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AUTHOR	Sumpter, Gary D.; Hill, Sherry G.
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ABSTRACT

The exemplary project was designed to develop a competency-based spiral curriculum for vocational education in Boone County, West Virginia. The project focused on the following areas: (1) survey of labor market requirements, (2) curriculum development, (3) staff development, (4) employer and community coordination, (5) facility development, and (6) career planning and placement counseling. The results and conclusions of the project are presented in the appendixes which comprise the major part of the text. Appendix A reproduces the contract between the RCA Corporation and the Boone County Board of Education to develop a vocational education program. Appendix B consists of a directory of cluster committees in allied health, business/management, construction, mining/mining technology, power mechanics, and social studies. Appendix C presents a plan for employer and community coordination and includes recommendations for establishing career executive-curriculum cluster committees. Appendix D (52 pages) presents recommendations for the development and implementation of the career clusters. Appendix E consists of a process model for developing career education curriculum materials for Grades 10-12. Appendix F presents a staff development plan for the Boone County Career Center. Appendix G focuses on a discussion of career planning and placement counseling plans for the career development center. (Author/EC)

Final Report

Project No. W V - 73 - E- 3

Grant No. DVE - 37 - W V - 73 - E - 3

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Sherry G. Hill

Boone County Board of Education
69 Avenue B
Madison, West Virginia 25130

June 30, 1973

West Virginia
State Board of Education
State Department of Education
Bureau of Vocational, Technical and Adult Education
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The work presented or reported herein was performed pursuant to a grant (or contract) with the State Board of Education, Division of Vocational Education. However, the opinions expressed herein do not necessarily reflect the position or policy of the State Board of Education, and no official endorsement by the State Board of Education shall be inferred.

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PREFACE

This project was initiated for the purpose of developing a plan for improved vocational education in Boone County, West Virginia. As spelled out in the contract negotiated with the educational consultants, this planning grant provided for a labor market analysis, a plan for community and employer coordination, a plan for curriculum development, a staff development plan, assistance in facility design, and a plan for career planning and placement counseling. The contents of these phases are included in the appendix of this report.

The need for improved educational opportunities in Boone County is best described by attitudes expressed by Kenneth B. Hoyt in Career Education - What It Is and How To Do It:

> "At the heart of the problem is a false societal attitude that worships a college degree as the best and surest route to occupational success. This attitude is as dangerous as it is false. When less than 17 percent of the population can attain what close to 100 percent of the population have been led to believe is desirable, it is inevitable that the majority must be dissatisfied with their lot. A viable democracy cannot afford to view 83 percent of its population as 'second class' citizens. Unrest is sure to exist when only one-third can try and less than one-sixth attain what more than nine-tenths regard as the optimal pattern of education as preparation for work. Many of the one-sixth are also dissappointed when they discover the irrelevance of much of what seemed to have such great promise."[1]

It is the hope of the local educational agency that the plan herein presented, once implemented, will contribute toward obliteration of the attitude described.

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[1]Kenneth B. Hoyt, et.al., Career Education - What It Is and How To Do It, Olympus Publishing Company, 1972, p.29.

Since this plan calls for the development and implementation of a competency based spiral curriculum which is flexible, measurable, self-paced, and individualized, the learning setting should serve to fulfill students needs and lend credibility to career education in the eyes of educators and the employing populace. A curriculum designed in the manner prescribed by this plan will lend support to a term common in the 1960's and 1970's - accountability.

Acknowledgement is awarded the educational consultants, the RCA Service Company, who assisted Boone County in the development and presentation of this plan. Additional recognition is accorded the Boone County Executive Committee on Career Education and its membership for their untiring and continued support in the promotion of career education.

SUMMARY

The proposition under consideration in the granting of this exemplary project was to conduct a study and present a plan for the development and eventual implementation of an improved curriculum in vocational education in Boone County, West Virginia.

Recognizing the number of perplexities common to Boone County the need for improved educational opportunities is apparent. The local educational agency presently offers vocational education opportunities only in home economics, business and office education, and one welding program. There is a total of only 245 students of a secondary school population of nearly 2000 involved in vocational education. Additionally, the student drop-out rate is higher than 4%, placing the county near the highest rate in the State. Youth unemployment rate is near 15%. The population of the county has declined by over 25 per cent since the 1950 U.S. Census.

Business, industry, and interested individuals of Boone County have expressed a proclivity to improve educational contigencies by pledging $75,000 toward the local effort needed to build and equip a career center and to design a curriculum that would be conducive to solving the aforementioned challenges. In an effort to alleviate some of the problems associated with the educational restraints mentioned, the Board of Education selected to initiate an exemplary project with the cooperation of the State Department of Education, Bureau of Vocational, Technical and Adult Education.

A proposal designed to accomplish the following objectives was prepared and a contract negotiated with the educational consultants:

a) To determine the occupational structure of the community and adjoining labor market areas, to identify employment opportunities and to determine appropriate occupational offerings in an expanded vocational education program being identified should be in agreement with local/state and national labor market needs.

b) To design a model for curriculum development relative to the occupational programs to be provided. Such curriculum should be

designed to allow students to enter and/or exit at any level with specific saleable skills. The curriculum will be measurable, individualized, flexible, self-paced and geared to meet the needs of students and the requirements of business and industry.

c) To determine staff requirements and design a plan for staff development for the occupational programs being planned.

d) To design a plan for a program of career planning and placement counseling for students enrolled in Boone County Schools.

e) To develop a plan for employer and community involvement and coordination in relation to the expanded program of vocational education being planned for the county.

f) To assist in facility design appropriate to implementation of an expanded program of vocational education to meet the needs of the county.

The initial portion of this phase of the exemplary project dealt with a labor market analysis of Boone and its contiguous counties in an effort to determine occupational areas, job classifications within the occupation, and the manpower needs so associated. The results of this study are presented in detail in Appendix D - Recommendations for Curriculum Clusters. Briefly the results of this study follow:

a) Employment trends were analyzed for the following occupational clusters -

Agriculture and Forestry
Business and Business Management
Construction
Fashion and Apparel Industries
Food Service
Health
Manufacturing
Mechanics and Repair
Mining and Mining Technology
Social Service

b) Employment potential appeared concentrated in six of the ten clusters -
   Business and Business Management
   Construction
   Health
   Mechanics and Repair
   Mining and Mining Technology
   Social Services

c) A student interest survey in the ten occupational clusters paralleled job potential -
Rank order of curriculum interest
   Business
   Social Service
   Health
   Power Mechanics (Mechanics and Repair)
   Mining and Mining Technology
   Construction

d) A follow-up study of graduates in the 1971 and 1972 classes indicated the following: (684 students)

Employed	40%
College or Technical School	23%
Married - Not Working	16%
Military	6%
Unemployed	12%
Unknown	3%

e) Places of employment -

Boone County	64%
West Virginia (other than Boone County)	12%
Out of State	24%

f) Occupational Areas of Employment (274 employed)

Business and Business Management	34%
Mining and Mining Technology	25%
Manufacturing	9%
Mechanics and Repair	5%
Construction	5%
Health	3%
Other four (4) areas	19%

The second aspect of this project dealt with the development of a plan for employer and community coordination. The substance of this plan is presented in detail in Appendix C - A Plan For Employer and Community Coordination. A direct result of the plan has been the formation of the Boone County Executive Committee on Career Education along with its membership of nearly seventy individuals. (See Appendix B for Register of Members.) The BCECCE is made up of an executive chairman, six committee chairmen heading each of the respective occupational clusters, and the director of vocational education serving as ex-officio members and executive secretary. The BCECCE and its membership have met three times since their creation in April 1973. The committees have perpetrated themselves to the following responsibilities:

a) Review whether there is a definite need for teaching the cluster
b) Continual review and critique of curriculum
c) Counseling
d) On-the-job training opportunities
e) Job/Career placement
f) Community education in cluster area
g) Student recruitment and cluster "marketing"
h) Evaluation of instruction
i) Coordination with higher education

In the conduct of business to date, the BCECCE has resolved that Boone County develop a competency based spiral curriculum imparted, developed, validated, and evaluated jointly by business, industry, and education. The respective curriculum advisory committees have recommended the following program areas be included in each cluster. The program areas designated will serve as the framework for conducting a task analysis for each job and eventually provide relevant data for the production of performance objectives.

ALLIED HEALTH

Core Curriculum Requirements
Medical Secretary
Nurse Aide
Assistant Physical Therapist
Inhalation Therapist
Medical Office Assistant
Medical Laboratory Assistant
Emergency Medical Technician
Sanitation Technician
Hospital Administration
Pharmacy Technician
Medical Records Technician

BUSINESS AND BUSINESS MANAGEMENT
- Small Business Management
- Secretarial Sciences
- Bookkeeping/Accounting
- Data Processing
- Retail Sales
- Graphics and Duplication

CONSTRUCTION
- Carpentry
- Masonry
- Plumbing
- Residential Electricity
- Heating Ventilation and Air Conditioning
- Floor Covering

MINING AND MINING TECHNOLOGY
- Ventilation
- Safety
- Electricity
- Math
- Equipment Operator
- Drafting
- Welding
- Mechanic
- Masonry
- Orientation and History
- Roof Control
- Supervisory Training
- Work Ethic
- Federal and State Laws
- Labor Contracts
- World of Work Preparation

POWER MECHANICS
- Hydraulics
- Internal Combustion Engines
- Industrial Electricity

SOCIAL SERVICES (Man and His Environment)
- Teacher Aide
- Mental Health Aide
- Case Aide
- Nutrition Aide
- Family Planning Aide

SOCIAL SERVICES (Man and His Environment) - continued
Day Care Personnel
Law Enforcement
Youth Leadership Training
Conservation Aide
Psychology
Philosophy
Sanitation Aide
Employment Aide

The third feature of this planning grant in the exemplary project has been the production of a model for the development of career education curricular materials. The model developed and presented in Appendix E - Process Model for Curriculum Development - is a product of input provided by previous experiences of the educational consultants and curriculum specialists on the staff of the local educational agency.

The model for development of curriculum embodies the heart of the goal set forth in Phase I of this exemplary project, i.e., to make a study of the labor market in order to acquire knowledge of manpower needs and job classifications; to execute an assessment of student interest and needs; to make provision for employer and community implication in the creation and organization of curricula; and in so doing create relevancy for the student and credibility to the employer and community.

The plan herein presented and the model set forth in Appendix E calls for the formation of advisory committees for each cluster area; the selection of support staff; collection of appropriate data; determination of career competencies by way of task analysis; validation of competencies by advisory groups; translation of competencies into performance objectives; classification and sequencing of performance objectives; development of criterion tests; design of instructional format for modules; development of instructional modules; review of modules; field test and implementation of modules; and acceptance of interim curriculum.

A plan for staff development has been consolidated into the initial phase of this exemplary project. The composition of the plan is recorded in Appendix F - Staff Development Plan for Boone County. RCA Service Company proposes that this staff development plan focus on career education awareness, the changing role of the community which the Career Development Center will serve, the changing role of administrators and instructors, and the developing, implementing, and evaluating of an individual-

ized learning system in career education.

This plan should serve as a guide in preparing for specific staff development activities and should relate directly to those individuals who will be primarily responsible for the operation of the Career Center. The staff development plan has been presented in two phases: pre-service and in-service. It has been suggested by RCA that a two-week pre-service session be conducted that is designed as an orientation to career education and the model to be utilized by the Boone County Career Center in developing curricular materials. During this same two week period the instructional staff selected for the center will learn the techniques of developing curriculum. The major thrust of the second week's activities will be for the developmental team to produce, at least, and acceptable module of instruction in the various cluster areas. These two weeks of pre-service training may be utilized to train the curriculum writing staff, or it may be used to orient and inform the instructional staff not involved in the developmental process.

The second phase, in-service training, has been designed and presented as three components. These three components are as follows:

- Curriculum Development and Implementation
- Interpersonal Relations Skills Development
- Systems Maintenance Functions

Each of the components has been presented with suggested topics to be covered. As the school progresses, many new and unanticipated problems will occur. This is normal and is to be expected. At the beginning of each in-service staff development session, the group in charge should allow time for discussion of these special problems.

A time period of two hours has been suggested to be set aside each week for in-service training. It is felt that all the designated personnel should attend the sessions. In establishing a new program in career education, it is imperative that staff development time be utilized to the fullest.

The educational consultants arranged for a time and sites to explore the open-space concept in building design as it relates to facility development in Boone County.

The Career Centers toured were - Capital Area Career Center, Ingham School District, Mason, Michigan; Lenawee

Area Vocational Technical Education Center, Lenawee School District, Adrian, Michigan.

These tours provided local staff members an opportunity to investigate the applicability of the open space concept in vocational education. The conclusions gleaned from this tour will lend themselves to construction design of the Career Center in the County. It became apparent in the inquires with administrators and instructors and in the observations made that the open-space idea has merit in the curriculum being planned for Boone County. Due to the clustering approach and the individualized instructional concept, an amalgamation of the traditional "boxed" classroom or laboratory and the ultra open-space appears more rational than either alone.

In addition to the above guidance provided in facility development, RCA has offered counsel to the LEA's architect through tours to the Skyline Career Center in Dallas, Texas and other similar settings. Assuming this exemplary project is continued, the consultant will furnish continued assistance in facility design in working with the committees referred to previously.

The sixth and final feature of this phase of the project has been that of contriving a plan for career planning and placement counseling through the cooperation of RCA, administrators, guidance counselors, and an evaluation specialist. The particulars of this plan may be found in Appendix F - Career Planning and Placement Counseling Plan for Boone County. The essence of this plan is condensed in a statement presented by Kenneth B. Hoyt, University of Maryland - "The school counselor will become a person of pivotal importance in the career development component of career education".

The career guidance/placement plan focuses on orientation to development of the concept of career education - career development component, recruitment of students, guidance of students, relating school to the world of work and vice versa, and placement. The proposition outlines the role of the guidance counselor in working on advisory committees in the review of career compentencies and the organization of the competencies, preparation of curriculum for OJT and occupational preparedness, and the training program set forth in the pre-service phase of staff development. Recruitment techniques call for use of news releases, interviews, slide-tape presentations, brochures, course descriptions, career guidance handbooks, school visits, open house and parent meetings.

The career guidance/placement plan makes provision for screening and entrance specifications, suggestions for placement activities and a description of responsibility in regard to the placement of graduates.

Because of the curriculum plan, the student, at the time he exits the program, will be able to take with him an enumeration of career competencies accomplished, an objective evaluation of work attitude, an attendance record, and a registry of experience to be presented his employer. This plan further provides for a follow-up plan of all students who exit the Career Center program.

Finally, it is the aspiration of the author that funding for the continued operation of this exemplary project will be forthcoming. The LEA and the educational consultants, the RCA Service Company, have set forth a plan for action and it is anticipated the efforts for development of a competency-based spiral curriculum will not have been in vain.

PROBLEM

The exemplary project herein outlined was initiated in order to alleviate some of the deficiencies and the resultant shortcomings of the educational opportunities presented in Boone County, West Virginia. Additionally, this project, once implemented, should serve the intent of being truly exemplary in Boone County as well as other parts of West Virginia.

The local educational agency is confronted with many of the same perplexities common to any school system. Namely, an attitude described in the summary of this report which implies that - to be successful one must pursue the college preparatory curriculum in high school and eventually attain the epitome of success - a college degree !

Secondly, the region has been plagued with a continual decline of population - loss of twenty-five percent since the 1950 Census Report. The high school drop-out rate now remains at more than four (4) percent, ranking Boone among counties with the highest rate. The youth unemployment rate is near fifteen (15) percent. Approximately twenty-five (25) percent of the students graduating in the classes of 1971 and 1972 have migrated to other states in search of employment. Few of these students leave the high school setting equipped for more than college entrance, further, academic training, business and office training, and little or no formal skill training for job-entry.

It seems evident that because of the interest shown on the part of business and industry in assisting Boone County to build a vocational-technical career center, these groups are voracious for trained, competent workers.

In a recent survey conducted of parent and student interest for vocational education the following was summarized:

PARENTS: Would you like to have your children enroll in a vocational course as part of the regular high school program in order to prepare them for an occupation suited to their interests and abilities?

84% YES 16% NO

(55% response on questionnaire presented to parents of all children in school, K-12. 3135 questionnaires sent)

STUDENTS: Does your school presently offer training in the occupational areas in which you are interested?[2]

34.5% YES 66.5% NO

If you had the opportunity would you enroll in a vocational school and prepare for obtaining a job?

80.5% YES 19.5% NO

Further, business, industry, interested individuals and covic groups have pledged $75,000 as a local effort needed to secure State and Federal matching monies to build and equip a vocational-technical career center. Construction of this facility is slated to begin in July, 1973.

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[2]Based on a survey made of juniors and seniors in the three high schools - equaling 800 students.

GOALS AND OBJECTIVES

The goal of this phase of the exemplary project is to develop a plan for the production of a competency-based spiral curriculum which is flexible, measurable, self-paced, and geared to meet the needs of students in grades ten through twelve and the requirements of business and industry in Boone and its contiguous counties. The format calls for community and employer involvement and coordination with a strategy for curriculum validation by these groups.

This plan has been developed and its presented sequentially in the appendix. The objectives originally prescribed in the planning grant proposal and listed below have been accomplished:

a) To determine the occupational structure of the community and adjoining labor market areas, to identify employment opportunities and to determine appropriate occupational offerings in an expanded vocational education program being planned by the county. Occupational offerings identified should be in agreement with local/state and national labor market needs.

b) To design and implement a plan for the development of curriculum relative to the occupational programs to be provided. Such curriculum should be competency based and designed to allow students to enter and/or exit at any level with specific salable skills.

c) To determine staff development needs and design and implement a staff development plan for the occupational programs being developed.

d) To design, develop and implement a plan for a program of career planning and placement for students enrolled in Boone County Schools.

e) To design, develop, and implement a plan for employer and community involvement and coordination in relation to the expanded program of vocational education being planned for the county.

f) To design facilities appropriate for the implementation of an expanded program of vocational education to meet the needs of the county.

DESCRIPTION OF PROJECT DESIGN

This project has been developed in a manner to prescribe a plan for the production of a competency based spiral curriculum for vocational education in Boone County, West Virginia.

The project design is composed of the following six elements:

1. Survey of Labor Market Requirements
   Conduct a survey of labor market requirements in Boone County and contiguous counties, as well as other cities in the region. The labor market survey will display the job needs of major occupational clusters and the projected job openings in the above geographical areas for the next five years.

   Occupational clusters evaluated will be the ten clusters named in the summary of this report, namely -
   - Agriculture and Forestry
   - Business and Business Management
   - Construction
   - Fashion and Apparel
   - Food Service
   - Health
   - Manufacturing
   - Mechanics and Repair
   - Mining/Mining Technology
   - Social Service

2. Curriculum Development
   Develop a plan and assist with the establishment of specific advisory and/or occupational committees representative of the clusters.

   Plan will include a curriculum development model that will utilize individual learning methods as well as learning experiences based on career competencies

   Curriculum will be arranged according to the spiral curriculum concept with a plan for vocational education instructors to perform the task of curriculum writing.

3. Staff Development
Contractor will submit a plan for staff development by jointly scheduling in-service and pre-service training of vocational education instructors, guidance counselors, and placement officers.

4. Employer and Community Coordination
Plan for procedures in establishing advisory cluster (craft) committees.

Plan will illustrate methods of up-dating curriculum model to provide for local employment needs and requirements.

Plan and implement programs concerning the ramifications and development of career education facility and curriculum development.

5. Facility Development
Contractor will provide assistance in co-operation with the Board and State Department of Education, Bureau of Vocational, Technical, and Adult Education in specifications concerning architectural plans.

6. Career Planning and Placement Counseling
Contractor will assist the Board in developing a plan for career planning and placement counseling. This plan will be designed to develop the concept of career education, recruit students, provide guidance in career selection, relate school to the world of work and to formulate a plan for placement of graduates.

RESULTS AND ACCOMPLISHMENTS

Details of the results and accomplishments of this project are displayed in the appendix of this report. The conclusions of this project are embodied in much of the dialogue previously noted; however, the most noteworthy characteristics will be recapitulated here.

The "Recommendations for Curriculum Clusters" submitted to the Boone County Board of Education outlines the results of a preliminary labor market analysis and proclaims the content of an interest survey made of all students, grades nine through twelve, numbering 1953 individuals.

The labor market analysis indicated that the highest employment potential in Boone and its contiguous counties lay in the following occupational areas--

Mining and Mining Technology
Business and Management
Power Mechanics
Construction
Allied Health
Social Services

Summarization of student interest survey information concluded that student interest and job potentialities paralleled identically. The rank order of curriculum choices indicated thus--

Business
Social Services
Health
Mechanics and Repair (Power Machines)
Mining
Construction

The above referenced report further validated that at least seventy-five per cent (75%) of the graduates remain in West Virginia--thus guiding the direction for curriculum planning. Additionally, it was recognized that sixty per cent (60%) of those graduated and employed are working in either business related occupations or mining.

Perhaps, the most notable outcome of the exemplary project to date has been the submission and implementation of the plan for employer and community coordination. This plan was submitted to the Board for approval on February 13, 1973. Within a period of four to six weeks, the RCA

Service Company, the administrative staff of the Board, and the Board of Education had the plan in the implementation phase. The Boone County Executive Committee on Career Education was formed. An executive committee chairman was selected. Chairmen of each of the clusters were appointed and all agreed enthusiastically to serve. The director of vocational education was designated executive secretary. The group has made a committment to be instrumental in providing assistance in curriculum and facility planning.

The BCECCE has made a tour of an adjoining county's vocational-technical center and is presently formulating job tasks within program areas eventually to be utilized in task analyses for use in curriculum writing. Since the inception during April 30 to May 4, the association has assembled four times and conducted business relative to curriculum and facility development. The format for operation by this group is exhibited in Appendix C.

The model for curriculum development provides a management scheme to be utilized in developing a curriculum for grades 10-12 in Boone County Schools. In the initial needs-assessment study, only six clusters have been identified as high-priority clusters to be developed; however, the process model presented in appendix E will be equally applicable to other clusters that may be developed in the future.

The model presented is based upon previous research in career education, accountability models, USOE program development, RCA program development, and the systems approach to more effective instructional program development.

The process model for curriculum development calls for the following action—

> formation of a career advisory committee for each of the clusters; selection of support staff; data collection relative to task analyses; determine competencies required for performance of a skill; validate competencies with support staff and cluster advisory committees; translate competencies into performance objectives; classify and sequence performance objectives; develop criterion tests; design instructional format for modules; develop instructional modules; reveiw modules with support staff and determine acceptability; field test and implement curriculum (modules); and revise, review, and accept interim curriculum.

The staff development plan has been presented in two phases; pre-service and in-service. It has been suggested by RCA that a two-week pre service session be conducted that is designed as an orientation to career education and the model to be utilized by the Boone County Career Development Center in developing curricular materials. During this same two-week period the instructional staff selected for the Center will learn the techniques of developing curriculum. The major thrust of the second week's activities will be for the developmental team to produce, at least, an acceptable module of instruction in the various cluster areas.

The two weeks of pre-service training will be utilized to train the curriculum writing staff, or it may be used to orient and inform the instructional staff not involved in the developmental process.

The second phase, in-service training, has been designed and presented as three components. These three components are as follows:

- Curriculum Development and Implementation
- Interpersonal Relations Skills Development
- Systems Maintenance Functions

Further detail on topics for discussion may be obtained in Appendix F.

The feature of this phase of the exemplary project dealing with facility development has been concerned primarily with the open-space concept in facility design.

A tour of vocational-technical career centers constructed for the purpose of open-space utilization were visited in Michigan. The following were viewed to assess the open-space concept in practice—

Lenawee Area Vocational-Technical Education Center,
Adrian, Michigan

Capital Area Career Center
Mason, Michigan

It was the conclusion of the group, after visiting the Centers, that a union of both the traditional "boxed" classroom/laboratory and the ultra open-space idea would be more compatible than either alone.

The educational consultant firm in concept with the LEA and the BCECCE has set the stage for facility planning to begin.

The final aspect of this project pertains to a plan for career planning and placement counseling. The career guidance/placement plan focuses on orientation to development of the concept of career education—career development component, recruitment of students, guidance of students, relating school to the world of work, and placement. The guidance-placement plan outlines the role of the guidance counselor in working on advisory committees in the review of career competencies and the organization of the competencies, preparation of curriculum to OJT and occupational preparedness, and the training program prescribed in the pre-service phase of staff development.

Recruitment techniques call for use of news releases, interviews, slide-tape presentations, brochures, course descriptions, career guidance handbooks, school visits, open house and parent meetings.

The career guidance/placement plan makes provisions for screening and entrance specifications, suggestions for placement activities and a description of responsibility in regard to the placement of graduates.

EVALUATION

In assessing the accomplishments of this aspect of the exemplary project, the most apparent achievement is total involvement and commitment on the part of educators, business and industry, civic leaders, total county population (the efforts perpetrated for this venture have been those of persons throughout the school district), parents, and more especially the student.

The content of the appendices of this report vividly portray the course to be followed to achieve the goal that has been stated. In the plan herein presented is found the input of consultants experienced in the field who have tried and proven these methods along with the "seasoning" contributed by local leadership.

The conclusions of the labor market analysis along with the impressions of students, business and industry, and parents clearly depict the course to be followed in the development and implementation of curricula.

The format for curriculum development encompasses the ingredients for measurability, objectivity, accountability, and credibility for assessment by those who will evaluate the outcomes--the student and the employer.

The plan for career planning and placement counseling delineates a program for recruitment, guidance, counseling and placement of students. The counselor will facilitate the successful functioning of this undertaking.

Unless the staff is oriented to the notion of being a "facilitator" of knowledge rather than the familar role of a "dispenser" of knowledge the labors in formulating this program will have been in vain.

CONCLUSIONS

In summarizing the list of this resume, inevitable conclusions may be inferred.

First, the plan presented must be continued to the point of development of tasks, competencies, and performance objectives. The Boone County Executive Committee on Career Education must continue to entangle itself in the evolvement of facility and curriculum design in order to validate the goals prescribed.

Secondly, a total commitment on the part of the staff must be forthcoming in the staff development format in order for meaningful performance to be a reality.

Thirdly, if the curriculum is implemented as planned, an improved career education program in Boone County and other areas of West Virginia will be in the resultant outcome.

Finally, the remaining phases of this exemplary project must be funded in order to secure the necessary services and expertise of qualified consultants in steering this venture to fruition.

The assistance provided the LEA by the educational consultants in preparing this plan for action has created a feeling of involvement, heretofore unsurpassed, on the part of the citizenry of Boone County, West Virginia.

It is the recommendation of the Boone County Board of Education that further action be executed on this project to expedite the implementation of this plan.

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APPENDIX A

CONTRACT

Contract Between RCA Corporation
and
Boone County, West Virginia, Board of Education

This AGREEMENT made this 19 day of December, 1972 between the Boone County Board of Education, hereinafter referred to as "Board" and RCA Service Company, a division of RCA Corporation, hereinafter referred to as "Contractor".

WITNESSETH:

WHEREAS, the Board desires to plan and develop a vocational technical career center in Boone County, West Virginia, and,

WHEREAS, the Board has requested Contractor to develop plans for the vocational education facility and to cooperate with the State Department of Education and the Board in the conduct of an exemplary planning project which is intended to deal primarily with planning for curriculum and staff development, and,

WHEREAS, Contractor will develop the vocational technical career education plan by recognizing county characteristics, such as youth unemployment rate, drop-out rate, percentage of college completion, access to vocational centers, understanding of vocational-technical education, employment projections, and national trends including individualized learning, curriculum designed for differentiated levels of training and measurability and accountability in education. The education plan will consider the following elements of career training:

1) Survey of labor market requirements
2) Curriculum development and implementation
3) Staff development
4) Career planning and placement counseling
5) Employer and community coordination
6) Facility development

Implementation of the plan is not a part of this agreement.

NOW, THEREFORE, the Board and Contractor do mutually agree as follows:

1. The term of this agreement shall be from January 1, 1973 to June 30, 1973.

2. Board shall pay Contractor the total fixed price of this agreement of $30,120. Payment shall be made in six (6) monthly installments of $5,020 each, payable the last day of each month.

3. The scope of the services to be performed by Contractor in developing the vocational-technical career education plan under this agreement are:

Contractor will provide the management, personnel and expendable materials necessary to develop the education plan which will be based upon six elements of career training listed below. Management personnel shall include curriculum designers, vocational technical career education specialists, educational facility and equipment specialists. A minimum of 160 man days of service will be provided during the contract period. Specifically the plan will include:

A. Survey of Labor Market Requirements

(1) Conduct a survey of labor market requirements in Boone and contiguous counties, as well as other major cities in the region. The labor market survey will be designed to include basic competencies required in each of the occupational clusters.

(2) The occupational clusters are as follows:

- General Clerical
- Agricultural
- Mining Occupations
- Food Service
- Construction
- Secretarial
- Electrical
- Social Service
- Health
- Metal Workers
- Mechanical and Repair
- Bookkeeping and Accounting
- Basic Marketing
- Transportation
- Manufacturing
- Hospitality and Recreation

B. Curriculum Development and Implementation

(1) Develop a plan and assist with the establishment of specific advisory and/or craft (occupational) committees representative of the clusters. Committees will be representative of labor, management, professional persons, laymen and other representatives of the cluster area in near equal members. Size and composition of the committee will be recommended by Contractor.

The plan will include a curriculum module that will utilize individual learning methods as well as learning experiences based on career competencies. Contractor will make plans for the curriculum development phase by identifying curriculum content specialists, educational specialists and behavioral objectives specialists. The module will contain measurable instructional objectives.

Curriculum will be arranged according to the spiral curriculum concept with a plan for vocational education instructors to perform the task of curriculum writing. Contractor will develop plans for employment and training of staff.

C. Staff Development

(1) The plan will include Contractor's assistance in staff development by jointly scheduling, with the Vocational Education Director and the State Coordinator of Vocational Education Personnel Development, in-service and pre-service training of vocational education instructors, guidance counselors, and placement officers.

D. Career Planning and Placement Counseling

(1) Contractor will assist the Board in developing a plan for career planning

and placement counseling. This plan will be designed to orient potential students with the availability of opportunities in the vocational-technical education center.

E. Employer and Community Coordination

(1) The plan will include procedures for establishing advisory committees and/or craft committees.

(2) Contractor's plan will illustrate methods of up-dating the curriculum module to provide for local employment needs and requirements.

(3) Plan and implement at least one public program concerning the ramifications and development of the vocational education facility and its curriculum development. This program could be available for presentation in every community in the county.

F. Facility Development

(1) As part of this agreement, Contractor will provide assistance in cooperation with the Board and State Department of Education, Bureau of Vocational, Technical and Adult Education, in specifications concerning architectural plans.

4. The Board shall provide office space, facilities and equipment for the Contractor's staff, to be used in developing the plan. Maintenance service and utilities shall be provided by the Board; however, Contractor shall bear expenses of all telephone toll calls.

5. Contractor shall use its best efforts in performing work called for in this agreement.

6. The Board may from time to time request changes in the scope of the services of Contractor to be performed hereunder. Such changes including any increase or decrease in the amount of Contractor's compensation which are mutually agreed upon by and between the Board and Contractor must be incorporated in written amemdments to this agreement.

7. This agreement may be cancelled by the Board if there has been substantial nonperformance by the Contractor. However, this agreement will not be cancelled if such nonperformance is occasioned by causes beyond Contractor's control such as acts of God, acts of government or labor difficulties. Nor shall Contractor be liable for damages resulting from delay in performance occasioned by causes beyond Contractor's control other than the withholding of a proportionate amount of funds for services not performed.

8. This agreement expresses the entire understanding of the parties hereto with respect to the subject matter hereof and there is no understanding, agreement, representation or warranty expressed or implied, oral, or written, in any way limiting, extending or relating to the provisions hereof. No subsequent amendment limiting, extending or relating to the provisions hereof shall be valid unless in writing and signed by duly authorized representatives of the parties hereto.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be executed as of the date shown below.

RCA Service Company A Division of RCA CORPORATION	Boone County Board of Education
BY_____	BY_____
Title_____	Title_____
Date_____	Date_____

APPENDIX B

DIRECTORY OF CLUSTER COMMITTEES

EXECUTIVE COMMITTEE

Mr. Fred Gilpin, Chairman
Boone County Executive Committee on Career Education
124 Nathan Ave.
Madison, West Virginia 25130

ALLIED HEALTH

Mr. Larry Loftin
Whitesville,
West Virginia 25209

BUSINESS/MANAGEMENT

Mr. Harold Madison
Box 15
Racine, West Virginia 25165

CONSTRUCTION

Mr. L. B. Lyon
114 Center Street
Madison, West Virginia 25130

MINING/MINING TECHNOLOGY

Mr. Dan Bayer
95 Hickory Lane
Madison, West Virginia 25130

POWER MECHANICS

Mr. Charley Bradley
Bob White,
West Virginia 25028

SOCIAL STUDIES

Mrs. Eugene Ferrell
195 Riverside Drive
Madison, West Virginia 25130

ALLIED HEALTH CLUSTER COMMITTEE - Mr. Larry Loftin, Chairman

NAME	ADDRESS	HOME TELEPHONE	OFFICE TELEPHONE	OCCUPATIONAL AREA
Mr. William Copper	1502 Village Drive South Charleston, W. Va. 25303	768-4516	925-3038	Pharmacist
Dr. R. DeRamos	Wharton Medical Center Wharton, W. Va. 25208		247-6202	M.D.
Dr. Kenneth M. Dolan	Box 187 Professional Building Madison, W. Va. 25130	369-1219	369-1117	Dentist
Mr. Jerry Fuller	OH9 Ambulance Service Box 747 Mullens, W. Va. 25882		249-4940 Ext. 60	Emergency Medical Technician
Mr. D. Joe Hill	159 Jackson Avenue Madison, W. Va. 25130	369-0622	369-1230	Assn't Administrator, Boone Mem. Hospital
Mrs. Ramona Jarrell	Drawer D Rock Creek, W. Va. 25174	854-0110	854-1571	Principal, Clear Fork High School
Mrs. Reba King	Bloomingrose W. Va. 25024		854-1321	R. Nurse
Dr. O.D. MacCallum	169 Nathan Avenue Madison, W. Va. 25130	369-3317	369-2051	M. D.
Mrs. Bessie Price	264 Osborne Avenue Madison, W. Va. 25130	369-1282	369-3625 Ext. 44	Public Health Nurse
Mrs. Sandra Sanders	Route 2 Madison, W. Va. 25130	369-0609	369-1230	Lab Technician, Supervisor

ALLIED HEALTH CLUSTER COMMITTEE (continued)

NAME	ADDRESS	HOME TELEPHONE	OFFICE TELEPHONE	OCCUPATIONAL AREA
Mrs. Carmen Smith	Raleigh-Boone Medical Center Whitesville, W. Va. 25209	854-1552	854-1321	Assn't. Administrator
Mrs. Betsy White	155 Leftwich Avenue Madison, W. Va. 25130	369-1959	369-1589	X-Ray Technician
Mrs. Lillian Ziegler	100 Summit Avenue Madison, W. Va 25130	369-1975	369-1230	LPN, Boone Mem. Hospital

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Chairman

Mr. Larry Loftin, Administrator
Raleigh-Boone Medical Center
Whitesville, W. Va. 25209

BUSINESS AND BUSINESS MANAGEMENT CLUSTER COMMITTEE - Mr. Harold Madison, Chairman

NAME	ADDRESS	HOME TELEPHONE	OFFICE TELEPHONE	OCCUPATIONAL AREA
Mr. Harold "Tony" Ball	348 2nd. Ave., W. Madison, W. Va. 25130	369-1979	369-3131	Bookkeeper, Fiscal Control Clerk
Mr. Ellis Bradley	271 Madison Ave. Madison, W. Va. 25130	369-0844		Teacher of Business
Mr. J.M. Dineen	1500 MacCorkle Charleston, W. Va. 25304	345-1396	344-6652	C&P Telephone Co.
Mrs. Nadine Dolin	Route 1, Box 665 Danville, W. Va. 25053	369-2352	369-3131	Business Teacher
Mr. H.K. Jackson	816 Lee Street Charleston, W. Va. 25305	768-9476	344-6228	C&P Telephone, Business Mgr.
Mr. Jerry Leffel	Racine West Virginia 25165	837-3767		3M Service Technician
Mrs. Barbara W. Lilly	P.O. Box 597 Madison, W. Va. 25130	369-2676	369-3317	Certified Public Accountant
Mr. Fred Mitchell	Box 233 Danville, W. Va. 25053	369-1769	369-3261	Manager, Super Value
Mrs. Nadine Moses	Seth West Virginia 25181	837-7566	837-3301	Business Teacher
Mr. Dan Rhodes	Box 102 Madison, W. Va. 25130	369-0022	369-0700	Assistant Vice Pres., Bank of Danville

BUSINESS AND BUSINESS MANAGEMENT CLUSTER COMMITTEE (continued)

NAME	ADDRESS	HOME TELEPHONE	OFFICE TELEPHONE	OCCUPATIONAL AREA
Mr. Ben Romero	1750 Koppers Building Eastern Associated Coal Corp. Pittsburgh, Pennsylvania 15219	412-343-2113	412-288-8275	Vice President, Safety and Personnel
Mr. Rodney Smith	Box 612 Madison, W. Va. 25130	369-0353	369-3011	Business Teacher
Miss Judie Tapley	P.O. Box 38 Madison, W. Va. 25130	369-3212	245-8383	Secretary

Chairman

Mr. Harold Madison
Richard D. Brown Insurance Agency
Whitesville, W. Va. 25209

CONSTRUCTION - Mr. L. B. Lyon, Chairman, 114 Center Street, Madison, W. Va. 25130

NAME	ADDRESS	HOME TELEPHONE	OFFICE TELEPHONE	OCCUPATIONAL AREA
Mr. James Belcher	Seth W. Va. 25181	837-3773		Electrician
Mr. R. S. Bias	Turtle Creek W. Va. 25203	369-3476	369-3131	Mason
Mr. Don Birley	116 2nd Avenue W Madison, W. Va. 25130	369-1005	369-2021	Superintendent, Bunch Construction
Mr. Dan Branham	Box 508 Whitesville, W. Va. 25209	854-1401	854-1401	Branham, Britts, Inc. Hardware Store
Mr. Bill Coda	Danville W. Va. 25053	369-0139		Bricklayer
Mr. Bill Fink	Ashford W. Va. 25009	836-5515		Construction Teacher, Carver Career Center
Mr. Eli Hatfield	c/o C. A. Bradley Stores Wharton, W. Va. 25208	247-6231		Air Contitioning - Heating
Mr. Robert Judy	Star Route, Box 19 Peyton, W. Va. 25154	836-5358		Carpenter
Mr. E. Hugh Miller	106 Jones Street Madison, W. Va. 25130	369-1916		Carpenter
Mr. A. J. Pratt	Box 340 Madison, W. Va. 25130	369-0651		Plumber, Electrician
Mr. Forrest Richardson	134 Boone Avenue Madison, W. Va. 25130	369-2063		Painter

CONSTRUCTION (continued)

NAME	ADDRESS	HOME TELEPHONE	OFFICE TELEPHONE	OCCUPATIONAL AREA
Mr. Bill Stone	Box 141 Danville, W. Va. 25053	369-2063	369-3031	General Manager, Boone Remodeling Co.
Mr. W. C. Thompson	Danville Lumber Company Danville, W. Va. 25053	369-0846	369-0244	President, Danville Lumber Co.

Chairman

Mr. L. B. Lyon
114 Center Street
Madison, W. Va. 25130

MINING/MINING TECHNOLOGY CLUSTER COMMITTEE - Mr. Dan Bayer, Chairman

NAME	ADDRESS	HOME TELEPHONE	OFFICE TELEPHONE	OCCUPATIONAL AREA
Mr. Calvin C. Baughman	35 Hickory Lane Madison, W. Va. 25130	369-0186	369-0666	Maintenance, Zapata Coal Co.
Mr. Robert Carson	459 Main Street Madison, W. Va. 25130	369-3646	245-8374	Superintendent, Island Creek Coal Co.
Mr. Joseph Evans, Sr.	Uneeda W. Va. 25205	369-3591	836-5531	Engineer, Safety Director-Laxare Coal Co.
Mr. Earl Goldsberry	Box 236 Madison, W. Va. 25130	369-3481	369-1690	Mine Safety Inspector, Bethlehem Steel
Mr. Rodney Lowery	Barrett W. Va. 25013	247-6803		UMW
Mr. J. O. McArdle	Marmet W. Va. 25315	949-4409	949-5812	General Superintendent, Southern App. Coal Co.
Mr. John Mullen	Box 338 Madison, W. Va. 25130	369-1041		Health & Safety Officer Omar Mining Co.
Mr. Leonard Peters	Twilight W. Va. 25204	245-8678		Maintenance, Armco Steel
Mr. John Henry Sutphin	Box 134 Madison, W. Va. 25130	369-3726		Labor, Westmoreland Coal Co.
Mr. Clarence Waller, Jr.	Barrett W. Va. 25013	247-6844		Engineering/Drafting, Eastern Associated Coal

MINING/MINING TECHNOLOGY CLUSTER COMMITTEE (continued)

Chairman

Mr. Dan Bayer
95 Hickory Lane
Madison, West Virginia 25130

POWER MECHANICS CLUSTER COMMITTEE - Mr. Charley Bradley, Chairman

NAME	ADDRESS	HOME TELEPHONE	OFFICE TELEPNONE	OCCUPATIONAL AREA
Mr. S. W. Bennett	Barrett W. Va. 25013	247-6394		Electrician
Mr. Colby Debusk	501 Main Street Madison, W. Va. 25130	369-2611		Welder, Carbon Fuel
Mr. Gordon Eversole	Bob White W. Va. 25028	245-8275		Owner, Service Station
Mr. Doug Harless	Box 108 Julian, W. Va. 25529	369-1634	369-1664	President, Harless Excavating Co.
Mr. Harry Harmon	Box 54 Barrett, W. Va. 25013	247-6464	247-6241	Assistant Superintendent, Eastern Associated Coal
Mr. Willard Mace	131 Nathan Avenue Madison, W. Va. 25130	369-2380	369-3905	Chief Maintenance Foreman, Bethlehem Steel
Mr. Denzil Mahone	Van W. Va. 25206	245-8294		Mechanic Hydraulics
Mr. Charlie Price	Barrett W. Va. 25013	247-6327		Welder, Eastern Associated Coal

Chairman

Mr. Charley Bradley
Bob White
W. Va. 25028

SOCIAL SERVICES CLUSTER COMMITTEE - Mrs. Doris Ferrell, Chairman

NAME	ADDRESS	HOME TELEPHONE	OFFICE TELEPHONE	OCCUPATIONAL AREA
Mr. Mat Bouldin	332 2nd Street, W. Madison, W. Va. 25130	369-1568	369-3925	Prosecuting Attorney
Mrs. Betty Bryson	126 Avenue B Madison, W. Va. 25130	369-3841		Social Service Supervisor
Mrs. Barbara Burgess	255 Jackson Avenue Madison, W. Va. 25130	369-1474		Teacher Aide
Mr. Robert Byus	373 2nd Street Madison, W. Va. 25130	369-3696		Employment Technician
Mrs. Juanita W. Copher	423 3rd. Street Madison, W. Va. 25130	369-1344		Teacher Aide, Secretary
Mrs. Jean Hanlon	104 Summit Avenue Madison, W. Va. 25130	369-1108	369-0451	Director, Boone County Community Organization
Mrs. Jean Joseph	Box 236 Whitesville, W. Va. 25209	854-0480	854-1321	Director of Nursing, R.N., Raleigh-Boone Medical Center
Mrs. Karen Maynard	Box 86 Man, W. Va. 25635	583-6350	752-7470	W. Va. Department Employment Security
Mr. David White	Racine W. Va. 25165	837-3725	837-3725	Minister
Mrs. Vikki Williams	Box 39 Seth, W. Va. 25181	837-3374	854-1301	Early Childhood Teacher

SOCIAL SERVICES CLUSTER COMMITTEE (continued)

Chairman

Mrs. Doris Ferrell
195 Riverside Drive
Madison, West Virginia 25130

APPENDIX C

PLAN FOR EMPLOYER AND COMMUNITY COORDINATION

PLAN FOR EMPLOYER AND COMMUNITY COORDINATION

RECOMMENDATIONS FOR ESTABLISHING
CAREER EXECUTIVE--CURRICULUM CLUSTER COMMITTEES

CAREER CENTER

BOONE COUNTY, WEST VIRGINIA

Submitted By:

William L. Roberts

RCA Project Manager

Dr. Robert D. Cain

Manager, Educational Planning

February 13, 1973

PLAN FOR EMPLOYER AND COMMUNITY COORDINATION

BOONE COUNTY CENTER FOR CAREER DEVELOPMENT

Industry - Business and School Coordination:

The RCA staff is of the opinion that instructional programs in career education must not be developed in isolation, either in school, or in industry, or in business. The process must involve a consortium of personnel working together, representing both industry and the school system. Our experience in model career education programs indicates that curricula must be tailored to regional needs, being responsive to local educational, industrial and commercial demands; it must also satisfy the needs and individual differences of the students involved.

Boone County Executive Committee:

The Boone County Executive Committee (BCEC) should be composed of no less than six and no more than ten members. These members should be selected and appointed by the Boone County Board of Education (BCBE). Included on the BCEC should be representatives from a cross section of the county organizations and interests, including business, industry, labor, education and the county at large. Serving as an ex-officio member of the BCEC will be the Boone County Schools Director of Vocational Education. The Chairman of the BCEC should be appointed by the BCBE. The time and frequency of BCEC meetings will be determined by the BCBE, on the advice and recommendations of the Superintendent of Schools and the Director of Vocational Education.

The BCEC will address the major policy questions relevant to the development of the career development center. All policy recommendations of the BCEC will be communicated to the Boone County Board of Education through the Superintendent of Schools for final disposition.

The BCEC will coordinate with the Boone County Board of Education in jointly appointing members of the Career Advisory committees. The BCEC will also recommend to the BCBE members of other committees that are established to deal with specific problems relevant to the center. The BCEC will be thoroughly informed on the work of these committees, as well as the overall development of the center.

The BCEC should be constituted and ready to function no later than April 1, 1973.

The BCEC, as initially constituted, will serve through the conclusion of the 1973-74 school year. At such time the BCBE and the BCEC jointly will evaluate its work to determine future responsibilities and composition.

BOONE COUNTY CENTER FOR CAREER DEVELOPMENT

CLUSTER ADVISORY COMMITTEES

Committee members and chairmen will be appointed jointly by the BCEC and the BCBE. BCEC members may, when appropriate, serve as members of cluster advisory committees. The committees will report to the Director of Vocational Education in writing, with copies to the Superintendent of Schools and the Chairman of the BCEC.

Cluster Advisory Committees should be established for each of the occupational clusters to be taught at the center. These committees will serve in the following capacities:

1. Work closely with Educational Contractor in analysis to determine career competencies required in each of the occupational clusters for local and regional business/industry and professional community.

2. Work with the Educational Contractor in establishing relevant equipment lists to meet curriculum demands in obtaining career competencies required by community and regional demands.

3. Work closely with the Chairman of each cluster in developing curricula that will satisfy the occupational requirements and needs of local business and industry and of advanced occupational/technical training programs.

4. Serve a supervisory function during the school year, determining how well the curricula designs are being implemented and recommending necessary changes.

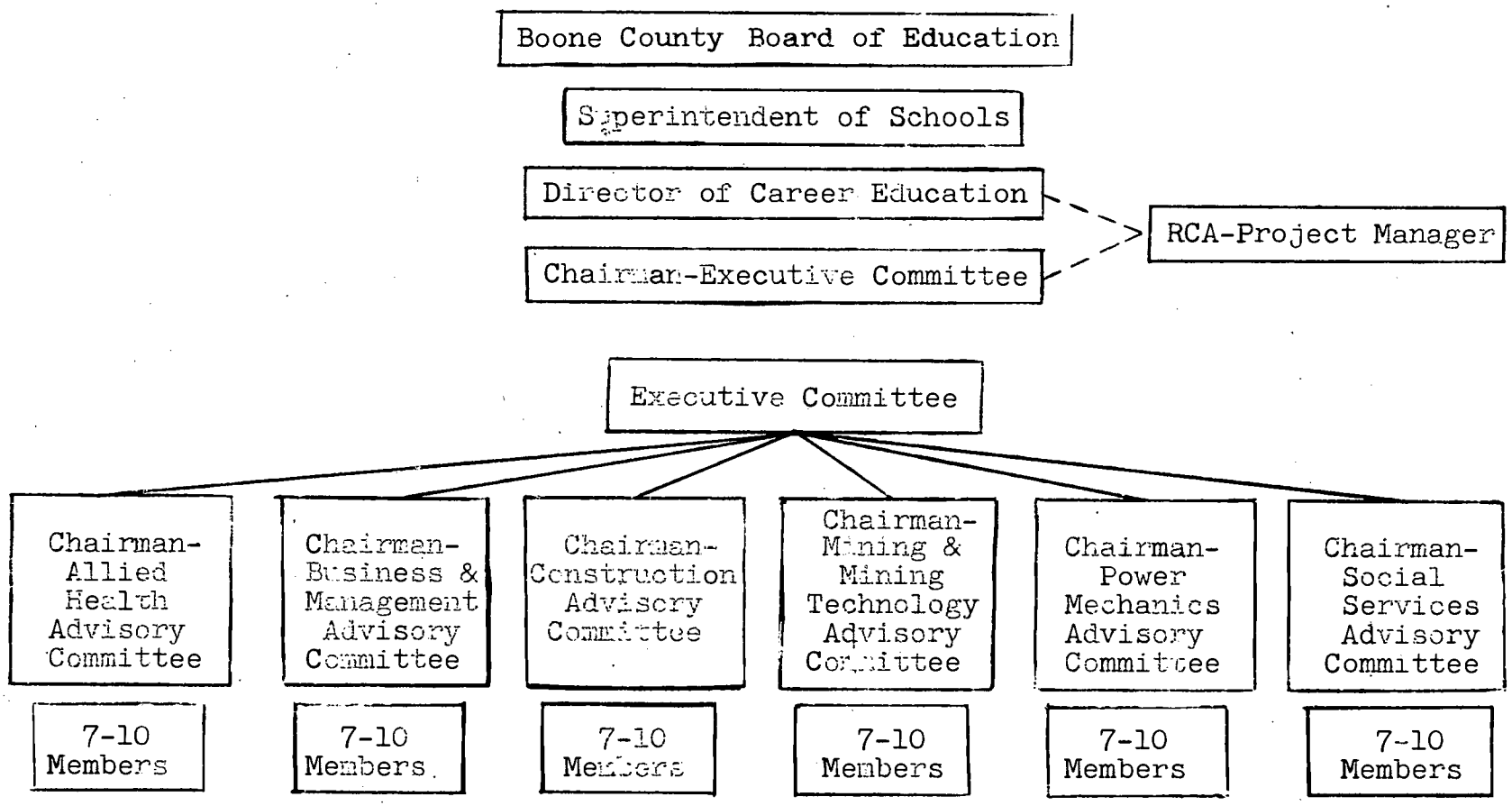
5. Conduct, together with the BCBE and the contractor, a comprehensive evaluation at the conclusion of the initial school year and recommend needed changes in curricula design and implementation.

6. Assist the coordinator of vocational education, the BCBE and the contractor in developing on-the-job training programs, summer employment programs and a counseling program for post-graduate employment and advance occupational/technical training.

Other responsibilities may be assigned by the BCBE to deal with specific problems relevant to the development of the center. These tasks may deal with such matters as finance, communication and media relations, and transportation.

The Cluster Advisory Committees should be composed of not less than seven and not more than ten members and should be appointed and ready to function by June 1, 1973.

RECOMMENDED ORGANIZATIONAL CHART FOR EMPLOYER AND COMMUNITY COORDINATION



Suggestions to Improve Production and Success of Committees:

1. Purpose - Advise and Recommend on all career education matters.

2. Objective - Promote county understanding of partnership with education, business/industry and citizens.

3. Members of committees should be dynamic leaders, well accepted and possess the ability to keep things moving to achieve successful accomplishments.

4. Written recommendations from all committees should be directed to the Superintendent of Schools.

5. The Superintendent should answer all recommendations by written acceptance, rejection or request for additional information.

6. Board of Education and Administration should stress appreciation and provide status for all committees and individual members.

7. Provide opportunities for classroom teachers involved in career clusters to participate in project planning.

APPENDIX D

RECOMMENDATIONS FOR CURRICULUM CLUSTERS

CONTENTS

SUMMARY OF FINDINGS

Curriculum clusters selected for further analysis, development, and implementation are as follows, with projected enrollment (per half-day session) indicated:

1. Mining and Mining Technology — 60 students

   This cluster will include such mining-related occupational skills as welding, electricity, mine maintenance and mechanics, and drafting.

2. Business and Management — 60 students

   This cluster will include such business-related occupational skills as accounting, bookkeeping, typing and shorthand, business machine operation, business administration, marketing, and data processing.

3. Power Mechanics — 30 students

   This cluster will include such occupational skills as operation, maintenance, and repair of internal combustion engines and hydraulic and pneumatic equipment.

4. Construction — 30 students

   This cluster will include such construction-related occupational skills as carpentry and finishing, masonry, plumbing, wiring, roofing and drafting and designing.

5. Allied Health — 30 students

   This cluster will include such health-related occupational skills as those required for nursing, physicians' or nurses' aides, hospital attendants, medical records and office workers, and laboratory technicians.

6. Social Services — 30 students

   This cluster will include such occupational skills as those required for paraprofessional or pre-professional roles as welfare aides,

mental health aides, teachers' aides, and assistance in other public programs and agencies.

Additional analysis of skill requirements and employment opportunities will be accomplished as necessary to determine specific cluster content and, in cooperation with the community advisory committee, to identify relevant learning objectives around which to build the curriculum.

I. INTRODUCTION: CAREER EDUCATION AND EMPLOYMENT PATTERNS

It is perhaps self-evident that any effective vocational education must be directly related to actual employment opportunities which can be reasonably anticipated for students enrolling in the program. Certainly, a survey of employment patterns in a given community must be a first step in determining what kinds of educational programs will provide students with the most relevant skills and abilities.

Current employment patterns however, may or may not be an accurate guide to opportunities which will be available at the time that students are ready to enter the labor market--at the conclusion of the secondary school program or after post-high-school programs. The situation is complicated by the exceptional mobility of people in contemporary America; educational planning must include a consideration not only of the projected time at which students will be available for employment but also of the potential geographic areas in which they may be likely to seek employment.

Career education adds other dimensions to the problem. A student must be prepared not only for entry-level employment but for advancement to the fullest extent of his ability throughout a lifetime career. The student must also be prepared for advanced educational programs, as appropriate to his interests, abilities, and career needs. Planning for career education, therefore, requires analysis of dynamic rather than static conditions of employment.

Conclusions about future employment patterns and opportunities are necessarily somewhat speculative. Unforeseeable shifts in economic, political, cultural, technological, or even natural conditions can totally alter the most cautious and reasonable projections. The goal of educational planning is simply to make the most enlightened judgement possible. That judgement must be based on historical experience, on current patterns, and on the best estimate of future trends and conditions.

In career education, an attempt is made to prepare for changing conditions and for career growth by developing in students a range of related skills and interests. The curriculum is organized in "clusters" of information and of skill development which will give the student some flexibility in entering employment, in adjusting to changing conditions, and in pursuing a satisfying career. Some

clusters might be described as vertical--that is, they embrace the full range from lowest to highest skills and employment opportunities in a given industry or profession, such as mining or medicine. Other clusters are more horizontal--that is, they are based on skills or employment opportunities common to more than one industry or profession, as secretarial or business management skills may be useful in a variety of careers.

This report offers recommendations for career clusters to be included in the curriculum for the Boone County program. It paints, necessarily, in broad strokes, but it provides the basis for fundamental decisions about the selection of programs to be offered. Further refinement of the curriculum--as to specific content in each area--must be accomplished in cooperation with the judgement and advice of school personnel and members of the advisory committee.

II. BOONE COUNTY AND VICINITY

Boone County is located in the southwestern part of West Virginia, bordered by Kanawha, Raleigh, Wyoming, Logan, and Lincoln counties. Its county seat, Madison, lies 37 miles south of Charleston.

The county has a land area of 506 square miles with a terrain characterized by steep mountain slopes and narrow valleys. The highest point in the county is 2,334 feet above sea level; the lowest is 600 feet avove sea level. The heavily forested surface covers the largest single amount of remaining mineable coal reserves in the state.

Total population of the county (1970 census) is 25,118. The census reports a total available work force of 6,165. The largest area of employment by far is mining, with 2,175 persons (35%), including those who are experienced but currently unemployed. Other major categories are wholesale and retail trade, 1,170 (19%), manufacturing, 456 (7%), construction, 332 (5%).

U.S. Route 119 bisects the county, passing through Madison approximately half-way between Charleston to the north and the Kentucky state line to the south. Appalachian Corridor G will roughly parallel this route. The Baltimore and Ohio/Chesapeake and Ohio Railway Company supplies freight service to the Madison area. The nearest commercial airport is located at Charleston.

The county is served by the following utilities: Appalachian Power Company, Southern Public Service Company, and the West Virginia Water Company. It has three banks, with total assets (30 June 1970) of $28.5 million. Three medical facilities provide a total of 100 beds.

There are no reliably accurate projections of employment opportunities in Boone County area. The county--as with other counties around it--is heavily dependent on a single industry, coal mining. Environmental and economic factors have caused sharp shifts in the well-being of this industry in the recent past, but the outlook is generally good for stability or even considerable growth in the future. No more explicit projection can be made, but it is likely that the decline in population will be reversed slightly in the years to come. The West Virginia Department of Commerce earlier projected a total population for Boone County in 1985 of roughly the same size as 1970 after slight declines in 1975 and 1980.

Reasonable interpretations of estimated recovery in coal mining suggest that the population will stabilize or grow slightly well before 1980. The best case suggested by the Corps of Engineers study, (Kanawha Basin Comprehensive Study, 1971), however, is a growth rate of only .2% per year for the Boone, Raleigh, Fayette area.

Neighboring Kanawha County, with Charleston, is projected to have a stronger growth, from 230,000 in 1970 to 286,000 in 1985. As the "Manpower Plan" of the Charleston Area Manpower Planning Council for 1973 notes, "Considering most recent and anticipated growth trends, the best fields for future employment in the area will continue to be in the non-manufacturing sector, especially contract construction, services, and finance/insurance/real estate . . . (and) manufacturing . . . will still provide some employment and training potential, especially in durable goods categories."

Raleigh County can also be expected to develop new areas of employment opportunity. The Kanawha Basin Comprehensive Service Study notes that the completed Appalachian and Interstate Highway systems "will expand Beckley's trading area substantially." The report draws the following conclusion from this anticipated fact. "These additions will provide more effective access to the major population concentrations and should augment the potential for manufacturing, tourism, and commercial activities. Potential for future expansion may be found in electronics, food processing, wood products, light metal fabrication, and mine machinery manufacturing."

Experience and current trends, as well as projections such as those indicated above, suggest that several factors will have a direct impact on students graduating from secondary school programs in Boone County in the next five to ten years: the growth of Kanawha and Raleigh--and Cabell (Huntington), as well--with a more diversified economy and diversified employment opportunities; the stabilization of population in Boone County, with the anticipated recovery of the coal industry (or its continuing dominance of local employment, at any rate) and with the possibility of development of opportunities in other fields; a continuing exodus of at least some young people to employment outside the state; and a likely continued trend of college attendance by Boone County students at the rate of at least 1 in 4.

III. BOONE COUNTY CAREER CENTER

The provision of relevant career education opportunities is not only a service to the students of Boone County; it is also a critical factor in the economic development of the area. In their analysis of the Kanawha River Basin, researchers for the U.S. Corps of Engineers concluded about the Boone, Raleigh, Fayette area: "A strong vocational educational program is needed throughout the region if it is going to retain its young people as a viable part of its labor force." In preparing its students--young people and adults--for more satisfying and rewarding employment, the Boone County Career Center can become an effective partner for progress in the community.

This new educational enterprise for Boone County is described in two documents, "Boone County Vocational School" (submitted to the U.S. Representative of the App- Regional Commission) and "Boone County Schools' Application for Funds as Provided in Legislative Allocation of $3.5 Million," Boone County Schools, (25 January 1973). Among the objectives outlined in these documents are the following:

- to expand and supplement the present high school curriculum to better serve the educational and occupational training needs of youth not now adequately served,
- to equip learners with essential technical information and marketable skills so as to enable him/her to gain employment,
- to encourage high school youths to remain in school,
- to provide a predictable source of newly trained or retrained workers as a service to the community, business, and industry.

It is anticipated that a successful project in career education for Boone County will result in a reduction in the school dropout rate by providing students with an instructional program relevant to their needs and a reduction in the youth unemployment rate by providing an occupational training program to meet the needs of the youth and of business and industry.

The review of occupational opportunities which constitutes this report is intended to contribute to the eventual success of the project by providing a basis for selection of relevant programs.

IV. CAREER CLUSTERS REVIEWED

The initial planning for the career education project in Boone County suggested that the following career areas ought to be evaluated:

- General clerical
- Agricultural
- Mining occupations
- Food service
- Construction
- Secretarial
- Electrical
- Social service
- Health
- Metal workers
- Mechamical and repair
- Bookkeeping and accounting
- Basic marketing
- Transportation
- Manufacturing
- Hospitality and recreation

In order to correlate these potential curriculum areas with the organization of available employment information, the areas were grouped in clusters of occupational categories. Preliminary investigation indicated a need for review of additional areas, with the result that employment trends were analyzed for the following clusters:

. Agriculture and Forestry

. Business and Business Management

. Construction

. Fashion and Apparel Industries

. Food Service

. Health

. Manufacturing

. Mechanics and Repair

. Mining and Mining Technology

. Social Service

A. AGRICULTURE AND FORESTRY

Agricultural occupations constitute a small and still declining segment of employment in the Boone County area. A study of the economic history, conditions, and outlook for the Kanawha River area (Kanawha Basin Comprehensive Study, U. S. Corps of Engineers, 1971) indicated that the amount of land devoted to farming throughout the area has steadily declined--from 4 million acres in 1954 to 3 million in 1964. In the three-county area of Boone, Fayette, and Raleigh, the total acreage in farm land declined from 210,000 acres in 1954 to 113,000 in 1964, a reduction of nearly 45%.

The work force survey of the West Virginia Department of Employment Security (West Virginia Work Force: Annual Averages, 1971) reports an annual average of just 240 persons in agricultural employment in Boone and Logan counties, including self-employed and unpaid family workers as well as wage and salary workers; that figure represents approximately 1% of the two-county work force. Statewide, the number of persons in agricultural employment has fallen from 45,7000 (8% of the work force) in 1957 to 23,400 (4% of the work force) in 1971. the number has remained at relatively stable level for the past three years, declining by 500 while the total work force has increased by some 7,700. Available estimates, including Miernyk's Simulating Regional Economic Development and the Charleston Area Manpower Council's "Man-power Plan," project a continuing but not dramatic decline.

The report of the Corps of Engineers notes that much of the land displaced from agricultural utilization is reverting to timber, and a great deal of the surface of Boone County is heavily forested. It was in part because of this natural resource that the U.S. Commerce Department report on Opportunities for Economic Development in Boone County, W. Va. (1964, quoted in Let's Look at Boone County) included "lumber and wood products" among opportunities for new employment. As reported in Let's Look at Boone County (West Virginia Department of Employment Security, 1966), the county has a timber stand in excess of 900 million board feet.

Throughout West Virginia, timber is one of the state's high quality resources. According to Departent of Commerce figures (West Virginia: Economic Profile, 1971), 74% of the state's land area is in forested acres, with 95% of the total cubic foot volume in hardwoods. The report notes that West Virginia hardwoods are much sought after by furniture manufacturers throughout the country, with 95% of all timber cut in West Virginia being shipped out of state. In addition, the Department reports that timber volume in the state is increasing, noting that more wood is being grown than cut (370 million cubic feet versus 120 million). While lumber production has not recently equalled the 607 million board feet produced in 1965, the state has produced more than a half billion board feet in every year since 1964.

There is no record of the numbers of people currently employed in Boone County in the area of forestry and forest management; presumably the number is small. The average number of people employed in the manufacturing of furniture, lumber, and wood products throughout the state has ranged over the last decade between a high of 8,700 in 1968 and a low of 7,400 in 1962; the figure was 7,500 for 1970. According to the U. S. Census for 1970, persons employed in this occupational area in Boone and contiguous counties totalled 1,047, though only 89 of these resided in Boone County itself. Despite the relatively low current employment patterns in wood-related activities, this valuable natural resource and potentially valuable area of employment must be kept in mind as educational planners look to future developments for Boone County.

B. BUSINESS AND BUSINESS MANAGEMENT

The business and business management cluster is both vertical and horizontal--that is, it includes a range of jobs from lowest to highest skills in the occupational area, but its skills are utilized in many different industries.

As a result of the pervasiveness of business skills throughout all areas of employment, it is difficult to identify precisely the number of opportunities in the field. Many of those persons engaged in business-related occupations are included in report totals for the industry in which they work, figures which are not functionally separable. A great many of those included in totals for government employment, for instance, or even in mining, are performing business-related tasks.

William Miernyk's study, Simulating Regional Economic Development, reported the following functional employment totals in West Virginia for 1965 (with 1975 projections indicated):

	1965	1975
Accountants	2,580	3,318
Stenos, Secretaries	15,830	22,041
Office Machine Operators	3,305	5,570
Accounting Clerks	6,192	6,974
Shipping, Receiving Clerks	1,658	1,517
Cashiers	3,498	4,776
Telephone Operators	1,763	1,977
Other Clerks	34,326	43,081
Sales Workers	28,266	31,767
Personnel, Labor Relations Workers	917	1,399
Other Professionals and Technicians	6,771	11,914
Managers, Officials, and Proprietors	53,593	61,343

This list is not an exhaustive enumeration of business-related skills and occupations, of course, but it is indicative of the range and scope of current employment. Total employment listed by the Department of Employment for finance, insurance, and real estate is another indication of employment opportunities for those with business skills. The report for 1971 lists an

annual average employment of 16,000 persons in these areas throughout the state. Of these, 9700 (60%) are employed in wage areas A and H, as identified by the Department of Commerce---the Huntington/Ripley/Charleston/Madison/Williamson/Beckley/Princeton area. More than 5000 (31% of the state total) are employed in Boone and contiguous counties.

The wholesale and retail trade area also indicates opportunities in this field. The 1971 statement of Annual Averages by the Department of Employment Security reports 96,500 persons employed in this field statewide. Of these, 54,930 (57%) are employed in wage areas A and H. Boone and its contiguous counties provide 26,760 (28%) of the jobs in the statewide total.

Because of its wide base throughout the economy, the field of business-related skills is perhaps the least volatile of areas examined in this study. Forecasts of recovery in the coal industry and of general development in Raleigh County and Kanawha County support estimates in the Charleston Area Manpower Planning Council's "Manpower Plan" and in the U.S. Corps of Engineers Kanawha Basin Comprehensive Study for expanded opportunities in this area of employment. Even at its current level, the field represents a major source of employment opportunities in Boone County and its general vicinity.

C. CONSTRUCTION

The construction cluster includes a number of independent skills and occupations such as masons, carpenters, electricians, plumbers, painters: People in these occupational areas may be self-employed, may be employed in construction firms, or may be employed in mining, manufacturing, or other industries.

Employment figures are not available for individual skills in this field; the Department of Employment Security reports only a single total figure for all persons employed in "contract construction." Persons with the same skills who are employed in other industries are included in total figures for those industries and are not identifiable. Recent analyses of the labor forces in mining and manufacturing, however, provide an indication of the level of employment in those industries for persons in construction-related jobs (Optimum Sample Selection and Occupational Patterns in the Mining Industry, Department of Employment Security, 1971, and West Virginia: Industrial Wage Survey, Department of Commerce, 1972).

The Work Force Annual Averages 1971, published by the Department of Employment Security, reports a total annual average of 30,500 persons employed state-wide in contract construction. Of these, 820 are in the Logan/Boone area. However, another 14,800 are in the adjacent or nearby counties of Kanawha, Putnam, Cabell, Jackson, Mason, Lincoln, Wayne, Mingo, McDowell, Wyoming, Mercer, Raleigh, and Fayette. (These are the counties which comprise wage regions A and H of the Department of Commerce report mentioned below; the total is indicated for these counties in order to correspond with figures from the second report.) Some 7000 of these workers (23% of the state total) are in the contiguous counties of Boone, Kanawha, Lincoln, Logan, Wyoming, and Raleigh.

The number of construction-related tradespeople employed in manufacturing, as reported in the Industrial Wage Survey for 1971, are as follows (the counties of wage areas A and H are indicated in the preceding paragraph):

Occupation	West Virginia	Wage Areas A and H	
Carpenters	200	97	(48%)
Crane Operators	430	278	(65%)
Electricians	755	494	(65%)
Erectors and Riggers	124	120	(97%)
Masons	75	52	(69%)
Painters	306	147	(48%)
Plumbers	445	340	(76%)
Welders	1088	741	(68%)
	3423	2269	(66%)

There are other skills employed in manufacturing activities which are similar to and which might easily be transferable between construction and manufacturing; these listed, however, are the major construction-related skills. (It should be noted that these figures represent only 34% of West Virginia manufacturers.) In addition, some 2,200 persons are employed in these skill

categories in the mining industry, as reported in the Department of Employment Security analysis of occupational patterns in that industy.

The approximate total number of persons employed in West Virginia in construction trades, then, is slightly more that 36,000. Of these, approximately 19,000 (52%) are employed in wage areas A and H--the Huntington/Charleston/Madison/Beckley area. While precise figures are not available for a more restricted geographical area, it appears that nearly 9,000 of the total (25%) are employed in Boone and its contiguous counties.

It is interesting to note that the total for 1971 in construction trades falls almost precisely on the midpoint of the projections make by William Miernyk in Simulating Regional Economic Development. Miernyk's figures are more precise than necessary (or even possible), but they offer a reasonable guide to the growth that may be expected in these areas. While it is difficult to correlate categories (What are "other"? What is the number of masons, carpenters, etc., included in "foremen"?), his projections are instructive and are roughly corroborated by actual 1971 employment. "Total demand" lists those jobs to be filled during the decade as a result of expansion and replacement.

	Miernyk Actual 1965	Miernyk Projected 1975	Total Demand
Brickmasons	1,174	1,466	492
Carpenters	3,871	4,896	2,045
Electricians	4,548	4,953	1,168
Excavating Machine Operators	2,024	2,831	1,451
Plumbers	1,745	2,454	1,252
Painters	4,508	5,314	1,196
Other	1,608	2,008	766
Foremen	13,880	15,174	4,212

Other estimates support a positive outlook for the expansion of construction activity in the Boone region. The "Manpower Plan" of the Charleston Area Manpower

Planning Council suggests that contract construction should be one of the largest gainers in employment in the area. The developments forecasted by the Kanawha Basin Comprehensive Study, as well as projected growth of mining, will support expansion of opportunities in this area. Current experience indicates that a major portion of the construction activity statewide will occur in the Huntington/Charleston/Madison/Beckley area.

D. FASHION AND APPAREL INDUSTRIES

The fashion and apparel industry has had considerable growth in West Virginia in the last decade, from 3900 employees in 1960 to 5500 in 1970. The occupational opportunities in this industry are listed in "An Occupational Outline of the Apparel Industry in West Virginia," (Department of Employment Security, Research and Statistics Division, 1972), providing statewide totals only.

The occupational categories enumerated in the report, of course, include a number of areas not exclusively related to the apparel industry. (There are, for example, approximately 200 positions in business-related fields.) Among those occupations directly related to the industry, only "sewing maching operator" appears also in the Department of Commerce report of industrial wages, providing an indication of employment opportunities in the Boone County vicinity.

In its survey, the Department of Commerce identified 1,522 sewing machine operators (as against 3,537 reported by the Department of Employment Security; the discrepancy in reported totals is attributable to survey procedures or rates of response and is less relevant to present purposes than the distribution of reported workers). Of the 1,522 reported by the Commerce Department, 274 are in wage areas A and H (Huntington/Charleston/Madison/Beckley). Wage area A, however, is vastly under-represented in the Commerce survey; the survey lists only 47 sewing maching operators in that area, while Manufacturing Directory lists four apparel industries in Huntington alone with a total of 1350 employees. Since the Directory was published, at least one other plant--Bobbie Brooks--has opened in the Charleston area. In all, the Directory lists 13 active industries in these two wage areas including Huntington, Charleston, and Boone County, with a total employment of nearly 2,300 persons.

E. FOOD SERVICE

Employment in food services is scattered through a wide range of industrial or other employment categories, including not only such primary areas as retail food stores or restaurants and clubs but also food service activities in schools, factories, private dining rooms or catering businesses, hotels and motels, transportation terminals, and so on. The 1970 Census reported 367 persons employed in Boone County in food, bakery, or dairy stores or in restaurants or other direct food service establishments; in Boone and its contiguous counties, including Kanawha, a total of more than 7000 persons are engaged in food service occupations.

Miernyk, in Simulating Regional Economic Development, estimated total employment statewide for waiters, cooks, and bartenders at 10,497 in 1965, with a projected increase to 13,710 by 1975. Employment in food processing industries, including food products, dairy products, baked goods, and beverages, was estimated at approximately 8,000 with little growth projected to 1975, paralleling the stabilization of food production in the state.

The expansion of direct food service opportunities will be a function of population growth and of urbanization. While population growth projected for West Virginia in general and for Boone County in particular is minimal, continued concentration of that population in urban areas and increased travel through the area via highways now under construction should cause an increase in food service opportunities in the Huntington, Charleston, and Madison area.

F. HEALTH

Health care remains a critical need of Boone and its neighboring counties, as noted by the Corps of Engineers study of the Kanawha Basin. While current employment levels are relatively low, the projection of opportunities must take into account the extent of the need for health services, potential increased governmental funding of health care programs, and the development of such new health careers as physicians' assistants and allied health professions.

Miernyk reported a total of 12,114 persons employed in 1965 as medical-dental technicians, doctors and veterinarians, dentists, pharmacists, and professional nurses, with major increases among nurses, doctors and technicians

projected by 1975, to a total of 17,646. The 1970 Census reports 4 physicians or dentists in Boone County and 67 health workers. Obviously, opportunities in this field are concentrated in urban centers; Kanawha County employment for 1970 included 558 doctors or dentists and 1472 health workers. In all, Boone and its contiguous counties had a total of nearly 3,000 people employed in health services.

This is clearly an area in which instructional programs offer benefits not only to the student but to the community as well. Health service skills are in demand; the profession offers an increasingly complex range of entry-level employment opportunities with satisfying professional responsibilities, and the benefits of an increase in available health care personnel accrue directly to the community in expanded and improved health service.

G. MANUFACTURING

As the Charleston Area Manpower Planning Council has noted in its 1973 "Manpower Plan," manufacturing concerns are the major employers for the Charleston area as a whole, followed by wholesale and retail trade, with the bulk of manufacturing employment concentrated in the chemical and allied products industry. The Manufacturing Directory for 1972 lists 18 separate chemical manufacturing installations in Kanawha County with a total employment of nearly 10,000 persons.

In all, 214 manufacturing plants are listed in Kanawha County, including some in occupational areas covered elsewhere in this report, with another 110 in Boone and its other contiguous counties. Total employment in these plants listed in the Directory is 14,000. The 1970 Census is perhaps a more accurate indication of total employment in manufacturing. That report includes the following figures for Boone and contiguous counties. (Note that these totals include occupations such as wood products and food processing which are duplicated elsewhere in the report.)

MANUFACTURING	Boone	Kanawha	Lincoln	Logan	Raleigh	Wyoming
Furniture, lumber, wood products	89	149	146	71	205	387
Metal Industries	30	957	70	39	38	14
Machinery, exc. electrical	54	492	54	253	209	36
Electrical machinery, equipment, supplies	14	153	14	79	217	5
Transportation equipment	6	97	109	10	15	—
Other durable goods	62	1572	93	55	108	7
Food and kindred products	5	594	34	108	203	12
Textile products	13	185	174	52	30	—
Printing, publishing and allied fields	67	948	19	107	253	37
Chemical and other allied products	63	9832	195	5	40	—
Other non-durable goods	53	713	24	47	80	50
TOTAL	456	15692	932	826	1398	548

Unfortunately, as noted in the Department of Employment Security's "Area Manpower Review" (1972), manufacturing employment has recently been reduced. "Factory cutbacks", the review reports, "have been the principal supplier of idled workers, and personnel at various manufacturing establishments have indicated a continued deterioration in employment rolls." The "Manpower Plan" for 1973 of the Charleston Area Manpower Planning Council similarly notes the decline in manufacturing employment and suggests that it will continue, with the majority of losses in the manufacture of non-durables.

Despite these reductions, manufacturing will continue to provide a sizable number of employment opportunities in the Huntington, Charleston, Madison, Beckley area. The Kanawha Basin Comprehensive Study notes that completion of the Appalachian and Interstate Highway systems will "augment the potential for manufacturing" in the Boone/Fayette/Raleigh County area, and the "Manpower Plan" concludes that manufacturing though somewhat reduced, will continue to provide employment potential, especially in durable goods categories.

As early as 1964, the U.S. Department of Commerce report, Let's Look at Boone County, commented on the potential for development of fabricated metal products industries in the area. The U.S. Census for 1970 reports only 37 metal craftsmen in Boone County but a total of 1,200 in Boone and contiguous counties. Miernyk's Simulating Regional Economic Development reported a total of 6,791 persons employed in fabricated metals industries in 1965 with projected growth by 35% to 1975, to a total of 9,186. It should be noted that of 1088 manufacturing welders (not all of them in metals industries, of course) reported in the Department of Commerce survey of industrial wages, 741 (68%) were in wage areas A and H, the Huntington/Charleston/Madison/Beckley area.

H. MECHANICS AND REPAIR

The U.S. Census report for 1970 records a total of nearly 5000 mechanics and repairmen in Boone and contiguous counties, 1800 of whom are automotive mechanics or body repairmen. Many of these are employed in mining or manufacturing industries included elsewhere in the report.

William Miernyk reported a base of more than 17,500 persons employed as motor vehicle (4,700) or other (12,800) mechanics statewide in 1965 (Simulating Regional Economic Development). He projected a growth rate of 40% through

the decade for other mechanics and 13% for automotive, for a total of 23,400 by 1975. Considering openings resulting from expansion and replacement, some 9000 jobs would become available in that decade.

Mechanics are employed in a number of areas, of course--in service stations, in municipal services, in manufacturing and mining activities, and so on. The Department of Commerce Survey of industrial wages included 1563 mechanics employed in manufacturing concerns throughout the state, 529 of them (34%) in wage areas A and H. The Department of Employment Security analysis of occupational patterns in the coal mining industry reported 3500 mechanics employed in that industry, certainly a sizable percentage of whom are located in Boone and its contiguous counties.

I. MINING AND MINING TECHNOLOGY

Employment in the mining industry in West Virginia has declined dramatically since the labor-intensive and heavy-coal-demand era of mid-century. In recent years, however, employment has stabilized somewhat at approximately 50,000 statewide. Of the total reported by the Department of Employment Security in its 1971 report on Work Force: Annual Averages--actually 48,400 statewide, though several thousand other persons reported under "Labor-Management Disputes" were also engaged in mining occupations--nearly 20,000 were employed in Boone and its contiguous counties.

Whatever the outlook for the mining industry, there can be little doubt that it will continue to dominate the economy of Boone County and to provide the great majority of employment opportunities in Boone and several surrounding counties. Of 6,165 persons reported in the 1970 Census table of "Industries of Employed Persons and Occupations of Experienced Unemployed Persons," 2175 (35%) were reported in the mining industry. For the region of Boone and contiguous counties, 14% of all persons reported in the table (18,031 of 130,665) were assigned to mining occupations.

In addition to the sheer size of current employment in mining, the outlook for expansion of the industry appears to be bright--and certainly Boone County offers tremendous potential for expansion, with its estimated coal reserve of more than 4 billion short tons. The Charleston Area Manpower Council's "Manpower Plan" for 1973 cites a special research project of the Department of Employment Security, Coal Outlook to 1980, in projecting total employment in the industry of 60,000 to 86,000 persons by 1980, statewide.

J. SOCIAL SERVICE

The area of social services is an expansive one, including such occupational opportunities as law enforcement, legal practice, ministry, teaching, medical service (included elsewhere in this report), child care, and other personal service categories. The field offers both professional and paraprofessional roles. While there is admittedly a wide range of responsibilities within this braod area, there is a common core of personal and interpersonal skills throughout these occupations.

Some idea of the scope of employment opportunities in these fields can be gained from Miernyk's study, Simulating Regional Economic Development. He reports, for instance, a base of 17,855 elementary and secondary teachers in West Virginia in 1965 (projected to 22,369 by 1975), more than 2,700 college teachers (to 4,800 by 1975), lawyers numbering 1,766 (to 2,152 by 1975), and 900 personnel and labor relations workers (to 1,399 by 1975).

Opportunities in these occupational areas, of course, are not in any way dependent on local or regional needs or conditions. Students who gain skills required for these occupations will find employment opportunities throughout the country. Creation of a pool of these skills within Boone County, however, will have an undoubtedly beneficial impact on the local community, however many may leave the area for employment opportunities elsewhere.

V. SURVEY OF STUDENT INTERESTS

Indications of student interests in career fields or in curriculum offerings are not necessarily accurate guides, of course, to the eventual occupational choices of graduates or to opportunities that may be available to them. Expressed preferences may be uninformed and unrealistic or even frivolous. They are, nevertheless, an accurate indication of the current base of student attitudes and interests.

The present survey was conducted in all junior high schools and high schools of Boone County without prior instruction to students with regard to career opportunities or to career or curriculum content. The survey was conducted, however, in the context of great anticipation about the development of a new vocational school and career center; we believe this anticipation resulted in minimizing frivolous responses. While the responses may be regarded as somewhat uninformed--and, in some cases, certainly unrealistic--we believe they are a reliable indication of the level of receptiveness of students to specified career curriculum offerings.

Results of the survey are as follows (survey forms are attached as Appendix B).

Survey of Current Students

Number of students in grades 9-12: 1953

	Male	Female	Total
Number of students responding:	877	841	1,718
Post-graduation plans (1st choice)			
College	271	304	575
Work	485	430	915
Military Service	78	19	97
Other	43	88	131

Survey of Current Students
(Continued)

	Male	Female	Total
Curriculum preferences (1st choice)			
Business	41	313	354
Agriculture	30	2	32
Mining	217	0	217
Construction	141	7	148
Manufacturing	44	3	47
Food Service	9	46	55
Mechanics and Repair	181	7	188
Health	49	190	239
Social Service	71	143	214
Fashion and Apparel	1	67	68
None of these	60	56	116

	Male	Female	Total
Curriculum preferences (2nd choice)			
Business	36	143	179
Agriculture	30	5	35
Mining	115	5	120
Construction	154	7	161
Manufacturing	80	12	92
Food Service	24	96	120
Mechanics and Repair	46	193	239
Health	34	154	188
Social Service	46	193	239
Fashion and Apparel	7	102	109

Survey of Current Students
(Continued)

Rank order of curriculum choices (1st choice only)

1.	Business	354	(41 male, 313 female)
2.	Health	239	(217 male, 190 female)
3.	Mining	217	(217 male, 0 female)
4.	Social Services	214	(71 male, 143 female)
5.	Mechanics and Repair	188	(181 male, 7 female)
6.	Construction	148	(141 male, 7 female)
7.	Fashion and Apparel	68	(1 male, 67 female)
8.	Food Service	55	(9 male, 46 female)
9.	Manufacturing	47	(44 male, 3 female)
10.	Agriculture	32	(30 male, 2 female)

Rank order of curriculum choices (1st and 2nd choices combined)

1.	Business	533	(77 male, 456 female)
2.	Social Services	453	(117 male, 336 female)
3.	Health	427	(83 male, 344 female)
4.	Mechanics and Repair	388	(375 male, 13 female)
5.	Mining	337	(332 male, 5 female)
6.	Construction	309	(295 male, 14 female)
7.	Fashion and Apparel	177	(8 male, 169 female)
8.	Food Services	175	(33 male, 142 female)
9.	Manufacturing	139	(124 male, 15 female)
10.	Agriculture	67	(60 male, 7 female)

Survey of Current Students (Continued)

Residence Preferences

	Male	Female	Total
Boone County	220	103	323
Charleston	16	60	76
West Virginia*	192	174	366
TOTAL West Virginia	428	337	765
TOTAL Non-West Virginia	207	224	431

*The survey question was open-ended, not multiple choice. By "West Virginia," therefore, students may not necessarily have meant to exclude Boone County or Charleston. Experience of previous classes indicates, in fact, that few graduates move to areas of West Virginia other than the Boone County area.

Survey of Graduates, 1971 and 1972

Number of graduates reported: 684

Current Status:

College or Technical School	160	
Employment	274	
Married, not working	108	(all female)
Military Service	41	
Unemployed	82	(23 male, 59 female)
Unknown	19	

Survey of Graduates, 1971 and 1972
(Continued)

Types of employment

Business	93
Mining	68
Manufacturing	25
Mechanics	14
Construction	13
Medicine	9
Food Service	6
Agriculture	2
Social Worker	1

Residence of employed graduates:

Boone County	174
West Virginia, other than Boone County	33
Other states	67

(Ohio, 27; Virginia, 7; Illinois, 6; Florida, 5; Pennsylvania, 4; other, 18.)

VI. CONCLUSIONS

From this preliminary survey of current employment patterns, occupational trends and projections, and student interests in Boone County, it is possible to make preliminary selections of occupational clusters to be included in the curriculum for Boone County.

Identification of specific skills and information to be taught, of course, must await evaluation of job inventories, task analyses, and projected skill requirements. This evaluation must be accomplished with the participation of an advisory committee of persons directly involved in the fields selected for inclusion. Further detailed analysis of these areas during the first phase of development will facilitate that process; a sample survey form for use in obtaining the required additional information is included with this report as Appendix C.

The curriculum clusters selected for further development and implementation are as follows:

A. MINING AND MINING TECHNOLOGY

There can be little doubt that mining will continue to dominate the economy of Boone County and to provide the great majority of employment opportunities. Current estimates of increased demands for coal production and general recovery of the industry support the inclusion of mining and mining technology skills among programs to be offered to Boone County students in preparation for gainful and satisfying employment.

The mining cluster should include a range of skills required for projected employment opportunities. The specific skills to be required can necessarily be determined only in cooperation with those who own, plan, manage, and work in the mines. Broadly, the cluster should include such occupational areas as mine maintenance and mechanics, welding, mine electricity, and drafting.

The selection of mining as a curriculum area is corroborated by a high ranking for the mining industry among occupational preferences and curriculum choices of current students in the county. The second-place ranking of mining in current employment of recent graduates and third-place ranking in first-choice preferences of current students is distorted by the combining of males and females in the totals; among males, mining was the single

area most often chosen by current students surveyed for this report and is the area of greatest employment for recent graduates.

Assuming for purposes of this initial report a ratio of 2 to 1 for major clusters to other clusters to be included in the career center, mining is assigned a projected half-day enrollment of 60 students. This projection is based on the expressed interest of a large number of students (337) in this potential curriculum offering.

B. BUSINESS AND MANAGEMENT

Of those recent graduates of Boone County schools whose specific current employment can be determined, 93 (40%) are employed in business-related occupations; this is, in fact, the principal area of employment for these graduates of the last two years, considering male and female graduates. Business is also the principal choice of students currently enrolled in grades 9-12 in Boone County. Of 1,562 students indicating a preference, 354 (23%) indicated business as a first-choice among potential curriculum offerings.

While the specific numbers of employment opportunities in business-related fields is difficult to determine, given the pervasiveness of related jobs throughout all industries and commercial activities, it can be certainly concluded that this is a major employment area. Boone and its contiguous counties--chiefly Kanawha--provide nearly 27,000 jobs in wholesale or retail trade, for example, and another 5,000 jobs in finance, insurance, and real estate. Employment opportunities for secretarial, financial, and management services exist on a similarly large scale in the Boone and Kanawha area.

Given the strong student interest in this occupational area and the high potential of employment opportunities, this cluster is projected for a half-day enrollment of 60 students. The cluster should include such related areas as typing, shorthand, and other stenographic and secretarial skills, office machine operation, accounting and bookkeeping, sales, business administration, and data processing.

C. POWER MECHANICS

As expected, the area of mechanics and repair drew a strong response from male students currently enrolled in Boone County schools. Of 1,562 students responding, 188 (12%) indicated a first-choice preference for this

occupational curriculum, with a heavy emphasis on auto mechanics. Considering both first and second choices, mechanics and repair drew more responses among males than any other area. A relatively small number of recent graduates, however, appears to be currently employed in this field. Of 231 graduates in the classes of 1971 and 1972 whose specific employment can be determined, only 14 are employed in this occupational area. (There may well be additional mechanics-related employment among those listed in mining or manufacturing.)

Employment opportunities for mechanics are reasonably good and may be found in automotive repair shops, in service stations, in transportation services, in construction, and in mining and manufacturing activities. The cluster should provide a range of skills useful in a number of these areas. For that reason, the cluster is recommended to include instruction and experience with the internal combustion engine and with hydraulic and pneumatic equipment. Assuming a ratio of 2 to 1 between the major curriculum areas of mining and business and the other areas to be included in the center, the power mechanics cluster is projected to have a half-day enrollment capacity of 30 students.

D. CONSTRUCTION

As in the case of mechanics, construction is a relatively small area of employment for recent graduates of Boone County schools. Construction skills, however, are also required in mining and in manufacturing. Employment opportunities appear to be substantial, as indicated by current employment of 7,000 persons in contract construction alone in Boone and contiguous counties.

Student interest in construction trades is reasonably strong. Among males, however, construction was the third highest choice, trailing only mining and mechanics. These three areas were by far the most popular choices of male students.

The cluster in construction trades should include such related but independent skills as carpentry and finishing, masonry, plumbing, wiring, roofing, and drafting and designing. A half-day enrollment of 30 students is projected for this area.

E. ALLIED HEALTH

While allied health occupations do not present employment opportunities on such a large scale as some

other areas selected for inclusion in the curriculum, there is a reasonable number of opportunities (9 graduates of the past two years are employed in health services, without curricular preparation). There is a great need in the area of Boone County for an increase in the number of persons with health-related skills, and there is great interest in this field among students currently enrolled in county schools.

Allied health occupations ranked second among first-choice curriculum preferences indicated by Boone County students. Of 1,562 responses, 239 (15%) chose health as first preference; another 188 indicated health as a second choice. Of the combined first and second choices, 83 were male students and 344 were female.

There appears to be adequate rationale at this point for inclusion of an allied health occupations cluster with a projected half-day enrollment of 30 students. The cluster should include such skills as those required for nursing, physicians' or nurses aides, hospital attendants, medical records and office workers, and laboratory technicians.

F. SOCIAL SERVICES

Social service occupations represent a very strong interest among students currently enrolled in Boone County schools. In part, this interest reflects the attraction of professional roles in such areas as teaching, law, or the ministry, but there is also an interest in other social service occupations with more limited educational requirements. In some instances, of course, professional roles attract students who for one reason or another will not be able to attend a four-year college; a program at the secondary level for paraprofessional or preprofessional roles can meet both the long-term career interests and immediate employment needs of these students.

Of 1,562 students indicating a first-choice preference among potential curriculum offerings, 214 (14%) chose the social service cluster (71 male, 143 female), ranking this cluster in fourth place. An additional 239 students, however, indicated this area as second choice (46 male, 193 female), ranking it in second place among combined first and second choices.

Employment opportunities for graduates of such a program exist in law enforcement, recreation and rehabilitation programs, welfare and social work, religious and charitable programs, mental health programs, teacher-aide

programs, and other public services. Skills related to this range of jobs should constitute the curriculum in a cluster projected for a half-day enrollment of 30 students.

Additional Comments. Those areas not selected for inclusion in the curriculum are agriculture and forestry, fashion and apparel industries, food service, and manufacturing. There is no justification, in terms of projected employment potential or current student interest, for development of an agriculture cluster for Boone County. Forestry and wood products industries were inadvertently omitted from the survey of student interests, but employment opportunities seem to be relatively limited at the present time; because of the great natural resource of timber in the county, this is a curriculum area that might well be considered for future development. Employment opportunities in fashion and apparel industry occupations are increasing in the Boone/Kanawha/Huntington area (though not yet to the extent of other occupational clusters already selected), and there is relatively little current student interest; as with forestry, this area bears watching for potential future development. Food service was not selected in spite of fairly strong employment opportunities, partly because of lack of student interest and partly because of the limited career potential and limited training requirements; skills in this area might be included with child care (for which there is considerable interest but limited employment potential) in an expanded home economics program. Manufacturing has little attraction for students in Boone County (it outpolled only agriculture in the student survey), though it is a major employment factor in central and southwestern West Virginia; it was decided to omit manufacturing as a separate cluster but to provide training in some related skills (welding, mechanics, business, and so on) in other clusters so that many students will have skills required in manufacturing activities.

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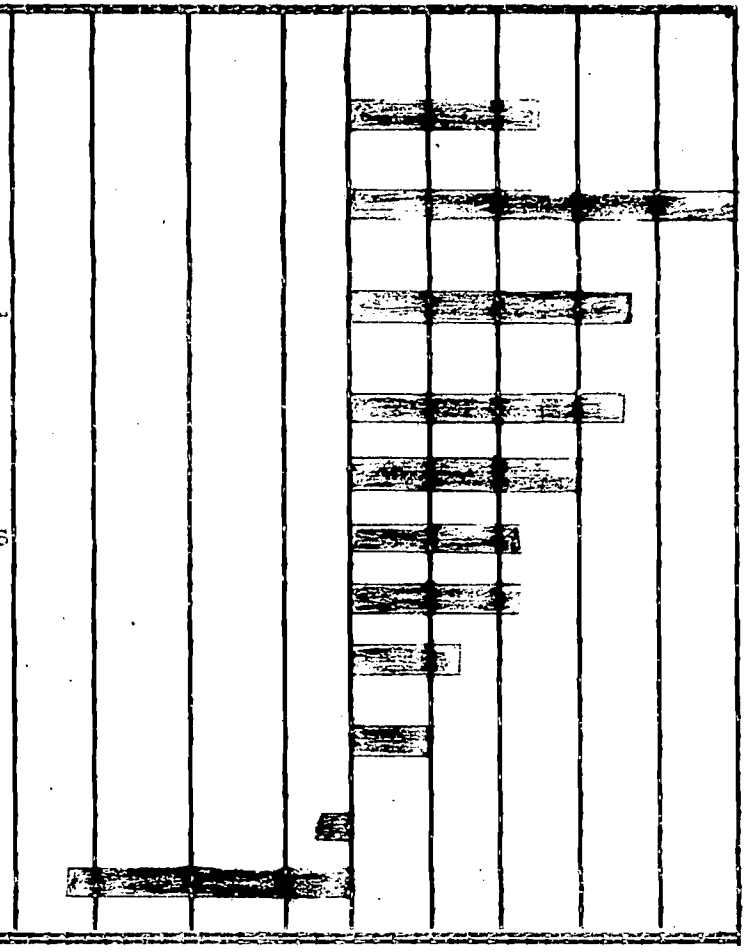
APPENDIX A of D

Employment Information for West Virginia, Boone County and Selected Neighboring Counties

NATIONAL EMPLOYMENT AND PROJECTIONS

Employment (millions)		Occupational group
1968	1980	
75.9	95.1	ALL OCCUPATIONS
10.3	15.5	Professional and Technical Workers
7.7	11.1	Service workers, except private household, e.g. hospital attendants, policemen, waitresses
12.8	17.3	Clerical workers
4.6	6.0	Sales workers
7.8	9.5	Managers, officials, proprietors
10.0	12.2	Craftsmen and foremen
1.7	2.0	Private household workers
14.0	15.4	Operatives, e.g. assemblers, truck drivers, bus drivers
3.6	3.5	Non-farm laborers
3.5	2.6	Farm workers



Source: U.S. Department of Labor

WEST VIRGINIA LABOR FORCE EMPLOYMENT
& UNEMPLOYMENT ANNUAL AVERAGES

(In Thousands)

INDUSTRY	1960	1970	1971	Projected 1975
TOTAL CIVILIAN LABOR FORCE	637.5	632.9	647.3	681.5
UNEMPLOYED	75.7	40.1	44.5	33.0
Rate of Unemployment	11.9	6.3	6.9	4.8
TOTAL EMPLOYMENT	561.5	591.6	595.5	648.5
NON-AGRICULTURAL WAGE & SALARY WORKERS	460.0	516.7	520.2	571.6
MANUFACTURING	124.6	126.5	122.8	128.2
DURABLE GOODS	74.4	75.9	74.8	77.6
NONDURABLE GOODS	50.2	50.7	48.8	50.6
NONMANUFACTURING	335.5	390.2	397.4	443.4
MINING	56.3	49.9	48.4	63.5
CONTRACT CONSTRUCTION	18.4	28.6	30.5	32.2
TRANS., COMM. AND PUBLIC UTILITIES	44.4	41.5	40.9	43.7
WHOLESALE AND RETAIL TRADE	84.5	91.8	96.5	105.8
FINANCE, INSURANCE, AND REAL ESTATE	13.3	15.7	16.0	18.3
SERVICE AND MISCEL-LANEOUS	51.1	66.8	67.0	74.1
GOVERNMENT	67.5	95.9	98.1	105.8
ALL OTHER NONAGRICULTURAL EMPLOYMENT	57.0	551.3	51.9	55.9
AGRICULTURE	44.6	23.6	23.4	21.0

Source: W.Va. Department of Employment Security, April 1, 1972.

OCCUPATIONS BY COUNTY

Source: United States Census, 1970

	Boone	Logan	Kanawha	Raleigh	Wyoming	Lincoln	Cabell
I. Professional, Technical Kindred Workers	471	1242	12945	2283	624	423	6085
II. Managers and Administrators, except farm	545	1045	7964	1514	569	247	3462
III. Sales Workers	276	703	5900	1365	309	144	3097
IV. Clerical and Kindred Workers	598	1674	15920	2550	593	368	6027
V. Craftsmen, Foremen, Kindred Workers	1273	2118	12961	3608	1826	969	5427
VI. Operatives, except transport	1369	2183	8271	2994	1745	782	4975
VII. Transport Equipment Operatives	492	941	3835	1314	642	275	1456
VIII. Laborers, except farm	450	511	3833	966	572	437	1994
IX. Farmers: farm managers	-	4	45	69	6	39	122
X. Farm Laborers: foremen	7	20	105	77	10	36	76
XI. Service Workers, except private households	608	995	8933	2133	520	341	4418
XII. Private Household Workers	76	150	1415	281	77	69	700
TOTAL	6165	11586	82127	19154	7493	4130	37839

OCCUPATIONS BY COUNTY

Source: United States Census, 1970

Content of Certain Primary Categories

	Boone	Logan	Kanawha	Raleigh	Wyoming	Lincoln	Cabell
I. Professional, Technical Kindred Workers							
Engineers	9	107	1857	113	36	28	713
Physicians, Dentists	4	65	558	121	31	22	792
Health Workers	67	149	1472	388	51	16	893
Teachers, elem. & sec.	229	530	2310	771	347	228	1198
Technicians, exc. health	28	30	1416	145	39	35	459
Other Professional	134	361	5332	745	120	94	2530
Total	471	1242	12945	2283	624	423	6085
II. Managers and Administrators, except farm							
Salaried							
Manufacturing	13	52	678	79	5	-	455
Retail Trade	110	243	1716	391	83	41	729
Other Industries	236	522	4251	799	290	95	1679
Self Employed							
Retail Trade	129	139	758	175	161	82	355
Other Industries	57	89	561	70	30	29	244
Total	545	1045	7964	1514	569	247	3462

OCCUPATIONS BY COUNTY

Source: United States Census, 1970

Content of Certain Primary Categories

	Boone	Logan	Kanawha	Raleigh	Wyoming	Lincoln	Cabell
III. Sales Workers							
Retail Trade	221	417	3081	866	252	144	1701
Other than retail	55	286	2819	499	57	30	1396
Total	276	703	5900	1365	309	144	3097
V. Craftsmen, Foremen, Kindred Workers							
Auto mechanics, body repair	94	176	999	302	78	132	349
Mechanics: repairmen expect auto	237	324	1792	483	260	77	775
Metal craftsmen, except auto mechanics	37	55	909	87	28	44	625
Construction craftsmen	465	691	3822	1336	670	389	1342
Other craftsmen	440	872	5439	1400	790	327	2336
Total	1273	2118	12961	3608	1826	969	5427
XI. Service Workers, except private households							
Cleaning service	173	266	2257	421	96	80	1010
Food Service	210	274	2497	632	123	116	1357
Health	105	131	1368	408	89	25	734
Personal service	48	138	1117	391	101	63	689
Protective service	33	71	868	180	44	31	257
Total	608	995	8933	2133	520	341	4418

INDUSTRIES OF EMPLOYED PERSONS
AND OCCUPATIONS OF EXPERIENCED UNEMPLOYED PERSONS

Source: United States Census, 1970

	Boone	Logan	Kanawha	Raleigh	Wyoming	Lincoln	Cabell
I. Agriculture, forestry	38	53	307	215	40	121	284
II. Mining	2175	3796	3799	4584	3305	372	265
III. Construction	332	475	7053	1139	359	604	2426
IV. Manufacturing	456	826	15692	1398	548	932	9834
V. Railroad/railway express	152	222	689	251	291	173	1730
VI. Trucking service: warehousing	119	52	1727	162	25	67	410
VII. Other transportation	44	120	888	178	73	35	375
VIII. Communications	59	155	1999	350	23	11	484
IX. Utilities/Sanitary Service	74	221	2038	296	116	135	640
X. Wholesale Trade	107	329	4316	730	140	41	1904
XI. Food, bakery, dairy stores	236	443	2366	512	188	147	876
XII. Eating/drinking places	131	248	2174	423	92	84	1079
XIII. General merchandise retailing	122	222	2530	562	210	28	1153
XIV. Motor Vehicle: service stations	160	349	2289	658	201	154	846

INDUSTRIES OF EMPLOYED PERSONS
AND OCCUPATIONS OF EXPERIENCED UNEMPLOYED PERSONS
Source: United States Census, 1970

		Boone	Logan	Kanawha	Raleigh	Wyoming	Lincoln	Cabell
XV.	Other retail trade	414	550	4606	1162	258	142	2351
XVI.	Banking and credit agencies	75	99	1316	215	21	34	560
XVII.	Insurance, real estate, other finance	48	146	2248	388	11	40	1027
XVIII.	Business: repair service	56	316	2112	372	91	77	815
XIX.	Private households	65	151	1371	249	55	65	693
XX.	Other personal services	128	413	2587	648	193	92	1207
XXI.	Entertainment/recreation	8	78	579	86	32	31	233
XXII.	Hospitals	205	428	3070	1238	203	31	2092
XXIII.	Health services except hospitals	69	124	1953	414	28	53	845
XXIV.	Schools/Colleges - govern.	472	873	4047	1111	529	333	2566
XXV.	Schools/Colleges - private	43	112	1100	308	57	44	548
XXVI.	Other education/kindred services	11	6	374	63	4	5	192

INDUSTRIES OF EMPLOYED PERSONS
AND OCCUPATIONS OF EXPERIENCED UNEMPLOYED PERSONS
Source: United States Census, 1970

	Boone	Logan,	Kanawha	Raleigh	Wyoming	Lincoln	Cabell
XXVII. Welfare, religion and non-profit organizations	51	175	1867	311	65	79	547
XXVIII. Legal and miscellaneous professional services	111	129	2126	348	45	4	759
XXIX. Public administration	204	475	4904	703	290	160	1148
TOTAL	6165	11586	82127	19154	7493	4130	37839

APPENDIX B OF D

Survey Forms for Inventory of Student Interests and Experience

INDUSTRIES OF EMPLOYED PERSONS
AND OCCUPATIONS OF EXPERIENCED UNEMPLOYED PERSONS
Source: United States Census, 1970

Content of Manufacturing Category	Boone	Logan	Kanawha	Raleigh	Wyoming	Lincoln	Cabell
Furniture, lumber, wood products	89	71	149	205	387	146	253
Metal Industries	30	39	957	38	14	70	3044
Machinery, exc. electrical	54	253	492	209	36	54	326
Electrical machinery, equipment, supplies	14	79	153	217	5	14	325
Transportation equipment	6	16	97	15	-	109	1233
Other durable goods	62	55	1572	108	7	93	1789
Food and kindred products	5	108	594	203	12	34	382
Textile products	13	52	185	30	-	174	596
Printing, publishing and allied fields	67	107	948	253	37	19	307
Chemical and other allied products	63	5	9832	40	-	195	900
Other non-durable goods	53	47	713	80	50	24	679
TOTAL	456	826	15692	1398	548	932	9834

SURVEY OF 1971 AND 1972 GRADUATES

Boone County

SCHOOL:_____

COUNSELOR:_____

For each student, please list name and sex and indicate only the following.

College (location and major field of study or interest)

Employment (location and type of work)

Married, not working

Military Service

Unemployed

Unknown

STUDENT INTEREST SURVEY

Students in 9th, 10th, 11th, and 12th grades
in Boone County, January 17, 1973

We need to begin planning together for your future. The answers you give to these questions will help us to help you.

NAME _____

AGE _____ SEX _____ GRADE _____

SCHOOL _____

CURRICULUM: Vocational_____ General_____ College Prep_____

1. What do you plan to do after you finish high school? (Put "1" by your first choice; put "2" by your second choice.)

_____ Go to college. (If you plan to go to college, which colleges are you interested in? _____ _____)

_____ Go to work. (What kind of work would you like to do? _____ Where would you like to live? _____)

_____ Military service. (Would you like to stay in military service as a career? _____ If not, what would you like to do after you leave the military? _____)

_____ Other. (What would you like to do? _____ _____)

2. Which of these courses in school would interest you most? (Put "1" by your first choice, put "2" by your second choice.) (Among the examples given for the courses you choose, circle any specific jobs that interest you.)

_____ Business (secretary, bookkeeper, accountant, sales-person, businessman or businesswoman, etc.)

STUDENT INTEREST SURVEY

(Continued)

_____ Agriculture (farmer, dairy farmer, etc.)

_____ Mining (miner, equipment operator, engineer, etc.)

_____ Construction (electrician, carpenter, mason, plumber, engineer, architect, interior designer, etc.)

_____ Manufacturing (assembly line-worker, equipment operator, laboratory technician, welder, etc.)

_____ Food service (grocer, store clerk, restaurant manager, waiter or waitress, cook, etc.)

_____ Mechanics and repair (auto mechanic, auto body repairman, diesel mechanic, heavy equipment mechanic, small engine repairman, etc.)

_____ Health (doctor, nurse, hospital aide, laboratory worker, doctor's or nurse's assistant, dentist, dental assistant, etc.)

_____ Social service (teacher, lawyer, minister, recreation leader, child care specialist, etc.)

_____ Fashion and apparel (clothes designer, sewing machine operator, seamstress, tailor, etc.)

_____ Not interested in any of these courses.

APPENDIX C OF D

Sample Form for Proposed Survey of
Employment Needs in Industries
of Selected Curriculum Areas

MANPOWER SURVEY

Confidential information for the use of the
Boone County Board of Education

RETURN TO: Boone County Board of Education
Madison, West Virginia 25130

INSTRUCTIONS FOR COMPLETING
EDUCATION/SKILLS SURVEY QUESTIONAIRE

1 This should be the name of the company and of the person who prepares the data.

2 Enter total employment of firm in all operations in Boone, Kanawha, or adjacent counties.

3 Leave this column blank. Our staff will enter the pertinent DOT code.

4 Use the firm's own job titles, just as they are carried on your payroll. Please include titles of any new jobs the firm contemplates adding during period under survey.

5 Enter in column 5 the total number of people employed under each job title.

6-7 Enter in the column under each time period your best judgment forecast of the number of workers you will require under each job title as of the dates shown.

8-16 Check (x) the most appropriate column to indicate the minimum educational levels your firm requires for applicants for employment under each job title.

17-19 Check the most appropriate column to indicate the minimum occupational experience your firm requires for employment under each job title.

IF YOU NEED ASSISTANCE, please call Mr. Sherry Hill, Coordinator of Vocational Education, Boone County Board of Education, Madison, W. Va. (304/369-3131).

1. Name of person completing questionnaire _____

Company _____ 2. Total number of employees _____

Occ. Code	Payroll Title	No. Workers Employed	Estimated No. Workers Needed By		Minimum Education Required for Hiring									Minimum Experience Required		
		Jan. 1973	July 1 1975	July 1 1980	Literate	High School dropout	High School-general	High School-voc./tech.	Junior College-general	Junior College-voc./tech.	Bachelor's Degree	Master's Degree	Doctorate	None	One year	Over one year
3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

APPENDIX E

PROCESS MODEL FOR

CURRICULUM DEVELOPMENT

A PROCESS MODEL FOR DEVELOPING

CAREER-EDUCATION

CURRICULAR MATERIALS

Grades 10-12

Prepared for

Boone County Board of Education
Madison, West Virginia

by

RCA Service Company, A Division of RCA
RCA Education Services
Camden, New Jersey 08101

May 3, 1973

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A PROCESS MODEL FOR DEVELOPING CAREER-EDUCATION CURRICULAR MATERIALS

Grades 10-12

"Career Education" has been described by Sidney Marland, Jr., U.S. Assistant Secretary of Health, Education, and Welfare for Education, as "a new order of education concerned with the usefulness and self-realization of every individual." It is not an alternative to "academic education"; it is an integral part of the full education of each individual and of his preparation for life.

Proponents of career education recognize the strength of the current American educational system, but they recognize also that it fails to provide adequate, meaningful preparation for life for a large portion of its students. Data compiled by the National Center for Education Statistics show that there were 850,000 high-school dropouts in 1970-71 and that an additional 750,000 students graduated from high school without learning a marketable skill. Of those who entered college to continue their educations, 850,000 left without earning a degree. Obviously, the system is not meeting the needs of a substantial number of students.

The present educational system often does not provide students with enough information concerning the range of career opportunities and requirements to enable them to make wise decisions, and it does not offer a sufficient number of the types of programs which develop the understanding, abilities, and attitudes that make possible the realization of desired goals. The central purposes of education - to prepare the young to accept the reality of constructive pathways to adulthood, to help them follow these pathways successfully, and to assist them in finding personal relevance in the life options available to them - have not been effectively accomplished; thus, the emphasis in public education is being refocused in the development of career education.

CAREER EDUCATION

As a concept, career education has gained nationwide acceptance and has been viewed by many educators and businessmen as the direction that public education must take in the 1970s. Moreover, career education has been endorsed by the President of the United States and by the U.S. Chamber of Commerce.

There are many definitions of career education, but the most widely accepted, perhaps, is that of Kenneth B. Hoyt, as stated in Career Education: What It Is and How To Do It. To Hoyt, "career education is defined as the total effort of public education and the community aimed at helping all individuals to become familiar with the values of a work-oriented society, to integrate these values into their personal value systems, and to implement these values in their lives in such a way that work becomes possible, meaningful, and satisfying to each individual." Career education, then, should be a concept which permeates all public education from K-12 and beyond and which integrates learning experiences in all of the student's curriculum so that, as the student progresses through school, the skills, knowledge, and attitudes necessary for career success are stressed. This emphasis should be integrated into the curriculum for every student.

It is conceivable that this concept of career education could be the core of an educational program which can unify the curriculum from kindergarten through grade 12 or perhaps, through grade 16. During such a program, each student, from grades K-12 and beyond, would ascend a developmental career ladder consisting of four basic phases, referred to by the U.S. Office of Education (USOE) as those phases necessary for each student to progress through in the career-education process. These four basic or essential phases are commonly referred to as Career Awareness (grades K-6), Career Exploration (grades 7-9), Career Preparation (grades 10-12), and Career Preparation in Depth, or Career Specialization (grades 13-continued). These four phases are presented in Figure 1.

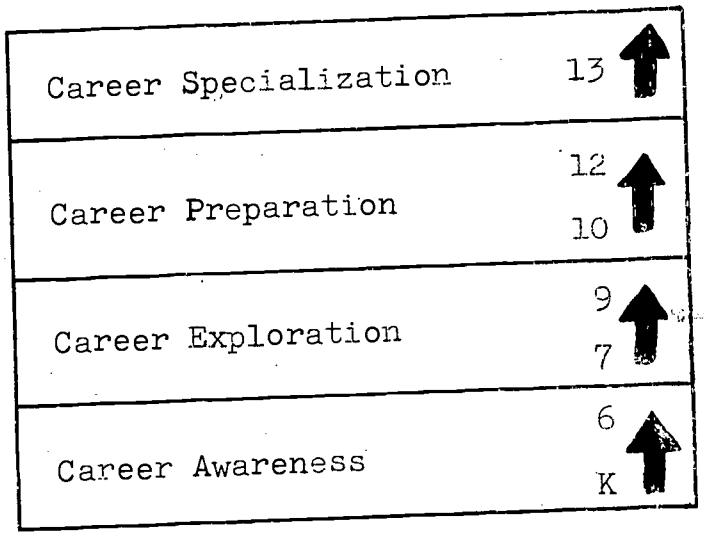

Figure 1. Developmental Career Ladder

The major objectives of the four phases are as follows:

1. The major objective of Career Awareness is to help all students become familiar with the values of a work-oriented society by developing an awareness of one's self in relation to the careers in the work world and by beginning a foundation in which students demonstrate a wholesome attitude toward the work world.

2. The second phase, Career Exploration, involves investigating or surveying the various careers available in a work-oriented society and their relationship to occupational clusters. Initially, the USOE identified 15 occupational clusters into which all career areas may be classified. These 15 clusters were designated as follows:

   Business and Office Occupations
   Marketing and Distribution Occupations
   Communications and Media Occupations
   Construction Occupations
   Transportation Occupations
   Agri-Business and Natural Resources Occupations
   Marine Service Occupations
   Public Services Occupations
   Environmental Control Occupations
   Health Occupations
   Hospitality and Recreation Occupations
   Personal Services Occupations
   Fine Arts and Humanities Occupations
   Consumer and Homemaking-Related Occupations
   Manufacturing Occupations

   Although these 15 clusters have been suggested as a means by which content information pertaining to related occupational areas might be structured, they represent only one such method. Dr. Marland has indicated that each school system should develop a career-education program that fits its own needs; therefore, individual school systems may identify clusters by different titles. In any event, it is anticipated that clustering areas of similar occupations will afford the student an opportunity to secure a broad base of information concerning a career choice. During the Career Exploration phase, the student is afforded the opportunity to make a tentative decision about which of the clusters he would like to pursue in depth during grades 10-12.

3. The third phase, Career Preparation, is essentially concerned with the acquisition of skills and knowledge in a chosen cluster in preparation for securing a job or preparing for continuing education. Basically, Career Preparation is education to become proficient in occupational entry-level either by entering into employment or by continuing education at the post-secondary level.

4. The fourth phase, Career Preparation in Depth, or Career Specialization, extends beyond grade 12 and continues through an individual's lifetime. It is a logical extension of Career Preparation, going into depth in a chosen area of occupational or career cluster.

These four phases in the developmental career ladder represent a logical continuum of learning experiences and are not discrete segments of education. This general model for curriculum development presents a global framework in which all curriculum content may be reorganized into occupational clusters that allow students to make wise career choices by providing them opportunities for levels of skills attainment and information acquisition appropriate to their interests and abilities.

The concept of career education will remain only a concept until it is made operational by state and local education agencies and individual communities. To make operational the career education concept requires the efforts of a consortium of individuals and agencies to articulate the concept, through a sound management plan, into usable curriculum materials - the "backbone" of the instructional and learning system.

The curriculum serves the purpose of a road map for teachers and students to chart the course from meager student interest and information concerning a vocation or cluster of occupations to achievement of the goal of employment in an occupation or career. The success of the instructional program is contained, to a greater extent, in the effectiveness of the curriculum. The proper implementation of the curriculum, then, is essential to its ultimate success.

To assure that all key variables or components are included in the curriculum development process, it has been found that a systematic approach formulated into a model or plan greatly enhances the quality of the final product. The following sections outline a model to be

utilized in developing curricular materials for Boone County's career education program for the Career Preparation phase of the developmental career ladder.

THE MODEL

Purpose

The following model provides a management scheme to be utilized in developing a curriculum for grades 10-12 in Boone County schools. In the initial needs-assessment study, only six clusters have been identified as high-priority clusters to be developed; however, the process model presented here will be equally applicable to other clusters that may be developed in the future.

The model presented is based upon previous research in career education, accountability models, USOE program development, RCA program development, and the systems approach to more effective instructional program development.

Rationale

The simple assertion has been made in educational theory that the function of the school is to develop or to change behaviors. In studying the productions of these behaviors and the educational programs intended to produce them, both behaviors and programs must be viewed in terms of their constituent variables.

The primary purpose of an instructional system is to make more precise the understanding of the relationship between educational environment (independent) variables and behavioral outcomes (dependent) variables, so that the independent variables can be manipulated to produce maximum values of the dependent variables.

Recent program development in career education has indicated that a systems approach to curriculum development is increasing in importance. This assures that key independent variables are present and are used to a maximum. The systems approach involves job and task analysis and further extends the development process by requiring performance objectives along with an educational strategy to meet these objectives.

Until recently, preemployment vocational curricular materials were prepared to train an individual for narrow occupational categories. The recent thrust in career education emphasizes a broad educational base. This emerging thrust emphasizes that the cluster concept, as presented earlier, is best for persons enrolled in preemployment training and/or educational programs.

Under this concept, high-school students and adults will be able to obtain a broad base of training which will help make them mobile and flexible in a job situation and will provide increased employment opportunities and an opportunity for them to grow. Present conditions indicate that preemployment and continued education curricula should be planned on this basis.

From previous research and exemplary programs, it has been found that flexible-modular developed curricular materials that allow for a continuous progress system are the most promising for a viable, relevant, and accountable program. A continuous progress system provides the flexibility for students to progress at their own rate and to move from one cluster to another should he desire to explore more than one cluster. It further provides for the incorporation of competencies that are necessary for job success to be written into each learning module for the curriculum.

The model or plan has been designed as a series of action steps that should be undertaken to guide one through the process of developing curriculum materials for a continuous progress system for each cluster within the total program. This process can best be organized through a systems approach to assure that all elements or variables are included.

The following model presents a series of steps that should be included in the developmental process.

Process Model for Curriculum Development

The model consists of 17 major steps or components. Each step is considered as interacting with the others, as shown by connecting arrows in Figure 2. Figure 2 presents these steps, separated logically and according to the temporal sequence in which they occur. Each step will be discussed as to how it relates to the other steps or components.

Formation of Career Advisory Council (Step 1)

Purpose. The first step within the model is to form a career advisory council for the primary purpose of providing guidance and support to the school system in planning, developing, updating, and revising curricula. The advisory council also acts as an interface between the industrial-business/community needs and the schools. Ideally, the council should provide for a group of individuals that are representative of all facets of community

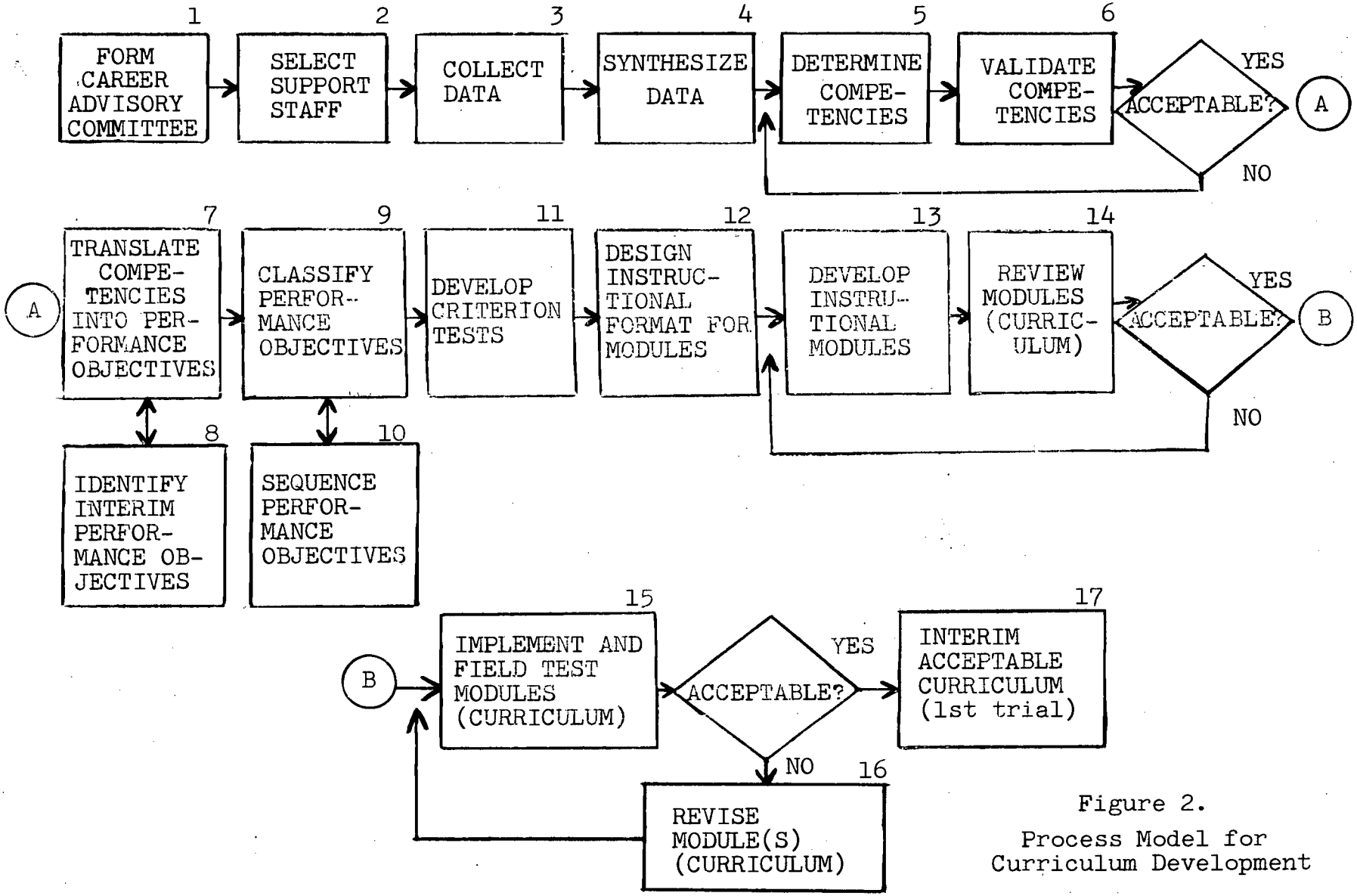

Figure 2.

Process Model for Curriculum Development

life. These individuals are to react to the total career-education effort, as well as to lend guidance to the development and implementation of the curriculum. Leaders within Boone County, the school system and RCA have established an advisory council to serve in guiding the total program effort for the development of the Boone County Center for Career Development.

Composition of council. The Boone County advisory council is presently composed of an executive committee and cluster advisory committee and one cluster advisory committee per career cluster.

The first of these two committees, the Boone County Executive Committee (BCEC), is presently composed of six members and a chairman. These six members and a chairman were selected and appointed by the Boone County Board of Education (BCBE). The Director of Vocational Education for the Boone County schools serves as an ex officio member of the BCEC. The primary duties of the BCEC are to address the major policy questions relevant to the development of the career development center. All policy recommendations of the BCEC will be communicated to the BCBE through the superintendent of schools for final disposition.

The second group of committees, the cluster advisory committees, has been established to give specific direction in planning and developing each identified priority cluster. At present there are six cluster advisory committees, each composed of from seven to ten members and each committee having a chairman that is one of the six members serving on the BCEC. These committees will serve in the following capacities:

1. Work closely with the school system and any subsequent contractor in the completion of a task analysis to determine career competencies required in each of the occupational clusters for the local and regional business/industry and professional community.

2. Work with the school system in establishing relevant equipment lists to meet curriculum demands.

3. Work closely with the chairman of each cluster in developing curricula that will satisfy the occupational requirements and needs of local business and industry and of advanced occupational/technical training programs.

4. Serve a supervisory function during the school year, determining how well the curricula designs are being implemented and recommending necessary changes.

5. Conduct, together with the BCEC and the school system, a comprehensive evaluation at the conclusion of the initial school year and recommend needed changes in curricula design and implementation.

6. Assist the coordinator of vocational education, the BCBE, and the school system in developing on-the-job training programs, summer employment programs, and a counseling program for postgraduate employment and advance occupational/technical training.

Other responsibilities may be assigned by the BCBE to deal with specific problems relevant to the development of the center. These tasks may deal with such matters as finance, communications and media relations, and transportation.

Appendix A presents a recommended organizational chart for employer and community coordination. It also provides names of the members of the individual cluster advisory committees. During the development of the curricular materials, the committee members listed in Appendix A will serve as part of the developmental team as outlined in Steps 6 and 14.

Selection of Support Staff (Step 2)

Purpose. The selection of support staff, the second component of the process model, provides for a consortium of individuals to be utilized in the curriculum-development process. This consortium should consist of curriculum specialists, content specialists, administrators, curriculum writers and editors, and counselors. The purpose of this team is to furnish the technical expertise for curriculum production.

Composition of support staff. During the developmental process, the team will be involved in performing the functions presented in Steps 3-5 and 7-13 and working with the cluster advisory committees in Step 6 and with review committees and instructors in Steps 14, 15, and 16.

The developmental or support staff may be comprised as follows:

(a) one or more curriculum specialists (behavioral objective specialists) per career cluster;

(b) two or more content specialists per cluster, depending on the number of specializations within the cluster;

(c) one principal or assistant superintendent for eac six career clusters;

(d) one or more curriculum writers and editors per career cluster; and

(e) one career planning and placement counselor for each set of three career clusters.

When a staff or group of curriculum development personnel are assembled, they must focus upon the following basic question: "What instructional outcomes should be specified for career education in each cluster curriculum at the secondary level to prepare students for employment upon graduation and/or to provide the basic skills and concepts necessary for continued education?" In this model, the position has been taken that program content for each cluster curriculum should be such that when a student exits a program, he must have the knowledge and skills essential for the full performance of those tasks that will be required of him on the job and the continuing development of expertise in the field. The most complex and relevant part of the curriculum development effort is for the developmental staff to identify the content necessary to satisfy these two demands. The identification process conducted is one of systematic analysis of career employment opportunities, postsecondary programs, and analysis of job positions. Some principal sources of data that may be used by the staff are listed in Step 3.

Collection of Data (Step 3)

Purpose. After the staff is identified and selected for curriculum development, its initial task is to review relevant data for each of the clusters for which curriculum is being developed. A thorough search of existing materials pertinent to a cluster program will greatly enhance the quality of the materials being developed. The following are sources of data that should be utilized, as a minimum, in program development.

Sources of data. Some principal sources of data that may be used to identify career employment opprotunities are as follows:

- Dictionary of Occupational Titles (DOT)
- Occupational Outlook Handbook and related references

- Professional journals
- The knowledge of content experts in the field (instructors, counsultants, and advisory committee members)

In addition to the sources above, program offerings which are representative of the nation, state, and local area should be searched to ascertain those skills and knowledge that other educators feel are necessary for success in each career cluster.

To obtain this desired information, the following sources are suggested for use in the identification process:

- Educational Research Information Center (ERIC)
- Postsecondary and exemplary program catalogues, bulletins, and syllabi describing each of the programs
- Personal communication with directors of postsecondary and exemplary programs
- Visits to selected schools
- Employment of experienced educators in the career area as members of the curriculum writing team

Synthesis of Data (Step 4)

Purpose. The next step in the process model for curriculum development is for the developmental staff to synthesize the information gathered during the previous step. The primary purpose is to analyze, then synthesize the vast amount of information obtained. The professional staff must very carefully utilize content and task analysis procedures to extract relevant competencies to incorporate into the cluster program.

Technical competence. The derivation of competencies is one of the most complex tasks and requires the expertise of a wide range of individuals as outlined in the section on the selection of support staff. RCA has found that a developmental team approach to curriculum construction has resulted in a product of much better quality.

Determination of Competencies (Step 5)

Purpose. This step outlines a method to be employed in deriving competencies. The competencies are the end results of data collection, analysis, and synthesis. The competencies represent the major skills, principles, attitudes, and concepts that should be included in the instructional programs. These competencies serve as the basis

for writing performance or behavioral objectives to be achieved in a cluster program. These competencies are the "real learning goals" for students to attain.

Suggested steps in deriving competencies. Analysis of the data derived from Step 3 may consist of a five-step sequence of content and/or task analysis. A task has been operationally defined as a set of related actions performed by an individual to complete an activity successfully in a work situation.

The first step begins with identifying the jobs available for employment. From these identified jobs, a list of tasks necessary for the performance of the jobs is compiled. Following the analysis of jobs, the programs (post-secondary and exemplary) are analyzed to identify the tasks necessary for program success. These tasks are compiled into a second list similar to the one compiled for jobs.

The third step consists of comparing the two lists and combining them into one comprehensive listing of common tasks. It has been found from previous experience that all tasks may be grouped into areas within a cluster.

The fourth step, which requires the expertise of highly skilled content specialists, consists of a careful analysis of the tasks to determine subsets composed of major skills, principles, and concepts. These subsets of the tasks are referred to as competencies. Each task consists of one or more of these competencies. These competencies are to be assembled into a listing and duplicates eliminated. The competencies should then be stated precisely for clarity.

Validation of Competencies (Step 6)

Purpose. The validation of competencies is one of the most important steps within the process model for curriculum development. This step provides the opportunity for each of the cluster advisory committees to review the content of each program. Further, it allows advisory personnel to validate the competencies for relevancy and, then after reviewing, make recommendations for adding, deleting, or modifying competencies. Within the model, as presented in Figure 2, a decision point is shown which designates that before preceding to translate the competencies into performance objectives, they should be validated by cluster advisory committees.

Validation criteria. The Boone County cluster advisory committees must serve as the final jury in determining whether or not the competencies represent the knowledge,

concepts, skills, and attitudes necessary for a student to learn in order that he be successful on the job and also in determining whether or not the competencies provide a broad instructional base for continued education. Deriving and validating competencies in this manner ensures the following:

- Relevance of the curriculum to the business and industrial community
- Relevance of the curriculum to each students's future needs
- Development of an interface between the school experience and the world of work
- Formation of a basis for articulation between the community and school
- Formation of a basis for derivation of relevant behavioral or performance objectives

After the competencies have been validated, the next task for the curriculum development team is to translate competencies into measurable performance objectives.

Translation of Competencies into Performance Objectives (Steps 7 and 8)

With the derivation of competencies, the next step is to write performance objectives. The writing of performance objectives constitutes a continuation of steps within the model. Within each module of the curriculum, there are two types of performance objectives: the terminal performance objectives and the interim or enabling performance objectives. The terminal performance objectives for each module of instruction are broad and more encompassing and are to be translated directly from the competencies. The interim or enabling performance objectives represent intervening or prerequisite behaviors leading to the terminal behavior.

Purpose. Deriving performance objectives is one of the most important elements in the program since it involves writing performance objectives based upon the already developed and validated competencies. As stated previously, competencies are broad statements of desired student outcomes. However, in contrast, performance objectives are precisely stated goals that students are to attain after completing an instructional sequence. Many classroom teachers have used objectives in their classes

for several years, although, in some cases, this may constitute a totally new concept in classroom management.

Definition of performance objective. The term "performance objective" may have several meanings to educators. However, in this career-education model, the following definition is used: For instructional purposes, a performance objective is defined as a communication device which states (1) a precise description of what behavior the learner (student) is expected to demonstrate after completing an instructional sequence, (2) under what conditions and/or limitations the learner will demonstrate the desired behavior, and (3) the standard for acceptable behavior to be demonstrated by the learner. Simply, it might be said that a performance objective provides a precise description of a testing situation.

Advantages of performance objectives. Developing performance objectives helps teachers and curriculum planners to identify desired student behaviors that will indicate the attainment of content - that is, concepts, knowledge, skills, and attitudes. It is anticipated that, through involvement in writing this type of performance objective, the support staff (curriculum specialists and others) will evaluate individually or collectively what they are trying to do through the instructional process. If other programs are good predictors, then a higher degree of relevance and effectiveness will occur as a result of using performance objectives. Using these objectives does not mean that teachers must abolish current teaching practices and start over again; rather, performance objectives add one very significant step to existing practices by helping teachers do a more effective job of planning and managing instruction. And, since performance objectives are stated in observable terms (i.e., they are measurable), evaluation or assessment is a built-in component of planning and managing.

Basic elements of the performance objective. In deriving performance objectives, the person writing (instructor, curriculum specialist, etc.) should ensure that each objective contains, at a minimum, the following elements before they are acceptable for the career-education program:

(a) States precisely what it is that a student will do or perform when demonstrating mastery of a task.

(b) States under what conditions the student will demonstrate mastery of a task.

(c) States to what extent or degree of quality the student will have to demonstrate his skill as proof of task mastery.

Components of the performance objective. In summary, written performance objectives are predetermined, precise statements of desired student behaviors that explain the testing situation. Each performance objective should consist of three parts, as defined below.

1. Performance Statement. The performance statement describes who will perform and what one will perform in a manner that can be observed or measured. The performance must be stated in precise verbs that are not vague and open to interpretation. Such verbs as "know" and "understand" are not acceptable in a performance statement, whereas they are acceptable for performance goals.

2. Conditions. Conditions describe the limitations and/or restrictions necessary to exclude acts that are not acceptable in performing the objective. The conditions normally describe where and what the student may use when demonstrating task mastery, usually indicating the reference materials and equipment permitted, the location of the task, and any other conditions that might affect the student's performance.

3. Criteria of Acceptance. The criteria of acceptance specify how well the student is expected to perform a task. Degree of excellence, maximum number of errors permitted, sequence of performance, and time are a few examples of criteria.

References for writing performance objectives. This model is not designed to teach the necessary skills of actually writing performance objectives; however, the following are suggested as references:

(a) Mager, Preparing instructional objectives

(b) Mager & Beach, Developing vocational instruction

(c) Kapfer (Ed.), Behavioral objectives in curriculum development

(d) Popham & Baker, Establishing instructional goals; and companion audiovisual materials

There are many other factors involved in a good career-education instructional program, but precise performance objectives derived from competency statements can markedly help most teachers enhance the quality of teaching and students to more effectively guide their energies in attaining the competencies.

Classification of Performance Objectives (Step 9)

Purpose. One last and important aspect of writing performance objectives is the classification of behavior for each objective. Without some means to classify behavior there is usually a tendency to develop low-level or trivial objectives requiring closely related skills of only one type - that is, either all thought or cognitive skills, all psychomotor or physical skills, or all attitudinal or affective skills. To nullify this tendency, a classification scheme should be utilized to categorize each objective. Although the competencies identify very broadly the skills, knowledge, concepts, and attitudes necessary to be attained by the student, there is a tendency, especially in the content areas, to focus primarily on the low-level cognitive or thought skills. A classification scheme also provides the mechanism for isolating and identifying those behaviors, interim or enabling objectives, that are necessary for terminal objective attainment.

Classification scheme. To ensure that performance ofjectives are comprehensive and properly sequenced for instructional and learning purposes, some analyzing and ordering technique is necessary. The first task (Steps 7 and 8) was to identify the behaviors (performance objectives) that would demonstrate the attainment of certain cpmpetencies. Gagne (1967) suggested that complex behaviors are invariably composed of simpler tasks and that attainment of these tasks is necessary before the more complex behavior can be demonstrated. His work has involved analyzing behaviors into a hierarchy proceeding from simple to complex.

To avoid developing performance objectives that do not have the necessary subtasks or prerequisites, it is suggested that the following hierachy be used to delineate separate levels for classifying tasks. These seven levels are listed below, in order of increasing complexity.

1. Response differentiation - When presented with a stimulus, definable within narrow physical limits, and no other stimulus, the learner responds with a copy of that stimulus and no other response. If

this first level of learning is in fact a prerequisite to the following levels, then most of the skills and knowledge basic to the lower level tasks are prerequisite to effective and functional performance at the higher and more sophisticated task levels.

2. Association - When presented with a stimulus, definable within narrow physical limits, and no other stimulus, the learner makes a response other than a copying response that identifies (names, codes, etc.) the stimulus, and no other response.

3. Multiple discrimination - When presented with two or more potentially confusable stimuli (physically defined), the learner makes a corresponding number of different responses that differentially identify these stimuli, and no other responses. An example might be that a student would underline a cube when instructed to do so, and not underline a sphere or a tetrahedron.

4. Behavior chains - When presented with a specific stimulus, the learner makes a series of two or more responses in a particular order, using no other order and no other responses. For example, a student could recite the Preamble to our Constitution when directed to do so.

5. Class concepts - When presented with stimuli that differ widely in their physical appearance, the learner makes a response that identifies them as instances of a class and distinguishes them from instances belonging to other classes. For example, the student could indicate that "$\frac{1}{2}$" is a common fraction whereas "8/5" is not.

6. Principles - When presented with a situation containing stimuli classifiable as concept no. 1 and instruction to produce concept no. 2, the learner performs the sequence no. 1 - no. 2. For example, the learner can apply a given rule (no. 1) correctly in a new situation (no. 2).

7. Problem-solving strategies - In discovering content principles applicable to a series of novel situations, the learner performs a mediating sequence a' - b' in which a' is a class of concepts to be attended to selectively and b' is a class of responses intermediate to those required for completing the action. For example, a student might be required to prove that an algebraic statement is true by using previous learned rules.

Action verbs which describe the major tasks of lower functions, such as identify, indicate, hold, locate, point to, pick up, repeat, etc., also correlate with the action verbs related to specific kinds of learning indicative of Level 1 learning as defined by Gagne (1965). On the other hand, action verbs which describe the major behaviors of high-level skills (analyze, contrive, diagnose, develop, etc.) are more likely to correlate with the action verbs related to the specific kinds of learning indicative of Levels 6 and 7. If the Level 1 learning is prerequisite to Level 2, and 2 to 3, etc., then most of the skills and knowledge basic to the lower level tasks are prerequisite to effective and functional performance at the higher and more sophisticated task levels.

Since these levels will probably cause teachers and/or occupational-technical personnel much difficulty in classifying performance objectives, the expertise of curriculum specialists will be required. However, this process does serve to make teachers conscious to the level to which they are developing instructional material and of the level to which they are teaching. Learning experiences concerning objectives and program development in general are built-in factors for staff development; that is, as materials are developed, the writing staff learns how the materials are developed and, therefore, how the materials can best be initially implemented. Teachers should not devote too much time in attempting to precisely classify each objective, as this should be a function of curriculum personnel working with the instructors during development.

Sequencing of Performance Objectives (Step 10)

Purpose. To be sufficient, the classification process must also aid the sequencing of performance objectives for instructional purposes. During this activity the question continually arises: "What should the student learn first?" From experience one knows course content can be structured and sequenced such that the student learns at an optimum rate. It is further known that all students do not learn in the same manner or at the same rate. Therefore, incorporating these two factors into curriculum development means that the preparation of instructional materials will be a more complex task.

Using Gagne's hierarchy will serve teachers and/or curriculum developers in initially sequencing objectives from a lower level to a higher level and in "guarding" against all objectives being written at very low levels of understanding or at levels too high for students to attain initially in a program.

In all clusters, content information (competencies) must be organized into some sequence based upon some theory of human learning for the dual purpose of teaching and learning. It is known that certain concepts are prerequisites to others, as in mathematics. Similarly, in science many principles are derived from the analysis and synthesis of simpler concepts. And, in history, most content is organized where chronology is thought to be basic to the field; thus, the resulting sequence is isomorphic with the order of historical events.

Within this model, the various steps have been suggested to ensure the inclusion of key variables, but it is the support staff (see Step 2) that will actually derive the performance objectives and sequence the resulting objectives into a hierarchy. To avoid oversimplifying the behavior-sequencing process, the staff should use the hierarchy presented in the previous step; this should also increase the effectiveness of the process.

Sequencing methods. Performance objectives may initially be written and sequenced as follows: (1) concrete to abstract, (2) simple to complex, (3) chronological, or (4) experientially familiar to experientially different. These four methods are to serve only as examples since they do not represent the totality of ways in which objectives may be sequenced for the learning process.

Probably one of the simpler approaches to the sequencing of performance objectives is for the support staff to view each specific objective in terms of the basic question "What does the learner need to be able to do before he can perform the task?" Since different support analysts might arrive at different orders, such an inspection should result in an instructional sequence that makes relatively few errors. Naturally, any necessary revision of the sequence of objectives will be an integral part of the implementation and revision steps of the model.

To sequence performance objectives and to analyze performance objectives into learning hierarchies may be the hardest job of all when one considers what career-education teaching is all about.

Construction and/or Development of Performance Measures (Step 11)

Purpose. Immediately following the development of each performance objective, a means to assess the performance specified in the objective should be developed.

By developing these measures for assessing performance at the same time that the performance objectives are written, ambiguities or gaps in the objectives are eliminated.

Determination of types of tests to administer. The standards of acceptability stated in the objective serve as the bases for writing assess instruments appropriate to each objective. There is no set method for determining the type of tests to be administered or the number of items to be written per performance objective. In some cases, paper and pencil tests are appropriate for measuring the performance; in other cases, checklists are adequate; and, in others, various combinations of testing techniques are preferable. The main concern is whether or not the measuring instrument adequately measures the performance indicated in the objective.

Types of measurement methods. The following eight measurement methods are generally applicable to performance objectives.

(a) paper and pencil tests

(b) oral tests

(c) observation

(d) checklists

(e) inventories

(f) inspection of products created or developed by students, such as models, movies, dresses, pictures, meals, charts, or graphs

(g) role-playing situations

(h) instructor-student conferences

Results of using measuring instruments. With the development of measuring instruments we are able:

(a) to determine to what extent the students are attaining stated competencies,

(b) to test assumptions upon which performance objectives have been developed, and

(c) to validate the supporting instructional activities and techniques.

Design of Instructional Format (Step 12)

Purpose. Designing the instructional format provides for the inclusion of key components in the instructional module. The format design serves as a guide for curriculum development personnel to follow in formally organizing instructional information for the learning environment. This format includes those elements considered most likely to be effective and efficient in promoting the attainment of the performance objectives and, subsequently, the derived competencies.

Once the objectives are sequenced (Step 10) and represent a continum of learning goals to attain, teaching strategies and learning methods can best be presented in individualized modular packages to allow for a flexible and continous progress learning system.

Components of a learning module. The performance objectives are the core of the learning module; however, there are other components that are essential to a good learning package. A module is operationally defined as a series of teaching-learning activities which guide the student toward the accomplishment of performance objectives.

In developing individualized learning packages, the following assumptions are made: (1) students learn at different rates and in varied ways, (2) students are capable of being self-directed with proper instructor guidance, (3) students can learn independently, and (4) students are capable of working together in small groups. Even though these assumptions are true for many students, the realistic approach must be assumed when preparing teacher-related materials. These materials must provide the instructor with alternate methods and techniques for dealing with those students who need special attention in their knowledge acquisition. Using these basic assupmtions, it is suggested that individualized learning modules be developed which consist of the following components. These components are:

- Student Learning Plan with performance objectives
- Teacher Implementation Plan
- Supportive Materials
- Test Items or Performance Test

Each module focuses on the attainment of the performance objectives which are to be presented in each Student Learning Plan (SLP). As stated previously, the performance objectives communicate to the instructor and student the behavior the student should demonstrate after completion of the learning activities, the conditions under which the behavior will be demonstrated, and the criteria of acceptance or performance standard for the demonstrated behavior.

Basic elements of teacher and student components. The following discussion presents, in outline form, those elements that are suggested to be included for the teacher and student component of the learning module.

Student Learning Plan

The Student Learning Plan presents a plan or scheme for the student to attain those competencies needed for job success or continued education. This plan should provide sufficient information such that the student is basically self-directed. The following elements are suggested for inclusion:

- Identification Code
- Competency
- Rationale
- Prerequisite Capability
- Instructions - Preassessment
- Terminal Performance Objective
- Interim Performance Objective
- Learning Activities
- References
- Supplies and Materials
- Postassessment
- Enrichment Activities

Each of the above elements for the Student Learning Plan will be discussed in more detail in Step 13.

Teacher Implementation Plan

The Teacher Implementation Plan (TIP), included in each module, provides the instructor with information on how to plan, implement, and evaluate the objectives in the Student Learning Plan. The following elements are suggested for inclusion in the TIP.

- Identification Code
- Rationale
- Recommended Prerequisites
- Assessment Procedures
- Supplies and Materials
- References
- Optional Activities

These elements of the TIP will be presented in more detail in Step 13. Appendix B presents an instructional format for each of the listed elements for the SLP and TIP.

Development of Learning Modules (Step 13)

Purpose. At this point, developmental work is begun on the actual writing of a learning module. The learning module will consist of those components presented in Step 12. This step is actually where the expertise and experience of the developmental team are combined into a total effort to produce learning modules. The learning modules, as previously defined, are designed for a period of learning longer than one class period, usually for a week or more. However, for some students, the objective acquisition time may be less, and, in other cases, the time required may be more. A well-designed learning package provides the instructor and student with predeveloped learning materials that assure a systematic approach to the learning process. Further, it frees the instructor(s) to serve in a management role within the learning environment.

Scope and content of the module. The following discussion presents in more detail the content of each element within the Student Learning Plan and the Teacher Implementation Plan, as well as a discussion of the Supportive Materials and Assessment Techniques.

Student Learning Plan

The Student Learning Plan is the most important component of the module. The material presented in the plan represents the culmination of many ideas and systematic steps to assure a quality product.

The SLP (Appendix B) begins with an identification code which states the course, module number, and objective number. This is a record-keeping device for student achievement and a cross-referencing system. The competency represents the heart of the module because the total curriculum is based upon a continum of knowledge, skills, and attitudes necessary for continued education and job success. The competency is a short statement, usually written in action terms. The rationale of the SLP states what the student is to accomplish, why he should be striving for this particular competency, and, generally, how he will reach or attain mastery of the behaviors listed in the performance objectives. The SLP continues with a listing of the prerequisite capability the student should have prior to entry in the module. Following this element, special instructions are presented for the student to follow. Within these instructions is an explanation of how the student is to undergo preassessment. The next elements are the terminal performance objective and the interim performance objectives. A definition of these objectives has been presented in Steps 7 and 8.

The learning activities include a wide range of activities, thus allowing for differences in learner characteristics. The learning activities should be structured to maximize student self-direction. The range of experience presented in the activities may make reference to assignment sheets, job sheets, books, charts, audiovisual materials, or hands-on experience with tools, materials, or equipment. The activities are written to take advantage of and utilize all available audiovisual materials, references, and equipment within each cluster.

The SLP also contains the references needed to accomplish each of the learning activities and to fulfill the requirements of the performance objectives. A listing of references is provided so that the student is guided toward using the multiple resources that are available in the classroom or resource center. Channeling students toward using multiple references builds the foundation for conducting independent research required of the student as he continues his education or performs on the job in his chosen career.

A listing of supplies and materials should be provided so the student may incorporate them into his learning activities. The learning activities direct a student to this list in order to obtain the specific equipment, supplies, or materials needed to accomplish a task.

The postassessment indicates to the student how he will be evaluated to ascertain objective attainment. This element usually directs the student to the teacher for directions on evaluation procedures. In some rare instances, a posttest may be attached to the SLP as an integral part of it, but, in most cases, the test will remain in the instructor's file. In addition, the SLP provides enrichment activities which are presented to stimulate the student's interest and direct him to more rewarding and challenging experiences. This section may provide the student with an opportunity to develop an independent project or group project.

Teacher Implementation Plan

The Teacher Implementation Plan is developed as an aid to implement the student learning portion of the module. The developmental team should prepare the Student Learning Plan first, then develop the TIP to provide the user (instructor) with information on how to plan, implement, and evaluate the derived competencies. Referring to Appendix B, the example format for the TIP, you will note that this plan includes some of the same elements as the SLP. These elements have the same designation; however, they are prepared for two different audiences - teacher and student. The identification code on the TIP is the same as that presented in the SLP; however, the rationale is written to the corresponding SLP. The recommended prerequisites outline those capabilities the student should possess prior to entry in the learning module.

The suggested instructional strategies direct the instructor toward those learning experiences for which preparation should be conducted. These strategies should inform the instructor or instructional team how to plan and implement the performance objectives. An instructor may not feel the need to use all the information suggested, and, during the first field test period, other activities may be developed and written into the suggested methods for implementation during following years. The SLP should provide a wide variety of learning experiences utilizing various media to compensate for differences in learner styles and characteristics. The TIP instructional strategies should complement these learning activities. The instructional strategies may refer to those procedures to

be used by the instructional staff to implement the performance objectives; however, the ultimate success of the implementation of the modules of instruction will be teacher competence. Establishing performance objectives allows for flexibility in the management of classroom learning activities, and the instructional staff and their individual expertise may be the deciding factor in determining which individual instructional techniques to employ.

In any event, student learning activities in the SLP should be written for various alternatives in instructional methodology. Several modalities exist which include the large group presentation-lecture; small group discussions; independent study; highly individualized materials, such as programmed materials for a step-by-step approach to learning, or modifications of each of the techniques.

Each of the performance objectives, in most cases, possibly can be implemented by a combination of classroom management techniques and learning methodologies. As each TIP and SLP is written for the module, the best efforts of the developmental team will have to be utilized in establishing initially the techniques to be employed. These initial techniques should not be considered permanent as, during the Implementation and Field Test phase, the precedures should be open to modification.

The assessment prodedures should explain to the instructional staff a method or methods to evaluate student progress toward objective attainment. These methods of assessment may be any of those presented in Step 11 or a combination of two or more. The two major categories of assessment are pretest and posttest. The pretest is used by the student to determine entry point into a curriculum, and the posttest is used by the student to determine if mastery of the objective has been reached after traversing a series of learning experiences in a module of learning.

The TIP also lists the supplies and materials necessary for implementing the performance objectives. A section on references indicates to the instructor which references are available and which ones are relevant to the performance objectives.

A section on optional activities identifies activities of two major categories: (1) those that are supplementary and should aid the student in strengthening or reinforcing a weak area, and (2) those that are enriching and should provide the student with challenging experiences which lead him to pursue an area of interest.

Supportive Material

The learning modules also contain a component referred to as supportive material. Some of the supportive material is for instructor use, and other material is for student use. Supportive materials for the student consist of sample assignment sheets, sample exercises, job sheets, and other designated materials referred to in the learning activities. The materials intended for instructor use only consist of sample evaluation exercises and evaluation instruments.

Assessment Techniques

The last component of the module is the instruments that are to be used to certify that a student has reached the objectives presented in the SLP. These instruments should have been developed in Step 11. The instruments may range from one or more test items to lengthy checklists. Usually the pre- and postassessment instruments will be retained by the instructional staff until a student is ready to be evaluated. In developing the assessment instruments the following information should be included as a minimum. The tests or evaluation exercises should provide the student with information regarding use of materials and equipment, references, work location, time allowed for completion, and special directions for taking the test. A second section should provide the instructor with a key and any special directions for administering the evaluation exercise.

Review of Modules (Step 14)

Purpose. After the modules of the curriculum are first drafted, it is necessary to review them to check the validity of various facets of the modules being developed by the team. This critique of the modules assures the best quality product possible during development and should result in condiderable savings in time and expense.

Review committees. The following outline describes four committees suggested for this purpose and the function of each.

1. Curriculum Development Review Team - This team should be comprised of various curriculum specialists (behavior technologists or specialists, specialists in reading levels, learning psychologists, media technologists, etc.). Obviously, one curriculum specialist may have expertise in more than one of the areas; consequently, it will not require one individual for each area

mentioned. The task will be to check all competency statements, performance objectives, classroom-management techniques, teaching/learning strategies, and learning activities for sequence and validity.

2. Instructional Content Team - Instructors from the clusters will form this team. Experts from the cluster possibly could be members of the advisory council or occupational instructors with recent work experience in the particular area. The task of this team will be to determine whether or not the content and learning activities of each unit adequately reflect the disciplines involved in objective attainment and to ascertain whether or not the activities are representative of the cluster involved. Should suggestions be made, these would be routed to the developing team for revision and/or discussion.

3. Minority Advisory Team - This team should be comprised of at least one member of a minority group. Their purpose will be to check the modules for positive and negative biases toward minority cultures. This team also is to make suggestions for improvement.

4. District Goals Team - The specific task of this team will be to check the competencies, performance objectives, and activities for relevancy to the goals and philosophy of the district.

The refinement of the modules should be more than a "token effort" on each team's part because career education is a function of the community and should not be left to the sole discretion of the school. Input from each team should be constructive and should result in a product far superior to one developed in isolation, by instructors alone.

After the unit is "signed off" by the review team, it should be prepared for implementation and field testing. This process is discussed next, in Step 15.

Implementation of Modules (Step 15)

Purpose. When technical and editorial requirements have been satisfied from the information received in Step 14, an empirical tryout of the system is required. All pertinent components of the modules must be engaged in a real classroom setting with all real constraints operating on the system. In Step 14, Review of Modules, the modules were evaluated by the various teams; however, only through

implementation will the real worth of the product present itself.

Promoting feedback. Close observation must be maintained during early tryouts to produce maximum feedback. Early in implementation the learners (students) are instructed to cooperate in this process by identifying any places (elements of the SLP) that are confusing, uninteresting, ambiguous, or too difficult. A formalized record should be kept of the students' comments, and the instructors should keep a record of their own difficulties with the module from the teaching or instructional point of view.

Pre-service and in-service programs. For those instructors implementing the system who were not involved in developing the modules, comprehensive pre-service and in-service programs should be conducted in the methodology of the materials developed. It is suggested that a pre-service program be conducted in which the following topics would be covered:

1. Orientation to career education
2. Performance objectives in teaching
3. Team teaching
    a. Basic communication skills
    b. Group interaction
    c. Leadership roles
    d. Leadership problems
4. Techniques of individualized instruction

To expand on the topics presented in the pre-service program, a comprehensive in-service program should be conducted throughout the year. This program should include the following topics:

1. Critique of learning modules
2. Development of additional modules in additional clusters should early program development not include all clusters

3. Student evaluation using performance objectives

4. Student reporting systems

These suggested topics are considered to be minimal; additional topics may be added as the need arises.

Importance of staff development. During implementation it is imperative that a comprehensive staff development program be initiated and conducted to assure maximum results. The Boone County school system has assured that a staff development program will be conducted. A more comprehensive staff development plan for Boone County is presented under separate cover.

Concurrent with module implementation is the application of assessment techniques for the objectives. The results must be analyzed to ascertain how well the system is accomplishing its objective, that is, are students attaining the performance objectives? The techniques used to assess the students may be any of those indicated in Step 11 or any combination of them. That list, however, is not all encompassing; other techniques are also available.

Process and product assessment. The two basic types of evaluation are the assessment of process and product. These are initiated after the module design has been structured and the modules have been put on trial. Restructuring of the modules is based on process information, which consists of evidence needed to determine the effectiveness of attaining performance objectives and other information about test administration. Although evidence that determines the extent to which objectives are attained is important, is often is not helpful in suggesting the kinds of revisions that might be made when objectives are not attained satisfactorily during the trial of the module. Other information, such as the length of time a learning activity requires and impressionistic information about the trial activities, can be useful in determining how the design may be restructured.

School curriculum and evaluation personnel will need to consider what information would cause them to change the module's original design and then plan a system of information-gathering that will obtain the needed information for evaluation. The use of process information, obtained during implementation and redesign, enables components of a larger program to be constructed.

The second type of assessment is product evaluation. Product evaluation should provide evidence of effectiveness in attaining short- and long-range performance objectives and competencies.

Utilizing both process and product assessment for the instructional system should reveal sources of information for the iterative cycle of revision.

Revision of Modules (Step 16)

Purpose. The primary purpose of this step is to analyze the data collected during the implementation phase. Prior to the actual revision process, the weaknesses and strengths should be identified and the decision must be made whether or not to actually revise the curriculum as a result of the first trial in the classroom. If the decision is made to revise the modules or at least part of the modules, then a systematic review of the interacting elements must be initiated.

Systematic review of interacting elements. During revision, precise analyses of the instructional system may not be possible. Generally speaking, many, if not all, of the instructional materials, the classroom-management routines, and the measuring techniques will be different. Analyses of this type will rely upon the empirical evidence of whether the desired or predetermined student outcomes were observed. That is, did the learner do what he was supposed to do successfully? Were the classroom-management strategies and learning activities adequate? Were the interfaces between various modes of instruction and teaching alternatives functional?

If observation shows faults in these various elements, the question "Why?" must be pursued actively. Often, just noting the fault will bring a new perspective to the instructor or curriculum specialist, resulting in a clearer view of the causal factor(s). In other circumstances, only a systematic exhaustion of alternative possiblitiies can bring the desired insights.

One of the major tasks to be accomplished during revision pertains to the assessment techniques. It may be found that during implementation the assessment instruments do not adequately measure the behaviors being taught or learned in the instructional system. Generally, an analysis must ascertain whether the instruments are indeed valid for the designed purpose. The following criteria are deemed essential for the measures being used. Each item or test should demonstrate:

- Representativeness
- Practicality
- Fidelity
- Accuracy
- Reliablilty
- Relevance, in terms of what it is supposed to measure

After the initial revisions to the components of the modules for each cluster curriculum, the next step is to consolidate and ready the materials for the second trial or field test.

Interim Acceptable Curriculum (Step 17)

Purpose. The final step within the curriculum development model is an interim acceptable curriculum. This step is the culmination of sequenced and orderly steps involving various combinations of personnel with their expertise. The development of curricular materials for a career-education program is quite complex and requires the active involvement of a large consortium of personnel as outlined in this process model.

Interim product. The task of curriculum development does not terminate with the interim version. This interim version must be recycled into the system after it has been modified or revised. The second field testing and revision should yield a much better product. The iterative cycling should be an on-going process to achieve the best program possible for the students, instructors, and the community.

SUMMARY OF THE MODEL

The process model for curriculum development in this paper has been designed to present an overview of the major steps involved. It is believed that such a structure will substantially enhance the Boone County school personnel's effort in developing curriculum for its career-education program for grades 10-12. It is further believed that, when properly implemented in the new Career Education Center, students can enter a cluster at any point and exit at any desired level or time. This will provide the student with the opportunity to sample more than a single cluster if he so desires.

The steps within the model are not detailed and obviously will require the experience and expertise of professionals to make it operational; however, it should serve as a systematic approach to developing curricular materials. The model is not a panacea but rather a guide to aid Boone County schools in developing their program in career education for the Career Preparation phase of the career developmental ladder.

APPENDIX A OF E

EXAMPLE FORMAT FOR STUDENT LEARNING PLAN AND TEACHER IMPLEMENTATION PLAN

Example Format

Module Number
Objective Number

STUDENT LEARNING PLAN

Course:

Module:

Competency:

Rationale:

Prerequisite Capability:

Performance Objectives:

Instructions - Preassessment:

Learning Activities:

References:

Supplies and Materials:

Postassessment:

Enrichment Activities:

Example Format

Module Number
Objective Number

TEACHER IMPLEMENTATION PLAN

Course:

Module:

Rationale:

Recommended Prerequisites:

Suggested Instructional Strategies:

Assessment Procedures:

Supplies and Materials:

References:

Optional Activities:

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APPENDIX F

STAFF DEVELOPMENT PLAN

FOR BOONE COUNTY CAREER CENTER

A STAFF DEVELOPMENT PLAN FOR THE BOONE COUNTY CAREER DEVELOPMENT CENTER

Prepared for

Boone County Board of Education
Madison, West Virginia

by

RCA Service Company, A Division of RCA
RCA Education Services
Camden, New Jersey 08101

May 10, 1973

PREFACE

This Staff Development Plan proposed for the Boone County Career Development Center is intended to be utilized as a supplement to the total staff development plan for Boone County schools. The plan presented here does not contain specific dates on which certain activities should be conducted but rather the content that should be provided and the sequence in which the activities should occur, the length of time suggested for their completion, and the affected target population.

RCA proposes that this staff development plan focus on career education awareness, the changing role of the community which the Career Development Center will serve, the changing role of administrators and instructors, and the developing, implementing, and evaluation of an individualized learning system in career education.

This plan should serve as a guide in preparing for specific staff development activities and should relate directly to those individuals who will be primarily responsible for the operation of the Career Development Center for Boone County.

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A STAFF DEVELOPMENT PLAN FOR THE BOONE COUNTY CAREER DEVELOPMENT CENTER

As a concept relating to the direction that public education should take, career education has been met with virtually instant acclaim. However, when the concept is examined and broken into its component parts, such as the various types of educational experiences, curricular materials, instruction, and counseling, a more realistic picture is brought into focus. That is, a new orientation in the area of materials and personnel must be accomplished. With the emphasis on accountability and flexible and broad-based learning systems, a positive approach must be initiated in order to change the present learning system or to develop new ones to fill the void that exists.

The Boone County school system is in the process of building and developing a Career Development Center as an integral part of career education to prepare students either for continued education or for entry-level job skills. This process requires that a comprehensive staff development program be initiated and implemented to assure that all personnel involved, from instructors to administrators and from instructors to business-industrial personnel in the community, understand their roles and how their roles are to be accomplished within the total career-education program. The following staff development plan, presented in two phases, should provide the needed structure for obtaining necessary knowledge and skills to develop, implement, and evaluate a program in career education for the career preparation phase of the career developmental ladder.

PHASES OF THE STAFF DEVELOPMENT PLAN

RCA Education Services proposes that a staff development program be conducted for the personnel of the Boone County Career Development Center. The program is to be accomplished in two basic phases. These two phases involve both pre-service and in-service training, and they focus on the curriculum and anticipated needs of the Center's management and instructional staff. RCA has found, through experience, that when a new approach such as career education is undertaken by a school system, instructors, counselors and guidance personnel benefit more from staff development if their roles and responsibilities are defined early in the development of the program.

Although the roles and responsibilities of the personnel are defined in Phase I, or pre-service training, their responsibilities continue throughout Phase II, in-service training. The entire staff development program must be a continuum of learning experiences which relate directly to the development, implementation, and evaluation of the Career Center.

Phase I

Phase I, the pre-service staff development plan, is designed for a two-week period that will serve a dual purpose. The pre-service staff development plan may be utilized prior to the actual development of curricular materials as described in A Process Model For Developing Career-Education Curricular Materials, Grades 10-12, which RCA has prepared for Boone County schools. Or, the plan may be made operational just prior to program implementation for those individuals who are not involved in the development of the curriculum.

RCA proposes that the content of the two-week staff development pre-service program consist of those topics presented in Phase I: Pre-Service Staff Development Plan for Boone County Career Development Center, as shown in Appendix A. It is suggested that the school management staff (administrators), guidance and placement personnel, the instructional staff, the developmental staff, and advisory council members participate in the first two days of activities which cover the following topics:

- Orientation to Career Education
- West Virginia Emerges as an Exemplary Model
- RCA Management Plan for Program Development
- The RCA Process Model for Curriculum Development

The remaining three days of the first week's activities involve the more technical aspects of curriculum development. The personnel who will be responsible for writing and/or implementing the career-education instructional system should participate in discussions of the following topics:

- Deriving Career Competencies
- Writing Performance Objectives for Accountability

- Developing Assessment Techniques
- Developing Teacher Implementation Plans and Student Learning Plans
- Utilizing A Team Approach To Develop and Validate Curriculum Materials

Both the instructional staff and career planning and placement personnel should participate in discussions of the topics listed above. It is felt that guidance and counseling personnel should be knowledgeable in the development of curriculum because of their changing role in career education. Knowing what content is present in the curriculum, how the curriculum is developed, and how it is to be implemented results in a more closely coordinated effort between instructors, counselors, and students.

The second week's activities of Phase I, or pre-service training, are concerned with the actual development. Prior to the actual writing of modules of instruction, the writing team, consisting of instructors, writers, and other support personnel as designated in the Boone County Model, will be formed. Actual modules of instruction will be developed in each cluster area of the Career Development Center. The entire week will be devoted to this task. The occupational instructors will serve as the content specialists throughout this segment of Phase I. As stated previously, Phase I may be implemented prior to program initiation for any instructors who will be involved in implementing the system who are not involved in developing the modules of instruction. This will assure that the instructors know the developmental techniques and will provide them with the necessary knowledge and skills for developing new materials during Phase II, or in-service staff development.

The pre-service plan shown in Appendix A not only presents a listing of topics but also provides an outline of sequenced events for each topic, methods of presentation, and materials to be distributed during the learning events. The topics are to be presented in modular form, from Module #1 through Module #11.

The two weeks of the pre-service staff development program terminate with a conference summary which should be scheduled for approximately two hours. During this summary all personnel who attended the first two days of activities should be present.

Phase II

Phase II, or in-service staff development training, has been designed to provide the management staff of the Career Development Center with the continued development of competencies needed to implement a comptency-based, individualized learning system. Although the in-service activities focus on the instructional process involving the teaching staff, many of the in-service sessions will require the participation of those persons in managerial positions within the Career Center. The student-centered instructional program that is to be implemented in the Center is based upon a philosophy of learning that may be new to many instructors, and a great deal of time will be required to orient the faculty to this concept. Therefore, an all-out effort must be initiated to provide a different orientation and to change teacher attitudes. The instructional staff must realize, through actual experience fused with professional guidance, that in order to implement a continuous progress learning system their roles will change. Most instructors are familiar with the role of a "dispenser" of knowledge, but few are familiar with the role of a "facilitator" of knowledge. The instructor must assume the role of interpreting new ideas and concepts to students and placing those ideas and concepts in their proper perspective so the students are given more responsibility for learning and making decisions.

In making the transition to such a learning system in the Center, curriculum specialists will be needed to conduct and provide guidance to the instructional staff. This guidance may be found within the Boone County school system, or it may be obtained from outside consultants.

Since the concept of individualized instruction is somewhat different from the traditional lecture-controlled mode of instruction, considerable time and emphasis must be devoted to curriculum implementation. This basic concept of individualized instruction places emphasis on student-centered activities in the classroom. Many well-meaning instructors will initially attempt to change their roles to facilitate this mode of learning, but as time progresses they have a tendency to revert back to the role they feel most comfortable in. Close supervision must be maintained for the first six months of the program. Also, the instructional staff must be provided many opportunities to meet and discuss common problems that occur in the classroom; therefore, RCA suggests that for the first year's operation a two-hour in-service block of time be allotted each week. This two-hour staff development time should be

scheduled as early each week as possible. It should not be scheduled for Friday afternoon.

The most effective in-service staff development programs are those in which the instructional process is the central theme. RCA suggests that the Boone County Career Development Center pursue an in-service program that will consist of three major components.

Components of Phase II

The first component would emcompass those activities that center on the philosophy of the developed curriculum and its implementation in the classroom. The second component, which is closely correlated to successful program implementation, is the development of human relations skills. Basically, human relations skills center around one basic premise: "Individual leadership is a role that involves interacting with other people rather than an assigned position of status." The concept of role flexibility is stressed so that instructors become prepared to interact with a variety of people that are found in the school setting and with those individuals who will be serving in advisory capacities to the Career Development Center. Developing human relations in the management and instructional staff should result in the following:

- Realize that each person (student and adult) is an individual, each with a unique set of personality characteristics
- Provide the opportunity for an individual to analyze his own behavior in a group setting
- Promote understanding of leadership roles
- Promote an understanding of an individual's behavior in relationship to the learning environment

As previously stated, this component correlates very highly with the individualized instructional program.

The third component of the in-service program deals primarily with systems maintenance functions. This maintenance process consists of those activities dealing directly with student reporting systems, student evaluation, curriculum revision, establishing and maintaining curricular materials files for student and instructor use, developing additional curricular materials, requisitioning supplies and services, student placement, and special problems.

These three basic components are suggested to be included in the total in-service staff development program for the Career Development Center. Each of these components, with suggested topics, is included in Appendix B. This plan for in-service topics also provides the target population that should attend the staff development sessions.

SUMMARY

The staff development plan has been presented in two phases: pre-service and in-service. It has been suggested by RCA that a two-week pre-service session be conducted that is designed as an orientation to career education and the model to be utilized by the Boone County Career Development Center in developing curricular materials. During this same two-week period the instructional staff selected for the Center will learn the techniques of developing curriculum. The major thrust of the second week's activities will be for the developmental team to produce, at least, an acceptable module of instruction in the various cluster areas.

These two weeks of pre-service training may be utilized to train the curriculum writing staff, or it may be used to orient and inform the instructional staff, not involved in the developmental process.

The second phase, in-service training, has been designed and presented as three components. These three components are as follows:

- Curriculum Development and Implementation
- Interpersonal Relations Skills Development
- Systems Maintenance Functions

Each of the components has been presented with suggested topics to be covered. As the school year progresses, many new and unanticipated problems will occur. This is normal and is to be expected. At the beginning of each in-service staff development session, the group in charge should allow time for discussion of these special problems.

A time period of two hours has been suggested to be set aside each week for in-service training. It is felt that all the designated personnel should attend the sessions. In establishing a new program in career education, it is imperative that staff development time be utilized to the fullest. There should never be an in-service session where the participants feel their time is being wasted. All staff development activities, as presented here, are those which can contribute to the development of an exemplary Career Development Center for Boone County.

APPENDIX A OF F

PRE-SERVICE STAFF DEVELOPMENT PLAN

Phase I

PRE-SERVICE STAFF DEVELOPMENT PLAN FOR BOONE COUNTY CAREER DEVELOPMENT CENTER
Madison, West Virginia

Conference Period	Topic	Sequenced Events	Methods of Presentation	Materials Distributed
First-Week Activities	I. Module #1 Orientation to Career Education	1. National Trends in Career Education	1. Verbal presentation with visuals; audio with slides	Module #1 (objectives, learning activities, glossary of terms, and other appropriate learning materials
		2. RCA Program Development Presentation	2. Slides with cassette tape	
		3. RCA Contribution to Career Education, From Concept to Classroom	3. Visual (chart) with verbal presentation	RCA brochure on Career Education Program Development
	II. Module #2 West Virginia Emerges as an Exemplary Model	1. Description of Boone County Module	1. Visual presentation (overhead transparencies) with verbal commentary	Module #2 (objectives, learning activities and summary of RCA needs assessment)
		2. Services Provided by RCA in Establishing the Model		
	III. Module #3 RCA Management Plan for Program Development	1. Exemplary Program Management Techniques	1. Verbal presentation with visuals (transparencies and slides)	Module #3 (objectives, learning activities, and other appropriate learning materials)
		2. Systems Approach to Instructional Process		

Conference Period	Topic	Sequenced Events	Methods of Presentation	Materials Distributed
		3. Individualized Learning System A. Description of Process B. Implementation of Process C. Assessment for Accountability		
		4. USOE Endorsement of RCA Program Development Technique		
	IV. Module #4 The RCA Process Model for Curriculum Development	1. Presentation of RCA Model 2. Identification of Each Component	1. Verbal presentation with visuals (transparencies and charts)	Module #4 (objectives and learning activities)
	V. Module #5 Deriving Career Competencies	1. How to Identify Competencies 2. How to Use Task and Content Analysis in Deriving Competencies	1. Audiovisual presentation 2. Group discussions (interaction of RCA group leaders and participants)	Module #5 (objectives, learning activities, and task-content listing sheets)

Conference Period	Topic	Sequenced Events	Methods of Presentation	Materials Distributed
	VI. Module #6 Writing Performance Objectives for Accountability	1. Behavioral Objective Defined 2. Components of a Behavioral Objective 3. Writing an Objective 4. Classifying an Objective	1. Programmed Instruction 2. Small groups (interaction of RCA group leaders and participants)	Module #6 (objectives, learning activities and programmed materials with worksheets)
	VII. Module #7 Developing Assessment Techniques	1. Methods and Instruments Used 2. Pre- and Post-Assessment	1. Programmed materials 2. Small groups (interaction of RCA group leaders and participants)	Module #7 (objectives, learning activities, programmed materials, and worksheets)
	VIII. Module #8 Developing Teacher Implementation Plans and Student Learning Plans	1. Defining a Module of Instruction 2. Components of a Student Learning Plan 3. Components of a Teacher Implementation Plan	1. Large group presentation (audiovisual, discussion) 2. Small group discussion (interaction of RCA group leaders and participants during materials preparation)	Module #8 (objectives, learning activities, and worksheets)

Conference Period	Topic	Sequenced Events	Methods of Presentation	Materials Distributed
		4. Participant Preparation of Student and Teacher Plan		
	IX. Module #9 Utilizing a Team Approach To Develop and Validate Curriculum Materials	1. Program Development Team 2. Curricular Materials Preparation 3. Duties and Responsibilities of Each Team Member	1. Large group presentation (audiovisual, discussion) 2. Small group discussion (The small groups will be formed into writing teams in preparation for second-week activities of education curriculum materials	Module #9 (objectives, learning activities, and worksheets
Second-Week Activities	X. Module #10 Developing Curriculum Materials Using West Virginia's Accepted Model	1. Preparation of a module of instruction under the direction of the RCA staff 2. Preparation of modules of instruction in which each participant selects his own area in which to write and/or develop 3. Post-Assessment	1. Small group discussion (interaction of RCA group leaders with participants as module of instruction is being prepared. Critique of module will be conducted after preparation). 2. Small group discussion (Within each group, a writing team will be formed, each member playing a specific role, in which a module(s) of instruction will be developed suitable for classroom	Module #10 (objectives, learning activities, and worksheets)

Conference Period	Topic	Sequenced Events	Methods of Presentation	Materials Distributed
			use. RCA staff will serve as resource personnel.)	
	XI. Model #11 Conference Summary	1. Key Points of Conference 2. Conference Activities Applied to Participants in School System	1. Large group presentation with visuals (charts and transparencies)	Module #11 (objectives and learning activities)

APPENDIX B OF F

IN-SERVICE STAFF DEVELOPMENT PLAN

Phase II

IN-SERVICE STAFFF DEVELOPMENT PLAN FOR BOONE COUNTY CAREER DEVELOPMENT CENTER
Madison, West Virginia

Suggested Time Period	Components	Topic	Target Population
First two months	Curriculum Development and Implementation	1. Philosophy of Continuous Progress Curriculum in Career Education	Instructors, counselors, and coordinator(s)
		2. Specific Curriculum Design and Its Elements	
		3. Grading Procedures	
		4. Establishing and Setting Up Student Open-Access Files	
		5. Implementation of Each Learning Module in the Classroom	
		6. Student Evaluation Using Performance Objectives	
		7. Instructor-Counselor Instructional Team	
Third month	Development of Interpersonal Relations Skills	1. Communication. This includes activities examining the process of communication and the art of listening.	*Total management staff for Career Development Center

*Note: There should be total participation of all personnel.

Suggested Time Period	Component	Topic	Target Population
		2. Feedback. The focus here is geared to building a feedback model among teachers, counselors, and students so that one can look at how he sees himself coming across to others as compared to how they see him. A continuing feedback model enables people to modify their behavior to be more in tune with their intentions. Feedback norms also create a climate of openness and objectivity about one's behavior.	
		3. Styles of Influence. During the course of this component, one's interpersonal style emerges. Other participants begin to identify each other's style of influence. At a point late in the component, this information is fed back to each participant by his fellow group members. Thus, he compares how he sees his style and how others perceive it. Styles of influence will be translated into teaching styles.	
		4. Helping Relations. Different styles of helping are examined for their effect in creating a receptive attitude on the part of the	

Suggested Time Period	Component	Topic	Target Population

recipient. While one may have something very important to offer another person, his style of helping or influence may create resistance rather than openness to his help. As a consequence of these activities, the instructor can provide a learning model for the students in which he instills in them the freedom to make mistakes and the attitude that mistakes are an opportunity for learning rather than punishment. In providing this model, he needs to have the courage to be imperfect himself and to own up to his own mistakes and shortcomings.

5. Group Effectiveness. The participants study group process in terms of decision-making, task and maintenance functions, and effective group behavior. These activities are geared toward building cohesive work teams. Most teachers are primarily concerned about task functions (i.e., content material of the course) and may have little awareness of the importance of the maintenance functions in creating an open learning climate

Suggested Time Period	Component	Topic	Target Population
		4. Student Placement	
		5. School-Business Personnel Exchange	
		6. Maintenance of Instructor and Student Files and Records	
		7. Employment Opportunities	
		8. Special Problems	

*Note: Representatives of business and industry should be involved with Topic 2, 4, 5, and 7.

APPENDIX G

CAREER PLANNING AND PLACEMENT COUNSELING PLAN

A PLAN FOR CAREER PLANNING AND PLACEMENT

FOR THE BOONE COUNTY

CAREER DEVELOPMENT CENTER

Prepared for

Boone County Board of Education
Madison, West Virginia

by

RCA Service Company, A Division of RCA
RCA Education Services
Camden, New Jersey 08101

June 22, 1973

PREFACE

This plan reflects in part the outcome of a workshop attended by personnel from the Boone County school district and representatives of RCA. The workshop was held early in June 1973 in Madison, West Virginia, with the following school personnel participating:

Sherry Hill, Director of Vocational Education, Board of Education

Harold Holstein, Evaluation Specialist, Board of Education

Lillian Church, Counselor, Scott High School

Readith Doss, Counselor, Scott High School

Violet Farmer, Counselor, Sherman High School

Lowell R. Shaw, Counselor, Van High School

Margaret Vickers, Counselor, Sherman High School

RCA's presentation was designed to focus the group's attention upon the procedures and methods which might be employed in developing a program of career planning and placement for the proposed Career Development Center in Boone County. The five areas considered in the presentation and subsequent discussion were:

1. The Initial Role of the Counselor in Career Education
2. The Recruitment of Students
3. The Guidance of Students into Career Clusters
4. The Relationship of the Career Development Center to the World of Work
5. The Placement of Students

Using the experience of RCA and the input of the Boone County personnel, the following plan has been developed.

TABLE OF CONTENTS

A PLAN FOR CAREER PLANNING AND PLACEMENT FOR THE BOONE COUNTY CAREER DEVELOPMENT CENTER

The Initial Role of the Counselor in Career Education

In the development and implementation of career education at the secondary school level, career guidance and placement are an integral part of the total program. Guidance and placement should not be thought of as marginal or optional if career education is to be realized fully. In Career Education: What It Is and How To Do It, Hoyt stated this idea in these words: "The school counselor will become a person of pivotal importance in the career development component of career education."

Such a view of career guidance and placement is incorporated in A Staff Development Plan for the Boone County Career Development Center, submitted by RCA on May 10, 1973. In this plan, the career guidance and placement personnel are involved in the initial phases of the total career-education program long before there is contact with students. Their input and responsibilities begin with the development and formation of the curricular materials. This is necessary because "It is felt that guidance and counseling personnel should be knowledgeable in the development of curriculum because of their changing role in career education. Knowing what content is present in the curriculum, how the curriculum is developed, and how it is to be implemented results in a more closely coordinated effort between instructors, counselors, and students."

On this basis, it becomes mandatory for the guidance and placement personnel to develop a clear and solid understanding of career education. To accomplish this goal, RCA recommends that each counselor formulate a plan of individual research. This plan should include, at least, a careful study of the following:

1. RCA Service Company, A Process Model for Developing Career Education Curricular Materials, May 3, 1973.
2. RCA Service Company, A Staff Development Plan for the Boone County Career Development Center, May 10, 1973.
3. Hoyt, Kenneth B., et al. Career Education: What It Is and How To Do It. Salt Lake City, Utah: Olympus Publishing Company, 1972.

4. Ohio State University, A Comprehensive Career Education Model.

5. Osipow, Samuel H. Theories of Career Development. New York: Appleton-Century Crofts, 1968.

6. Northwest Educational Laboratory, essays on career education (published under contract with the U. S. Office of Education); available through the U. S. Government Printing Office.

7. U. S. Office of Education, information on career guidance and placement as related to its six special projects.

Additional acclimatization to career education should, of course, be provided by the pre-service phase of the Staff Development Plan.

While striving toward an understanding of career education, the counselor should also be working with the various advisory committees which have already been formed. This means that the number of counselors needed to fulfill the responsibilities of career guidance and placement for the new Center must be determined and the individuals selected. Three counselors are recommemded for the initial phases if the guidelines of this plan are to be met. For the counselor to execute this role in career education effectively, the counselor-student ratio must be kept low as compared with the ratio presently existing in many schools. Eventually, two counselors may be sufficient.

Once the number of counselors is determined, each counselor should be assigned to work with two advisory committees. This will link the counselors into a definite role with the business-industrial community, which is a significant part of the total concept of career education. As the counselor begins to appreciate and become cognizant of the needs and emphasis of the business-industrial community, he will be obtaining valuable information, gaining experiences, and establishing relationships which will contribute substantially toward the fulfillment of his responsibilities as outlined in the Staff Development Plan and in this present paper and which will arise in the future when the Career Development Center is made operational.

The counselor's interaction with the advisory committees will be helpful in regard to his duties involving curriculum development. It has been suggested in the

Staff Development Plan that the counselor participate in the review of the career competencies which are to be part of the curricular materials for each cluster. Also, the counselor should assist in the development of the curricular materials which relate to on-the-job training and occupational preparedness. To accomplish this the counselor must understand the needs and requirements of the business-industrial community. His work with the advisory committee members should provide such information.

Through his experiences of personnel study, preservice training, and working with the designated advisory committees, the counselor should now be able to accomplish a second important and critical phase of his work, the recruitment of students.

The Recruitment of Students

Since both career education as a concept and its implementation in Boone County through the proposed Career Development Center are new, the first task in the recruitment of students is to convey fully to the student, his parents, other schools, and the community what career education is and what it means for everyone. This is an important task because, like any other new development, there may be a degree of misconception and skepticism surrounding career education. This could lead to the acceptance or rejection of career education by students and other persons from an inadequate and prejudicial base. So, telling the story of career education clearly is of fundamental significance in the recruitment of students.

In order to reach this objective a number of methods and procedures must be employed. Below are listed several possibilities. They do not all lend themselves to every situation, and the counselors, as well as anyone else involved in recruiting, should determine which ones are appropriate and where they are best suited.

1. News releases - these releases should not be about only the everyday education-related news items such as ground-breaking ceremonies, Board of Education decisions, and similar activities, but of the meaning of career education for all students and the community, the involvement of the advisory committees in the development of career education trends in future employment patterns, how a career-oriented school will help prepare a student to fill these jobs, and other events which illuminate this new trend in education.

2. Audiovisual presentation - This presentation should be general in nature and should be of excellent quality. This particular medium should be used to relate the meaning of career education for the student and the community, why it is needed, how it will help meet the needs of all students and the community, the role of the Career Development Center in meeting these needs, and how the Center relates to the rest of the educational system.

3. Printed materials:

   a. General brochure - A general brochure of high quality should be prepared to convey much the same information contained in the audiovisual presentation. This brochure should be distributed widely.

   b. Individual brochures - These brochures should be prepared in an attractive format for each cluster in the Center and should be aimed at informing the student of the courses in the particular cluster, the main aptitudes and interests required to function effectively in the cluster, the goals of the cluster, the career opportunities available for a student completing studies in the cluster, and other pertinent information.

   c. Career guidance handbook - Such a handbook should be developed for use by those school personnel in other schools who will be involved in guiding students in their choice of career clusters. It should state the general policies of the Center as they relate to prospective students, i.e., entrance requirements (if any), the effect of a student's attending the Center on his participation in activities such as athletics, clubs, or the band at his home school, how the student will be transported, and similar topics. Also, the brochure should contain a sample application for enrollment in the Center, a description of each course, the requirements or prerequisites for entering a course (if any), and any other material which will assist generally in the guidance of students interested in the Center.

Note: Some examples of the suggested printed materials were made available at the meeting mentioned in the Preface, and other materials are available from RCA upon request. Advisory committees should be consulted in the preparation of printed materials because of the expertise they can bring to a career area.

4. Group meetings - The purpose of these meetings is to disseminate helpful information to prospective students and all the persons involved in assisting the student with the decision to enroll in the Center. These meetings can be held in several ways.

   a. School visits - The counselors could arrange a visit to a school and would make a general audiovisual presentation to the entire student body. After the presentation, each interested student should be given time to ask questions. This could be done either on an individual basis or in small groups, depending on the number of students. Several days before the visit to a school, printed materials should be made available to them.

   b. Parent meetings - These meetings might be held in conjunction with the PTA meetings. It is important that parents understand the concept of career education and what it means for their sons and daughters. Again, the materials listed above should be used; however, a very important aspect of these meetings is personal contact with the parents.

   c. Career Days and Open House - This type of event can be very useful in involving a number of persons who can be very helpful in providing students with valuable information for career guidance. Employers, advisory committee members, persons in professional fields, and employees could be used as resource persons for such days. An Open House should be scheduled at the Center as soon as the building is available.

Note: Advisory committee members should be encouraged to participate in all group meetings because of the expertise they can bring to the understanding of a career area. During the recruiting of students a career interest form should be provided to aid in ascertaining the career areas which have the most student interest.

When the procedures and materials outlined above, along with other carefully chosen techniques, are conscientiously and prudently employed, students will respond, and the process of guiding students into the various career areas is ready to commence.

The Guidance of Students Into Career Clusters

Several factors must be considered in providing counseling which will assist the student in choosing a career

area. The initial step would be to develop a method for interviewing all students who indicate an interest in attending the Center. The decision should be made as to whether individual interviews or a small group approach will be used; or, a combination of these techniques may be utilized. Since the task of interviewing a large number of students may need to be accomplished in a short period of time, consideration should be given to using counselors from other schools as well as advisory committee members. Of course, this will require some orientation for those who are being brought in for the interviewing phase.

The interviewing session should help to establish the career interest of the student, how the cluster selected by the student relates to his career plans, what prerequisite skills and aptitudes (if any) are needed to enter a cluster, and what postsecondary educational plans the student may have. The session should allow time to answer any questions the student may have concerning the Center.

After all interested students have been interviewed, the next step is the screening of these students to determine how many and which students are going to be admitted to the Center and to each particular cluster.

If an open-door policy exists, the screening task is minimal. However, if there are more students than there are vacancies or if students apply who may not be able to function in the Center, the screening process becomes even more important.

RCA recommends that the Board of Education formulate a policy concerning admission to the Center and that the Board appoint a Screening Committee. The persons selected for this committee should include an Assistant Superintendent of Schools, the Director of Vocational Education, the principal or manager of the Career Development Center, the Center counselors, and several advisory committee members.

The Screening Committee may want to consider whether aptitude and interest tests should be used in the process of interviewing and selecting students. It is suggested that every student take the Armed Services Vocational Aptitude Battery which can be arranged through the local Army Recruiting Office at no cost to the school district. Other areas, such as grade average, IQ score, other test scores, class attendance, and classroom behavior, may be considered in screening students. Any criteria suggested by the Screening Committee should be implemented only after careful consideration and approval by the Board of Education.

The final step in the guidance of students into the career clusters is to contact each student concerning whether or not he has been accepted and then to develop a procedure for orienting the accepted student to the Center and his cluster area in particular. This should be accomplished before the beginning of the school year in order to provide the most favorable orientation of the student to the new school and this new concept of education.

With the completion of the selection and orientation of students the counselor's attention should be directed to what can be one of the most interesting, challenging, and rewarding aspects of his work: bridging the gap between the school and the world of work.

The Relationship of the Career Development Center to the World of Work

Relating the school to the world of work is one of the primary aims of career education. Reaching this goal is the responsibility of a number of people. However, the counselor is a key person who is essential to the achievement of such an objective. For this to occur the counselor must know well the career clusters assigned to him and the businesses and industries related to those clusters. To gain this knowledge the counselor cannot afford to stay in the counseling office; he must be out where the action is taking place.

RCA recommends that the counselor spend as much time as possible in each assigned cluster area so that he has personal knowledge of each student and the instructors who work with the student. Since the curricula for the Center will emphasize individualized, self-paced learning, the counselor should have ample opportunity to observe the student's work, how well he functions, and to learn his interests and problems. In this manner career guidance naturally becomes part of the student's career education. Also, the counselor should be familiar with the curricular materials of each course in his assigned career clusters. This knowledge will be very significant in relating the school to the business-industrial community and assisting in the placement of students at a later stage.

It is also recommended that the counselor invest some of his time in visiting the businesses and industries employing persons with the type of skills being taught in his assigned career clusters. This process can begin with visits to the business establishments of the various advisory committee members. The advisory committee members

could then arrange visits to other places of business. This will provide the counselor with firsthand knowledge of business practices and what abilities the employer expects from the persons he employs. Also, this will give the counselor the opportunity to share what public education is doing to prepare students with the skills the employer is seeking.

In addition to gathering the information mentioned above, the counselor should be continually gathering information on labor trends and statistics. There are a number of places this information can be found. The Federal Government is a key source. The current Occupational Outlook Handbook and the Dictionary of Occupational Titles both should be studied in the areas relating to the career clusters assigned to the counselor. This information is critical if the student is to receive up-to-date, relevant career guidance.

To further bridge the gap between industry and the school, the counselor should work with the instructor in planning and arranging appropriate field trips. These ventures can be very helpful learning experiences if the counselor and instructor orient the students before the trip as to its objective and plan a way of assessing what the student gained from the trip. By such planning, the counselor is providing important, pertinent career guidance for the student.

Another important and time-tested method for helping the student relate to the world of work is to actually put him in that world through on-the-job training. This cannot occur for every student, but, whenever feasible, the counselor and the instructor should cooperate in providing this experience for the student. The student's progress on the job should be checked periodically by the counselor by visiting the student at his place of employment.

In those areas where on-the-job training cannot be given because of age, safety, or another valid regulation, consideration should be given to creating a simulated work situation so that the student's education closely approximates the type of work he will be doing.

If a good rapport is established between the school and the world of work, the final segment of this plan, namely, placement, should not be too difficult.

The Placement of Students

In the final analysis the placement of students is the critical issue in career education. Unless the student can actually be employed and function effectively in his chosen career, the game is lost. This is where career education is demonstrated to be or not to be worthwhile.

With this in mind, several questions concerning placement must be answered. The first question is, who will be responsible for placement? For several reasons, RCA suggests strongly that the counselors handle this responsibility. The primary reason is that the counselor knows the the student, his ability, career interest, scholastic record, and other pertinent data. Also, the counselor already will have made contacts with a number of businesses employing persons from his assigned career clusters and should be able to utilize such contacts in the placement of students.

The second question to be considered is, what methods should be used to assist in the placement of students? Several techniques may be employed, among which are student profiles, occupational preparedness sessions, and employer's days.

1. Student profiles - This file would be begun when the student first enters a career cluster and would contain a record of the skills (career competencies) he has developed, his grades and grade average, his attitude toward work, his attendance, his relationship with other students and the instructors, and his outside work experience. This type of information provides a definite systematic method for the school to know the product it is marketing.

2. Occupational preparedness sessions - These sessions should be based on curricular materials included for each cluster. The counselor, under the RCA Staff Development Plan, would have participated in the development of materials. Using these curricular materials, the counselor, working with the instructor, would assist each student in developing a resume, in learning how to complete employment applications, and in learning how to best present oneself in an employment interview.

3. Employer's Days - This type of event is geared toward making the area business firms aware of which marketable skills the students possess and toward providing an opportunity for employers to meet the student. It offers the student an excellent opportunity to develop

a knowledge of employment opportunities in his career area and to meet prospective employers. In planning Employer's Days, the advisory committee members should be consulted and involved.

Another question which needs to be considered is, what is placement? By what criteria can a student be regarded as having been placed in the appropriate employment situation? It would seem that career education is most valid only when the student enters the job market in an area related to the skills he has developed during his career-preparation phase or when he enters a postsecondary educational program which will build upon the knowledge and skills he acquired at the Center. However, this statement should not be interpreted too narrowly since one of the goals of career education is career flexibility. Exactly what will constitute placement for the student graduating from the Boone County Career Development Center should be defined by local school personnel. This enables a basis to be established for determining whether or not the Center is meeting its goals.

The final inquiry which requires a response is, when does placement end? Some may believe that when the student is initially placed in an employment situation or when he enrolls in another educational institution, placement has occurred and the counselor's responsibility is ended. However, RCA recommends that a follow-up program be developed which will accomplish two objectives and that the length of time for the follow-up program be determined by these objectives. The first goal is to provide the graduating student with a person he can counsel with when he is experiencing difficulty with his job or considering further career development. If the Center has an effective follow-up program, such a student can turn to a counselor he knows and who knows him.

The second goal of a follow-up is to obtain information which will be very important in evaluating the effectiveness of the career-education program in Boone County. Knowing what the student is doing and how his career goals are being realized will provide a definite answer to the question "Is this school providing a viable program of career education for the students of Boone County?" Also, the information gathered through a follow-up program will assist significantly in answering the inquiry "What can be done to improve our educational endeavor?" In continually answering that question, public education can best fulfill its responsibility of assisting persons to relate meaningfully to life.