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CONTINUATION OF THE COLORADO RESEARCH COORDINATING UNIT, INTERIM REPORT.

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Activities conducted during the 19-month period ending July 1, 1968 are reported. Coordinating activities involved liaison work between state agencies, and participation in a planning group concerning the 1970 census. Stimulation activities resulted in seven research proposals. Three were approved and funded, two were approved, and two were rejected. The titles of the funded projects were: "A Vocational Guidance and Information Program at Golden, Colorado, Senior High School," "Wheat Ridge Applied Civics Project," and "Cost Benefit Study of Selected Secondary Programs." Dissemination activities included (1) the preparation of feature stories for newspapers, (2) the production of a film, "The Future," and work on a second film, (3) three issues of a newsletter, and (4) preparation for an educational resources center at Colorado State University. Research and development activities included direct involvement in 15 research projects and design and analysis aid to 16 graduate studies. Annotations of all projects mentioned are provided. A description of the organization and setting of the unit is included. (EM)

EMPERIM EMEL REPORT Grant No. OEG-4-7-063016-1589

CONTINUATION OF THE COLORADO RESEARCH COORDINATING UNIT

July 1968

U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
Office of Education
Bureau of Research

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE OFFICE OF EDUCATION

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Interim Report

Grant No. OEG-4-7-063016-1589

Continuation of the Colorado Research Coordinating Unit

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Colorado State University,

Fort Collins; Colorado

July, 1968

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

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

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SUMMARY

This document is the final report of the activities of the Colorado Research Coordinating Unit for the period of December 1, 1966 to July 1, 1968. This 19 month period is the time covered by the continuation grant for the RCU. The RCU was originally funded for the 18 month period of June 1, 1965 to December 1, 1966.

The RCU for this period was centered in the Vocational Education Department at Colorado State University. Much of the activity of the RCU was carried out in the Office of Program Services of the State Board for Community Colleges and Occupational Education. This office includes the guidance, public information, special projects, and research sections.

The Research Coordinating Unit and the Office of Program Services conducted several activities during this reporting period. These activities can be classified under the general headings of coordination, dissemination, stimulation, and research and development. The coordination efforts were directed primarily at effecting coordination of data gathering among several state agencies. The dissemination activities included the preparation of a film, public relations work, and the establishment of a dissemination or resource center at C.S.U. Stimulation activities were concerned primarily with stimulating research and development activity at local and university levels. The RCU also worked closely with graduate student research in the Vocational Education Department at C.S.U. The RCU and the Office of Program Services were directly involved in several research and development efforts.

It is felt that the RCU has defined its role in this reporting period and has become a significant factor in vocational education in the state.

Furthermore, the Colorado RCU can be expected to become even more of a positive influence as it continues to work at coordination, stimulation, dissemination, and development of research of relevance to Vocational Education.



INTRODUCTION

The grant for the Continuation of the Colorado Research Coordinating Unit was for 19 months to run from December 1, 1966 to July 1, 1968. The total project cost for this period was \$165,072 of which \$81,150 was from the U.S.O.E. Grant and the remainder was from state funds.

The Colorado Research Coordinating Unit was established on June 1, 1965, with a contract with the U. S. Office of Education. The original contract period was for 18 months. The activities of the unit for this first 18 month period were reported in the final report for Contract No. OE-5-85-125 entitled A Plan to Provide an Occupational Research Center at Colorado State University, dated January, 1967.

The activities of the unit for the 19 month period of December 1, 1966, to July 1, 1968 are reported in this document. The report is organized as follows:

- a. Description of the setting and the structure of the unit.
- b. Major activities of the unit with results and bindings of projects.



SETTING AND ORGANIZATION

The Research Coordinating Unit was centered in the Department of Vocational Education at Colorado State University at the time of its inception. It was intended that there be an assistant director in the State Board offices in Denver also. During the first 18 months of the unit, however, we were not able to fill the position in the Denver office. With no person in the State Board offices, it was difficult to effect coordination among the unit, the State Board, and other state and federal agencies. This limited the effectiveness of the unit for the first 18 months because the unit was not as responsive to the needs and concerns of the State Board as it should have been.

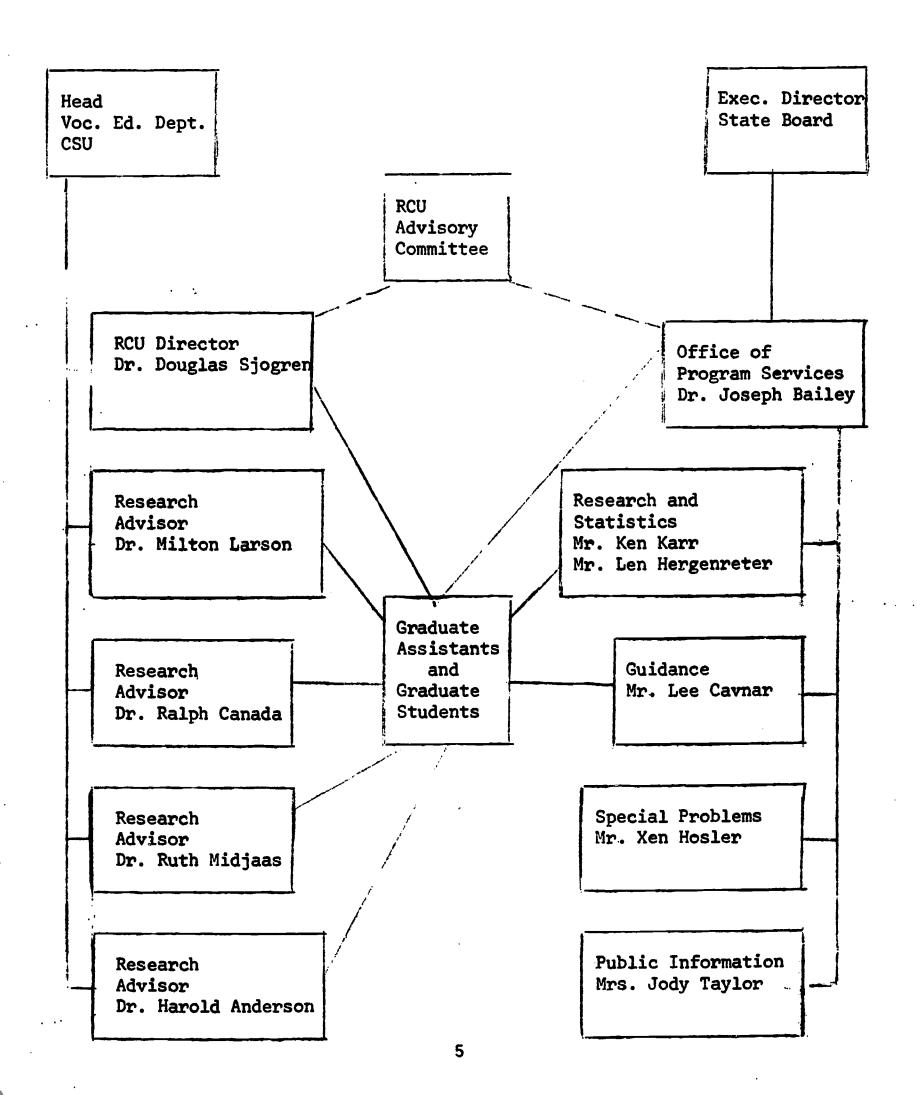
Among the major objectives of the Colorado Research Coordinating Unit were those of stimulating research and development activity in the schools of the state and to establish a data and information center for the State Board. To effectively work on such objectives it was essential that the unit have a direct line relationship to the Executive Director of the State Board. Consequently the organization of the unit changed at the time of the awarding of the continuation grant.

At about the same time that the RCU was funded for an additional 19 months, the grant period covered in this report, the State Board established a new division in its organization. This division was called the Office of Program Services. Among the functions of this office were to supervise special programs, public information, guidance activities, and research and statistical activities. It was obvious that these functions were similar to RCU functions and that the activities of the RCU should be closely coordinated with the Office of Program Services in the State Board.

While some of the objectives of the RCU were seen as being most probably achieved by working in the State Board context, there were other objectives that needed to be attacked in the university setting. These objectives included stimulating research and development activities among graduate students, the Vocational Education Department staff members, and other university staff. Consequently, it was considered necessary that the RCU have staff in the Department of Vocational Education at Colorado State University in order to effectively work on these objectives.



The schematic below illustrates the organization of the RCU for the second funding period.



As the chart indicates, the graduate assistants of the RCU as well as other graduate students in the department assisted with the activities of the RCU and the Office of Program Services. Furthermore, the research of the graduate students was supervised by the research advisors in the Vocational Education Department.

The RCU Advisory Committee met quarterly to review the activity of the unit, suggest new directions, and review and make the recommendations on specific projects and proposals. The following list is of the people who served on the RCU advisory committee:

- Dr. M. G. Linson, Executive Director of Occupational Education, State Board for Community Colleges and Occupational Education.
- Dr. Duane Blake, Head, Department of Vocational Education, Colorado State University.
- Mr. Wallace Clark, Supervisor, Business and Office Education, State Board for Community Colleges and Occupational Education.
- Mr. Paul Foster, Supervisor, Agricultural Education, State Board for Community Colleges and Occupational Education.
- Dr. Milton Larson, Division Head, Technical Education, Department of Vocational Education, Colorado State University.
- Dr. Ruth Midjaas, Division Head, Home Economics Education, Department of Vocational Education, Colorado State University.

Although we continued to be hampered somewhat by staffing problems, the research and development effort in vocational education in Colorado was significantly improved during the second funding period over the first. It is the belief of this writer that the organizational pattern described above was instrumental in effecting this improvement.

ACTIVITIES OF THE RCU AND OFFICE OF PROGRAM SERVICES

The following discussion of the activities of the RCU is arranged under the sub-headings of coordination, stimulation, dissemination, and research and development. These categories are not necessarily independent so that some of the activities were arbitrarily placed in a category. Where appropriate, results or evaluative comments are made of the activities.

Coordination Activity:

- The primary emphasis in coordination has been directed at establishing and maintaining a liason between the State Board and other state agencies. The research section of the Office of Program Services has established a close working relationship with its counterpart in the State Department of Education and in the State Employment Service. The coordination among these offices has resulted in the two education offices using a common coding system so that the data in the respective offices can be readily exchanged. The coordination with the Employment Service has resulted in some coordination of data gathering activity. In addition, Mr. Randall Ruff and Mr. Carl Roberts of the Employment Office have assumed responsibility for establishing a group that will explore the feasibility of an information and data center for the state.
- 2. The RCU has been to meetings of the planning group for the 1970 census in Colorado. These meetings have been to explore possibilities for using the optional code field that will be available in the census.

We have found that coordination of research and data gathering activities among various agencies is difficult to effect. The principle is sound, and we are committed to continued effort in this area. In practice, however, it will take considerable time and effort to achieve, largely because of the unique data needs of each agency.

Stimulation Activities:

The stimulation activity of the unit has been directed at research stimulation both locally and at the university level. Seven proposals were submitted to the RCU and the

Office of Program Services for funding. Three of the proposals were funded, two were approved but not funded, and two were declined.

The three projects that were supported are described first:

1. A Vocational Guidance and Information Program at Golden, Colorado, Senior High School.

The purpose of this project, which was started in June, 1967, was to establish a vocational guidance and information program in a school that is on modular scheduling. This program, if judged successful, would be regarded as a model program for other schools.

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Specific objectives were established for each grade level in the senior high school in terms of vocational information. A wide variety of materials, resources, and activities were developed or accumulated for the project, and a plan was instituted so that all students would have access to these and would use them in the modularly scheduled context.

Unfortunately the Viet Nam War interfered with this project as the initiator and director was called-up with his reserve unit in December, 1967. The project was continued, however, and a complete report of the results is expected by the end of the summer of 1968.

2. Wheat Ridge Applied Civics Project.

support for developing a curriculum which would introduce ninth grade students to the occupational world. This curriculum will be incorporated into the traditional ninth grade Civics program. It will include many of the components of the traditional Civics curriculum such as the basic understandings and concepts contributing to citizenship, but will relate these understandings and concepts directly to productive citizenship. The curriculum will provide activities and experiences which relate to the vast occupational spectrum of sociology. Opportunity will be provided for each student to match his interests and capabilities with a realistic choice of an occupational goal.

The curriculum is presently being developed and will be tried-out in the Wheat Ridge Junior High School in the 1968-69 school year.

3. Cost-Benefit Study of Selected Secondary Programs.

A professor in the Economics Department at Colorado State University and one of his graduate students were granted some funds to conduct a Cost-Benefit study of three secondary vocational programs. The study is an attempt to assess the benefits of vocational education programs in Business and Office, Agriculture, and Home Economics in relation to their costs for the 1965-66 school year. The post-benefit ratio of these programs will be compared with the cost-benefit ratio of the academic program for that year also based on comparable students.

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The final report of this project is now being written and will be available at the end of August, 1968.

The two proposals that received favorable consideration, but have not yet been funded are described next.

1. A Supplemental Program of Twelve Months to Prepare Licensed Practical Nurses to Become Eligible for Licensure as Technical Nurses.

The purpose of this project was to design and implement a model program that would facilitate the upgrading of the LPN to the technical nurse level. The model program would allow credit for material covered in the LPN training program that is redundant with the technical nurse program. The model program would be essentially an extension of the LPN program.

We felt this proposed project was a forward looking idea and do want to see it developed. The project was not funded, however, because of a desire to study further whether the school submitting the proposal could actually carry it out. It was felt that the program should be developed in a community college setting because of the A. A. degree requirements for licensure as a technical nurse. The school submitting the proposal is in a community that does not have a community college.

2. A Follow-Up of Two-Year Reimbursed Post-Secondary Vocational Education Programs in the State of Colorado.

The purpose of this proposed project was to attempt to determine the reasons for the relatively high drop-out rate in certain post-secondary vocational programs in Colorado. Three programs were selected for

study: Business Data Processing, Electronics Technology, and Secretarial Training. The three programs all have a large initial enrollment and a high dropout rate (over 50% of the enrollees fail to complete).

The proposed project was approved and the study could have been conducted starting in August, 1968. Both of the investigators, who were in the College of Business at Colorado State University, have taken teaching positions outside of Colorado, however, so the study is not likely to be conducted unless some interested and qualified person is able to assume responsibility for it.

The following two proposed projects were not approved.

1. Evaluation of a Vocational Technical School.

The purpose of this project was to establish a model evaluation plan for evaluating a vocational-technical school. The project was not supported because of the limited expectations for the school. The school was near the RCU, however, and the plan was instituted by the school on a limited basis with help from the RCU staff.

2. Learner-Controlled Instruction in an Electricity-Electronics Course.

This proposed project was an experiment on teaching methods in a college level electricity-electronics course. The course was in the Industrial Arts Department of the college. The project was not funded because it was felt that the experiment was very redundant with many other studies on teaching methods.

Although seven proposals is not a large number, we were pleased that we did solicit and obtain proposals from local schools as well as colleges and universities. We were encouraged by the quality of the proposals, and we believe that this phase of the RCU activity will move ahead with the money in the Discretionary Award Program. The writer of this report feels compelled to comment at this point on a frustration he felt in attempting to stimulate research. It is my perception that the fate of unsolicited research proposals to U.S.O.E. in the last two years has been such that I hesitate to recommend that such proposals be submitted to U.S.O.E. The likelihood of their being funded is so small that it seems to be a waste of time and effort to work on the proposal. Obviously, I regard this an unfortunate situation. Earmarking for projects may be



politically defensible, but hardly conducive to stimulation of sound research ideas. Surely a reasonable amount of money can and should be used to fund proposals on their soundness of conceptualization and design rather than on their being the "in thing".

The RCU has worked in other ways to stimulate research of relevance to vocational education. We have consulted with individuals and agencies on research design and evaluation methods, and we have provided design and analysis assistance on graduate student research.

The projects to which we have provided consultative services are described in the following paragraphs.

1. Two Colorado cities, Denver and Trinidad, have been designated as Model Cities. The RCU staff has assisted with the development of two proposals for the Model Cities programs in these two cities. The proposal for the Denver Model Cities program was a project designed to assist in-migrants to Denver in becoming oriented to urban life. An important component of this project is to inform the in-migrant of the work and training possibilities in Denver and to provide training and assistance in applying and holding a job. The proposed project is still pending.

The proposal for the Trinidad program was for a survey of the community for information that would be useful for decision-making. The project also was designed so that on-going evaluation efforts could occur. The planning survey proposal was approved by the local administration in Trinidad, but was not approved by the regional office in Fort Worth. The evaluation aspect of the project is still pending.

- 2. The RCU staff has consulted several times with the staff at the Rocky Mountain Educational Laboratory in Greeley. One focus of this laboratory is to study and develop materials and programs in occupational education at the secondary level. The RCU staff has consulted with the lab on this project. The project should enter the first phase of implementation in the 68-69 school year.
- 3. Dr. William England, who was in the College of Business at C.S.U. during the 1967-68 school year, has done a large amount of research on the value systems of managers of business enterprises. His research has been done in the United States and in several Asian countries. The RCU staff worked with Dr. England in



preparing a proposal to extend his work to managers of educational establishments, that is school administrators. The proposal was submitted to the Denver Regional. Office of U.S.O.E. and was approved. The project was started in March, 1968 and will run for one year.

- 4. Dr. Ronald Wykstra of the Economics Department at C.S.U. prepared two proposals on which the RCU staff provided assistance. One of the proposed projects was to apply the shift-differential technique of analysis to the study of occupational shifts by region of the country and also of occupational shifts by industry. The other project was to develop a handbook of operations research techniques for school administrators and school board members. Neither project was approved.
- Psychology Department at C.S.U. in developing two proposals for projects to study evaluation methodology. The many social action programs that are being attempted in the United States today are requiring new approaches to program evaluation. The evaluation model to be tested in the proposed projects is a systems model developed by Dr. Neidt. The settings for the projects are a county 'War on Poverty' program and a rehabilitation program in a state hospital.

Funding of the two projects is still pending.

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Design and analysis help has been provided by the RCU staff on the following graduate student research projects. All were in the Vocational Education Department at C.S.U.

- 1. <u>Data Processing Institute Evaluation</u>. Completed doctoral dissertation by Lewis Wall.
- 2. <u>Machine Use in Teaching Data Concepts</u>.

 Completed doctoral dissertation by Robert Hanson.
- 3. A Curriculum Development Analysis of Selected Programs
 in Data Processing.
 Proposed doctoral dissertation by J. B. Walden.
- 4. The Relationship between Educational Expenditures and Selected Economic Indices by State.

 Proposed doctoral dissertation by Dale Gutcher.
- 5. A Study of Personality Characteristics Related to
 Success in Data Processing.
 Proposed doctoral dissertation by Janie Jones.



- 6. Attitudes of Adolescent Girls and Their Mothers Concerning Home Economics in the Secondary Schools of District Twelve, Adams County, Colorado.

 Master's Thesis by Doris Walters.
- 7. A Survey of Factors Influencing the Establishment of
 Non-Farm Agricultural Occupations in Colorado High
 Schools.
 Master's Report by Larry Thomas.
- 8. Student Achievement When Teaching Time Management To

 Junior High Students.

 Master's Report by Anne Putnam.
- 9. Effectiveness of the Lecture Method Compared with Other Methods in Teaching Vocational Agriculture.

 Master's Report by George Nelson.
- 10. Factors in Changing to and from Home Economics Education at Colorado State University.

 Master's Report by Billie Swartz.
- 11. The Effect of Pretesting on Junior High School Achievement in Home Economics.

 Master's Report by Twila Taylor.
- 12. Expressed Homemaking Interests of Adult Women from Low-Income Families in Aurora, Colorado.

 Master's Report by Karen Tibodeau.
- 13. Acceptance of Self and Others by High School Girls
 at Crittendon Home, Denver, Colorado.
 Master's Report by Dora Von Vihl.
- 14. Selected Factors Concerning Special Education Students
 in Home Economics.

 Master's Report by Connie Wilson.
- 15. The Relationship between Creativity Test Scores and the Ability to Vary Designs in Clothing.

 Master's Report by Martrene Woodard.
- 16. Occupational Opportunities in Aurora, Colorado for Women with Limited Home Economics Training.

 Master's Report by JoElen Zgut.

We feel that the RCU has been reasonably effective in stimulating research of relevance to vocational education in the state. It would be inaccurate to infer that all of the above named research activity occurred because of RCU stimulation, but it is probably fair to say that the RCU did



provide some stimulus for and guidance to the activities.

Stimulation of research and development activity at the local level is still not as successful or effective as desired. This will continue to be an area of concentrated effort in the future, and we expect that the discretionary awards program will effect much more. R and D activity at the local level.

Dissemination Activity:

The following paragraphs describe the information dissemination activities of the RCU and the Office of Program Services.

- 1. Several feature stories about vocational education and specific vocational education programs have been placed in the newspapers of the state. The public information section of the Office of Program Services has been quite successful in getting such stories into the papers.
- 2. The Office of Program Services produced a film entitled The Future. This film was designed to present a positive image of the work and the workers at technical and skilled levels. The film has been shown throughout the state to educational, service, and civic groups. It has generated much reaction and discussion, and has apparently been successful in stimulating the viewer to think about the world of work and vocational education. The office is presently working on a second film which will deal rather specifically with vocational and technical education programs and program needs.
- 3. In an attempt to inform people in the state about the RCU and the Office of Program Services, three news-letters were published. The newsletters were discontinued because they tended to be redundant with the Colorado Vocational Association Newsletter and because there was only very limited feedback on them. We expect to continue to use the CVA Newsletter as the primary means of informing people of our activities.
- 4. The RCU and the Office of Program Services have started work on setting up an educational resources center in the Vocational Education Department at C.S.U. This center will be primarily concerned with making ERIC services more available to the teachers and administrators in the state than they now are. It is expected that the resource center and the public information section of the



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Office of Program Services will work together in publizing the service and disseminating the information around the state. The resource center will also accumulate and make available research reports, curriculum guides, course materials, and other educational material that is not in ERIC. The center will serve as a clearinghouse of educational materials produced in the state for ERIC.

The problem of disseminating useful information in education is crucial. One of the difficulties is that there is no good evidence about effective practices for dissemination and adoption in education. The diffusion model that has been applied to some other areas like agriculture seems to have limited applicability in education primarily because of the institutional constraints that exist in education.

We have distributed information, but we are not very confident that this has had any effect. We are quite hopeful that the resource center will evolve into an effective means of disseminating information and affecting practice.

Research and Development Activity:

The RCU and the Office of Program Services have been directly involved with a number of Research and Development studies. Direct involvement means that the activities have either been initiated and conducted by the two offices or the staffs of the two offices have been instrumental in the conduct of the study which was initiated by some other person or agency.

These activities are described in the following material.

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- 1. Dr. Ruth Midjaas of the home economics section of the department at C.S.U. conducted a follow-up study of women who had graduated from high school in the period of 1955-1960. The study, which was patterned after a study done in Virginia, was designed to obtain information about the judged relevance of their high school programs to their present situation. The data have not been completely analyzed, but from the analysis there is evidence to indicate that those women who had taken home economics in high school did feel they had obtained useful and relevant knowledge from such courses.
- 2. In another study in the home economics section, Dr. Mary Helen Haas is attempting to scale the perceived importance of various secondary school objectives by



different reference groups. One purpose of this study is to obtain estimates of the perceived value of home economics objectives in relation to the objectives of other secondary school subjects. These value estimates can then be used as an estimate of benefits attributable to home economics which can be used in obtaining benefit-cost ratios.

3. Dr. Milton Larson of the technical education section of the vocational education department at C.S.U. conducted a study of the <u>Institute Interest of Technical</u>, <u>Trade</u>, and <u>Industrial Teachers of Colorado</u>. The study indicated a high degree of interest in in-service training institutes. There was strong evidence that the teachers were interested in both the technological aspect of their field and teaching methods. In-service programs are being planned for the state on the basis of this study.

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- 4. Dale Gutcher of the RCU staff at C.S.U. conducted a study of Desirable Characteristics of Department Heads as Seen by Senior Administrators. The institutions surveyed were technical institutes with curricula accredited by the Engineering Council on Professional Development. Several statements or definitions of characteristics were rated on a 10 point scale of importance. important characteristics were technical knowledge, administrative or supervisory experience, experience in organizaing programs, personality, and an interest in vocational education and on the job. Of least importance were eligibility for vocational certification, publications, experience in teaching reimbursed programs, marital stability and age. The variance in the ratings of all items was quite high indicating that the senior administrators who were surveyed were not in general agreement in their ratings.
- 5. Another study was conducted by Mr. Gutcher in which he attempted to determine the extent to which the last three digits of the DOT code might be used validly for a measure of the skill level of a job. A canonical correlation model was used in which the three digits of the DOT code were used as the criterion variables and various indices of income and education were introduced as predictor variables. When median income and median education for a sample of jobs were introduced in a canonical model with the data, people, and things values for the jobs both canonical correlations were significant. The first canonical of .75 showed high loadings for education, data, and people. The loading for things was of a bi-polar nature. The canonical equation might be considered one that might be used to assign a skill level value to a job. The second canonical correlation was

- .39. Education, income, and things loaded heavily on this dimension. Even though statistically significant, this canonical does not appear to be an index of skill level. It undoubtedly includes a large error variance component. A hypothesis suggested by the results is that the data level value, which is the fourth digit of the DOT code, might be a useful single index of the skill level of a job.
- 6. Dr. Douglas Sjogren of the RCU staff completed a study entitled Identification of Common Behavioral Factors as Bases for Pre-Entry Preparation of Workers for Gainful Employment. The study, which was essentially methodological, demonstrated that the method employed does identify meaningful job clusters and behaviors that might be used as bases for curriculum building. The problem of job-clustering is fraught with many difficulties, however, and it would seem desirable to examine further the many methodological issues as well as the effect of basing the clustering on varied assumptions.

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- 7. Dr. David Sheppard, who was on the RCU staff for the first nine months of this funding period, conducted a study in which he constructed an instrument designed to measure the vocational maturity of adult men. This study was patterned after the work of Crites at the State University of Iowa. The instrument developed by Dr. Sheppard is essentially an adaptation of the Crites inventory which is appropriate for secondary school students. The instrument developed by Sheppard did have reliability and did differentiate among three adult male groups who would be expected to differ in vocational maturity. The three groups were chronic unemployed, MDTA trainees, and vocational education graduate students.
- 8. The guidance section of the Office of Program Services under the direction of Lee Roy Cavnar has been working during this funding period on establishing a vocational guidance information service for the schools of the state. The service is patterned after Project VIEW of the San Diego schools and has the same designation for Colorado. A large number of occupations have been reviewed and the VIEW cards have been prepared and disseminated to the participating schools. Nearly 100 schools in the state have purchased the necessary equipment and are participating in the project. This project will be continued and expanded. The VIEW cards will be updated regularly and additional occupations will be included in the files as time and resources permit.
 - 9. Mr. Caynar also conducted a study of the Attitudes

Counseling, and Vocational Education. Returns were received from 80% of the Superintendents who were surveyed. Generally the results indicated that the administrators did not believe that their counseling and guidance programs and their vocational education offerings were adequate. There was some evidence that the definition of the counselor's role continues to be a persistent problem in education. Their roles tended to be not well-defined and the counselors often performed in many diverse functions in the schools. One result of this survey was a concerted effort by the guidance section to effect an in-service project for the counselors in the state.

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- 10. The guidance section also conducted a comprehensive study of the vocational interests of the secondary students in the state. Some 10,000 secondary school students in the state took the Ohio Vocational Interest Inventory. Some 70% of these students indicated high degrees of interest in occupations that would be provided for in a vocational-technical program rather than a college-professional program. Although it is dangerous to infer that all of these students are strongly committed to their choices and would enroll in such programs, the results do justify an inference that many more secondary students are interested in and would enroll in vocational education programs than do now should the courses be made available. Only about 10% of the secondary school students of the state are now enrolled in the vocational education programs.
- ll. The Office of Program Services administered a pilot project that involved four schools of the state in programs for youth with special needs. These programs were occupational work-experience programs for one or two years in which low-ability students were given on-the-job training in jobs at the low-skilled, semi-skilled, or operator levels. The students spend half a day in school and the other half day on the job. They take a related class as part of their school work.

The project has had some problems, with the main difficulty arising from the fact that the low-ability students do not perform as well on the job as the employer would like. The cooperating employer for such a program must be very sympathetic to the idea, and he certainly should be made cognizant of the difficulties he may have with such students. Most of the participating students have performed well and apparently have benefited from the project. The few who have had problems, however, have created difficulties for not only the special needs project,

but also the other cooperative programs in the school. It would appear that such programs need very careful and close supervision and that the cooperating employer must be fully aware of the kinds of problems he should expect when working with low-ability students.

- 12. The Office of Program Services has started on a project to establish a data gathering and reporting function in the research section. The first phase of this project is the establishment of a state-wide follow-up system. Leonard Hergenreter has been directing this project which is now in the field test stage. It is expected that the system will become operational in September, 1968. The system will provide information of all vocational program enrolles in the state.
- 13. Three Area Vocational School surveys were conducted in the state with help from the Office of Program Services. The reorganization of the State education bureaucratic structure to include a State Board for Community Colleges and Occupational Education has had an influence on the area vocational school movement. Although the surveys have yielded data to support the establishment of area vocational schools, the state has moved slowly in designating such schools. The judgment of this writer is that the hesitancy stems from a concern of the State Board that the direction that the community college movement takes needs to be determined before they can become committed to any decisions about the area vocational schools.

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- 14. The research section of the Office of Program Services assisted Mr. Tony Pisciotta in conducting a study of training needs and desires of firemen for college level programs in the state. The data indicated strong interest in several different kinds of training programs among respondents from fire departments that are staffed with salaried employees. Respondents from volunteer departments indicated considerably less interest in college level programs, but a strong interest in itinerant instructor type programs.
- 15. The research section of the Office of Program Services assisted with two other studies conducted under the sponsorship of the State Board for Community Colleges and Occupational Education. One study was conducted by Management and Economics Research Incorporated of Palo Alto, California. The purpose of this study was to obtain information that would be helpful for planning the implementation of the State Community College system.

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The second study was the Colorado phase of the testing on the evaluation model being developed by the Center for Research and Leadership Development in Vocational Education at Ohio State University.

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The Research Coordinating Unit and the Office of Program Services have assisted with and/or conducted a significant number of research and development activities. It is impossible to establish that such activities were done because of the RCU, but it does seem reasonable to infer that the existence of the RCU facilitated their being done. It is expected that the RCU will continue to be directly involved in conducting research and development activities, especially those activities that are especially relevant to the needs of the State Board. Hopefully we will be able to stimulate other agencies to do studies that are needed in vocational education, but are not specific to the decision-making concerns of the State Board.

Evaluation:

As implied earlier in this report, it is difficult or even impossible to assert that all of the activities are because of the RCU. We do feel that the RCU has had an impact on the research and development efforts in vocational education over the past three years. Research and development activity has been stimulated, research has been done, and progress has been made toward a coordinated research effort in the state. The groping for identity and proper function that characterized the RCU for its first 18 months was pretty well resolved during the second funding period. We are anticipating that the RCU will be an increasingly significant and positive influence on vocational education in Colorado during the next several years.



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