computer, keypunching, reading printout sheets and other computer-related tasks as well as the use of desk calculators.

The students attended staff conferences of the research projects, conferred with other University and non-University

personnel in connection with the projects. In addition there were, for example, conferences with the local Federal Head Start consultant, with a local physician active in Head Start, and with professors, such as Robert M.W. Travers who was on campus for a conference. Some students also worked with computer center personnel and sat in on meetings with statistical consultants.

Each of the students was involved in participation relating to research design. Some of the design problems concerned reliability problems, others dealt with design of coding procedures and data interpretation.

Data analysis included correlation variance, chi square statistical techniques, and protocol and interview analysis techniques.

Students prepared tables for reporting data, kept anecdotal records of observations, developed interview protocols and prepared materials for research reports.

The students were asked to evaluate all phases of the program. In respect to apprenticeship: 15 felt their time was used effectively, 3 did not; 4 felt it was exciting, 9 good learning, 2 useful, and 3 a chore; 12 felt they became basically familiar with data processing. Some sample responses were:

"Most of apprenticeship projects seemed to be moving at a snail's pace."

"As for my individual and apprenticeship studies, they have been very valuable hours. I would have enjoyed more time allotment on the apprenticeship study."

"Sometimes exciting, sometimes frustrating, always good learning."

"For the most part it was clerical work -- the same clerical work but every now and then it became extremely interesting -- like when we met with statisticians and directors."

"Exciting -- a very valuable experience."

In response to the question, "Have you become basically familiar with data processing and some of its problems?" students reported:

"Yes, through statistics and BSCS project."

"No, this is the weakest point in relation to research."

"No, and I'm glad."

Substantive Knowledge and Research Competence through Courses:

The specific course work was evaluated by students and faculty. Faculty suggestions about the content of the courses were as follows.

"I think students could benefit greatly from being directed in a well thought out piece of research where they did all of the leg work form start to finish as a part of their work with a research project."

"You could work out an excellent major by doing more of the kind of thing you tried this summer."

"If you wish to grant a degree, I would push greater emphasis upon techniques of research."

"Making sure there was a common area explicitly designed for discussing the application of different approaches and techniques of research. Students need a common bone to pick to integrate disciplines and educational research."

"Anthropology could be better adapted to fit the needs of the students if it were clearer what these needs are."

"Sell the program in terms of being as applicable to the learning of research techniques in the social sciences. This will make it more interesting to the department chairmen whose cooperation in publicizing and recruiting is pretty essential."

"The areas of language and literature are so foreign to the very concept of scientific research that they are not promising for good cooperation. This works with math and the sciences."

"I think I'd have more formal and informal pressure on becoming acquainted with classical and present educational research, perhaps from the perspective of the so-called basic disciplines."

"I'd encourage but leave quite voluntary whatever tendencies can now be spotted, making the encouragement nutritive toward but neither coercive nor impetuous of a joint degree granting program; I guess I'm urging the policy of encouraging birds of a feather to flock together."

These comments reflect a general acceptance of the concept of an undergraduate training program by the interdisciplinary staff. They do not indicate reactions to the specific courses, but rather to the problem of integration and focus. They also reflect the particular individual biases of faculty which were somewhat balanced in the actual program.

The students felt that on the whole, class time could have been used more effectively, particularly in psychology and anthropology. The reasons are mixed and are presented here:

"Time could have been used more effectively in both psychology and anthropology through a more effective use of discussion and a wider base of readings."

"More forethought should have been exercised to prevent students from actually repeating courses (in the area of their majors or minors.)"

"May I suggest next year more flexibility in the courses offered in that a program may be designed around an individual student's needs."

"It could have been more useful if we as students had known where we were headed."

"Class -- less griping by those students who hadn't the knowledge to talk."

"Have a greater range of course offerings."

The concept of a core needs to be examined on the basis of these replies. Conceivably, fewer required courses and more electives might engender different affect.

However, the students also ranked classes as the most effective part of the program when they were forced to rank courses, apprenticeship, individual study, and the other experiences. That courses left their mark in ways other than just subject-matter learning can be seen from their responses to the question, "What do you see as utilization of specific disciplines to the solution of education problems?" A sample of replies follows:

"I think that some of the substantive material of psychology, anthropology, and sociology can be applied directly as they relate to learning. The methods and procedures of some of the established disciplines may also be borrowed."

"Educational research uses all methods useful to it -- borrowed from other disciplines."

"Educatior encompasses the problems and techniques involved in many disciplines and these disciplines can be very helpful to educational research."

"...borrow the techniques of inquiry and research from specific disciplines in solving educational problems."

"The specific disciplines can provide the educational researcher with ways of looking at the human community, social interaction, and the individual. The educator must use some kind of conceptualization, methods of analysis, and techniques in his research. The different disciplines can furnish the educator with their kind of tools which seem most useful to the disciplines at a given time and therefore possibly useful to the educational researcher."

"The connection between the social and behavioral sciences,once felt non-existant, is now very real. I see now how all sciences are interconnected, methods borrowed, researchers combined, and theories proved by all before accepted."

The director's evaluation, of a subjective nature, based upon student comment, grapevine, and other non-objective means, was that the psychology and anthropology courses ran into difficulty because of the heterogeneous background of the students, the conflict of expectations of faculty and students, and the ambigious orientation provided the faculty by the director. Much more pre-program staff consultation is needed to integrate discipline people and courses into such a program. The seminars in political science and issues and problems in education did not experience this problem because they were electives.

This suggests that there should be more allowance made for individual background in course assignment.

Individual Research:

Another aspect of the program was the individual project. This was very successful; both staff and students reacted favorably. The students were asked, "Do you see the relation of your individual study to educational research?" All did, in some fashion. Sample replies were:

"Some carry over in methods of conducting research and some definite relevance to promoting education."

"...Introduced me and gave me experience in the rigors of research. I have now also realized the broad scope that is part of educational research and how the problems dealved into through many methods and disciplines are all relevant to that of education."

"Yes, in the sense that if in an individual study the student can employ techniques of sound educational research. One thing I felt especially beneficial was that in my individual project I came face to face with pitfalls encountered in research."

"...in individual study I was able to utilize what I had learned in the other areas..."

"Yes, I was able to see many problems which did not come up elsewhere in the program."

"By conducting my own experiments I realize how involved a process it is. I can see how numerous studies in an area can add different facets to the area of research as a whole."

Further, the students were asked if they had integrated the courses, the apprenticeships, and the individual study aspects of the program. Fifteen of the 18 felt they had done so. Some of the longer replies are given below, to capture the flavor of these students' thought processes:

"Yes, the course gave some of the basic principles of research methodology. The apprenticeship project showed these principles in operation, and the individual project necessitated combining both principles and application in one's own work."

"I think so, although it was not because my individual project and apprenticeship overlapped to any extent. Rather because of the project as a whole and I mean to include the courses and the contact or exposure to members of the college of education faculty."

"I have been able to integrate my independent study with another group of research apprentices in a community study as background knowledge for my own work. In this way I have gained a first hand experience in discovering the make-up of the cultures I am comparing in my independent study. This has brought the problems involved with these people to the surface and made them alive for me. The research I have participated in as apprentice has shown me another facet of educational research and while not integrated so much in subject, I can see similarities in

methods -- that is, the way the same types of methods can be adjusted to fit what you are studying -- and in goals, the seeking to find the whys and hows, often so that we can make it better. Through the project as a whole I have been able to see just how it all fits into the scheme of educational research."

"Yes I have. My apprenticeship project opened up a study of Head Start and I got to see some really culturally deprived areas. I got interested in the culturally disadvantaged and did a report on it. I also got interested in interviewing and observing techniques (apprenticeship study) and decided to employ these as major methods in my individual study. My statistics background gave me the base on which I reported my findings in my individual study. And my education seminar gave me a further hint for my individual study through a presentation of the power structure in education. My apprenticeship project helped to orient me well in my anthropology course, too."

One suggestion, made by several students and staff, was that small groups might choose to work on a common project rather than engage in individual work. The time pressures of a single 15-week program might have contributed to this suggestion, but it would be easy enough to implement in a second endeavor.

Two goals related to interpersonal experiences; one with faculty, the other with fellow students. The students were asked, "Has there been enough interaction with faculty?" Sixteen said more than usual, and 13 felt there had been enough. Some sample responses are:

"All faculty members have been generous with their time."

"No. The situation was perfect for more interaction. This project had as much interaction between faculty and students as usual, maybe more. But I feel this could have been strengthened and might have led to more communication in the classroom setting."

"It was a main part of the learning process which tended to give the students greater feeling of worth and of being a part of a larger whole."

"Yes, more than I have ever known at the University. It has been very rewarding."

The reaction to fellow students was mixed. They enjoyed each other as a social group. Most came to respect each

other, but some felt that the scholastic caliber and achievement motivation of their colleagues was not up to their own standards. The following responses to the question of interaction with and attitudes toward fellow students demonstrate this ambivalent attitude:

"They are honest, friendly, serious."

"I identified with an interacting group both in and out of class."

"Although I like a few of them, I was disappointed."

"Responsible for a great deal of my liking the project."

"Within the students we had a wide difference of interests but for the most part we were able to function as a group without too much inter-division."

"In the future I feel the director should be much more demanding and careful."

"Loveable kids who don't have the ability to contribute or gain from a project such as this."

"I think it has been very valuable to have students from many academic backgrounds together."

"The interaction of the group in presenting their projects and ideas has done much to broaden my concepts of the parameters of educational research."

"It also seems that the project has gained much for education since it seduced the students from the other disciplines into the field of education."

"We functioned as a social not an educational group."

STAFF EVALUATION OF THE PROGRAM

The staff clearly reflected the inter-disciplinary concept of the project. This was both a strength and a weakness. It provided the students with resources, information and skill training from several disciplines and points of view. On the other hand, it was to a large extent a first time for much of the staff to be relating in a common endeavor across disciplines. Because of the lack of sufficient "lead-time", there was not enough orientation, discussion and dialogue among the faculty. Several sessions were held, but general agreements do not necessarily mean

operational agreements.

The liaison with the apprentice directors was mostly through the graduate assistant on the project. This arrangement provided an individual contact between the director and each staff member, but did not serve to acquaint staff members with each other's activity. Thus, a strong feeling of staff unity and commonality of purpose was not achieved as well as might have been accomplished through planned staff meetings.

In response to the question, "Would a different orientation to the program have been more useful to you?", 4 replied yes and the following responses were given:

"I was never part of the program. Participation in regular staff meetings would have helped me greatly."

"Perhaps one focused on the members of the faculty getting to know each other's craft and present focus better."

"Of course, there is always room to hope for a 'different orientation.' I would like a chance to interview and select apprentices that work on our project in the future."

"I think so. I missed the first orientation meeting and so I did not fully understand that researchers were not to "exploit" the undergraduates. Perhaps a brief contract for researcher and undergraduate to complete would avoid misunderstandings."

Morale may be seen in the nine-to-one favorable response to the question, "Would you do it again?' The one negative response emerged from the problem of a basic discipline course, mentioned earlier.

Use of Consultants:

Although no paid consultants were used, students had significant contacts with over 20 professionals in the field of educational research.

A field trip to the computer assisted instruction center at Florida State University grew out of a speech delivered on the campus by Dr. Louis Bright, Assistant Commissioner of Education, U.S. Office of Education. All students and three of the faculty visited this facility and spent a valuable day in experiencing computer-assisted instruction first-hand.

In the seminar on issues and problems in education, Professors Wm. Alexander, (curriculum and instruction), A. Combs, (educational psychology), M. Cunningham, (special education), W. Guertin, (educational research), R. Kimbrough, (educational administration), and Dean Wiles presented the issues in their special fields. In addition, Dean J.R. Clarke of St. Petersburgh Junior College discussed desegregation.

Organization:

The use of a trimester (approximately 15 weeks) was far better than a regular summer school, but students still felt rushed in doing their individual projects. Several took "incompletes" and are carrying on their work into the fall trimester. This may also be due to the very heavy load of fifteen academic hours combined with the 90-hour apprenticeship. A lighter load, or a re-arranged schedule might serve the purpose.

All classes were held on the first three days of the week, so that field work could be scheduled without interrupting classes. This is desirable, and will be retained if the program is offered again. The range of faculty comments included:

"Spread it out on a part-time basis over two trimesters. One trimester is not long enough for research ideas to jell and be executed."

"Might run a 6 to 9 hour block the first half, including programming. Then specialize."

"The approach is excellent."

The above report indicates faculty and student appraisal of the program, and a few subjective reactions of the program director. These data do not always reflect the high morale of the student group, the feeling of "worth-whileness" of all participants, and the subtle change of attitude of education and arts and sciences faculty and students toward each other. As a pilot program, difficulties were expected and experienced; these can be changed in a second summer run. The ultimate goal of enriching the pool of potential educational researchers through a systematic, continuous program is still to be accomplished. This pilot laid the foundation in demonstrating inter-college and inter-discipline cooperation. The cooperation of the Dean's office of the College of Arts and Sciences was of special merit. Credit for electives in education, not normally allowable toward graduation, were allowed for these

students; advice and counselling were freely given and consultation with the program director was immediate in case of any registration or selection problem. This leads to optimism for further work.

There were difficulties with USOE administration, although not with individual personnel. Because this was a new program, the rules about student stipends were not clear for undergraduates. It was necessary to submit two proposals -- one for stipends and one for program development -- which led into a variety of complications during negotiation. The time lag between informal notification and contract negotiation was too long, and led to beginning the program on a letter contract. Even the final report forms arrived late, and necessitated re-writing. The nature of the final report was not specified in the application information, nor was it clear that this would be due three months after the program, when no time or staff were allocated to writing the report. Chances are these problems will not recur as the Educational Research Training Program is stabilized. Early award and negotiation is of the utmost importance for recruitment of both trainees and faculty for this program.

Obviously certain types of growth are functions of the program as a whole rather than single facets such as courses. In order to evaluate this growth, and with a recognition that students not in the program may grow in similar ways, the students were asked a set of general questions. Below are selected responses. Eighteen of the 18 students who finished the project answered positively to the first two questions.

Question: Do you feel more prepared to effectively evaluate research? Are you more critical now?"

"Yes, because I am now familar with problems that social researchers face.'

"I now know some of the problems involved and will be less quick to accept any research findings at face value."

"I've learned to look more closely at the conditions of the experiment in order to more clearly analyze the significance of the conclusions."

"I look more critically at source of information and the techniques used in obtaining."

"Yes, I am now much more critical of what I read and hear. I especially found this to be true in reviewing the

research for my problems paper."

Question: Do you feel more prepared to participate in research projects and to interpret to your community the need for research?

"Yes, and along with the preparation to evaluate and interpret research I also have gained a committment. I feel it would be a responsibility of mine to at least offer my opinion on current research."

"Before the project, research had an abstract connotation to me. It seemed to be the work of experts and as far as I was concerned the utilization of the research was done on a higher level. I am now aware of its necessity and practicality as a functional and basic instrument of education."

"More prepared, but I have a long way to go."

"More prepared - yes - fully prepared - no!"

"I feel more prepared to participate in research now but as far as interpreting the need for it to my community -- I don't know. Perhaps if I had specific projects to look at I could."

"Yes, I now want to discover what, if anything, my school system is doing in research and I would like to work with it."

Question: What changes have you noticed in yourself as the project progressed?

"If perhaps I've lost the security of knowing 'for sure' I've gained the excitement of truly being aware."

"A keener interest in research."

"I have become more cynical, less trusting, and more angry as far as the students were concerned. I have a better opinion of college of education and educational research."

"More empathy on social problems, more critical, bigger respect for education, more professional feeling."

"I've become a little more tolerant of diverse ideas. I've found a niche (educational research) where I think I can put my best abilities to use."

"I find there is now more depth in my experiences and my thinking goes into more detail and draws from a broader base of knowledge. I am also able to think more critically now."

Question: What were the high points?

"The field trip to the Computer Assisted Instruction facilities at Florida State University."

"Exposure to some of the top men in education, and to hear men like Dr. Bright speak."

"The opportunity to find learning in so many situations -- in class, in discussions, conferences, in the office, at a speech, seminars, at a watermelon festival, etc. Never in so short a time have I learned so much about so many different things. I felt like a sponge -- as though I could not absorb enough. This is something new for me and I felt excited with learning like I haven't in a long time."

Question: What were the most difficulties in the project?

"Lack of time."

"Finances."

"Most difficulty was seeing, in the beginning how all the activities related to each other. There was a tendency to keep the different aspects isolated since this was the way it was done in all the previous trimesters of undergraduate work. It is a change in attitude in learning."

"Being able to design a study of my own."

Question: Was the total experience unique?

"Yes, it was unique in that we were treated like individuals and that someone really cared about us. Different from any other University of Florida experience."

"By being and having access to what is happening in the college (such as the conferences) I have begun to feel a real part of the professional aspects of education. Dedication is setting in."

"I feel the close relationships developed with both faculty and students was quite unique. The opportunity to meet outside of class was very helpful. I also feel the

acceptance of our frank opinions on a friendly professional level was excellent."

"Unique in that I got closer to my professors on an informal basis than ever before. I found too, that when the classes for the most part allowed it, there was a free exchange of ideas."

"Yes, meeting and hearing experts talk about their fields in conferences and education class. Being able to talk freely about personal opinions and ideas."

OVERALL EVALUATION

Generally, this pilot program proved successful. It did recruit some capable students into the field of educational research, it did demonstrate a successful mixture of courses, individual work and apprenticeship. As in any pilot program, it revealed areas of weakness. The late start was perhaps the most critical. This led to the selection of some students whose grades were below the desired academic level. These students did well; but not as well as those who met the standards. Further, part of the second weakness, the gap between faculty and student expectations in the psychology and anthropology courses, may have been due to this selection. The gap was also a result of the basic difficulty of teaching methodology in a discipline when students lack a substantive knowledge. There was confusion of goal (for example, to learn anthropology or to learn anthropological methods applied to educational research problems) which was not satisfactorily resolved. A continuation proposal, if approved, will change to an elective system in basic disciplines.

The program is planned to continue, with no major modification of objectives, with some changes in sequence, course credit and time allocation. The individual study and apprenticeship phases proved very satisfactory, and will be enlarged in any continuation through reduction in course time. On the whole, student morale was high, and subsequent correspondence and interviews suggests that the program made a profound impact.

Recommendations:

The basic difficulty with the United States Office of Education was, it is felt, temporary and situational. Late funding, prolonged negotiation and the requirement of 2 proposals to cover one project delayed the start of the

program, recruitment, and the payment of stipends. We had to proceed on two letter contracts, which was an unsatisfactory mode of operation. We are sure that this was because the program was new and because our plans were somewhat unique. We feel that the paper work connected with what was a small contract was equal to that required of much larger contracts. The training of 20 students for a whole trimester at the cost of less than $26,000 is very reasonable, particularly in a first pilot phase. At one time we almost abandoned the whole proposal because of the communication problems about cost. We expect that these difficulties will not be encountered in the future, because of both USOE and University experience with the program. What is needed is early review, firm commitment to announce and recruit even before formal contract signing, and fast negotiation based upon the assumption of the professional dignity and reputation of the program director and the institution.

PROGRAM REPORTS

Application Summary

1.	Approximate number of inquiries from prospective trainees (letter or conversation).	32
		32
2.	Number of completed applications received.	29
3.	Number of first rank applications (Applicants who are well-qualified whether or not they were offered admission.)	17
4.	How many applicants were offered admission	24

Trainee Summary

1.	Number of trainees initially accepted in program.	20
2.	Number of trainees enrolled at the beginning of the program.	20
3.	Number of trainees who completed program.	18

Financial Summary

Purpose	Budgeted	Committed
Trainee Support		
1. Stipends	5,000	4,590
2. Dependency Allowance	-----	-----
3. Travel	-----	-----
4. Institutional Allowance	5,000	4,439.17
Direct Costs		
1. Personnel	17,250	12,503.32
2. Supplies	100	65.00
3. Equipment	------	-------
4. Travel	800	528.00
5. Other Costs	1,137	779.79
Indirect Costs	1,543	1,110.88
Total for trainee support	10,000	9,029.17
Total for program costs	20,830*	14,986.99

*Only 15,830 was awarded; the other 5,000 is shown as institutional allowance. The trainees' registration fees were paid as a part of the Institutional Allowance.

APPENDIX A. INDIVIDUAL STUDY FIELD TRIPS

Student	Field Trip and Purpose
Joe Brannon	Athens, Georgia, to interview high school science teachers who were there taking summer courses.
Bev Johnson	Newberry, Florida, to talk with rural families.
Louis Shelley	Raleigh, North Carolina to examine the state archives material on the founding of Black Mountain College.
Bev Zlotshewer	Newberry, Florida, to investigate the rural white community's resistance to Project Head Start.