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AUTHOR Campbell, Merrill G.
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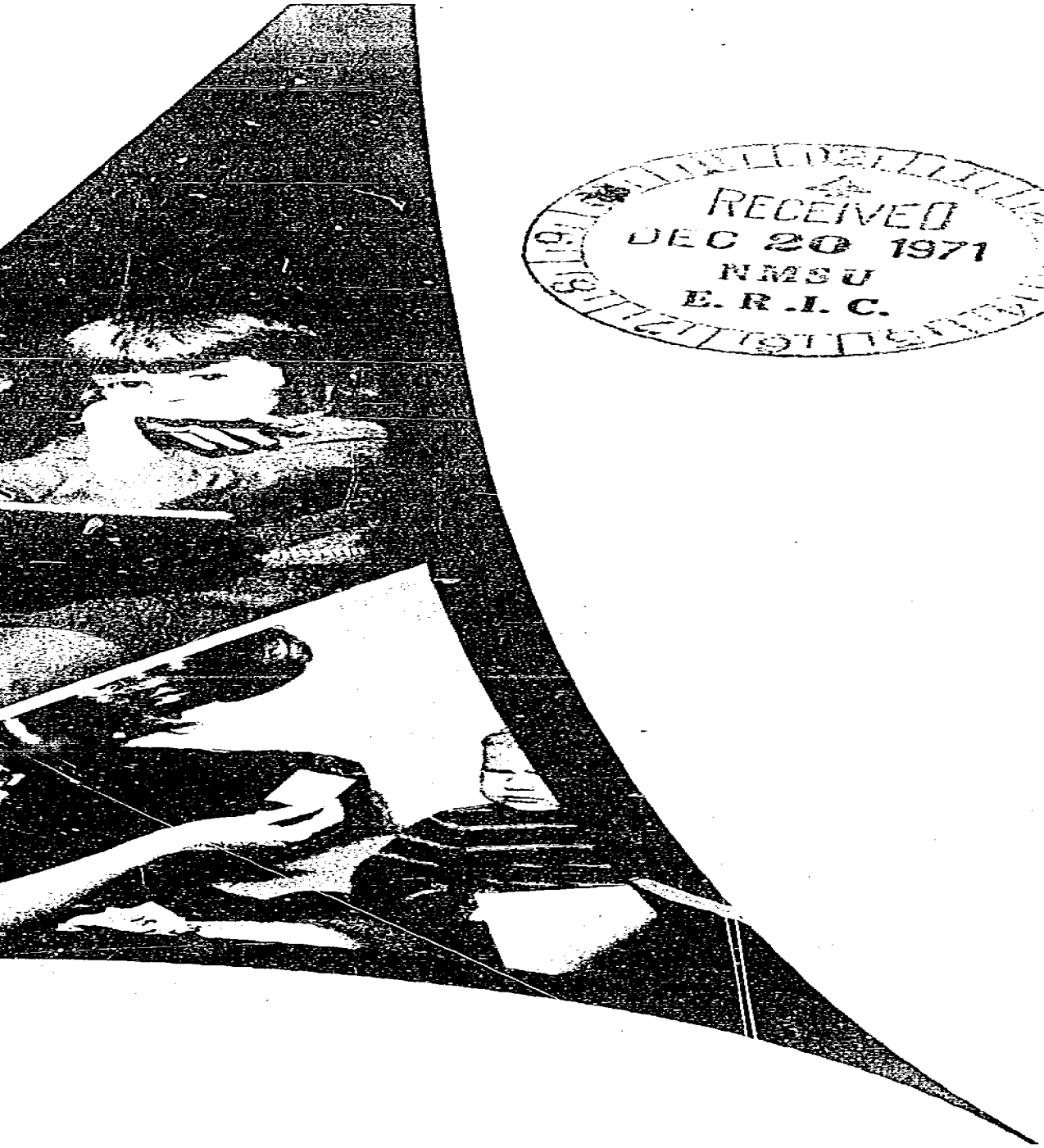
ABSTRACT

In 1971, the Appalachia Educational Laboratory initiated a comprehensive Needs and Feasibility Study designed to present an overview of the educational needs of Appalachia and to pinpoint critical problems the region's educators will face in 1976. The study consisted of 5 independent components: a review of pertinent literature, analysis of data collected in a 1967 AEL survey of Appalachian superintendents, a 1971 survey of teachers and administrators, a 1971 survey of a panel of Appalachian experts, and use of a convergence technique at a meeting of approximately 200 decision-makers in Appalachia. Main objectives were to determine systematically what educational products should be developed by the AEL and to provide the potential users of these products an opportunity to participate in their identification. Experts anticipated that, during the next 5 years, changes in attitudes within and about Appalachia, increased educational leadership, and curriculum changes would be needed. Critical needs in the area of product development were innovations relating to new patterns of educational organization and new means of focusing on vocational or career education in Appalachia. The greatest pupil need in the cognitive-psychomotor area related to reading skills; the most critical need in the affective area was positive change in attitudes, including self-concept, regional perceptions, and career concepts. Improved educational leadership was identified as the most acute system need. A description of the procedures used and the study results are presented in this report, along with 8 appendices (55-pages) and a 22-page bibliography. (JB)

Educational Labor
Charleston, West





oratory, Inc.
Virginia

# Credits

Author, Director of the Study

Merrill G. Campbell

Editor

Karen K. Manthe

Chief Contributors

Charles L. Bertram
Ermel Stepp, Jr.

AEL Board of Directors Needs
and Feasibility Study Committee

Charles E. Clear
E. Dale Doak
Robert B. Hayes

Participating School Districts
Appalachian Experts
AEL Membership

# Foreword

In his address to the 1971 Annual Commissioner's Conference of the Council of Chief State School Officers, Commisioner of Education Sidney P. Marland stressed "how little this nation knows" about the educational endeavor. And this is particularly true of Appalachia. Although the region has been surveyed and studied by countless groups and individual scholars, still, actual hard data about education are very limited.

Dr. Merrill C. Campbell directed this study for the Appalachia Educational Laboratory to gain perceptions of educational needs in the region. In the absence of hard data, these perceptions, as they have been crystallized in this assessment, will provide a rational basis for educational development efforts.

Dr. Campbell, vice president for administrative affairs, California State College, California, Pa., spent his sabbatical leave with the Laboratory to design this comprehensive needs study. His contribution has aided the Laboratory in progressing toward our goal of increasing avenues to excellence in education for the children of Appalachia.

Benjamin E. Carmichael, Director
Appalachia Educational Laboratory

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# DIRECTIONS FOR EDUCATIONAL DEVELOPMENT IN APPALACHIA

# Chapter 1

## Highlights of the Study

In 1971, the Appalachia Educational Laboratory initiated a comprehensive Needs and Feasibility Study designed to present an overview of the educational needs of Appalachia and attempt to pinpoint the critical problems the region's educators will face five years from now, in 1976.

The study consisted of five independent components: a review of pertinent literature, analysis of data collected in a 1967 AEL survey of Appalachian superintendents, a 1971 survey of teachers and administrators, a 1971 survey of a panel of Appalachian experts, and use of a convergence technique at a meeting of approximately 200 decision-makers in Appalachia.

The main objective of these efforts was to determine systematically what educational products should be developed by the Appalachia Educational Laboratory, and to provide the potential users of these products an opportunity to participate in their identification. Educational products are exportable methods and/or materials which, when used as prescribed, will produce specified outcomes with the designated target population. An example of an educational product is AEL's Early Childhood Education Program which is nearing completion of the developmental cycle. A description of the procedures used and the results of these studies are presented in the following chapters and briefly summarized in the following statements.

The first method was to examine the recent assessments of the educational needs of Appalachia (Chapter 2). These were primarily the assessments conducted by each state department of education as a prerequisite to funding of local Title III projects (Elementary and Secondary Education Act, 1965). The different states used a variety of methods to assess educational needs, and these assessments represent an important contribution to educational planning within each state. However, the variation in methods used, plus the fact that only portions of five of the six states fall within Appalachia, makes arriving at meaningful generalizations specific to Appalachian educational needs rather difficult. Two other agencies, the Appalachian Regional Commission and the Appalachian Research and Defense Fund, have completed needs studies and their results are also reported in Chapter 2.

The second component (Chapter 3) is based on a survey conducted by a team of educators for AEL in 1967. Results are compiled from interviews

with 661 superintendents in the Laboratory's six-state region. The section of the interview instrument requesting their estimation of educational needs produced 1,169 needs statements. The needs identified by these educational administrators in 1967 were generally expressed in terms of inputs into the school systems such as facilities, curriculum improvement, fiscal resources, personnel selection, and consolidation of school units.

The third study was based on returns from a survey from 86 administrators and 892 teachers in 50 randomly selected Appalachian school systems (Chapter 4). An Educational Needs Inventory which permitted the ranking of problem areas and (for the teachers) a statement of the number of pupils affected by the problem, was mailed from the Laboratory in May, 1971. Sixty-six different problem areas were considered by each person responding. There was marked agreement among teachers in the different states, and between administrators and teachers. The five most frequently identified problem areas, in decreasing order, were reading comprehension, work habits, written expression, spelling, and reading rate.

The fourth method selected to determine educational needs of Appalachia was an open-ended survey with responses elicited from 126 persons considered knowledgeable about Appalachia (Chapter 5). The list included school administrators and teachers, state department of education personnel, college faculty, businessmen and industrialists, sociologists, clergymen, and persons with a variety of other backgrounds. Respondents were asked to identify what they felt was the most critical educational problem which would exist five years in the future--in 1976. They were then requested to suggest an educational product which might be developed to counter that problem. There was considerable agreement between the statements of educators and lay persons as indicated by a rank order correlation of .75 between categories of responses. The most frequently stated problems that these experts anticipated would occur during the next five years were (1) need for changing attitudes within and about Appalachia, (2) need for increased educational leadership, (3) need for curriculum changes, relevance and/or expansion, (4) need for new educational organizations or a change in the present organization of the system, both political and instructional, and (5) need for increased funding. The two most frequently mentioned critical areas for product development were (1) innovations relating to new patterns of educational organization, e.g., new structures more relevant to pupil needs, and (2) new means of focusing on vocational or career education for Appalachia.

A modified convergence technique executed at the AEL Annual Membership Meeting, July 25-26, 1971, was the fifth procedure employed to specify existing and imminent educational needs and identify appropriate directions for educational product development (Chapter 6). The meeting was attended by more than 200 persons representing the leadership in the six Appalachian states, both in and out of the ranks of professional education. Participants were assigned to small discussion groups; each unit was requested to develop a consensus statement reflecting the most critical educational problem, and suggest a product for educational development which could be instrumental in alleviating the identified problem. In a series of three sessions, with information about the proposals of other groups made available to each group

at the end of each session, a convergence was developed on seven major products for development by 1976. Ten of the 20 groups converged on the following statement:

> A pattern for community school involving programs of educational experience for all members of the family; developed out of resources provided by representatives of education, industry, business; based on shared studies of the needs of the area.

The needs perceptions as expressed in the five components of this study are summarized in Chapter 7 and categorized according to pupil needs and system needs. The greatest pupil need in the cognitive-psychomotor area was reading skills; the most critical need in the affective area was attitudes, including self-concept, regional perceptions, and career concepts. Improved educational leadership was identified as the most acute system needed.

The lack of hard data available to identify specific educational needs was evident throughout the study. The reports of the U. S. Office of Education categorize data according to states, and with one exception, only fragments of the different states are within Appalachia. Even the input data such as expenditures per pupil were not available for the Appalachian Region. Attempts are being made by the Laboratory to assimilate data, such as the National Assessment of Educational Progress items, 1970 U. S. Census reports, and state educational data for portions of states within Appalachia, into a compendium of information about Appalachian education. Until this task is completed, the results of the needs studies presented in this report will give direction to new educational product development and serve as a guide to help decision-makers in education make sounder decisions about the educational future of Appalachia.

# Chapter 2

## Educational Needs Assessments for Appalachia — A Brief Review

Stimulated by the Elementary and Secondary Education Act of 1965, the state education departments of each state within the Appalachian Region have developed varied procedures for assessing educational needs. Although these studies provide useful data, there are some limitations on the application to the total of Appalachia. The first limitation lies in the diversity of procedures. Comparisons from state to state are difficult. A second limitation is geographic since only the State of West Virginia lies wholly within the Appalachian Region (Figure 1). Several states have established areas within the state to facilitate sampling and data analysis. In some instances these areas fall within Appalachia, thus enabling inferences about education to be drawn. Selected portions of the results of some of the assessments for the six Appalachian states in the Appalachia Educational Laboratory's region are presented here.

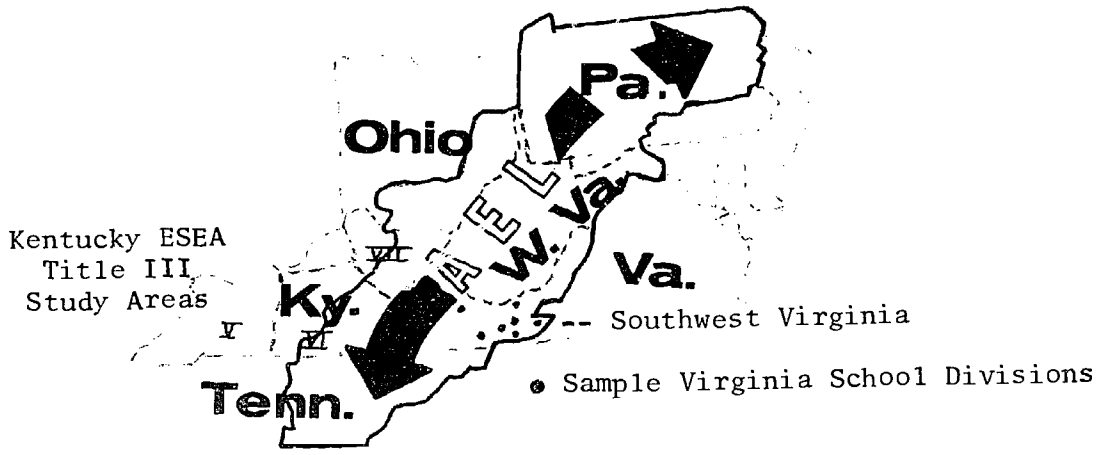


Figure 1

Six AEL States in Appalachian Region
Providing Needs Assessment Data

## Kentucky

(49 of 120 are Appalachian counties)

In Kentucky, the most recent statement relating to the criticality of learner needs was obtained from the analysis of a sample of professional and lay citizen opinions as expressed in the State Educational Needs Assessment (Kentucky State Department of Education, 1970).

Table 1

Rank Order of General Learner Needs as Identified in Kentucky Educational Needs Assessment: 1970

| Rank in State | Rank in Appalachian Regions of Kentucky | | |
|---|---|---|---|
| | V | VI | VII |
| 1. Learning skills | 1 | 1 | 1 |
| 2. Vocational knowledge | 2 | 2 | 2 |
| 3. Human relations | 4 | 6 | 5.5 |
| 4. New approaches to learning | 3 | 3 | 3 |
| 5. Citizenship | 6 | 5 | 5.5 |
| 6. Basic knowledge areas | 5 | 8 | 4 |
| 7. Social and economic disadvantaged | 7 | 4 | 7 |
| 8. School readiness | 8 | 7 | 8 |
| 9. Physical and mental differences | 9 | 9 | 9 |
| 10. Physical and mental health | 10 | 10 | 10 |

For each identified general need a rank order of 10 related specific needs was determined. Table 2 (Page 7) lists the four top-ranked general needs followed by the first three or four specified needs with which respondents in Kentucky's Appalachian regions felt learners needed more assistance.

Table 2

Rank Order of Specific Learner Needs as Identified in Kentucky Educational Needs Assessment: 1970

| | Rank in State | Rank in Appalachian Regions of Kentucky | | |
|---|---|---|---|---|
| | | V | VI | VII |
| 1. Learning Skills | | | | |
| Reading, writing, mathematics, listening, and speaking | 2 | 2 | 1 | 1 |
| Thinking logically and critically in solving problems | 1 | 1 | 2 | 2 |
| Analyzing their own learning skills, abilities, and needs and seeking assistance when it is needed | 3 | 3 | 3 | 3 |
| Making choices and decisions based on the best information available | 4 | 4 | 4 | 4 |
| 2. Vocational Knowledge and Skills | | | | |
| Acquiring occupational skills and knowledge to qualify them for employment immediately after high school | 1 | 1 | 1 | 1 |
| Understanding a wide variety of careers so that they will be better prepared to make wise choices | 2 | 2 | 2 | 2 |
| Developing basic occupational knowledge and skills at the high school level that lead to a planned post-high school career | 4 | 3 | 4 | 3 |
| 3. Human Relations | | | | |
| Knowing themselves and developing positive attitudes toward their own strengths, weaknesses, attitudes, and behavior | 1 | 1 | 1 | 1 |
| Understanding other people and developing positive attitudes for their worth and dignity regardless of age, sex, race, religion or social status | 2 | 3 | 2 | 2 |
| Accepting and appreciating work as a necessary part of their lives | 3 | 2 | 3 | 3 |
| 4. New Approaches to Learning | | | | |
| Programs that change as the learners change and as new materials, equipment, methods, and knowledge become available | 3 | 1 | 2 | 1 |
| Opportunities to examine and resolve problems rather than memorize predetermined, isolated information | 1 | 4 | 1 | 2 |
| Opportunities to learn on their own and at their own rate | 4 | 2 | 4 | 3 |
| Programs that provide for different and more productive ways of using learners' time in school | 2 | 3 | 3 | 5 |

## Ohio

(28 of 88 are Appalachian counties)

Batelle Memorial Institute in Columbus, Ohio, conducted needs assessment studies for the State Department of Education (1970). Following are relevant points abstracted from their general summary for the state:

General conclusions:

1. The educational researcher and the educational practitioner are in different worlds.

2. There was a shortage of solid research results in the areas studied in this project.

3. A number of needs in the state educational systems were not investigated as part of this study. (It was apparent that there are a number of other problem areas that should be classified as needs.)

4. There is a great need to apply the concepts and methods of modern management throughout the state educational system.

Needs developed from study (item 3 above):

- Developing relevant curriculum,
- Training of teachers in educational technology,
- Training of administrators in management and leadership,
- Stating educational objectives in measurable terms,
- Developing measures of educational effectiveness and efficiency,
- Appraising teacher performance and developing a teacher advancement system based upon ability and performance,
- Developing effective methods for communicating with the public,
- Fostering cooperation among districts,
- Coping with increasing unrest among students, teachers, parents, and the community at large.

## Pennsylvania

(52 of 67 are Appalachian counties)

The Pennsylvania Department of Education has developed and tested a "Plan for the Assessment of Educational Quality." Ten "Goals of Quality Education" serve as the basis for assessment (1970):

- Quality education should help every child acquire the greatest possible understanding of himself and an appreciation of his worthiness as a member of society.

- Quality education should help every child acquire understanding and appreciation of persons belonging to social, cultural and ethnic groups different from his own.

- Quality education should help every child acquire to the fullest extent possible for him, mastery of the basic skills in the use of words and numbers.

- Quality education should help every child acquire a positive attitude toward the learning process.

- Quality education should help every child acquire the habits and attitudes associated with responsible citizenship.

- Quality education should help every child acquire good health habits and an understanding of the conditions necessary for the maintaining of physical and emotional well-being.

- Quality education should give every child opportunity and encouragement to be creative in one or more fields of endeavor.

- Quality education should help every child understand the opportunities open to him for preparing himself for a productive life and should enable him to take full advantage of these opportunities.

- Quality education should help every child to understand and appreciate as much as he can of human achievement in the natural sciences, the social sciences, the humanities, and the arts.

- Quality education should help every child to prepare for a world of rapid change and unforeseeable demands in which continuing education throughout his adult life should be a normal expectation.

A statement on Phase I findings is particularly relevant to this review.

> Phase I findings indicate that those factors which pupils bring with them--levels of previous learning and educational and occupational levels of parents--are most significant in determining how well pupils achieve. These findings are neither startling nor revealing. The more consequential findings are that these pupil factors do not account for all of the differences in pupil achievements. In fact, in many of the goals, less than half of the differences in pupil achievements is accounted for by socioeconomic and potential ability factors. The implications are that schools can and do make a difference (Pennsylvania, p. 1.4).

A consultant group that studied educational needs for the north central region in Appalachian Pennsylvania identified the following broad categories of educational need (Associated Educational Consultants, Inc., 1968):

Elementary-Secondary:

- Updating and broadening of guidance services,
- Revitalization of general and college bound course offerings,
- Expansion of vocational programs to include many more offerings for both boys and girls.

Higher Education:

- Continuing education,
- College transfer program,
- Community services.

Vocational-Technical:

- High school programs,
- Post-high school programs.

## Tennessee

(50 of 95 are Appalachian counties)

The State Department of Education conducted a needs assessment based on information routinely collected by the state and data compiled from a questionnaire designed to determine critical needs as seen by school superintendents, principals, state department field supervisors, local school instructional supervisors, and a 5 percent random sampling of certified teachers in the state.

Analysis of data collected in the 1969 questionnaire designed to identify educational deficiencies in the state, revealed the following eight critical needs. Statements are not ranked in order of priority (Tennessee Department of Education, 1969).

- Capability to assimilate associative learning factors of a personal and environmental nature in ways that facilitate learning.

- Development of efficient learning skills and appropriate concepts through a viable learning environment that utilizes relevant content and activities.

- Orderly and meaningful progression through learning activities that are satisfying as the learner develops efficiency.

- Development of efficient learning skills and concepts through sufficient time commitment and appropriate opportunities.

- Early learning activities that enhance the learner's total development.
- Development of specific capabilities to bridge the gap between school and nonschool learning environments and to utilize the best in each.
- Realistic opportunities for the handicapped learner to approach his learning potential.
- Learning management that skillfully contributes to the learner's use of all the available "tools of learning."

An earlier study to identify community needs in Tennessee was carried out by the state's universities and colleges under direction of State Agency for Title I of the Higher Education Act of 1965. The portion of the report dealing with education listed key problems. Excerpts from the summary statement indicate problems revealed by this research effort (Tennessee State Agency for Higher Education Act, Title I, 1967).

- The public school systems in many areas are inadequate in many ways; they have limited curricula, poor facilities, and inadequate funds. Most of the teachers in rural areas are natives, and they have had little opportunity to observe or work in an effective school system.
- There is a general need for an improved (realistic) educational system, with more counseling and guidance services, better occupational and vocational training, and loans or scholarships provided for deserving students to attend post-high school training programs.
- In-service continuing education for professional and subprofessional groups in various areas is needed (health-related occupational areas, social welfare occupational areas, home economics occupational areas, and the like).
- There is a need for social work service administered by the public schools.

## Virginia

(21 of 96 are Appalachian counties, plus independent cities)

The Virginia assessment in 1969 followed a plan "that moved from goals to evidences of programmatic effort, to evidences of programmatic outcome. This system is a posteriori and defines need in operational terms as evidence of a gap between an educational goal or objectives and evidence of educational outcome (Virginia Department of Education, 1970)."

In the sampling procedure, one geographic region, Southwest Virginia (Figure 1), was located almost entirely in Appalachia. Therefore it may be inferred that findings which apply to this region have relevance to Appalachian educational needs.

## Cognitive Achievements and Needs

Criterion used in this aspect of the survey was the state average or national average established for selected standardized tests. A need exists when the score on various standardized tests falls below the average by a significant difference. The statistical test used was that the differences could not occur by chance oftener than 2.5 times in 100 testings.

Grade four. Southwest region exhibited no needs in terms of the operational definition and the probability standard established for this study. A finding of no need does not connote that pupils in this region do not have needs in terms of other imposed standards, i.e., performance on reading objectives.

Southwest Virginia excelled in five cognitive areas, listed in order of increasingly high schievement:

- Arithmetic: Reasoning,
- Arithmetic: Computation,
- Arithmetic: Concepts,
- Work-Study Skills: Charts,
- Reading: Vocabulary.

Grade seven. Southwest Virginia fell below the statewide totals in seven areas measured by the tests: social studies, capitalization and punctuation, grammatical usage, spelling, arithmetic concepts, reading vocabulary, and work-study skills charts. In terms of the number of cognitive clusters at or above the national mean, Southwest ranked third of the six regions.

Needs as defined by the study and their measured level of criticality indicated that the Southwest region had no needs. Southwest Virginia also had no exemplary achievement.

Grade eleven. Southwest Virginia fell below the statewide means in social studies, science, mathematics, and writing. It ranked at the bottom of the six regions in terms of the number of cognitive clusters at or above the national means. However, as determined by the established criterion, test scores indicate that Southwest had no existing cognitive educational needs.

## Affective Assessment and Needs

There is considerable lack of consensus between and among authorities, professionals, and laymen concerning affective goals, objectives, and needs.

Modal deviations or differences of two or more answer choices between regional and state total mode responses can be interpreted as needs.

Grade four. No modal deviations were apparent in any category; thus there were no defined needs.

Grade seven. Students deviated from expected responses by agreeing or selecting this alternative on three items, thus indicating needs.

The items were:

- I see nothing wrong with using offensive names for certain groups of people.
- When I am not included in group activities, I feel hurt.
- When someone criticizes me or pays me a compliment, I'm not sure how to respond.

Grade eleven. No modal deviations were exhibited; thus there were no defined needs.

On teacher ratings of needs, the only item considered as a need was:

- Student takes on the role of a leader when the situation requires it.

A summary statement from the final report of the affective assessment study stated that:

> The consensus and correspondence of ratings indicate that aspirations of desired behavioral standards are being attained in Virginia's schools (Virginia Department of Education, p. 284).

## West Virginia

(totally in Appalachia)

West Virginia's Department of Education has established a plan for continuous assessment. "Critical needs are those which have been identified by the State Superintendent of Schools and his staff. They reflect also the collective opinion of the state's citizens, as it has been expressed by the lawmakers, educators, the press, letters, petitions, public forums, and various other communications (West Virginia Department of Education, 1970a)."

A discrepancy model is used to assess needs in terms of the gap which is found to exist between goals and objectives developed from general needs and actual achievement of goals and objectives. The following published needs (West Virginia Department of Education, 1970b) were validated by an opinionnaire circulated in 1969 to educators and lay citizens through the

state. A list of 17 critical educational needs was included in the opinionnaire which drew 1,503 replies. Respondents were requested to identify the five most critical needs. This procedure revealed that West Virginia's five most critical educational needs are, in rank order:

- Early childhood education,
- Additional vocational offerings,
- State funds for school construction,
- Increased local funds,
- Curricular improvement.

The 17 critical needs specified in the opinionnaire are listed below. Those items noted with an asterisk were considered "most critical" by many sectors of the survey population:

- *Public early childhood education programs to be offered by all county school systems and available to all children who will enter the first grade the following year.
- Increased local funds for education, both for current operation and for capital improvement.
- *Authorization for the state to provide matching funds for school building construction, including legislation and constitutional revision, if necessary.
- *Revision of the present School Foundation Program Formula to provide a more comprehensive minimum educational program.
- An increase in the percent of elementary teachers who hold a professional teaching certificate.
- *State funds to provide remuneration for teachers who supervise student teachers, with stipends to be based on existing qualification levels as approved by the West Virginia Board of Education.
- Additional pupil personnel workers to enable county school systems to provide professionally trained and certified specialists at recommended ratios.
- *Sufficient vocational offerings to permit all public school students and adults who are interested in and have a need for vocational education to receive appropriate training programs.
- *A system of adult education centers operating on a regional basis and providing adult basic, adult secondary, and adult vocational education.
- Textbooks and other instructional materials to be provided to all pupils at public expense by all county school systems.

- Elimination of all one and two room elementary schools.

- Consolidation of high schools to ensure a minimum graduating class of 100 in all schools, with commensurate program enrichment.

- Supportive services to be provided on a regional basis to extend the present level of such services offered in some counties and to provide the services in counties where they are not now available.

- Extended use of school facilities by all county school systems to provide at least for community activities and after-school recreational programs.

- Curricular improvement through study and revision of present offerings and educational experiences.

- Modification of present school districts to provide comprehensive educational programs and services.

- Provision of a system of educational broadcasting, with programs available to all educational regions.

## Other Relevant Studies

In addition to the educational assessments cited which relate specifically to the six Appalachian states in the AEL region, numerous groups and individuals have made detailed studies of educational needs in Appalachia. Three statements are presented here as recent examples.

The Appalachian Regional Commission (1971), has presented recommendations which reflect priority needs for the region:

- Establishment of formal Long Range Development Planning activities for education within each Appalachian state to:

- Promote the development of Regional Education Agencies so that:

- Occupational Education can be conducted most efficiently and;

- Curricula to provide the Appalachian child with Career Orientation and Work Experience can be developed; and:

- Child Development programs and Early Childhood centers can be established and operated and:

- The Educational Manpower of the region can be improved

through preservice and in-service education of teachers, not only in general but more particularly in support of the above recommended priorities.

In another Commission report, Teachers in Appalachia, (Appalachian Regional Commission, 1970) specific recommendations were made which are designed to improve the quality of teaching in the region.

Action needs to be taken on:

- The preparation of Appalachian teachers, preservice and in-service;
- Retention of young, well-educated teachers;
- Help in teaching (paraprofessional staff and technological devices).

Highest priority should be given to:

- Programs to supply the teachers needed in early childhood education,
- Programs that will remedy gaps in knowledge of basic and recently developed educational methods and subject matter.

Milton Ogle, associate director for education and training, Appalachian Research and Defense Fund, Inc. (1970), specified the following educational needs for the region:

- Provision of better quality of education to socially and economically deprived, particularly dropouts. Proper use of Title I ESEA funds is both required by law and is a significant step in this direction.
- Termination of "self-evaluation" occupational procedures and provision of public monitoring of all educational systems.
- Terminate a finance base that is actually discriminatory (if a student cannot afford a band instrument he is unable to receive band training). Every pupil should have equal access to all educational opportunities and experiences at public expense.
- Discourage use of prepackaged curriculum offerings that have little relevance for today's real world but be certain that the best is equally available to all rural as well as urban children.
- Continuing professional growth for teachers: make it impossible for them to coast along in comfortable knowns without imagination or relationship to individual children's backgrounds and experiences.

- Terminate the unconscious or prescribed practices whereby teachers attempt to "rid children" of their background, home life, self-image. Insist upon individual awareness and pride.

- Open up the teacher training institutions in the region to the mainstream of national life and growth. Terminate the detached, "locked in" unreality syndrome.

# Chapter 3

## A Survey of School Administrators — Report of a 1967 Study

In 1967, a team of educators from the Appalachia Educational Laboratory interviewed 661 school superintendents in Appalachia. One concern of the interviews was to obtain superintendents' perceptions of educational needs in Appalachia.

### Need Categories

From these interviews, 1,168 statements of educational needs were elicited from the superintendents. Through examination of a random sample of 100 statements 17 needs categories or constructs were established. The 1,168 statements were placed into the 17 categories which were then rank ordered on the basis of the frequency with which needs were expressed (Table 3).

### Rank Orders of Perceived Educational Needs

Rank orders were determined for the needs categories on a regional basis for Appalachia and, also, for the Appalachian portions of each of the six states served by the Laboratory--Kentucky, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia. The five top-ranked educational needs, according to the superintendents, were in order: facilities, curriculum improvement, fiscal resources, personnel selection, and consolidation.

### Concordance on Perceived Needs

Each state was represented in the sample of 661 school superintendents: Kentucky, 78; Ohio, 139; Pennsylvania, 391; Tennessee, 73; Virginia, 29; and West Virginia, 34. The superintendents from a given state were regarded as representing the Appalachian section of that

Table 3

Rank Order of Educational Needs as Perceived by Appalachian School Superintendents: 1967

| Rank Order of Need Categories in Six-State Region | Total Region | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Frequency[a] | Percent | Ky. | Ohio | Pa. | Tenn. | Va. | W.Va. |
| 1. Facilities | 212 | 18.15 | 1 | 9 | 1 | 1 | 2 | 2 |
| 2. Curriculum Improvement | 177 | 15.15 | 3 | 2 | 2 | 2 | 10 | 1 |
| 3. Fiscal Resources | 115 | 9.84 | 2 | 4 | 5 | 3 | 3 | 7.5 |
| 4. Personnel Selection | 113 | 9.67 | 4 | 6 | 3 | 10 | 1 | 7.5 |
| 5. Consolidation | 89 | 7.61 | 5 | 5 | 6.5 | 5 | 5 | 3.5 |
| 6. Personnel Recruitment | 86 | 7.36 | 10 | 1 | 9.5 | 5 | 10 | 7.5 |
| 7. Vocational Education | 77 | 6.59 | 11 | 3 | 8 | 5 | 7 | 3.5 |
| 8. Leadership | 59 | 5.05 | 12 | 7.5 | 4 | 11 | 14 | 12.5 |
| 9. Personnel Development | 51 | 4.36 | 6 | 12 | 9.5 | 7.5 | 10 | 7.5 |
| 10. Equipment | 50 | 4.24 | 9 | 11 | 6.5 | 9 | 14 | 11 |
| 11. Community | 38 | 3.25 | 8 | 10 | 13 | 13.5 | 7 | 7.5 |
| 12. Guidance/ Counseling | 26 | 2.22 | 7 | 16.5 | 11.5 | 16 | 14 | 14.5 |
| 13. Salary | 25 | 2.14 | 15.5[b] | 7.5 | 15.5 | 7.5 | 14 | 7.5 |
| 14. Special Services | 19 | 1.62 | 12.5 | 15 | 11.5 | 13.5 | 7 | 16.5 |
| 15. Special Education | 18 | 1.54 | 14 | 14 | 14 | 12 | 4 | 16.5 |
| 16. Personnel Retainment | 8 | 0.68 | 15.5 | 13 | 17 | 16 | 14 | 12.5 |
| 17. Output | 5 | 0.42 | 12.5 | 16.5 | 15.5 | 16 | 14 | 14.5 |

[a]Total number of needs statements - 1,168.

[b]Numbers with decimals indicate tie rank.

state, and the six rank orderings represented the collective judgment of the sample of those superintendents. Under this premise, the rank orders by state were amenable to a test for significance through Kendall's coefficient of concordance (W) (Siegel, 1956). The W of .648 was significant at the .001 level. The degree of concordance in the ratings confirmed the degree of agreement upon the ranking of educational needs in Appalachia among the school superintendents.

## System Taxonomies

To give insight into the meaning of the needs statements an attempt was made to distribute the needs categories into systems taxonomies. Two basic systems taxonomies were used, a fundamental input-output system and a simple cybernetic system.

### Input-Output Taxonomy

In essence a fundamental input-output system utilizes a process which converts and transforms inputs into outputs through a production function which relates outputs to inputs and process parameters. In the strict sense of input-output analysis, the process is treated as a black box with an unknown interior which is subject to analysis by operations on input and output. However, it is recognized that the educational system is not totally a black box, though elements of it evidently best are treated in such a vein. Consequently, some process needs were evident in the classification of the needs categories in the input-output system.

In the input-output taxonomy the distribution of the 17 perceived educational needs revealed more need in the input facet, less need in the process, and least in the output category (Figure 2). Input needs included facilities, fiscal resources, personnel selection, and consolidation, among others. Process needs included curriculum improvement. Output needs, such as measuring pupil achievement, were represented solely by the need category designated "output." To determine the number of needs statements relating to input, process, and output, the frequencies listed in Table 3 were added by category, as shown in the Figure 1 model. This procedure revealed that there were 846 needs statements in the input category; 317 relating to process; and only 5 for the output category (Table 4). From this analysis of the data it became apparent that perceptions of educational needs by Appalachian school superintendents in 1967 were input oriented, had a noticeable process awareness, and had no awareness for educational outputs.

### A Cybernetic Taxonomy

A cybernetic system includes monitoring of its output to assure the attainment of performance standards. Product feedback is translated into a control policy to change the process and shift to more desirable performance. The control unit is internal to the system and changes the performance of the system. The need categories most nearly fitting this

Table 4

Appalachian Educational Needs: An Input-Output System Taxonomy

| System Category | Frequency | Percent |
|---|---|---|
| Input | 846 | 72.43 |
| Process | 317 | 27.14 |
| Output | 5 | 00.42 |

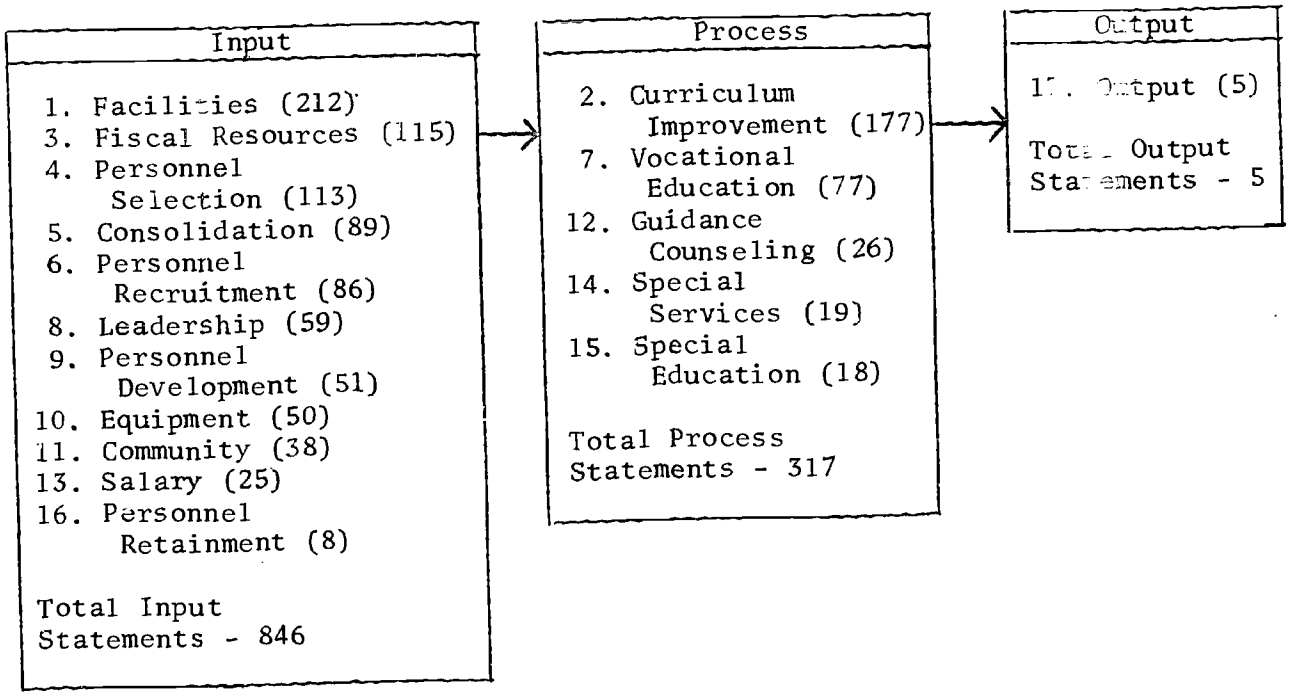


Figure 2

Appalachian Educational Needs as Categorized in an Input-Output Systems Model (Numbers preceding needs item indicate rank order; numbers indicated in parentheses indicate frequency.)

Table 5

Appalachian Educational Needs: A Cybernetics Taxonomy

| System Category | Frequency | Percent |
|---|---|---|
| Control | 444 | 38.01 |
| Input | 402 | 34.41 |
| Process | 317 | 27.14 |
| Output | 5 | 00.42 |

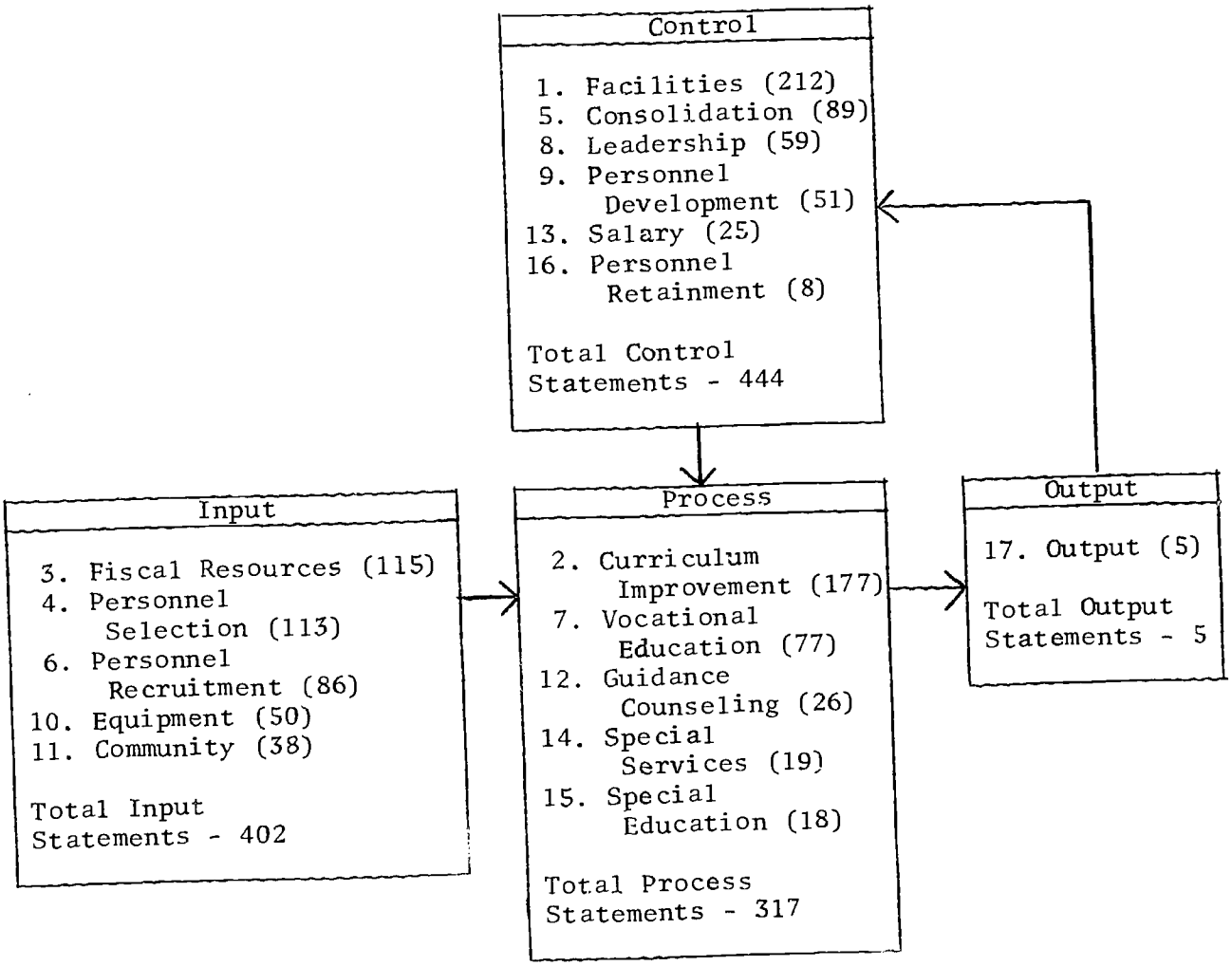


Figure 3

Appalachian Educational Needs in a Cybernetic Systems Model (Numbers preceding needs item indicate rank order; numbers indicated in parentheses indicate frequency.)

descrip[illegible]ere: facilities consolidation, leadership, personnel development, a[illegible]sonnel retainment. Under the input-output taxonomy (Figure 3) these [illegible]ere classified as input. The control is still considered an input, [illegible]he former input category may include both input and control in the cyb[illegible]ic systems taxonomy.

[illegible]en the cybernetic system taxonomy was applied, there were 444 contro[illegible]ments to 402 input needs statements, or percentages of 38.01 and 34.[illegible] respectively (Table 5).

## Taxonomi[illegible]parisons

The [illegible]s for the rank in each system category, i.e., input, control, process, [illegible] output were obtained to indicate the relative priorities given to each [illegible]egory. An overall composite rank based on the needs statements of Appal[illegible]an school superintendents produced an average of 6.8 for input, 8.7 for [illegible]ntrol, 10 for process, and 17 for output. In other words, there was more regard among superintendents for input than for output. The input average-rank for the input-output model was 7.8. As was noted previously, the number of needs statements favored control over input by 444 to 402, but the composite average rank for input was 5.67 to 9.5 for the control. This indicated that the priority for input needs was greater than for control. The differences in the number of needs statements and the composite rank average occurred primarily as a result of the ranking process; however, the greater percentage of perceived control needs relative to input needs may reflect the superintendents desire to alter the outcomes of education.

The lack of output needs statements in this survey may have revealed the lack of a feeling for accountability on the part of superintendents. However, the large number of needs statements classified as system control may point to an underlying need for standards for product evaluation.

## Summary

Seventeen educational needs were perceived by 661 Appalachian school superintendents in 1967. Analysis of the needs statements by the superintendents in the Appalachian sections of six states (by state) demonstrated a concordance on the rank ordering of the needs which was significant beyond the .001 level. The upper five needs, by rank, were: facilities, curriculum improvement, fiscal resources, personnel selection, and consolidation. The need structure perceived by school superintendents appeared to be input oriented, since 72.43 percent of the perceptions were classified as input in an input-output taxonomy. When described according to a cybernetic taxonomy, a greater percentage were considered control needs than input needs. Output needs were represented by a .42 percent

of the needs statements. The small number of output needs statements may have indicated a lack of a sense of accountability. However, many of the needs statements such as "a need for leadership" which were classified as control may have indicated an underlying need for product evaluation.

# Chapter 4

## Educational Needs as Perceived by Public School Personnel

### Selection of the Instrument

As a major component of a Needs and Feasibility Study, the Appalachia Educational Laboratory conducted a survey in June, 1971, to determine teacher-administrator perceptions of educational need in the Laboratory's region. An Educational Needs Inventory[1] was selected to obtain the data. The rationale for its selection was that:

- It would yield some idea of the magnitude of problems in schools as perceived by teachers.
- It would provide a basis for determining educational needs priorities.
- It would give teachers a significant role in helping to identify problems.
- It asked questions specific to learning needs in schools.
- It would provide information on professional views with regard to services and approaches needed to solve critical educational problems.
- It would provide an information base for cross checking other needs assessments.
- It had been validated.
- It would provide data for long-range planning.

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[1]Dr. W. Timothy Weaver, Educational Policy Research Center, Syracuse, N.Y., consultant to the Appalachia Educational Laboratory, provided the initial design and documentation of the instrument.

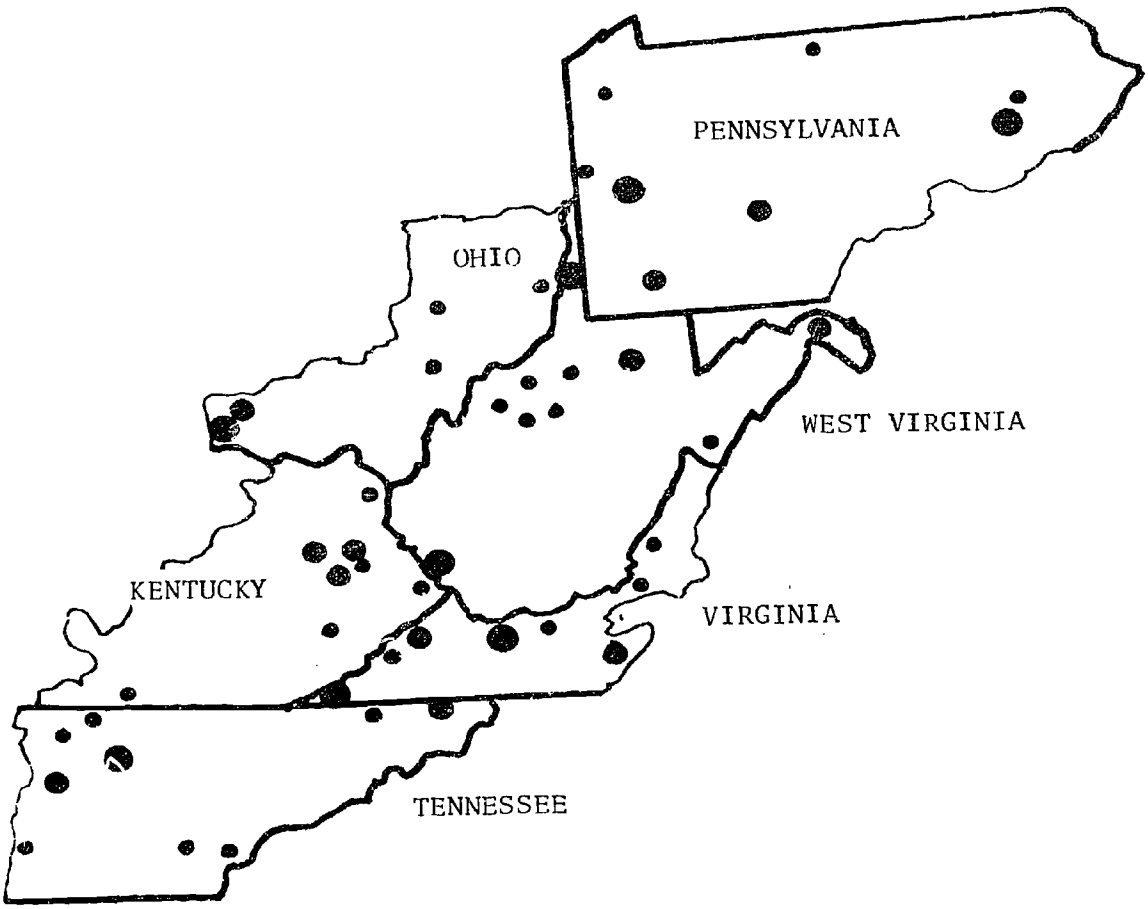
- It was constructed and validated by teachers; thus the use of it to determine teacher perception of need should make the diffusion of new educational products less difficult.

The selected inventory was developed and first used in the public schools of Montgomery County, Maryland, in 1966. Validation of the instrument was obtained through a 1968 study in Sumner Elementary School, one of the Syracuse Public Schools in Syracuse, N.Y. The Sumner study demonstrated internal consistency correlation coefficients by grade level ranging from .88 to .93.

The instrument was modified to make it more relevant to the purposes of the AEL study and more responsive to the desired type and size of sample (Appendix A). The original instrument was designed for use in a stated elementary school population, and was used to identify needs in terms of a percentage of the sample population. Since the instrument presented practical problems in terms of resources when applied to a wider population sample, the instrument was modified to obtain only perceptions of problems for rank order analysis. The section of the instrument dealing with needed services and approaches to meet critical problems was adapted to be more representative of educational products which are available or in development.

## Selection of the Sample

A stratified random sample of school systems was drawn from the total of all public school districts in the Appalachian portions of the six-state region of the Appalachia Educational Laboratory. Selected strata were state and school district size. The 741 school systems were given unique numbers for identification purposes. They were then classified by size (large, middle, or small) to ensure that the survey would yield a proportional number of returns for each stratum. A table of random numbers was used to draw a sample estimated to provide 1,000 returns. A representative from each state department of education in the survey area telephoned the chief school officer in each selected school system to enlist his cooperation. Each administrator was requested to distribute the instrument to a representative 5 percent of his professional staff. Fifty school systems in the six states returned 978 inventories for analysis. The distribution of the sample is shown in Table 6 and Figure 4. (See Appendix F for list of participating districts.)




● Up to 1999 Pupils

◐ 2000 to 4999 Pupils

● 5000 (and Larger) Pupils

Figure 4

Geographic Distribution of Educational Needs Inventory Sample

Table 6

Distribution of Sample for AEL Educational Needs Inventory: 1971

| Schools, Size & Type | Respondent Category | Totals for Region | Distribution by State | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Ky. | Ohio | Pa. | Tenn. | Va. | W.Va. |
| 1-1999 Small | Elementary Teachers | 171 | 31 | 15 | 18 | 44 | 20 | 43 |
| | Secondary Teachers | 81 | 19 | 14 | 10 | 4 | 16 | 18 |
| | Sub-Total/Teachers | 252 | 50 | 29 | 28 | 48 | 36 | 61 |
| | Administrators | 46 | 10 | 4 | 5 | 11 | 7 | 9 |
| | TOTAL | 298 | 60 | 33 | 33 | 59 | 43 | 70 |
| 2000-4999 Middle | Elementary Teachers | 156 | 37 | 7 | 13 | 39 | 43 | 17 |
| | Secondary Teachers | 73 | 14 | 7 | 9 | 13 | 20 | 10 |
| | Sub-Total/Teachers | 229 | 51 | 14 | 22 | 52 | 63 | 27 |
| | Administrators | 19 | 4 | 2 | 3 | 4 | 4 | 2 |
| | TOTAL | 248 | 55 | 16 | 25 | 56 | 67 | 29 |
| 5000-Up Large | Elementary Teachers | 207 | - | 20 | 81 | 13 | 34 | 59 |
| | Secondary Teachers | 204 | - | 0 | 71 | 23 | 45 | 65 |
| | Sub-Total/Teachers | 411 | - | 20 | 152 | 36 | 79 | 124 |
| | Administrators | 21 | - | 1 | 8 | 2 | 4 | 6 |
| | TOTAL | 432 | - | 21 | 160 | 38 | 83 | 130 |
| TOTAL | Elementary Teachers | 534 | 68 | 42 | 112 | 96 | 97 | 119 |
| | Secondary Teachers | 358 | 33 | 21 | 90 | 40 | 81 | 93 |
| | Sub-Total/Teachers | 892 | 101 | 63 | 202 | 136 | 178 | 212 |
| | Administrators | 86 | 14 | 7 | 16 | 17 | 15 | 17 |
| | TOTAL | 978 | 115 | 70 | 218 | 153 | 193 | 229 |

## Analysis of Returns

The returns were tabulated by school district, by state, and for the total AEL area. Since the purpose of the Laboratory study was to establish the priority of critical educational needs in this region, a rank order was calculated for relevant questions on the survey instrument.

The instrument listed 66 need items, ranging from educational through physical and social problems. To obtain a perception of existing need, teachers were asked to indicate the number of their students that they believed had this need on each of the 66 items. When ranked from high to low, the

first 10 items accounted for approximately 50 percent of the reported student problems. The frequency distribution of students with problems for the sample is shown in Figure 5.

Reading comprehension was ranked as the greatest student problem by most of the 978 respondents and the 892 teachers indicated that 14,799 students had this deficiency. This was an average of 17 students per teacher and, based on the distribution of the sample throughout Appalachia, can be interpreted as a strong indication of need.

Work habits was considered a problem for 14,358 students, or 16 students per teacher in the sample and was therefore ranked second. Written expression, spelling, reading rate, and following directions were listed as problems for more than 12,000 students (13.5 students per teacher). Listening comprehension was a problem for 10,903 students, or 12 students per teacher. Attention span and abstract reasoning were indicated as problems for 9,727 and 9,547 students respectively, or about 11 students per teacher. The tenth-ranked problem was attitude toward school. Both cognitive and affective domains are represented in the 10 top problem items.

The 10 highest ranked needs for the total sample and for each state in the sample are listed in Table 7). A total of 14 needs statements included the 10 priority needs for each state. When the first 10 statements for the total sample were considered as a universe and ranked for each state, the concordance coefficient (W) was significant beyond the .001 level of confidence, indicating that respondents from the six states exhibited a considerable degree of agreement on the priorities of identified needs.

When the Appalachia rankings were compared with previous studies in which the 66 item portion of the instrument was used (Table 8), there appeared to be considerable similarity in problem perception. In the Montgomery County survey, although ranked in different order, 9 of their first 10 problems were the same. In the Sumner Elementary School study, 6 of the top problems were included in the Appalachia first 10. On only one item is there a major difference. Attitude toward school, which ranked 10th in the AEL sample, was 31st for Montgomery County and 27th for the Sumner School. Thus "attitude toward school" could be a uniquely Appalachian problem in terms of its priority.

Appalachian educators were also asked to identify from the list of 66 problem items, the five most serious educational problems that they believed would remain unresolved

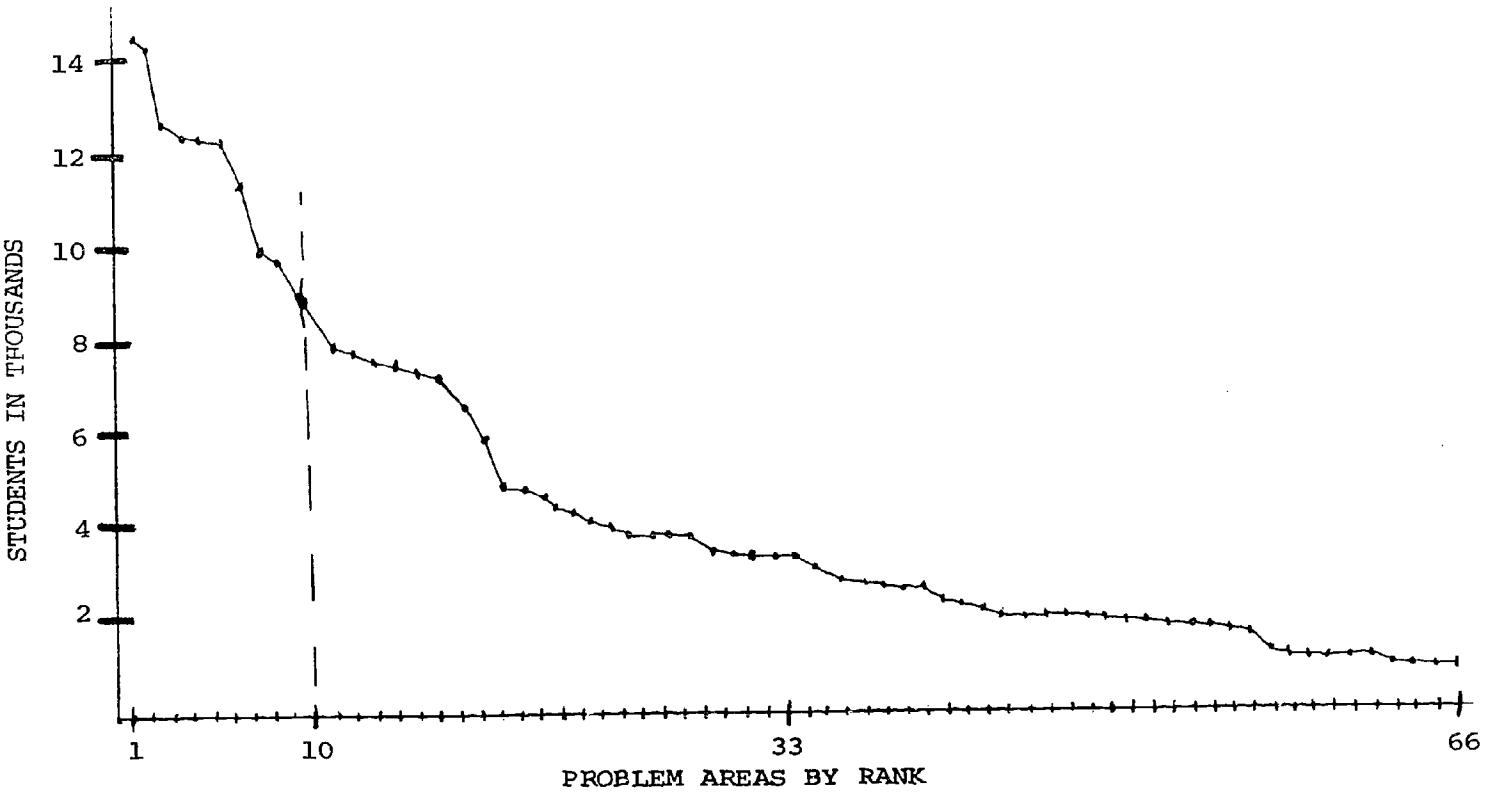



Figure 5

Frequency Distribution of Reported Student Problems for ENI Sample. (Items identified in the Educational Needs Inventory, 1-66, are indicated on the horizontal line in order of decreasing frequency. The first 10 items accounted for approximately half of the reported student problems.)

Table 7

Ten Most Common Problems for Public School Pupils in AEL Appalachia, as Identified by a Random Sample of Teachers and School Administrators: 1971

| Problem | Rank Order for Total Sample | Rank Order for AEL States | | | | | |
|---|---|---|---|---|---|---|---|
| | | Ky. | Ohio | Pa. | Tenn. | Va. | W.Va. |
| Reading Comprehension | 1 | 1 | 3 | 2 | 2 | 2 | 2 |
| Work Habits | 2 | 3 | 2 | 1 | 1 | 5 | 3 |
| Written Expression | 3 | 5 | - | 10[a] | 5 | 1 | 1 |
| Spelling | 4 | 2 | 9 | 3 | 9 | 7 | 4 |
| Reading Rate | 5 | 7 | 8 | 4 | 4 | 3 | 6 |
| Following Directions | 6 | 4 | 4 | 10[a] | 3 | 6 | 5 |
| Listening Comprehension | 7 | 6 | - | 6 | 6 | 8 | 7 |
| Attention Span | 8 | 9 | 7 | 5 | 7 | - | 9 |
| Abstract Reasoning | 9 | - | 1 | 7 | 8 | 9 | 10 |
| Attitude Toward School | 10 | - | 5 | 10[a] | - | - | 8 |
| Arithmetic Reasoning | (11) | 8 | - | - | 10 | 10 | - |
| Home Environment | (12) | 10 | 10 | - | - | 4 | - |
| Inadequate Motivation | (14) | - | 6 | - | - | - | - |
| Arithmetic Computation | (16) | - | - | 8 | - | 16 | - |

[a]Tie values for 9, 10, and 11.

W = .88 Significant at .001 level for concordance among rankings by states. Kendall's Coefficient of Concordance (W) is defined by the following formula:

$$W = \frac{12S}{m^2 (N^3 - N)}$$

Table 8

Comparison of AEL Needs Ranking by Teachers With Previous ENI Studies

| Problem | AEL Ranking | MCPS[a] Ranking | SES[b] Ranking |
|---|---|---|---|
| Reading Comprehension | 1 | 6 | 13 |
| Work Habits | 2 | 1 | 3 |
| Written Expression | 3 | 4 | 7 |
| Spelling | 4 | 5 | 20 |
| Reading Rate | 5 | 7 | 11 |
| Following Directions | 6 | 2 | 6 |
| Listening Comprehension | 7 | 8 | 5 |
| Attention Span | 8 | 3 | 4 |
| Abstract Reasoning | 9 | 10 | 1 |
| Attitude Toward School | 10 | 31 | 27 |

[a]Montgomery County Public Schools, Maryland, 1966.
[b]Sumner Elementary School, Syracuse, N.Y., 1968.

for at least the next five years. School administrators were included in the second part of the study. The first five problem areas, in rank order for the total sample as well as for each state in the sample, are indicated in Table 9. When the frequency of items was ranked within each state, the first five choices from each state included only nine different problem items from the total list of 66 included on the survey form. This was further indication of the agreement among respondents from the six states as to the identity of the most important problem areas. If the first five problems for the total sample are used as the universe and placed in order for each of the six states, a concordance coefficient of .76, significant at the .01 level of confidence, is obtained.

Table 9

Five Most Serious Educational Problems in Appalachia Which Will Remain Unsolved for the Next Five Years (Until at Least 1976) as Identified by a Random Sample of Teachers and School Administrators: 1971

| Problem | Rank Order for Total Sample | Rank Order for AEL States | | | | | |
|---|---|---|---|---|---|---|---|
| | | Ky. | Ohio | Pa. | Tenn. | Va. | W.Va. |
| Reading Comprehension | 1 | 2 | 2 | 1 | 2 | 1 | 2 |
| Home Environment | 2 | 1 | 1 | 2 | 1 | 2 | 1 |
| Work Habits | 3 | - | 5.5 | 3 | 3.5 | 5.5 | 5 |
| Attitude Toward School | 4 | 4.5[a] | 3 | 4 | 5 | 5.5 | 3 |
| Listening Comprehension | 5 | 3 | - | 5 | 3.5 | 4 | 4 |
| Written Expression | (6) | - | - | - | - | 3 | - |
| Following Directions | (7) | - | 5.5 | - | - | - | - |
| Inadequate Motivation | (8) | - | 4 | - | - | - | - |
| School Attendance | (9.5) | 4.5 | - | - | - | - | - |

[a]Numbers with decimals indicate tie rank.

$$W = \frac{12S}{m^2 (N^3 - N)} = .76$$ Significant at .01 level.

Although there was a high degree of consensus in the ranking, the first five serious problem choices do not represent a majority choice of the respondents. Each of the 66 items received nominations as one of the five most serious problems. "Depression" and "early maturity" were identified least often; these items were selected only four times representing 0.4 percent of the respondents. Reading comprehension

received the highest number of choices. It was chosen by 342 or 35 percent of the respondents. In addition to reading comprehension the five items selected as most serious problems included home environment (34 percent), work habits (23 percent) attitude toward school (22 percent), and listening comprehension (22 percent).

One objective of the study was to identify services and/or approaches which teachers and administrators believed held the greatest promise for resolving critical problems. Table 10 identifies the rank order of selections compiled from a list of 19 suggestions (see page 4 of ENI form, Appendix A) and responses from three open-ended choices. The table includes data from the total sample and for each of the six states. Again there was considerable evidence of agreement among respondents from different states on the priorities of the approaches, indicated by the concordance coefficient of .59, significant at the .001 level of confidence.

Table 10

Ten Most Common Services or Approaches Considered to Hold Most Potential for Resolving Critical Educational Problems, As Identified by a Random Sample of Appalachian Educators: 1971

| Services or Approaches | Rank Order for Total Sample | Rank Order for AEL States | | | | | |
|---|---|---|---|---|---|---|---|
| | | Ky. | Ohio | Pa. | Tenn. | Va. | W.Va. |
| Individualized Instruction | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Psychological Evaluation | 2 | 3 | 2 | 2 | 2 | 2 | 2 |
| Speech Evaluation | 3 | 2 | 6 | 7 | 5 | 4 | 3 |
| Multimedia Approaches | 4 | 10 | 3 | 4 | 6.5 | 6.5 | 5 |
| Nongraded System | 5 | 5[a] | 4.5 | 6 | 6.5 | 5 | 7 |
| Use of Paraprofessionals | 6 | 7.5[a] | 4.5 | 3 | 3 | - | 9 |
| Team Teaching | 7 | - | 7 | 5 | 4 | 10 | - |
| Medical Evaluation | 8 | 5 | 11 | 10 | - | 6.5 | 6 |
| Dental Services | 9 | 7.5 | 9 | - | 9 | 3 | - |
| Use of Television | 10 | 5 | 11 | 9 | - | 8.5 | 4 |
| Vision Evaluation | (11) | - | 11 | - | 8 | 8.5 | 8 |
| Hearing Evaluation | (12) | - | 8 | - | 10 | - | 10 |
| Programmed Textbooks | (13) | 9 | - | 8 | - | - | - |

[a]Repeated numbers in each column indicate tied ranks.

$$W = \frac{S}{1/12\ M^2\ (N^3-N) - M \Sigma T} = .59.$$ Significant at .001 level

Individualized instruction as an approach holding high promise for the improvement of education was the first choice in each state, for both the total sample of elementary and secondary teachers, and also for administrators. This was selected by two-thirds (66 percent) of all respondents. Psychological evaluation was an almost universal second choice and was listed as important by 50 percent of all respondents. Other high ranking services and/or approaches which could have potential for problem resolution were speech evaluation, multimedia approaches, nongraded systems, the use of paraprofessionals, and team teaching.

Performance contracting, computer assisted instruction, mobile classrooms, all year school, and community centered schools, ranked low, being chosen by 12 percent or less of the sample.

Comparisons were made to determine if there were major differences in the problem perceptions of elementary teachers, secondary teachers, and school administrators. Table 11 shows that 17 items from the list of 66 problem areas account for the first 10 choices of all three groups. There was a high level of statistical agreement in the ranking of problems with a concordance coefficient of .68, significant at the .05 level

Table 11

Comparison of Needs Rankings by Appalachian Elementary and Secondary Teachers and Administrators on the First Ten Problem Items: 1971

| Problems | Rank Order of 10 Most Critical Problems from List of 66 | | | |
|---|---|---|---|---|
| | Total Sample | Elementary Teachers | Secondary Teachers | School Administrators |
| Reading Comprehension | 1 | 2 | 1 | 2 |
| Home Environment | 2 | 1 | 4 | 1 |
| Work Habits | 3 | 5 | 3 | 3.5 |
| Attitude Toward School | 4 | 9 | 2 | 10 |
| Listening Comprehension | 5 | 3 | 7 | 7 |
| Written Expression | 6 | 6 | 6 | 5 |
| Following Directions | 7 | 4 | (14) | (21) |
| Inadequate Motivation | 8 | (17) | 5 | 3.5 |
| School Attendance | 9.5 | (15) | 9 | 10 |
| Immaturity | 9.5 | 7 | (25) | (18.5) |

(continued)

Table 11 (continued)

| | | | | |
|---|---|---|---|---|
| Abstract Reasoning | (12) | 8 | (16.5) | (21) |
| Speech | (14) | 10 | (25) | (14) |
| Spelling | (19) | (31) | 8 | (26) |
| Too Little Participation in Activities | (21.5) | (35) | 10 | (18.5) |
| Oral Expression | (15) | (21) | (12.5) | 6 |
| Program Does Not Provide Outlet for Creativity | (16) | (16) | (15) | 8 |
| Low Self-Concept | 24.5 | (24) | (28) | 10 |

For first ten of total sample, in rank order of those ten only of the 66 possible items, the concordance coefficient (W) is .68. This is significant at the .05 level of confidence. In order to complete the analysis, the items of each group were given a rank of one through ten, e.g., "17" in the second column was counted as "10." Seven items in addition to the first ten were included so that the actual first ten ranking of each group could be indicated.

of confidence. Some differences within the priorities are apparent. Spelling and too little participation in activities were given a higher ranking by secondary teachers than by either elementary teachers or administrators. Following directions and abstract reasoning were lower in rank order importance for the school administrators and the administrators considered lack of oral expression, creativity, and self-concept more important than did teachers. Likewise, attitude toward school was considered a lesser problem by elementary teachers and administrators, although it was still relatively high when considering the total of 66 items. The greatest contrast was that administrators ranked problems related to speech much higher than did either elementary or secondary teachers.

In terms of the five most serious problems considered beyond solution for at least five years, the priority ranking of the three groups does not coincide, as indicated in Table 12. However, only 8 of the 66 items are required to include the first five rankings for each group. Reading comprehension, home environment, and work habits all are high in the priorities of each.

There is considerable agreement between elementary teachers, secondary teachers, and school administrators with regard to the rank order of services or approaches which would meet student problems (Table 13). The concordance coefficient of .74 is significant at the .01 level of confidence. All groups are unanimous on the potentials of individualized instruction and equally

Table 12

Comparison of the Ranking of Five Most Serious Educational Problems for the Next Five Years by Appalachian Elementary and Secondary Teachers and School Administrators: 1971

| Problem | Rank Order of Problems from 66 Items[a] | | | |
|---|---|---|---|---|
| | Total Sample | Elementary Teachers | Secondary Teachers | School Administrators |
| Reading Comprehension | 1 | 2 | 1 | 2 |
| Home Environment | 2 | 1 | 4 | 1 |
| Work Habits | 3 | 5 | 3 | 3.5 |
| Attitude Toward School | 4 | (9) | 2 | (10) |
| Listening Comprehension | 5 | 3 | (7) | (7) |
| Written Expression | (6) | (6) | (6) | 5 |
| Following Directions | (7) | 4 | (14) | (21) |
| Inadequate Motivation | (8) | (17) | 5 | 3.5 |

[a]A test of concordance indicates that the three groups do not agree upon the priorities of the five most serious problems even though they rate them high in the 66 possible items. (W = .49, not significant).

Table 13

Comparison of the Ranking of Services or Approaches Considered Capable of Resolving Educational Problems as Determined by Appalachian Elementary and Secondary Teachers and School Administrators: 1971

| Service or Approach | Total | | Rank Order of Services or Approaches | | |
|---|---|---|---|---|---|
| | Rank | % | Elementary Teachers | Secondary Teachers | School Administrators |
| Individualized Instruction | 1 | 66 | 1 | 1 | 1 |
| Psychological Evaluation | 2 | 51 | 2 | 2 | 2.5 |
| Speech Evaluation | 3 | 40 | 3 | 5.5 | 4 |
| Multimedia Approaches | 4 | 37 | 6 | 3 | 6 |
| Nongraded System | 5 | 36 | 4 | 8 | 6 |
| Use of Paraprofessionals | 6 | 36 | 5 | 7 | 2.5 |
| Team Teaching | 7 | 32 | 8 | 5.5 | 6 |
| Medical Evaluation | 8 | 30 | 10 | 9 | 8 |
| Dental Services | 9 | 29 | 7 | 12 | 9.5 |
| Use of Television | 10 | 29 | 9 | 10 | 12 |
| Visual Evaluation | 11 | 27 | 11 | 11 | 12 |
| Hearing Evaluation | 12 | 25 | 12 | 13 | 9.5 |
| Programmed Textbooks | 13 | 25 | 14 | 4 | 18 |
| Mobile Laboratories | 14 | 21 | 13 | 14 | 12 |
| "Classroom Without Walls" Community Centered | 15 | 12 | 16 | 16 | 15 |
| All Year School | 16 | 12 | 18 | 15 | 16 |
| Mobile Classrooms | 17 | 12 | 15 | 18 | 17 |
| Computer Assisted Instruction | 18 | 11 | 17 | 17 | 14 |
| Performance Contracting | 19 | 7 | 19 | 19 | 19 |

$$W = \frac{S}{1/12\ M^2\ (N^3 - N) - M\ T} = .74$$ significant at the .01 level of confidence.

(38)

unanimous in ranking performance contracting last. Individualized instruction and psychological evaluation were the only two items selected by a majority of the respondents.

## Summary

A stratified random sample of teachers and school administrators in the Appalachian portions of six states has selected reading comprehension as the major educational problem facing their students. Work habits was identified as the second major problem area for students. Written expression, spelling, reading rate and following directions were other areas of some significance. Rounding out the first 10 selections were listening comprehension, attention span, abstract reasoning, and attitude toward school. All of these appear to be important variables which should be given careful consideration in the development of models and products to improve Appalachian education.

Attitude toward school may be one variable that is a greater problem for Appalachian students than for students in other areas.

Appalachian educators considered reading comprehension, home environment, work habits, attitude toward school, and listening comprehension as the five most serious problems that would remain unsolved for the next five years.

The most highly recommended approach to resolve critical educational problems was individualized instruction. A service for assisting with problem resolution was psychological evaluation which was recommended by slightly more than half of the respondents. Other high selections of problem-solving approaches were multimedia instruction, nongraded systems, use of paraprofessionals, team teaching, and television. Additional services of promise were considered to be speech evaluation, medical evaluation, and dental services.

# Chapter 5

## Educational Needs in 1976 — As Viewed by 'Appalachian Experts'

In April, 1971, the Needs and Feasibility Committee of the Appalachia Educational Laboratory Board of Directors approved the use of a survey technique as one approach to investigate educational need in Appalachia. Procedures for conducting the survey were formulated by the Research and Evaluation Division of the Laboratory. The first task was the selection of a panel of persons known to be expert on the problems and characteristics of Appalachia. A second task was to design an appropriate survey instrument.

It was decided to secure nominations for the panel of experts from the AEL Board and staff. The Board is widely representative of both lay and professional education leadership. Their contacts with many facets of the Appalachian region made them an ideal source for nominations. Staff members represented another area of contact with the regional leadership, particularly in the educational endeavor. These nominations were collected and organized into a file for the solicitation of opinion. This file was supplemented by reviewing the literature on Appalachia, including the major regional surveys, and adding these scholars to the file. A final listing of 370 recommended persons was obtained. Of these, five were found to be deceased; addresses could not be located for another five, leaving a completed file of 360 names (Appendix G).

The instrument selected was a two question open-ended survey. The first question was "In your best judgment, what is the most critical problem that Appalachian education faces in the five years ahead, 1971-1976?" Stated on a separate page was the question, "In light of the most critical problem in the ensuing five years, 1971-1976, what new products or innovations do you believe that AEL should undertake?" (Appendix B).

A usable return of 126 questionnaires was secured representing 35 percent of those requested. Since respondents were permitted to remain anonymous, no data are available to indicate the degree of Appalachian leadership represented. However, many of those surveyed voluntarily added cover letters or signed their names to the instrument. These persons were very prominent in the literature of Appalachia and did represent key leadership in the region. For example, the 18 persons who listed their occupation as higher education included one chancellor, six college presidents, and four college or university deans.

Six persons supported their replies with position papers or copies of publications. A number of others submitted responses which were much more extensive than requested. The general tone of the replies indicated a depth of interest and a genuine desire to assist and, at times, to be heard.

The respondents were categorized into 27 broad occupational classifications. Table 14 presents a breakdown of the respondents by occupational category. Each category was assigned a number and this number was marked on each questionnaire. The questionnaires were then separated by category of occupation.

Table 14

Distribution of AEL Expert Opinion Survey
Respondents by Occupation: 1971

| Lay Personnel (not professional educators) | N | Educators | N |
|---|---|---|---|
| Clergy | 2 | School Administrators | 20 |
| Law | 2 | Teachers | 5 |
| Geographers | 1 | Professional Associations | 4 |
| Economists | 4 | Head Start | 1 |
| Sociologists | 4 | Vocational Directors | 1 |
| Medicine | 3 | College/University Administrators | 18 |
| Chemists | 1 | Professors of Education | 11 |
| Public Service | 4 | Academic Professors (Disciplines) | 5 |
| Housing | 1 | Agriculture | 3 |
| Planning Agencies | 4 | State Departments of Education | 22 |
| State School Boards | 2 | U.S. Office of Education | 1 |
| State Regents | 1 | | |
| State PTA | 1 | | |
| Business | 3 | | |
| Mining | 1 | | |
| Publisher | 1 | | |
| Sub Total | 35 | Sub Total | 91 |

Total Respondents: 126

For data analysis the replies were examined carefully to obtain a taxonomy for classification. A second reading was made and the significant statements or ideas were extracted and each statement recorded on a separate sheet of paper. These papers were then arranged into separate stacks, each stack representing a single idea or problem concept. A statement was generated for each group of similar concepts. The statements were arranged on the left vertical margin of a large chart. When a plot was made of the generated statements against occupational category, the resulting matrix provided the basis for drawing some comparisons for testing the universality of a given critical problem.

Twenty-one statements of critical problems were generated for the first question of the survey. Eleven of these statements represented the selections of 90 percent of the experts. Table 15 lists the problems in order of their rank (See Page 44).

The need for changing attitudes within Appalachia was ranked first by both lay persons and educators. The second-ranked problem was a need for educational leadership. Other major needs were curriculum changes; changes in the organization of the educational system; increased funding; resolutions of the problems of poverty and employment; vocational or career education; improved educational management; continuing and adult education; teacher competence, preparation, and behavior; and early childhood education.

When the rank order of these problem statements are listed by educators and lay persons there is a surprising agreement on the criticality of these problems during the five-year span from 1971-1976. The rank order correlation was .75 which is significant to the .01 level of confidence.

Table 15 indicates that proportionately more in-system persons (educators) were dissatisfied with the existing educational system than were the non-educators. Improved educational management was also listed as a higher priority by educators.

Fifteen recommendations to the Appalachia Educational Laboratory for the development of new educational products designed to meet the critical educational problems of 1976 were provided in the analysis of the returns. Table 16 (See Page 46) presents the data received in answer to the question, "In the light of the most critical problem in the ensuing five years, 1971-1976, what new products or innovations do you believe that AEL should undertake?"

The most common recommendation (27 percent) was for innovations relating to new patterns of educational organization or new structures of organization which would be more relevant to pupil needs and more attuned to knowledge about the processes of learning.

Table 15

Most Critical Problems to be Faced by Appalachian Education in the Next Five Years as Perceived by Persons Considered Knowledgeable About Appalachia: 1971

| Broad Categories | Educators (N=91) | | | Lay Persons (N=35) | | | All Respondents (N=126) | | |
|---|---|---|---|---|---|---|---|---|---|
| | N | %[a] | Rank | N | %[a] | Rank | N | %[a] | Rank |
| Need for changing attitudes within and about Appalachia | 21 | 16 | 1 | 9 | 18 | 1 | 30 | 17 | 1 |
| Need for educational leadership, all facets | 17 | 13 | 2 | 7 | 14 | 2.5 | 24 | 13 | 2 |
| Need for curriculum change, relevance and/or expansion | 13 | 10 | 4 | 7 | 14 | 2.5 | 20 | 11 | 3 |
| Need for a new or changed organization of the system, political and instructional | 15 | 11 | 3 | 3 | 6 | 8 | 18 | 10 | 4 |
| Need for funding, more money | 11 | 8 | 5 | 6 | 10 | 4 | 17 | 9 | 5 |
| Need for industrial development, increased or better employment opportunities - problem of poverty | 9 | 6 | 8 | 4 | 8 | 5.5 | 13 | 7 | 6 |
| Need for vocational or career education | 8 | 6 | 8 | 4 | 8 | 5.5 | 12 | 7 | 7 |
| Need for improved educational management | 9 | 6 | 6 | 1 | 2 | 12 | 10 | 6 | 8 |
| Need for continuing and adult education including community college and adult re-education | 8 | 6 | 8 | 0 | 0 | 18 | 8 | 4 | 9 |
| Problems relating to teacher preparation, competence and behavior | 4 | 3 | 10.5 | 3 | 6 | 8 | 7 | 4 | 10.5 |
| Need for early childhood education | 4 | 3 | 10.5 | 3 | 6 | 8 | 7 | 4 | 10.5 |
| Need for improved transportation, roads | 2 | 1.5 | 13.5 | 1 | 2 | 12 | 3 | 1.6 | 12.5 |

(continued)

Table 15 (continued)

| Broad Categories | Educators (N=91) | | | Lay Persons (N=35) | | | All Respondents (N=126) | | |
|---|---|---|---|---|---|---|---|---|---|
| | N | %[a] | Rank | N | %[a] | Rank | N | %[a] | Rank |
| Problem of improved educational facilities | 2 | 1.5 | 13.5 | 1 | 2 | 12 | 3 | 1.6 | 12.5 |
| Retention of population within Appalachia-out-migration | 2 | 1.5 | 13.5 | 0 | 0 | 18 | 2 | 1 | 14.5 |
| Need for improved educational guidance | 2 | 1.5 | 13.5 | 0 | 0 | 18 | 2 | 1 | 14.5 |
| Need for child care and programs for child development | 0 | 0 | 20.5 | 1 | 2 | 12 | 1 | 0.5 | 18.5 |
| Problems of the assessment of educational need | 1 | 0.7 | 17.5 | 0 | 0 | 18 | 1 | 0.5 | 18.5 |
| Problems relating to health and medical care | 1 | 0.7 | 17.5 | 0 | 0 | 18 | 1 | 0.5 | 18.5 |
| Retention of pupils in school drop-out problem | 1 | 0.7 | 17.5 | 0 | 0 | 18 | 1 | 0.5 | 18.5 |
| Need for improved housing in Appalachia | 0 | 0 | 20.5 | 1 | 2 | 12 | 1 | 0.5 | 18.5 |
| Needs relating to instructional method | 1 | 0.7 | 17.5 | 0 | 0 | 18 | 1 | 0.5 | 18.5 |

[a]% of respondents. Since some respondents submitted more than one statement, percentages total more than 100 percent.

$\rho = 1 - \frac{6\Sigma D^2}{N(N^2-1)} = .75$ Significant to the .01 level of confidence.

Table 16

Suggested Critical Program Development Areas for the Appalachia Educational Laboratory as Indicated by a Group of Persons Considered Knowledgeable About Appalachia: 1971

| Product Development Areas | Educators (N=91) | | | Lay Persons (N=35) | | | All Respondents (N=126) | | |
|---|---|---|---|---|---|---|---|---|---|
| | N | %[a] | Rank | N | %[a] | Rank | N | %[a] | Rank |
| Innovations relating to new patterns of educational organization, new structures more relevant to pupil needs and knowledge about learning | 19 | 22 | 1 | 12 | 39 | 1 | 31 | 27 | 1 |
| New patterns of means of focusing on vocational or career education for Appalachia (preschool through adult suggested) | 18 | 21 | 2 | 3 | 10 | 6 | 21 | 18 | 2 |
| Approaches for revitalizing or producing school leadership, lay and professional | 10 | 12 | 4 | 6 | 19 | 2.5 | 16 | 14 | 3 |
| Developments relating to curriculum--relevance, reorganization, expansion | 11 | 13 | 3 | 3 | 10 | 6 | 14 | 12 | 4 |
| Development of programs for improving school management, instructional and administrative | 7 | 8 | 6 | 6 | 19 | 2.5 | 13 | 11 | 5 |
| Innovative approaches to continuing education, adult basic education, retraining and post-secondary opportunity | 9 | 11 | 5 | 1 | 3 | 10.5 | 10 | 9 | 6 |
| New products related to improved or changed instructional methods | 6 | | 7.5 | 2 | 6 | 8.5 | 8 | 7 | 7.5 |
| Continuation of the development of programs for early childhood education and/or expansion to earlier years | 6 | 7 | 7.4 | 2 | 6 | 8.5 | 8 | 7 | 7.5 |

(continued)

Table 16 (continued)

| Product Development Areas | Educators (N=91) | | | Lay Persons (N=35) | | | All Respondents (N=126) | | |
|---|---|---|---|---|---|---|---|---|---|
| | N | %[a] | Rank | N | %[a] | Rank | N | %[a] | Rank |
| The development of programs for teacher preparation and for retraining or reorienting | 3 | 4 | 10 | 4 | 13 | 4 | 7 | 6 | 9.5 |
| Programs for educational guidance, all phases | 4 | 5 | 9 | 3 | 10 | 6 | 7 | 6 | 9.5 |
| Develop a program or programs for the assessment of needs and goals for Appalachia | 2 | 2 | 11 | 0 | 0 | 13.5 | 2 | 2 | 11.5 |
| Programs or innovations relative to year around school | 1 | 1 | 13.5 | 1 | 3 | 10.5 | 2 | 2 | 11.5 |
| Child care and child development including the use of drugs to improve learning ability | 1 | 1 | 13.5 | 0 | 0 | 13.5 | 1 | 1 | 14 |
| Continue current programs with no new products, consolidate gains | 1 | 1 | 13.5 | 0 | 0 | 13.5 | 1 | 1 | 14 |
| Make an evaluation of all schools and rate by district | 1 | 1 | 13.5 | 0 | 0 | 13.5 | 1 | 1 | 14 |

[a]% of respondents. Since some respondents submitted more than one statement, the percentages total more than 100 percent.

$\rho = 1 - \frac{6 \Sigma D^2}{N(N^2-1)} = .73$ Significant to the .01 level of confidence.

New patterns or means of focusing on vocational career education for Appalachia, preschool through adult, was chosen by 18 percent of the experts. This was a more popular choice with educational respondents (21 percent) than with lay persons (10 percent).

Approaches for revitalizing or producing educational leadership was ranked third in the recommendations with a greater percentage of lay persons (19 percent) suggesting this than educators (12 percent).

Curriculum improvement, programs for improving school management, innovative approaches to continuing and adult education, new products for changing instructional methods, and early childhood education were other relatively high ranking suggestions.

Although lay persons and educators exhibited a high degree of commonality ($\sum$ = .73) in their suggestions of products, non-educators ranked new or revised organizations, revitalized or improved school leadership, improved school management and teacher preparation or reorientation considerably higher.

Several limitations must be considered for this study. First, although the sample was broad, it failed to elicit replies from organized labor and to obtain sufficient representation from Appalachia's business leaders. Second, a number of the problems identified are not educational, even though relevant to education, and a number of recommendations are not within the mission and structure of AEL. This infers that respondents did not receive sufficiently precise instructions.

In summary, the survey instrument did yield problem data for AEL consideration. It also provided expert proposals for critical problem resolutions. There was a high degree of lay personnel and professional educator agreement on both problems and suggested AEL products.

# Chapter 6

## AEL Membership Suggests Areas for Educational Development

Article I of the By-Laws of the Appalachia Educational Laboratory, Inc., requires an annual meeting of the corporation members. This meeting is held each year in Charleston, W. Va. The By-Laws stipulate that any matter may be considered by the members in attendance. Since this membership is broadly representative of the leadership in the six Appalachian states served by AEL, the decision was made to conduct the 1971 membership meeting in a manner designed to produce a membership consensus on needed educational development for 1976.

A modified elementary convergence technique was employed to arrive at consensus. Members who had indicated that they planned to attend the meeting were mailed a review of published educational needs for the region and informed about the nature of the program. At the meeting in July two general sessions were held to establish the framework for discussion and provide specific instructions for participants.

Prior to the annual meeting a cadre of group leaders selected for their skill in use of group dynamics, had been recruited. These leaders were informed of procedures to be followed and the desired outcomes at a brief training session.

As participants registered, they were assigned to a specific discussion group. Groups were structured to insure that participants represented broadly divergent backgrounds. Each group also

was assigned a member of the AEL Board of Directors to serve as a consultant and an AEL staff member who served as recorder. Group size was limited to a maximum of 11 participants. Twenty groups were organized.

At the first session, each group was given the following assignment: "Discuss educational problems facing Appalachia. Develop insofar as is possible the group consensus of the most critical problem for the next five years. Based upon this consensus agree upon a proposed educational product for AEL feasibility analysis, development, and diffusion." (See Appendix D for forms used.)

The statements were collected at the end of the sessions, typed, and reproduced for each participant to use in session two.

In the second session each group was asked to "Discuss the statements and list two statements which the unit considers to be most critical and at the same time capable of AEL development."

At the conclusion of this session the statements were again collected, tallied, typed, and copies were duplicated for each participant. The 20 groups produced 17 statements. Participants were informed of the rank order of the selections.

In a third session, each group was requested to "Discuss the revised statements and select one as the most appropriate and necessary. Produce, to the extent that time permits, a rationale in support of this final selection."

The 20 groups selected seven educational products as needed developments for 1976. Ten of the groups (50 percent) converged upon a single need. (See Appendix E for complete results.)

The Fifth Annual Membership Meeting of the Appalachia National Laboratory thus produced a final list of seven educational development needs. More than 200 persons from the region representing both professional educators and lay persons, were involved (Appendix H). Selected educational products in the order of the frequency of selection were:

- A pattern for community schools, involving programs of educational experience for all members of the family; developed out of resources provided by representatives of education, industry, business; based on shared studies of the needs of the area. (Selected by 10 groups.)
- To develop a structure and operation which would put into effect the innovative programs (already developed by AEL and others), focusing on communicative skills.

- A system for the development of self-respect among pupils and interpersonal respect between pupils and between teachers and pupils.

- Improved models for improved communications between school-community agencies and between teachers-administrators and school-home.

- A process or program to bring about attitudinal change among the groups of administrators, teachers, parents, students and others involved in and with education.

- Home intervention in education from prenatal on, with a multi-disciplinary approach--medical, social--educational and environmental which would involve retraining of teachers to deal with real problems of Appalachia to significantly change parents and students.

- A program to provide worthwhile learning experiences to individuals--in and out of schools--devising model organizational structures in which these things can happen, including improved communications, climates for changes, with stress on attitudinal changes, incorporating more cooperative concepts and community involvement.

# Chapter 7

## Directions for Educational Development in Appalachia

The 1971 study of educational needs in Appalachia was based on a review of the literature, a review of existing data which might reveal needs, an Educational Needs Inventory submitted to a stratified random sample of Appalachian teachers and administrators, an analysis of data collected in a 1967 survey of all Appalachian superintendents in six states, and an opinion survey of persons considered most knowledgeable about Appalachia.

It is difficult to differentiate between educational needs and the massive Appalachian problems of transportation, ecological deterioration, political reform, industrialization, out-migration, housing, employment, and poverty. All of these are relevant to educational need. The Appalachia Educational Laboratory has a mission which is geared to produce educational change in Appalachia. Although educational improvement is not likely to cure all of the region's ills, it is a positive long range force which can be brought to bear upon these problems. It is also evident that these inherent problems impose restrictions and limitations upon the techniques which the Laboratory can employ to create change (i.e., limited fiscal resources, inadequate transportation facilities, etc.).

The fact of political geography makes the assessment of educational need in Appalachia difficult. Only the state of West Virginia lies entirely within the Appalachian region. Portions of 12 other states are included in the total region. Since each state

operates as political entity, the formulation of educational goals and objectives that are uniquely Appalachian is difficult. Parnes (1964) states that "the concept of need has no meaning except in relation to goals or objectives, and this is no less true of education than of any other category of needs." This is consistent with most other writers[1] in the field who consider needs as "gaps" or "discrepancies" between established goals or standards and actual output measurements. The political structure provides relatively little that can be interpreted as either Appalachian educational goals or Appalachian educational achievements.

In the absence of more exacting information the preceding discussion explains the necessity for presenting "needs perceptions" to provide an assessment of gaps or discrepancies in Appalachian education. Data available on a statewide basis, such as the percentage of draftees who fail to meet mental requirements, are indicators of possible weaknesses in the output of the educational system, but it is dangerous to presume that this is solely an Appalachian deficiency.

For convenience in considering educational needs, a format has been devised that categorizes "need perceptions" into pupil needs and system needs. Pupil needs relate directly to system outputs and also relate to goals of improved student behavior. System needs are those which contribute to the improvement of the educational system (establishment) and are presumed to result in improved student behavior. Table 17 attempts to present a taxonomy for the comparison of needs statements or perceptions. The needs perceptions are not sufficiently defined or exact enough to fit into precise classifications. Glass (1970) cites a number of studies which indicate that the affective domain interacts with the cognitive domain. Both overlap and interaction between the domains are indicated by the very general adaptation of Bloom's taxonomic categories (Bloom, Hastings, & Madans, 1971) to the stated educational needs in Appalachia (Table 17).

## Pupil Needs -- Cognitive-Psychomotor Area

Not enough hard data currently are available. In the Virginia State Department of Education assessment (1970), the student sample in the Southwest region, a predominately Appalachian area, was found to have no cognitive needs as defined by the established criteria.

West Virginia State Department of Education (1970) reports on the State-County Testing Program indicate that while test means are slightly below national norms, the differences, although statistically

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[1] Davis, Fitzgerald, Flanagan, Johns, Kaufman, Harsh, Provis, Pfeiffer and Tyler are among those advocating needs in terms of goals or standards.

Table 17

A Taxonomy for Listing Critical Educational Needs in Appalachia

| Need Category | AEL Educational Need Inventory, 1971 ( ) Indicates Priority Rank | AEL Expert Opinion Survey, 1971 ( ) Indicates Priority Rank | AEL Survey of Appalachian Superintendents, 1967 ( ) Indicates Priority Rank | Recent Needs Studies in Appalachian States | Available Data Virginia, West Virginia, NMSQT USOE |
|---|---|---|---|---|---|
| Pupil Needs: (Outputs) Cognitive-Psycho- | (1) Reading Comprehension<br>(5) Listening Comprehension<br>(6) Written Expression<br>(7) Spelling<br>(8) Reading Rate<br>(11) Abstract Reasoning | (6) Skills, Career-Vocational<br>(8) Skills, for Adult and Continuing Education | (7) Skills, Vocational | Skills Career Skills, Adult and Continuing Education | Basic Academic Skills |
| Affective Areas | (2) Home Environment<br>(3) Work Habits<br>(4) Attitude Toward School<br>(9) Following Directions<br>(10) Attention Span | (1) Attitude, Self Concept and Regional Concept<br>(6) Career Attitudes | | Human Relationships Citizenship | |
| System Needs: (Inputs) | (1) Individualized Instruction<br>(2) Psychological Evaluation<br>(3) Speech Evaluation<br>(4) Multi-media Approaches<br>(5) Non-graded System<br>(6) Use of Para-professionals<br>(7) Team Teaching | (2) Educational Leadership<br>(3) Curricular Change<br>(4) Reorganization of the System<br>(5) Additional Funding<br>(7) Improved Educational Management<br>(9) Teacher Preparation, Competence, and Behavior<br>(10) Early Childhood Education | (1) Facilities<br>(2) Curriculum Improvement<br>(3) Fiscal Resources<br>(4) Personnel Selection<br>(5) Consolidation<br>(6) Personnel Recruitment<br>(8) Educational Leadership | Early Childhood Education<br>Curricular Revision<br>Teacher Preparation for Educational Technology<br>Modern Management Techniques | Fiscal Resources<br>Psychological Services<br>Instructional Supervision<br>Teacher Salary |

significant, are not large. Standardized tests used in the program include the Otis-Lennon Mental Ability Test, the Stanford Achievement Test, the School-College Ability Test, and the Sequential Test of Educational Progress.

Nichols (1969) compiled a composite index for ranking Standard Metropolitan Statistical Areas and areas outside of the SMSA's on the 1966 National Merit Scholarship Test. The study was undertaken to determine factors related to the concentration of talent. His findings were based upon the high scorers in a population of 800,000 eleventh grade students from 17,500 public and private high schools. On Nichols' index, the Appalachian SMSA's were generally low. Of the total 278 SMSA areas (including the 50 states), none from the Appalachian region ranked in the first 80. West V nia, the only completely Appalachian state, ranked 261st in the . areas. This study of 1966 eleventh graders indicated a real need in the cognitive area for Appalachian pupils (Appendix C).

The Appalachia Educational Laboratory conducted a study in May, 1971, to determine teacher-administrator perceptions of educational need. An Educational Needs Inventory which had been developed in Montgomery County, Maryland, and validated in Syracuse, N.Y., was selected to obtain the data. A random stratified sample of 978 returns was secured from 50 Appalachian school districts in six states. The highest ranked educational need was reading comprehension. Other cognitive needs, ranking fifth, sixth, seventh, and eighth respectively, were listening comprehension, written expression, spelling, and reading rate. Thus, for those persons in elementary and secondary schools who work daily with Appalachia's young people, reading, written expression, and listening comprehension are serious cognitive needs (Tables 7 & 9).

An opinion survey of persons known to be knowledgeable about Appalachia was completed in June, 1971, by the Laboratory. The 126 respondents indicated needs primarily in terms of system inputs. However, it can be inferred from the data that vocational and/or career skills were considered as important cognitive-psychomotor needs. The improvement of basic skills and the development of career skills in continuing and adult education were also highly ranked (Tables 15 & 16).

All school superintendents in the six-state AEL region were surveyed in 1967. Educational needs constituted one item in that survey. An analysis of these data yielded a number of needs statements; however, the only statement directly related to the cognitive-psychomotor area was the need for increased vocational skills (Table 3).

Needs assessment results have been published by the states of Ohio, Kentucky, Tennessee, Virginia, and West Virginia. Since the

first four have Appalachia areas and West Virginia is entirely within the region, the results of these studies may have relevance. They identify a need for vocational skills as well as a need for skill development in continuing and adult education.

The foregoing discussion seems to indicate that in Appalachia critical educational needs in the cognitive-psychomotor areas are reading, written expression, listening comprehension, and career skills.

## Pupil Needs — Affective Area

The actual hard data were too limited to provide information on affective needs of students. Work now under way in the several states may provide more precise needs data in the near future.

Some needs perceptions that can be inferred to be in the affective domain were obtained from AEL's Educational Needs Inventory. Needs ranking high on this teacher-administrator list were home environment, work habits, and attitude toward school. Also identified, but at a lower priority, were following directions and attention span. These needs would be generally consistent with results of sociological studies of Appalachian cultural patterns.

In the Expert Opinion Survey conducted by AEL, the greatest single problem was considered to be the need for changes in attitude, including attitudes within and about the region. A need to change attitudes toward careers was also expressed.

Needs assessment reports from states in the Appalachian region specified improved human relationships and citizenship as educational needs.

Therefore, it can be concluded that major needs in the affective domain relate to attitudes, including self concept, regional perceptions, and reaction to the educational system as it exists. Improvements also are needed in student home environment, work habits, and ability to follow directions. Pupil attention span and lack of skill in abstract reasoning are other problems teachers identify. The Appalachian experts consider human relationships and citizenship broad areas of concern.

## System Needs

Since the Educational Needs Inventory was designed to identify student needs and services, data yielded no direct identification of system needs. However, responses to the section requesting educators to specify felt needs for services and approaches may be interpreted as inferring inputs for the improvement of education. A need for individualized instruction was the first choice for each state, as well as for elementary teachers, secondary teachers, and administrators. It was selected as an effective approach to improved educational opportunity by 66 percent of the respondents. Psychological evaluation and speech evaluation were deemed necessary services to meet pupil needs.

The 126 Appalachian experts submitted needs or problem statements that could be assumed to be predominately system inputs. Top-ranked on this list was the need for educational leadership. Other needs the panel of experts identified included curricular change, a reorganization of the educational system, additional funding, improved educational management, reoriented teacher preparation, need for improved teacher competence and behavior modifications, and early childhood education.

In the 1967 AEL survey of school district superintendents the reported educational needs were definitely oriented to system inputs. Data analysis revealed the major needs to be facilities, curricular improvement, fiscal resources, personnel selection, consolidation, personnel recruitment, and educational leadership.

The review of assessment results reported by six states with Appalachian constituencies, revealed that the major educational deficiencies were lack of early childhood education, need for curricular revision, preparation of teachers to use educational technology, and improved management techniques.

The National Center for Educational Statistics, U.S. Office of Education (1970) reports statistical data by state. Until data are available for Appalachian portions of the states in the AEL region, an accurate statement of educational need is not possible. However, recognizing this limitation, the data do infer that these states need more fiscal resources, improved availability of school psychological services, more instructional supervision, and improved teacher salaries.

Consistently high ranked needs identified in the Appalachia Educational Laboratory Needs and Feasibility Study effort and literature review suggest that the region has system input needs in early childhood education, attention to curricular revision, increased fiscal resources, adoption of modern management techniques, improved educational leadership, appropriate teacher preparation, appropriate school organization, and expanded services for students, particularly in the areas of psychological and speech evaluation.

## Conclusions

Based upon available data and the review of the literature, priority needs in education for Appalachia appear to be:

Pupil Needs (System Outputs)

Cognitive-Psychomotor Domain

- Reading skills including comprehension and rate,
- Written expression,
- Listening comprehension,
- Career skills (vocational)
- Abstract reasoning.

Affective Domain (some overlap to psychomotor domain)

- Attitudes included self-concept, regional perceptions, and career concepts,
- Attitude toward school,
- Home environment,
- Human relationships,
- Citizenship concepts,
- Following directions,
- Attention span.

System Needs (System Inputs)

- Educational leadership,
- Curricular revision,
- Early childhood education,
- Improved management techniques,
- Fiscal resources,
- Appropriate teacher preparation,
- Revitalized or new school organization,
- Improved services making available school psychologists and speech therapists.

# Appendix A

EDUCATIONAL NEEDS INVENTORY

Appalachia Educational Laboratory

EDUCATIONAL NEEDS INVENTORY

Educational Administrator Form

City, County,
or District _____ Title _____

Number of students in your jurisdiction _____

Instructions

1. Please read the questions at the top of each column before completing the Survey Form

2. Each item response represents your best judgment.

3. Problem areas: Items 1-66 (pages 2 and 3)

   a. Please check in Column (1) whether you consider this is a problem.

   b. In Column (2) please evaluate the seriousness of the problem.

   c. In Column (3) check whether you believe that the solution to the problem requires a special program.

   d. In Column (4) check the degree to which you think the problem is being resolved for your students.

   e. In Column (5) check the five problems which you consider the most serious and the most unlikely to be solved in the next five years.

4. Services and current educational approaches: (page 4)

   a. Please check in Column (1) the services or approaches that you feel would be most likely to resolve the educational problems which you feel are critical. Add any services or programs that you believe should have been listed.

   b. For the services or educational approaches checked in Column (1) answer the Column (2) question in terms of your best judgment.

   c. Estimate the Column (3) response in terms of your best estimate for your students.

5. When you have completed the form place it in the envelope, seal, and return to administrator responsible.

Acknowledgement - The items in the Educational Needs Inventory (pages 2 and 3) were developed by Montgomery County Public Schools, Rockville, Maryland, under contract with the United States Office of Education, ESEA, Title III, Public Law 89-10.

| (1) | (2) | | | (3) | | (4) | | | | (5) |
|---|---|---|---|---|---|---|---|---|---|---|
| Do any of these items represent a problem area for your students? | To what degree do you think this is a serious problem in the schools? | | | Are the problems generally serious enough to require a special program? | | To what degree do you think the problems are being resolved? | | | | Check the 5 most serious education problems you think will remain unresolved for at least the next 5 years. |
| | Very Serious | Serious | Not Serious | Yes | No | Very Poorly | Poorly | Satisfactory | Very satisfactory | |
| ____ 1. Vision | | | | | | | | | | |
| ____ 2. Hearing | | | | | | | | | | |
| ____ 3. Visual Perception | | | | | | | | | | |
| ____ 4. Speech | | | | | | | | | | |
| ____ 5. Motor Coordination | | | | | | | | | | |
| ____ 6. Low Energy Level | | | | | | | | | | |
| ____ 7. Frequent Illnesses | | | | | | | | | | |
| ____ 8. Physical Disability | | | | | | | | | | |
| ____ 9. Oral Expression | | | | | | | | | | |
| ____10. Listening Comprehension | | | | | | | | | | |
| ____11. Poor Memory | | | | | | | | | | |
| ____12. General Information | | | | | | | | | | |
| ____13. Work Habits | | | | | | | | | | |
| ____14. Attitude Toward School | | | | | | | | | | |
| ____15. Abstract Reasoning | | | | | | | | | | |
| ____16. Attention Span | | | | | | | | | | |
| ____17. Following Directions | | | | | | | | | | |
| ____18. Arithmetic Reasoning | | | | | | | | | | |
| ____19. Arithmetic Computation | | | | | | | | | | |
| ____20. Reading Comprehension | | | | | | | | | | |
| ____21. Reading Rate | | | | | | | | | | |
| ____22. Spelling | | | | | | | | | | |
| ____23. Written Expression | | | | | | | | | | |
| ____ 24. School Attendance | | | | | | | | | | |
| ____25. Too Impulsive | | | | | | | | | | |
| ____26. Lack of Alertness | | | | | | | | | | |
| ____27. Aggressiveness | | | | | | | | | | |
| ____28. Restlessness | | | | | | | | | | |
| ____29. Overly Anxious | | | | | | | | | | |
| ____30. Over-Reactive | | | | | | | | | | |
| ____ 31. Tenseness | | | | | | | | | | |
| ____32. Inadequate Motivation | | | | | | | | | | |
| ____33. Inappropriate Behavior | | | | | | | | | | |

| (1) | (2) | | | (3) | | (4) | | | | (5) |
|---|---|---|---|---|---|---|---|---|---|---|
| Do any of these items represent a problem area for your students? | To what degree do you think this is a serious problem in the schools? | | | Are the problems generally serious enough to require a special program? | | To what degree do you think the problems are being resolved? | | | | Check the 5 most serious education problems you think will remain unresolved for at least the next 5 years. |
| | Very Serious | Serious | Not Serious | Yes | No | Very Poorly | Poorly | Satisfactory | Very Satisfactory | |
| ____34. Bizarre Behavior | | | | | | | | | | |
| ____35. Withdrawn Behavior | | | | | | | | | | |
| ____36. Daydreams | | | | | | | | | | |
| ____37. Self-conscious | | | | | | | | | | |
| ____38. Low Self-concept | | | | | | | | | | |
| ____39. Fearfulness | | | | | | | | | | |
| ____40. Depression | | | | | | | | | | |
| ____41. Gets Sick When Faced With Difficult Tasks | | | | | | | | | | |
| ____42. Passive Toward Peers | | | | | | | | | | |
| ____43. Ignored by Peers | | | | | | | | | | |
| ____44. Actively Rejected by Peers | | | | | | | | | | |
| ____45. Negative Leader of Peers | | | | | | | | | | |
| ____46. Easily Misled by Peers | | | | | | | | | | |
| ____47. Hostile Toward Adults | | | | | | | | | | |
| ____48. Passive Toward Adults | | | | | | | | | | |
| ____49. Too Competitive | | | | | | | | | | |
| ____50. Too Little Participation in Activities | | | | | | | | | | |
| ____51. Excessive Participation in Activities | | | | | | | | | | |
| ____52. Overage for This Class | | | | | | | | | | |
| ____53. Immaturity | | | | | | | | | | |
| ____54. Early Maturity | | | | | | | | | | |
| ____55. Antisocial Behavior | | | | | | | | | | |
| ____56. Socially Different from Groups | | | | | | | | | | |
| ____57. Home Environment | | | | | | | | | | |
| ____58. Class Scapegoat | | | | | | | | | | |
| ____59. Lack of Appropriate Social Skills | | | | | | | | | | |
| ____60. Poor Grooming | | | | | | | | | | |
| ____61. Boy-Girl Relationships | | | | | | | | | | |
| ____62. Grade Placement Too High | | | | | | | | | | |
| ____63. Grade Placement Too Low | | | | | | | | | | |
| ____64. Program Is Too Difficult | | | | | | | | | | |
| ____65. Program Is Unchallenging | | | | | | | | | | |
| ____66. Program Does Not Provide Outlet for Creativity | | | | | | | | | | |

| Services And/Or Approaches Which May Be Appropriate For Meeting Educational Needs.<br><br>(Add others you feel are needed.) | (1) | (2) | | | (3) | |
|---|---|---|---|---|---|---|
| | Check those approaches or services, which if provided, would be most likely to resolve the problems you think are critical. | If the program or service were available, would your school actually make use of it? | | | How many of your students are or should be receiving these services or programs right now? | |
| | | Not Likely | Possibly | Definitely | Are Now Receiving | Are Not, Should Be |
| 1. Speech Evaluation | | | | | | |
| 2. Hearing Evaluation | | | | | | |
| 3. Vision Evaluation | | | | | | |
| 4. Medical Evaluation | | | | | | |
| 5. Dental Services | | | | | | |
| 6. Psychological Evaluation | | | | | | |
| 7. Individualized Instruction | | | | | | |
| 8. Non-graded System | | | | | | |
| 9. Team Teaching | | | | | | |
| 10. Use of Paraprofessionals | | | | | | |
| 11. Multi-media Approaches | | | | | | |
| 12. Programmed Textbooks | | | | | | |
| 13. Use of Television | | | | | | |
| 14. Mobile Classrooms | | | | | | |
| 15. Mobile Laboratories | | | | | | |
| 16. Computer Assisted Instruction | | | | | | |
| 17. All Year School | | | | | | |
| 18. Performance Contracting | | | | | | |
| 19. "Classroom Without Walls" (Community Centered) | | | | | | |
| 20. | | | | | | |
| 21. | | | | | | |
| 22. | | | | | | |

Appalachia Educational Laboratory

EDUCATIONAL NEEDS INVENTORY

Classroom Teacher Form

School _____ City, County, or District _____

Grade or Subject _____ Number of students in your classes(es) _____

Instructions

1. Please read the questions at the top of each column before completing the Survey Form.

2. Each item response represents your best judgment.

3. Problem areas: Items 1-66 (pages 2 and 3).

   a. Please check in Column (1) whether this item is a problem in <u>your</u> class or classes.

   b. Please enter in Column (2) the number of students in <u>your</u> class or classes that you estimate to be affected by this problem.

   c. In Column (3) check either "yes" or "no" in terms of your best judgment.

   d. Check in Column (4) the degree to which you believe the problem is being resolved by <u>your</u> district for <u>your</u> classes.

   e. In Column (5) check the five problems which you consider the most serious and the most unlikely to be solved in the next five years.

4. Services and current educational approaches: (page 4)

   a. Please check in Column (1) the services or approaches that you feel would be most likely to resolve the educational problems which you feel are critical. Add any services or programs that you believe should have been listed.

   b. For the services or educational approaches checked in Column (1), answer the Column (2) question in your best judgment.

   c. In Column (3) estimate in terms of your knowledge of <u>your</u> class or classes.

5. When you have completed the form place it in the envelope, seal, and return to your superintendent or administrator.

<u>Acknowledgement</u> - The <u>items</u> in the Educational Needs Inventory (pages 2 and 3) were developed by Montgomery County Public Schools, Rockville, Maryland, under contract with the United States Office of Education, ESEA, Title III, Public Law 89-10.

| (1) | (2) | (3) | | (4) | | | | (5) |
|---|---|---|---|---|---|---|---|---|
| Do any of these items represent a problem area for your students? | How many students have this problem? | Are the problems generally serious enough to require a special program? | | To what degree do you think the problems are being resolved? | | | | Check the 5 most serious education problems you think will remain unresolved for at least the next 5 years. |
| | | Yes | No | Very Poorly | Poorly | Satisfactory | Very satisfactory | |
| _____ 1. Vision | | | | | | | | |
| _____ 2. Hearing | | | | | | | | |
| _____ 3. Visual Perception | | | | | | | | |
| _____ 4. Speech | | | | | | | | |
| _____ 5. Motor Coordination | | | | | | | | |
| _____ 6. Low Energy Level | | | | | | | | |
| _____ 7. Frequent Illnesses | | | | | | | | |
| _____ 8. Physical Disability | | | | | | | | |
| _____ 9. Oral Expression | | | | | | | | |
| _____10. Listening Comprehension | | | | | | | | |
| _____11. Poor Memory | | | | | | | | |
| _____12. General Information | | | | | | | | |
| _____13. Work Habits | | | | | | | | |
| _____14. Attitude Toward School | | | | | | | | |
| _____15. Abstract Reasoning | | | | | | | | |
| _____16. Attention Span | | | | | | | | |
| _____17. Following Directions | | | | | | | | |
| _____18. Arithmetic Reasoning | | | | | | | | |
| _____19. Arithmetic Computation* | | | | | | | | |
| _____20. Reading Comprehension* | | | | | | | | |
| _____21. Reading Rate* | | | | | | | | |
| _____22. Spelling* | | | | | | | | |
| _____23. Written Expression* | | | | | | | | |
| _____24. School Attendance | | | | | | | | |
| _____25. Too Impulsive | | | | | | | | |
| _____26. Lack of Alertness | | | | | | | | |
| _____27. Aggressiveness | | | | | | | | |
| _____28. Restlessness | | | | | | | | |
| _____29. Overly Anxious | | | | | | | | |
| _____30. Over-Reactive | | | | | | | | |
| _____31. Tenseness | | | | | | | | |
| _____32. Inadequate Motivation | | | | | | | | |
| _____33. Inappropriate Behavior | | | | | | | | |

*(19-23) Kindergarten Teachers please note that these 5 items do not apply.

| (1) | (2) | (3) | | (4) | | | | (5) |
|---|---|---|---|---|---|---|---|---|
| Do any of these items represent a problem area for your students? | How many students have this problem? | Are the problems generally serious enough to require a special program? | | To what degree do you think the problems are being resolved? | | | | Check the 5 most serious education problems you think will remain unresolved for at least the next 5 years. |
| | | Yes | No | Very Poorly | Poorly | Satisfactory | Very satisfactory | |
| ____34. Bizarre Behavior | | | | | | | | |
| ____35. Withdrawn Behavior | | | | | | | | |
| ____36. Daydreams | | | | | | | | |
| ____37. Self-conscious | | | | | | | | |
| ____38. Low Self-concept | | | | | | | | |
| ____39. Fearfulness | | | | | | | | |
| ____40. Depression | | | | | | | | |
| ____41. Gets Sick When Faced With Difficult Tasks | | | | | | | | |
| ____42. Passive Toward Peers | | | | | | | | |
| ____43. Ignored by Peers | | | | | | | | |
| ____44. Actively Rejected by Peers | | | | | | | | |
| ____45. Negative Leader of Peers | | | | | | | | |
| ____46. Easily Misled by Peers | | | | | | | | |
| ____47. Hostile Toward Adults | | | | | | | | |
| ____48. Passive Toward Adults | | | | | | | | |
| ____49. Too Competitive | | | | | | | | |
| ____50. T[illegible]le Participation [illegible]ivities | | | | | | | | |
| ____51. Excessive Participation in Activities | | | | | | | | |
| ____52. Overage for This Class | | | | | | | | |
| ____53. Immaturity | | | | | | | | |
| ____54. Early Maturity | | | | | | | | |
| ____55. Antisocial Behavior | | | | | | | | |
| ____56. Socially Different From Groups | | | | | | | | |
| ____57. Home Environment | | | | | | | | |
| ____58. Class Scapegoat | | | | | | | | |
| ____59. Lack of Appropriate Social Skills | | | | | | | | |
| ____60. Poor Grooming | | | | | | | | |
| ____61. Boy-Girl Relationships | | | | | | | | |
| ____62. Grade Placement Too High | | | | | | | | |
| ____63. Grade Placement Too Low | | | | | | | | |
| ____64. Program Is Too Difficult | | | | | | | | |
| ____65. Program Is Unchallenging | | | | | | | | |
| ____66. Program Does Not Provide Outlet for Creativity | | | | | | | | |

| Services And/Or Approaches Which May Be Appropriate For Meeting Educational Needs.<br><br>(Add others you feel are needed.) | (1) | (2) | | | (3) | |
|---|---|---|---|---|---|---|
| | Check those approaches or services, which if provided, would be most likely to resolve the problems you think are critical. | If the program or service were available, would your school actually make use of it? | | | How many of your students are or should be receiving these services or programs right now? | |
| | | Not Likely | Possibly | Definitely | Are Now Receiving | Are Not, Should Be |
| 1. Speech Evaluation | | | | | | |
| 2. Hearing Evaluation | | | | | | |
| 3. Vision Evaluation | | | | | | |
| 4. Medical Evaluation | | | | | | |
| 5. Dental Services | | | | | | |
| 6. Psychological Evaluation | | | | | | |
| 7. Individualized Instruction | | | | | | |
| 8. Non-graded System | | | | | | |
| 9. Team Teaching | | | | | | |
| 10. Use of Paraprofessionals | | | | | | |
| 11. Multi-media Approaches | | | | | | |
| 12. Programmed Textbooks | | | | | | |
| 13. Use of Television | | | | | | |
| 14. Mobile Classrooms | | | | | | |
| 15. Mobile Laboratories | | | | | | |
| 16. Computer Assisted Instruction | | | | | | |
| 17. All Year School | | | | | | |
| 18. Performance Contracting | | | | | | |
| 19. "Classroom Without Walls" (Community Centered) | | | | | | |
| 20. | | | | | | |
| 21. | | | | | | |
| 22. | | | | | | |

# Appendix B

EXPERT OPINION SURVEY--1971

APPALACHIA EDUCATIONAL LABORATORY
P. O. Box 1348
Charleston, West Virginia 25325

# Expert Opinion Survey - 1971

Profession or Occupation _____ State of Residence _____

Appalachia is said by some persons to lag the rest of the nation in ways such as median income, health standards, educational level, housing conditions, and similar indices. These are symptoms of problems. The problems may be relevant to the quality of education in Appalachia or at least partially so. In your best judgment, what is the most critical problem that Appalachian education faces in the five years ahead, 1971-1976?

The Appalachia Educational Laboratory develops and implements promising new concepts for the improvement of education. In industrial terminology this is analogous to the development and marketing of new products. In the light of the most critical problem in the ensuing five years, 1971-1976, what new "products" or innovations do you believe that AEL should undertake?

# Appendix C

RANKING OF APPALACHIAN AREAS ON THE NATIONAL
MERIT SCHOLARSHIP QUALIFYING TEST

NATIONAL MERIT SCHOLARSHIP QUALIFYING TEST (NMSQT)
DATA AND APPALACHIAN AREAS

A study of the 1966 participants in the NMSQT was undertaken by Nichols[1] to determine factors related to the concentration of talent. His data list talent indices by Standard Metropolitan Statistical Areas (SMSA's) and by states (areas of the state outside of the SMSA's).

An examination of the data reveals that Appalachian areas are generally low on the Composite Index ranking. This is true even though the states listed include non-Appalachian areas in the data.

The NMSQT was taken by "almost all" of the most capable students in the United States. Data are based upon approximately 800,000 eleventh grade students in 17,500 public and private high schools.

Correlations of the Composite Index with other characteristics of the metropolitan areas revealed that talented students tend to be concentrated in areas with large populations that are economically well off and have a high educational level, a high proportion of foreign born, a low proportion of nonwhites and low fertility.

[1] Robert C. Nichols, "Where the Brains Are," NMSC RESEARCH REPORTS, Vol. 5, No. 5, 1969.

## RANK OF APPALACHIAN AREAS ON NATIONAL MERIT SCHOLARSHIP TEST

Extract from Talent Indices for Standard Metropolitan Statistical Areas and State Areas Outside SMSA's Derived from the 1966 National Merit Scholarship Qualifying Test.

| Rank on Composite Index | SMSA or State Areas Outside SMSA's | Number of High Scorers (≥136) per 1000 Students Enrolled | Mean NMSQT Score of "A" Students * |
|---|---|---|---|
| 17 | Binghampton | 23 | 135 |
| 22 | NEW YORK | 21 | 136 |
| 74 | MARYLAND | 18 | 133 |
| 82 | Erie, Pa. | 23 | 129 |
| 90 | Pittsburgh, Pa. | 19 | 129 |
| 145 | Scranton, Pa. | 17 | 126 |
| 157 | Ashville, N.C. | 17 | 124 |
| 161 | Knoxville, Tenn. | 19 | 124 |
| 168.5 | Altoona, Pa. | 12 | 130 |
| 172 | Charleston, W.Va. | 19 | 124 |
| 175 | PENNSYLVANIA | 12 | 126 |
| 188.5 | Chattanooga, Tenn. | 13 | 123 |
| 205 | Wheeling, W.Va. | 14 | 122 |
| 212.5 | Huntington, W.Va. | 09 | 124 |
| 212.5 | Johnstown, Pa. | 09 | 124 |
| 222 | OHIO | 11 | 124 |
| 231 | Steubenville, O. | 08 | 124 |
| 232 | Huntsville, Ala. | 15 | 117 |
| 240 | Greenville, S.C. | 09 | 122 |
| 247 | VIRGINIA | 10 | 119 |
| 261 | WEST VIRGINIA | 05 | 120 |
| 262 | Tuscaloosa, Ala. | 06 | 120 |
| 264 | SOUTH CAROLINA | 06 | 116 |
| 265 | Birmingham, Ala. | 07 | 115 |
| 267 | ALABAMA | 06 | 117 |
| 268 | KENTUCKY | 06 | 116 |
| 269 | GEORGIA | 06 | 115 |
| 271 | NORTH CAROLINA | 05 | 115 |
| 272 | TENNESSEE | 05 | 114 |
| 273 | MISSISSIPPI | 05 | 111 |
| 276 | Gadsen, Ala. | 05 | 114 |
| (Highest on Index) | | | |
| 1.5 | Rochester, N.Y. | 40 | 140 |
| 1.5 | Stamford, Conn. | 49 | 139 |
| (Last on Index) | | | |
| 278 | Laredo, Tex. | 00 | 105 |

*Mean score for all participants in 1966 was 104, SD 22

# Appendix D

FORMS AND MATERIALS FOR ANNUAL MEMBERSHIP MEETING

FIFTH ANNUAL MEMBERSHIP MEETING

Appalachia Educational Laboratory

Charleston, West Virginia

Report No. 1 Task Unit No._____ Room_____

Unit Leader_____ Recorder_____

Instructions for Session 1:

Discuss Educational Problems facing Appalachia. Develop insofar as is possible the group consensus of the most critical problem for the next five years. Based upon this consensus agree upon a proposed educational product for AEL feasibility analysis, development and diffusion.

The agreed upon educational product for AEL development is_____

_____

Deliver immediately to recorder's table at entrance to A.W.Cox Reception Area.

81/ (83)

FIFTH ANNUAL MEMBERSHIP MEETING

Appalachia Educational Laboratory

Charleston, West Virginia

Report No. 2 Task Unit No._____ Room_____

Unit Leader_____ Recorder_____

Instructions for Session 2:

Each participant should now have a copy listing the statements (products) produced by all task force units. Discuss the statements and list <u>two</u> statements which the unit considers to be most critical and at the same time capable of AEL development.

1.

2.

Deliver immediately to recorder's table at entrance to A.W.Cox Reception area.

84/ (85)

FIFTH ANNUAL MEMBERSHIP MEETING

Appalachia Educational Laboratory

Charleston, West Virginia

Report No. 3 Task Unit No._____ Room_____

Unit Leader_____ Recorder_____

Instructions for Session 3:

A revised listing of statements is now available to each task unit member. Discuss revised statements and select one as the most appropriate and necessary. Produce, to the extent that time permits, a rationale in support of this final selection:

1. The most appropriate educational product for AEL development in the next five years is:

2. The following statements provide a rationale in support of the selection:

86/ (87)

(continue on back of page)

# Appendix E

EDUCATIONAL PRODUCT DEVELOPMENT NEEDS
AS SUGGEST BY AEL MEMBERSHIP

Appalachia Educational Laboratory
Charleston, West Virginia

Fifth Annual Membership Meeting

The task force on "Engineering Education for '76" produced these educational products for the AEL to consider for development and feasibility analysis. Suggested products are listed in order according to the number of units that selected them. (Rationale statements are unedited).

Educational Product 1. (Selected by ten units.)

A pattern for community schools, involving programs of educational experience for all members of the family; developed out of resources provided by representatives of education, industry, business; based on shared studies of the needs of the area.

Rationale statements in support of the selection:

1. Apparent success of AEL's ECE program in operation. The involvement of parents and the results received in the ECE study would give impetus to the above statement.
2. The above statement is the next logical, evolutionary step following current laboratory programs - ECE, Vocational Guidance, and the Educational Cooperative.
3. If education is to succeed, we must incorporate the aid of the total community.
4. All governmental agencies should be included with education, industry, and business.
5. By involving the total community in education, communication will be improved.
6. Money for education must in one way or another come from industry and business.
7. Involvement of parents will help break pattern of previous disinterest of parents. By offering parents something they need, interest will be kindled and eventually they will begin asking for these educational opportunities themselves.
8. Five years hence there will be a greater demand for community involvement.
9. Expectation of greater demand for accountability.
10. Need for allocation of community resources.
11. Need for improved communication between school and community.
12. This process will provide community involvement in educational planning and decision-making.
13. This educational process must provide for motivation of the community to influence, upgrade and change now the real life of Appalachia.

14. Design a comprehensive cooperative program that would utilize differentiated staffing and take into consideration the concept of a community school which involves programs of educational experience developed out of resources provided by representatives of education, industry, business; based on shared studies of needs of the area.

15. To make use of the talents available; broaden the curriculum; identify personality problems.

16. Community schools have an important role in the revitalization of rural Appalachia; can meet certain needs; problem of isolation; geographic, ethnic, etc.; there is a need for social interaction; individual, community and regional; need to perpetuate pride in Appalachia, culture, language, values, mores, etc.

17. Jobs would emerge from this approach to education; multi-county cooperative, i.e., shared services and interaction.

18. Problem in getting rural people involved in programs with continuity, and provide the means for people to have the necessary services and facilities, before they will be ready to "learn".

19. AEL must continue the emphasis on "rural" Appalachia.

20. AEL, in developing program, must focus on the inter-agency approach, drawing on all resources of the community, capitalize on the positive aspects of the local resources, involve people, don't impose outside (AEL) values.

21. Provide means to facilitate industrious growth of individuals along modern technological lines, give individuals expected important skills(wiring, plumbing, brick laying, etc.)

22. Develop several alternative packages for community schools whereby local school systems can choose that program which benefits their community needs.

23. Should involve the whole family; this is desirable as the adults have to be educated in order to keep up with their children.

24. It indicates a total commitment on the part of educators for the education of all members of the family and society.

25. An ideal community school would not be contained within a building; would extend beyond four walls.

26. This type of program would encourage the use of multi-sensory texts which would find the child on his own level.

27. Use of community resources would be excellent because it would prompt community involvement.

28. Ideally this community school should include career education on all levels to blend or merge with the pure academics.

29. Knowledge of community values (individual, cultural and occupational) would indicate which educational methods would be functional.

30. This program would bring about an attitudinal change via the school, community and outside world.

31. Parental involvement would make the program more effective.

32. This type of program would bring education, business and industry into a more cooperative effort within the community.

33. It would accelerate educational changes for improving life in Appalachia.

34. It seems to be the most efficient way to involve many agencies in the total educational process.

35. Make education more open and available.

36. Make use of community resources and facilities and cut costs.

37. Increase school planning and utilization.

38. Improve public relations, easy way to have differentiating staff.

39. Opportunity for more flexible programs.

40. Encourage drop outs to return to school as they would not be classified as "drop outs".

41. Build in special purpose course.

42. Open all kinds of business buildings which could be used as laboratories.

43. May decrease vandalism of buildings as they are seen as part of the community and useful and not a place one has to go.

44. Increased physical support as a result of more community involvement.

45. Bridge gap between school and work so student can see relevance between work and school.

46. Social welfare agencies fail to reach many low income families. Four-H clubs, boy scouts, and adult education programs reach a higher income clientele. The schools, however, reach the children of nearly all low income families. By extension, these schools might also reach the other members of these families to provide recreation, training in arts and crafts, and some job retraining. The community school thus designed might incorporate the following features:

    a. Paraprofessional involvement.
    b. Adult education.
    c. Crafts, music, recreation.
    d. "Free university" courses.
    e. Adult participation in planning.
    f. Involvement of many community people in teaching welfare people, merchants, bankers, extension workers, industrial people, police.
    g. Glasser method a clue?
    h. Tours, trips, expanding experiences.
    i. Adult support to the schools.

47. Within this scope many other of the program statements may be accomplished.

48. The community wide educational program encompasses many of the concepts and efforts presently being developed in the AEL Educational Cooperative Program.

49. Provide for input from other agencies to make education more relevant.

50. Provide a means of taking a look at established priorities.

51. Presently a national concern, with direct contact to become actively involved immediately.

Recommendation: That AEL make a concerted effort to communicate with its constituency the role of the laboratory, what services it provides and is limited in providing and in some way make it understood why a more personal relationship can't be developed with all of the individual schools comprising the membership.

Educational Product 2.

To develop a structure and operation which would put into effect the innovative programs (already developed by AEL and others), focusing on communicative skills.

Rationale statements in support of the selection:

1. Gap between research, theory, and practice; not realistic in light of changing society.

2. No value to innovation unless it benefits the pupil in the classroom.

3. Lack of public confidence in schools and school personnel.

4. Problem of developing single operating structure for all of Appalachia.

5. Provision of data base availability to school personnel.

6. This may be outside the function of AEL.

7. Many administrators don't know how to talk with or listen to parents and citizens.

8. ERIC does not function effectively for local school people.

9. If it works use funds to get it into the system.

10. Don't limit to communicative skills.

11. e.g., AEL Early Childhood program is not seriously being considered in many W.Va. districts.

12. Two way communication link-up, satellite, telelecture, etc.

13. Not limited to total programs.

14. We are assuming that changes are needed, that others have made changes, and that we can profit by the experiences of others.

Educational Product 3.

A system for the development of self-respect among pupils and interpersonal respect between pupils and between teachers and pupils.

Rationale statements in support of the selection:

1. A system for developing authentic identity, which will assist in assessing group characteristics and self-worth. Total development will result in understanding of economic, cultural, aesthetic values which should result in a self-determined life style.

2. Appalachia provides a number of personal and cultural alternatives to the mainstream of American culture, and these alternatives should be encouraged rather than assumed to be disadvantages. By selecting and training teachers who encourage such diversity, we will be able to facilitate learning and encourage its continuance into the general community. The dropout rate in Appalachia and the evidence of teacher rigidity, as well as low levels of student achievement point to the need for such a program.

Educational Product 4.

Improved models for improved communications between school-community agencies and between teachers-administrators and school-home.

Rationale statements in support of the selection:

1. AEL develop materials and means of producing the desired better relationships; multi-dimensional multi-functional visuals, etc.

2. AEL should help local people get innovative programs incorporated into their school systems. This could be done by providing a model to show how to organize for such a program.

Educational Product 5.

A process of program to bring about attitudinal change among the groups of administrators, teachers, parents, students and others involved in and with education.

Rationale statements in support of the selection:

1. If effective and lasting changes which up-grade the life styles of Appalachians are to occur, then changed attitudes of the total educational, professional, business, and lay personnel is imperative. Otherwise, there is slight possibility that changed curricula and school climates will occur.

2. Additionally, attitudinal change is a requisite for the implementation of existent educational technology.

3. Without change in the total social milieu within which local schools operate, change in the educational system is impossible.

4. Teacher education programs need to have redirection if their product (teachers and administrators) is to possess the necessary attitudes and skills to meet the educational needs of a changing society. Attitudinal change on the part of teachers and administrators offers the greatest potential for (total) attitudinal change on the part of students and community. The change from teacher-centered and teacher-dominated instruction to student-centered instruction demands attitudinal change. The career-development stage (teacher education before, not after, the fact) offers the greatest possibilities for attitudinal change, since we would be developing positive attitudes as the person enters the profession and thus shorten the long and tedious task of attitude change. Continuous teacher training is more fiction than fact at this point in time. There is need for removing teacher-administrator apathy, resulting from lack of first-hand information about local district in which they work, as a barrier to innovation.

5. Better articulation needs to prevail among the agencies which are involved in the development of models relative to teacher training programs. Inputs and projected outcomes need to be cooperatively planned. At present, one group does not understand the objectives of the other groups (no common objectives). Revamping of teacher-administrator learning should be approached on a cooperative basis.

6. Research provides evidence that pupils who have positive attitudes toward school and learning achieve more than do pupils who have negative attitudes. Teachers tend to teach the way in which they were taught, but there is evidence that attitudes (and therefore behaviors) of teachers can be changed to help teachers look at their own behavior and at pupil responses and behaviors. Teacher and pupil behaviors can be analyzed systematically. The teacher is a vital element in the learning process, and his attitudes have great influence on his students; his expectations are related to the child's success.

7. AEL is free from many restraints which would impede the effectiveness of other agencies in the role of change agent.

Educational Product 6.

Home intervention in education from prenatal on with multi-disciplinary approach--medical, social--educational and environmental which would involve retraining of teachers to deal with real problems of Appalachia to significantly change parents and students.

Rationale statements in support of the selection:

1. Problems are multi-dimensional requiring coordinated efforts of various agencies.

2. Problems are best solved through direct intervention.

3. Capacity to learn is greated affected by early development (0-6).

Educational Product 7. (Unit developed a statement not on the Session No. 2 list).

A program to provide worthwhile learning experiences to individuals--in and out of schools--devising model organizational structures in which these things can happen, including improved communications, climates for changes, with stress on attitudinal changes, incorporating more cooperative concepts and community involvement.

Rationale statements in support of the selection:

1. Types of materials should be improved, with emphasis on relevance of materials to concerned groups.
2. AEL provide leadership, arrange meetings, brainstorming sessions...
3. Through field activities develop model for educational cooperative.
4. Make better use of educational and school facilities.
5. Further development of cooperative model.
6. Investigate models of services than can be provided outside of normal school - compare learning outside of school to that in with decision making being within consumer group.

# Appendix F

PARTICIPATING SCHOOL DISTRICTS

## Participating School Districts

Alexander Local Schools, Ohio
Barnsville Exempted Village, Ohio
Bland County Schools, Virginia
Bristol Schools, Tennessee
Butler Area Schools, Pennsylvania
Calhoun County Schools, West Virginia
Central Cambria Schools, Pennsylvania
Central Luzerne County Joint, Pennsylvania
Clay County Schools, Tennessee
Clermont-Northeastern Local Schools, Ohio
Clifton Forge City Schools, Virginia
Clinton County Schools, Kentucky
Conneaut Valley Schools, Pennsylvania
Craig County Schools, Virginia
DeKalb County Schools, Tennessee
Dickenson County Schools, Virginia
Doddridge County Schools, West Virginia
Etowah Schools, Tennessee
Fairview Schools, Kentucky
Floyd County Schools, Virginia
Frazier Schools, Pennsylvania
Galeton Area Schools, Pennsylvania
Gilmer County Schools, West Virginia
Hazard Schools, Kentucky
Jackson County Schools, Tennessee
Johnson County Schools, Kentucky
Laurel County Schools, Pennsylvania
Lee County Schools, Virginia
Magoffin County Schools, Kentucky
Manchester Schools, Tennessee
Mingo County Schools, West Virginia
Morgan County Schools, Kentucky
Morgan County Schools, West Virginia
Northern Local Schools, Ohio
Norton City Schools, Virginia
Ohio County Schools, West Virginia
Paintsville Schools, Kentucky
Pendleton County Schools, West Virginia
Pikeville Schools, Kentucky
Pleasants County Schools, West Virginia
Putnam County Schools, Tennessee
Rogersville Schools, Tennessee
Sweetwater Schools, Tennessee
Taylor County Schools, West Virginia
Tazewell County Schools, Virginia
West Clermont Local Schools, Ohio
Wirt County Schools, West Virginia
Wyoming Valley West Schools, Pennsylvania

# Appendix G

PERSONS KNOWLEDGEABLE ABOUT APPALACHIA

Responses to the Opinion Survey were solicited from the following persons who are knowledgeable about problems and characteristics of Appalachia.

Alabama

Lewis Jones, Tuskegee Institute

District of Columbia

Congressman William Anderson
James Branscome, Appalachian Leadership Commission
Congressman Ken Hechler
John Sweeney, Industrial Development Assoc.
Grant Venn, U. S. Office of Education

Georgia

Jack Acree
John Belcher, University of Georgia
Rubye Benson, DHEW/OCD
Earl Brewer, Emory University
Mrs. Leason Hart, President, State PTA
Carl Hodges, Georgia Education Association
Henry Neal, Board of Regents
Jack Nix, Georgia State Board of Education
Roy Proctor, University of Georgia
H. E. Tate, Georgia Teachers and Education Association
R. C. Williams, Northwest Georgia Regional Health Advisory Council, Inc.

Illinois

David Whisnant, University of Illinois

Kentucky

Robert Adkins, Elliott County Bd. of Educ.
D. C. Anderson, State Department of Educ.
Benny Bailey, Alice Lloyd College
James Baker, Middlesboro Independent Schools
Charles Barnhart, University of Kentucky
Maurice Bement, Kentucky School Boards Association

Kentucky (continued)

Billy Best, Berea College
Harry Caudill, Attorney at Law
Arthur Cotterill, Kentucky Innovative Development Center
Roswell Cox, Berea College
James Daniel, State Department of Educ.
James Davis, State Department of Educ.
J. M. Dodson, Kentucky Educ. Assoc.
Lewis Donohew, University of Kentucky
Fred Edmonds, University of Kentucky
Jesse Elliott, Floyd County Schools
Fred Engle, Eastern Kentucky Univ.
Troy Eslinger, Lees Junior College
Alex Eversole, Perry County Schools
Jack Foley, Williamsburg Independent School
Thomas Ford, University of Kentucky
Charles Furr, Department of Economic Security
Mr. and Mrs. Tom Gish
James Graham, Ashland Independent Schools
Lucile Guthrie, Green County Schools
Eunice Harper, Raceland-Worthington Schools
Carl Hatcher, Pike County Schools
William Hayes, Alice Lloyd College
Johnny Herald, Jackson City Schools
George Hillery, University of Kentucky
Elbert Hudson, Lee County Schools
Ed Jones
Loyal Jones, Berea College
Harry LaViers, Jr.
Joseph McCauley
Jim Miller
W. J. Moore
Julian Mosley, Union College
Morris Norfleet, Morehead State Univ.
Joanne Parker, University of Kentucky
Malcolm Patterson, State Dept. of Educ.
John Ragland, University of Kentucky
Tom Rainey
B. F. Reed
David Salisbury
Michael Smathers, Lees Junior College

Kentucky (continued)

Louis Smith, Berea College
Mrs. George Spoonamore, Jr., President, State PTA
Paul Street, University of Kentucky
Jesse Stuart
William Turner
Frank Vittetow, State Dept. of Educ.
Pat Wear, Berea College
Willis Weatherford, Berea College
Reverend Jack Weller
Mrs. Jack Weller
Arville Wheeler, Eastern Kentucky Univ.
John Williams, Ashland Oil and Refining Company
Mary Williamson, State Dept. of Educ.

Maryland

Alice Holden, State Dept. of Educ.
Mrs. John Loizeaux, President, State PTA
Milson Raver, Maryland State Teachers Assoc.
T. Bayard Williams, Jr., Maryland Assoc. of Boards of Education

Mississippi

Annie Flemings, Regional Rehabilitation Center
Mrs. Milton Hill, President, State PTA
Charles Johnson, Jr., Mississippi Educ. Association
Garvin Johnson
Fred McEwen, Mississippi School Boards Association

New York

Robert Cole, Elmire Psychiatric Center
Everett Dyer, New York State School Boards Association
G. Howard Goold, New York State Teachers Association
Tom Mannix, Empire State Federation of Teachers
Mrs. Oscar Willett, President, State PTA

North Carolina

A. C. Dawson, North Carolina Education Association
Raleigh Dingman, North Carolina State School Boards Association
C. Horage Hamilton, North Carolina State University
Edward Harrell, Appalachian State Teachers College
E. B. Palmer, North Carolina Teachers Association
Rupert Vance, Univ. of North Carolina
Mrs. Carlton Watkins, President,

Ohio

Clarence Anderson, Scioto Valley Local Schools
Senator Harry Armstrong
Wilma Barnett, Muskingum College
Ralph Brown, Union-Scioto Schools
Alphus Christensen, Rio Grande College
Walter Cooper, Jefferson Local School
David Davis, Chesapeake Union Ex. School District
Harry Davis, State Dept. of Educ.
Frank Duddy, Marietta College
Robert Estepp, Clay Local School District
Herbert Gardner, Hamersville Local Schools
Mrs. James Gibson, Clermont County Schools
Robert Greer, Office of Equal Education Opportunities
Jerry Hammett, Division of Computer Services and Statistical Reports
Jerry Hammill, Dept. of Urban Affairs
Edward Hamsher, Newcomerstown Public Schools
Lewis Harris, Ohio School Boards Assoc.
George Hill, Ohio University
Marguerite Holmes, Ohio Federation of Teachers
Linton Honaker, Tuscarawas County Schools

Ohio (continued)

Ray Horn
Dean Hummel, Ohio University
Edward Jirik, Ohio Education Association
Mrs. Alfred C. Jones, President, State PTA
Meno Lovenstein, Ohio University
Ed Lynn, Ohio University
Harry Manley, Muskingum College
John Matthews, Community Action Program
Harry Meek, Ohio Department of Education
G. R. Mehl, Greenfield Exempted Village Schools
Clyde Miller
E. J. Miller, Holmes County Schools
Orlo Musgrave, Ohio State University
James Noel
Geraldine Peterson, Family Service Center
R. J. Postweiler, Allied Chemical Corp.
Tom Quick, Ohio State Dept. of Educ.
Forest Smith, Olin Aluminum-Ormet Corp.
Samuel Speck, Muskingum College
Elizabeth Stanton, American Association of University Women
F. Brighton Stayner, Ohio Educ. Assoc.
Mack Wallace, Brown County Schools
Charles Weaver
Michael Yohman, Ohio Federation of Teachers

Oklahoma

John Morris, University of Oklahoma

Pennsylvania

Lewis Angotti, Bentworth School District
John Anthony, Washington County Planning Commission
Lloyd Bell, University of Pittsburgh
Richard Bishop, Trinity Area School District
John Branick, Altoona Area School District
George Brehman, State Dept. of Educ.
Frederic Bryan, University of Pittsburgh
Michael Budzanoski, United Mine Workers Union
John Cairns, California Area School District
Paul Campbell, State Dept. of Educ.
Donald Carroll, State Dept. of Educ.

Pennsylvania (continued)

Robert Cavanaugh, Pennsylvania State Federation of Teachers
Victor Celio, State Dept. of Educ.
John Cober, State Dept. of Educ.
Joseph Cober, Norwin Public Schools
James Crawford, Moon Union Schools
Carroll Curtis, State Dept. of Educ.
Mitchell Czoch, Wilkes-Barre Township School District
Clarence Dittenhafer, State Dept. of Education
William Donny, State Dept. of Educ.
Michael Dovensky, Northwestern School District
Frank Durkee, State Dept. of Educ.
Harold Fleming, Dept. of Commerce
Max Goldberg, Pa. State University
J. T. Harriger, DuBois Area Schools
John Hertz, Pa. School Boards Assoc.
George Hoffman, State Dept. of Educ.
Howard Jack, Peters Township School District
Dale Johnson, Climas Molybdenum Co.
Hartley Johnston, Westmoreland County Community College
Arthur Julian, St. Francis College
Joseph Kata, Redbank Valley School District
Jacob Kaufman, Pa. State University
George Kehew, State Dept. of Educ.
Jchn Kennedy, State Dept. of Educ.
Walter Koch, State Dept. of Educ.
John Kosoloski, State Dept. of Educ.
Father Hugh J. Lang, Mon-Valley Catholic High School
Grace Laverty, State Dept. of Educ.
James Lewis, State Dept. of Educ.
Mary Lydon, State Dept. of Educ.
Agnes Martinko, State Dept. of Educ.
Robert Maskin, Luzerne Outerwear Manufacturing Corp.
James Maurey, Millersville State College
Vincent McCoola, State Dept. of Educ.
James McCreight, Washington County Bar Association
Anthony Miklausen, Shippensburg State College
Ferman Moody, State Dept. of Educ.
A. Clair Moser, Pa. State Educ. Assoc.
Phillip Mulvihill, State Dept. of Educ.

Pennsylvania (continued)

James Murphy, State Dept. of Educ.
John Northrop, Observer Publishing Co.
Thomas Patton, Pa. State University
Mrs. Robert Reynolds, President, State PTA
James Schantz, Piper Aircraft Corp.
Joseph Stauder, Roselon Yards, Inc.
Severino Stefanon, State Board of Educ.
Theodore Valance, Pa. State University
Alfonso Zawadski, State Dept. of Educ.
Earl Zimmerman, State Dept. of Educ.

South Carolina

Carlos Gibbons, South Carolina Educ. Assoc.
T. Jackson Lowe, South Carolina Assoc. of School Boards
Jesse Wilson, President, State PTA

Tennessee

Julian Brewer, Tenn. School Boards Assoc.
James Brown, National Institute of Mental Health
William Cole, University of Tennessee
D. P. Culp, East Tenn. State University
Vernon Darter, University of Tennessee
Max Ellis, Polk County Schools
James Freshour, Cocke County Bd. of Educ.
Doyle Gaines, Macon County Schools
Albert Gore
Orin Graff, University of Tennessee
Aelred Gray, TVA
Kenneth Green, Polk County Schools
Dallas Hardin, Washington County Bd. of Education
Raymond Hargis, Grundy County Schools
Charles Hyder, Univ. of Tenn. at Chattanooga
Ander Jacobs, Oneida Special School District
Florena Jeffers, Scott County Schools
Bruce Jordan, McMinn County Educ. Dept.
Paul McEwen, Johnson County Schools
Mrs. Charles Mitchell, President, State PTA
Wayne Myers, TVA
James Neely, Claiborne County Bd. of Educ.
William Pollard, Oak Ridge Associated Universities

Tennessee (continued)

Donald Sahli, Tenn. Educ. Assoc.
Jean Smith, Office of Urban and Federal Affairs
Bernice Stevens, Southern Highland Craft Guild
Wilma Stokely
Charles Tollett, Tenn. School Bd. Association
Ross Wilson, Tenn. Educ. Assoc.

Texas

Niles Hansen, University of Texas

Virginia

P. E. Ahalt, Giles County School Bd.
Rufus Beamer, Va. Polytechnic Institute and State University
Betty Belcher, Lee County Community Action
J. M. Bevins, Buchanan County Public Schools
D. Woodrow Bird, Rural Affairs Study Commission
Franklin Bland, Jr., Rural Affairs Study Commission
Numa Bradner, State Dept. of Educ.
A. Gordon Brooks, State Dept. of Education
Andrew Chafin, Planning District Commission
Benny Coxton, DILENOWISCO Educational Cooperative
Lynn Curry, State Dept. of Planning and Community Affairs
Jack Dougherty, Scott County School Board
Fendall Ellis, State Dept. of Educ.
Fred Entler, Emory and Henry College
Charles Franklin, Pulaski County School Board
Robert Griffis, Division of State Planning and Community Affairs
Carson Hibbetts, United Mine Workers
Jerry Hicks, Smyth County School Bd.
Edwin Holm, Division of Industrial Development
George Holmes, Va. School Boards Assoc.

Virginia (continued)

S. P. Johnson, State Dept. of Educ.
Charles King, Southwest Virginia Community College
John Larew, Appalachian Power Company
Helen Lewis, Clinch Valley College
Robert Mangum, Celanese Fibers Company
Charles Martin, Radford College
Waldo Miles
W. Foster Mullins, Division of Mines and Quarries
Leonard Muse
Roy Ogle, Dept. of Labor and Industry
Donald Puyear, Virginia Highlands Community College
Bruce Robinette, LENOWISCO Planning District Commission
George Sandvig, State Dept. of Educ.
W. E. Skelton, Va. Polytechnic Institute
Joseph Smiddy, Clinch Valley College
Elmer Smith, Madison College
Harry Stallard, Wise County Schools
E. B. Stanley, Washington County Public Schools
John Stanley
R. E. Starnes
Mrs. Earl Stegman, American Association of University Women
Geralene Sutton, State Dept. of Educ.
Martin Tartar, Va. Commonwealth Univ.
T. Edward Temple, Governor's Office
Lorin Thompson, University of Virginia
The Honorable James Turk
W. J. Wilkerson, Dept. of Labor and Industry
W. W. Wilkerson, State Dept. of Educ.
Peyton Winfree

West Virginia

John Andes, West Virginia University
Reverend and Mrs. Richard Austin
Arthur Benson, Concord College
Ernest Berty, State Dept. of Educ.
Kenneth Branch, Mercer County Schools
Elwin Bresette, W. Va. Board of Regents
Robert Britt, West Virginia University
Maurice Brooks, West Virginia University
Helen Caton, Council of Southern Mountains
W. E. Chilton, Charleston Gazette
Mirrell Clark, Roane County Bd. of Educ.

West Virginia (continued)

Barbara Clay, Office of Federal-State Relations
James Comstock
W. C. Cooke, Mercer County Schools
Woodrow Cooke, W. Va. State Federation of Teachers
Brooks Daugherty, State Dept. of Agriculture
L. G. Derthick, Monongalia County Schools
William Dillion
N. H. Dyer, State Dept. of Health
Harry Ernst, West Virginia University
Eston Feaster, Fairmont State College
Ruel Foster, West Virginia University
Louise Gerrard, W. Va. Commission on the Aged
Nathan Gerrard, Morris Harvey College
William Hamilton, W. Va. School Board Association
David Harshbarger, West Virginia Univ.
Harry Heflin, West Virginia University
Arthur Hofstetter, W. Va. Univ. Graduate Center
Bernard Hughes, Hampshire County Bd. of Education
James Hupp
Oscar Hutchison, West Virginia University
Calvin Jones, Salem College
Paul Kaufman, Attorney at Law
Mrs. H. M. Keiter, President, State PTA
Richard Kelly
Eddie Kennedy, West Virginia Univ.
Gibbs Kinderman, Designs for Rural Action, Inc.
Robert Lindsey, Jr., Brooke County Schools
Roland Manthe, West Virginia University
Beryl Maurer, West Virginia University
Marion McCoy, State Dept. of Educ.
William Miernyk, West Virginia Univ.
Delmas Miller, West Virginia Univ.
Margery Morehardt
Joseph Morris, West Virginia University
C. D. Munson, Raleigh County Schools
Milton Ogle, Appalachian Research & Defense Fund
Louise Pease, Fairmont State College
Edward Perkins, Davis and Elkins College
Harold Pickens, Randolph County Schools

West Virginia (continued)

William Plumley, Morris Harvey College
David Puzzuoli, West Virginia Univ.
Phares Reeder, W. Va. Educ. Assoc.
Mr. and Mrs. Don Richardson
Leonard Riggleman
Jack Robertson, W. Va. Institute of Technology
William Ross, West Virginia University
John St. Clair, State Dept. of Educ.
Eleanore Sankowski, Kanawha County Schools
Howard Shriver, West Virginia University
Norman Simpkins, Marshall University
Miles Stanley, W. Va. Federation of Labor
Harry Stansbury, Jr., W. Va. School Boards Association
Paul Stewart, Marshall University
Franz Taylor, West Virginia University
Joseph Taylor, Kanawha County Schools
Marjorie Warner, State Dept. of Educ.
D. Banks Wilburn, Glenville State College
Nicholas Winowich, Kanawha County Public Library
Barbara Yeager, Morris Harvey College
Larry Yost, West Virginia University

# Appendix H

PARTICIPANTS IN AEL'S FIFTH ANNUAL
MEMBERSHIP MEETING

ILLINOIS
Carolyn Boiarsky, Peoria

KENTUCKY
Maurice Bement, Lexington
Frank Hamilton, Ashland
Dwight Hendricks, Hazard
Buford Horton, Irvine
Norma Lewis, Greensburg
Marshall Lowe, Greensburg
Kathleen McGraw, Lexington
Carole Morella, Morehead
Malcolm Patterson, Frankfort
David Salisbury, Catlettsburg
Harold Steele, Frankfort
Jack Williamson, Williamsburg
Thomas Winkler, Pineville

OHIO
C. B. Anderson, Piketon
Jack Brown, Lancaster
Mary L. Cottingham, Ironton
Estella Curry, Southpoint
David Davis, Chesapeake
Joseph Dials, Southpoint
Jane Essman, Wellston
J. G. Gibson, Mt. Orab
Noreta Gibson, Mt. Orab
Curtis Johnson, Athens
Merrill Grodin, Rio Grande
Herman Koby, Gallipolis
Paul Kuhn, Gallipolis
James Mabry, Nelsonville
Ralph McCormick, Wellston
Wanda McCoy, Ironton
Harry Meek, Columbus
Harry Moore, Batavia
Lane Nudd, Athens
Thomas Quick, Columbus
William Rogers, Minford
Lois Rush, Columbus
James Shope, Chillicothe
Arthur Shumate, Bainbridge
Clarence Thompson, Gallipolis
Ken Thompson, New Boston
Gerald Vance, Marietta
Edward Wallen, Rio Grande
Max Way, Piketon
Katherine Williams, Gallipolis

PENNSYLVANIA
William Benedetti, California
Dwight Brocious, Commodore
Dennis Burke, California
John Cairns, Roscoe
William Cornell, Harrisburg
Samuel Craighead, California
Roy Creek, Pittsburgh
Jeffrey Douville, California
Charles Gray, Uniontown
John Griffiths, Monongahela
Bertha Mayes, Lock Haven
Allen Moon, Erie
Robert Phelps, Harrisburg
Philip Proud, California
Edward Schaffer, Beaver
Henry Stoudt, Huntingdon
Bowman Thomas, Salisbury
John Waldron, Erie
Carl Welch, Greenville

TENNESSEE
Roy Bowen, Kingston
Bobby Carver, Lafayette
Sam Cooper, Johnson City
Jack Crouch, Oak Ridge
Willard Crouch, Kingston
D. P. Culp, Johnson City
Lee Davis, Livingston
Jim Estes, Kingston
Hassel Evans, Nashville
Ralph Evans, Kingsport
Doyle Gains, Lafayette
J. M. Giles, Kingston
Kenneth Green, Benton
Luthe Hall, Oliver Springs
William Holt, Oak Ridge
Illard Hunter, Dunlap
John Irwin, Oak Ridge
Raymond Jeffers, Huntsville
James Leonard, Knoxville
Dorothy Lyons, Knoxville
L. N. McDowell, Madisonville
Paul McEwen, Mountain City
Rosa McGhee, Chattanooga
Robert Marlowe, Oak Ridge
Wayne Myers, Knoxville
Fred Oran, Harriman
Charles Peccolo, Knoxville

TENNESSEE (Continued)
John Price, Clinton
O. C. Stewart, Cookeville
Fred Stout, Johnson City
Lusk Stubblefield, Cookeville
James Thomas, Bristol
Jerry Ward, Greenville
Berch Williams, Cookeville
Edward Williams, Kingston
Nofflet Williams, Cookeville
Jack Williams, Harriman
Vernon Williams, McMinnville
Ross Wilson, Wartburg
Charles Wingenbach, Oak Ridge
John Yegge, Oak Ridge
Ben Hankins, Greenville

VIRGINIA
Alfred Arth, Charlottesville
Tom Bentson, Charlottesville
Joseph Berry, Hillsville
William Carriker, Charlottesville
Benny Coxton, Wise
William Davis, Galax
Helen Deason, Charlottesville
Paul Elkins, St. Paul
John Galloway, Chesterfield
John Highfill, Radford
James Kendrick, Nickelsville
James Laughlin, Covington
Daniel Link, Richmond
Agens McMurray, Gate City
C. S. McMurray, Gate City
Emelyn Markwith, Chesterfield
Marie Morris, Chesterfield
Boyd Owens, Chesterfield
Irving Silverman, Radford
Harley Stallard, Wise
Charles Starnes, Gate City
Janie Taylor, Gate City
Judy Whittemore, Charlottesville
Ernest Worrell, Hillsville

WASHINGTON, D.C.
Richard Elmendorf, USOE

WEST VIRGINIA
Don Alexander, Morgantown
Gary Anderson, St. Albans
John Andes, Morgantown
Wilhelmina Ashworth, Fayetteville

WEST VIRGINIA (Continued)
Richard Austin, Seth
John Barker, Huntington
Everett Barnett, Philippi
Ella Bergdoll, Moorefield
Ernest Berty, Charleston
Virginia Bodo, Huntington
Barbara Boiarsky, Charleston
Marshall Buckalew, Charleston
James Butcher, Shepherdstown
Helen Canton, Welch
Edythe Clay, Beckley
Don Crislip, Charleston
Glennis Cunningham, Charleston
C. W. Curris, Montgomery
Sidney Davis, Buckhannon
Galen Duling, Fairmont
Sarah Estes, Charleston
Eulah Mae Fleming, S.Charleston
Mike Gerrard, Charleston
K. C. Gross, Beckley
Herman Hambrick, Charleston
Irene Hambrick, Charleston
A. L. Harper, Beckley
Mary Lee Heiser, S.Charleston
Arthur Hofstetter, Nitro
Julia Hoover, Webster Springs
John Hutchinson, Charleston
A. E. Jackson, Beckley
Offalou Jenkins, Huntington
Patrick Julius, Wheeling
Robert Kidd, Charleston
Leo Kopelman, East Bank
George Laughlin, Clarksburg
Margie Leap, Huntington
Harding Lowry, Charleston
Wesley Lynch, Morgantown
Charles Martyn, Montgomery
Margaret Mills, Charleston
Leonard Nelson, Montgomery
Mabel Nichols, Webster Springs
Milton Ogle, Charleston
Larry Pelfrey, Fort Gay
Edward Perkins, Elkins
John Price, Charleston
David Puzzuoli, Morgantown
J. K. Randolph, Martinsburg
James Ranson, Nitro
Kenneth Rucker, Nitro
Phyllis Rutledge, Charleston
Eleanor Sankowski, Charleston

WEST VIRGINIA (Continued)
John Saunders, Beckley
Harry Scott, Institute
Richard Stanley, Charleston
Harry Stansbury, S.Charleston
Daniel Taylor, Charleston
Philip Thornton, Charleston
Powell Toth, Nitro
Kenneth Underwood, Charleston
Marjorie Warner, Charleston
Nicholas Winowich, Charleston
Victor Young, Montgomery

BOARD MEMBERS
Wallace Blake, Zanesville, Ohio
Kendall Boggs, Whitesburg, Kentucky
Douglas Bowman, California, Pennsylvania
D. E. Elswick, Frankfort, Kentucky
Ethel Guthrie, Marietta, Ohio
Nelson Hale, Slippery Rock, Pennsylvania
Robert Hayes, Harrisburg, Pennsylvania
Scott Honaker, Johnson City, Tennessee
Tom Kelley, Nashville, Tennessee
W. P. Kanto, Norton, Virginia
L. K. Lovenstein, Charleston, W.Va.
J. Leonard Mauck, Marion, Virginia
Delmas Miller, Morgantown, W.Va.
Mahlon Miller, Barbourville, Kentucky
William Miller, New Concord, Ohio
Homer Mincy, Oak Ridge, Tennessee
A. A. Page, Mt. Sterling, Kentucky
Walter Snyder, Charleston, W.Va.
Miles Stanley, Charleston, W.Va.
William Wallace, Institute, W.Va.
Jack Weller, Hazard, Kentucky

AEL STAFF
Roy Alford
Frances Anderson
Barbara Baldy
Charles Bertram
Palmoneada Brown
Merrill Campbell
Benjamin Carmichael
Robert Childers
Mary Helen Cobb
Mary Farley
Emma Forte
Brainard Hines
Penny Hundley

AEL STAFF (Continued)
Rudy Jackson
R. J. Kaufman
Robert Kennedy
James Kincheloe
Mabel Little
Karen Manthe
Sue Meeks
Anna Miller
George Miller
Thomas Mitchell
Elvin Moore
Norman Mullins
Mary Parker
James Randolph
John Seyfarth
Marie Snider
Ermel Stepp
Phyllis Stowers
Linda Thornton
John Vroon
Rob Roy Walters
Robert Willits
Madison Wilson
Dave Winefordner

# References


Appalachian Regional Commission. Appalachia Education for Tomorrow. (Washington, D.C.: Government Printing Office, 1971), Report No. 1, p. vi.

Appalachian Regional Commission. Teachers in Appalachia. (Washington, D.C.: Government Printing Office, 1970), Report No. 12, pp. 77-84.

Associated Educational Consultants, Inc. A Comprehensive Study of Educational Needs of the North Central Region of Pennsylvania. (Pittsburgh, Pa.: the Corporation, 1968), pp. 8.5-8.6.

Battelle Memorial Institute, Summary Report on Educational Planning for Ohio Schools. (Columbus, Ohio: the Institute, 1970), p. 19.

Bloom, Benjamin S., J. Thomas Hastings, and George F. Madans. Handbook on Formative and Summative Evaluation of Student Learning. (New York, N.Y.: McGraw-Hill Book Company, 1971).

Glass, Lynn W. Assessment of Affective Outcomes of Instruction with High School Sophomore Biology Students and Teachers. (Iowa City, Iowa: Iowa University Press, 1970).

Kentucky Department of Education. Kentucky Educational Needs Assessment Study, Phase 1. (Frankfort, Ky.: the State, 1970), p. 55.

Marland, Sidney P., Jr. Commissioner of Education, U.S. Office of Education, Department of Health, Education, and Welfare. "Data Gathering--A Time for Planning." Address delivered at Annual Commissioner's Conference of the Council of Chief State School Officers, Washington, D.C. June 17, 1971.

National Center for Educational Statistics, U.S. Department of Health, Education, and Welfare. Digest of Educational Statistics. (1970 ed.) (Washington, D.C.: Government Printing Office).

Nichols, Robert C. "Where the Brains Are." NMSC Research Reports. (Evanston, Ill.: the Corporation, 1969), Vol. 5, No. 5.

Ogle, Milton. Associate Director for Education and Training, Appalachian Research and Defense Fund, Inc. "Position Paper on Education for Appalachia." Address delivered at a meeting of the Social, Economic and Political Issues Task Force of the Commission on Religion in Appalachia. Charleston, W. Va. December 1970.

Parnes, Herbert S. "The Meaning and Dimensions of the 'Need' for Education." Don Adams (ed.) Educational Planning. (Syracuse, N.Y.: Syracuse University Press, 1964), p. 47.

Pennsylvania Department of Education. Educational Quality Assessment, Phase II Findings. Sec. 1, 2, 3. (Harrisburg, Pa.: the State, 1970), p. 1.2.

Siegel, Sidney. Nonparametric Statistics for the Behavioral Sciences. (New York, N.Y.: McGraw-Hill Book Company, 1956), pp. 229-238.

Tennessee Department of Education. Guidelines for Project Applicants and Grantees. (Nashville, Tenn.: the State, 1969), p. 2.

Tennessee State Agency for HEA, Title 1. The Identification of Community Needs in Tennessee. (Nashville, Tenn.: the State, 1967), pp. 150-151.

Virginia Department of Education. Virginia Educational Needs Assessment Study. Vols. 1 and 11. (Richmond, Va.: the State, 1970), Vol. 1, p. 7.

West Virginia Department of Education. Educational Needs Assessment Report Number Two. (Charleston, W.Va.: the State, 1970a), p. 1.

West Virginia Department of Education. Validation of Educational Needs. (Charleston, W.Va.: the State, 1970b), p. 2.

# Bibliography

Part I

Appalachia Educational Assessment Data

A Comprehensive Study of Educational Needs of the North Central Region of Pennsylvania. Pittsburgh, Pennsylvania: Associated Educational Consultants, Inc., 1968.

A well organized study of unmet educational needs for Cameron, Elk, McKean, and Potter counties in Appalachian Pennsylvania. These counties are rural, have a very low population density, and are isolated from urban areas. Recommends guidance services, curriculum changes, vocational education, and continuing education.

Condensed Final Task Report on Vocational Education. Columbus, Ohio: Battelle Memorial Institute, 1970.

Recommends vocational education as an integral part of the total educational array. Recommends study of the possibility of replacing the four-year high school with individualized student program concept with no set period of time as an obligation.

Condensed Task Report on Vocational Education and Technical Training. Columbus, Ohio: Battelle Memorial Institute, 1968.

Reviews the existing system and makes recommendations for changes in all facets including administrative units.

Educational Needs Assessment Report Number Two. Charleston, West Virginia: West Virginia Department of Education, 1970.

Describes the assessment and validation of educational need for West Virginia. Lists 17 critical needs and identifies 11 as most critical. Contains descriptive data on state schools (p. 5).

Educational Quality Assessment, Phase II Findings, Secs. 1, 2, and 3. Harrisburg, Pennsylvania: Pennsylvania Department of Education, 1970.

Describes the Pennsylvania assessment plan, procedures, and the techniques of establishing reliability and validity.

Final Report on Preschool Education. Columbus, Ohio: Battelle Memorial Institute, 1969.

Describes preschool education in detail with extensive documentation. Establishes priorities and makes recommendations.

Guidelines for Project Applicants and Grantees. Nashville, Tennessee: Tennessee Department of Education, 1969.

Sets guidelines for Title III ESEA projects from PACE (Projects to Advance Creativity in Education) Center. Includes needs assessment criteria and list of critical needs for the learner (p. 2).

The Identification of Community Needs in Tennessee. Knoxville, Tennessee: State Agency for HEA Title I, 1967.

Study by higher education institutions on the community needs including education. Divides state into eight areas for study. Gives Appalachian educational need data for near Appalachia portion.

Kentucky Educational Needs Assessment Study, Phase I. Frankfort, Kentucky: Kentucky Department of Education, 1970.

Describes assessment procedures and provides details on accumulated data. Assessment by districts provides data for Appalachian areas. List of needs in order of priority (p. 55).

Kentucky Educational Needs Assessment Study, Progress Report. Frankfort, Kentucky: Kentucky Department of Education, 1971.

Presents models of designs for the meeting of learner needs. Describes proposed sampling procedures, goals, and outline of instruments to be used in collecting data on achievements.

Summary Report on Educational Planning for Ohio Schools. Columbus, Ohio: Battelle Memorial Institute, 1970.

Gives summary of assessment of need (p. 19). Presents a model of Ohio schools for 1975 that is based upon recommendations of the task force.

Summary Report on Planning to Meet Educational Needs in Ohio Schools, Phase I. Columbus, Ohio: Battelle Memorial Institute, 1968.

Need definition reported on pages 3 and 21. Lists goals for 1970 of the Ohio Board of Education (p. A-1).

Teachers in Appalachia. Washington, D.C.: Appalachian Regional Commission, Research Report No. 12, 1970.

A 20 percent random sample of 162,000 teachers in Appalachian portions of 11 states. Descriptive data on teachers.

Validation of Educational Needs. Charleston, West Virginia: West Virginia Department of Education, 1970.

Describes the sampling and validation procedures for the development of 17 needs statements. Priority ranks are established.

Virginia Educational Needs Assessment Study, Vols. 1 and II. Richmond, Virginia: Virginia Department of Education, 1970.

A joint effort of the Bureau of Educational Research of the University of Virginia and the State Department. Lists needs in terms of discrepancies between standards and actual achievement measures including affective domain. Sampling yields Appalachian data.

## Part II

## Educational Needs Assessment Methodology

Adams, Don (ed.). Educational Planning. Syracuse, New York: Syracuse University Press, 1964.

C. Arnold Anderson and Mary Jean Bowman disuss planning. They define it as "the process of preparing a set of decisions for action in the future" (p. 9). Educational planning is discussed in terms of manpower. Herbert S. Parnes contributes a unit on assessing educational needs of a nation. Basis axioms are proposed (pp. 50-51). The econometric model of Jan Tinberger is presented.

Bloom, Benjamin S., Hastings, J. Thomas, and Madaus, George F. Handbook on Formative and Summative Evaluation of Student Learning. New York, New York: McGraw-Hill Book Company, 1971.

Outlines procedures for formulating and classifying educational objectives. The emphasis is on student learning. Gives condensed version of the Taxonomy of Educational Objectives (p. 271).

Thomas P. Baldwin uses industrial education to explain a four domain taxonomy-cognitive, perceptual, psychomotor, and affective.

Campbell, Vincent N., and Markle, David G. Identifying and Formulating Educational Problems. Washington, D.C.: American Institute for Research Project, HEW, 1967.

Aim of the project was to develop effective techniques for identifying educational needs and formulating them into well defined problems. Describes "critical incident technique."

Carrese, Louis M., and Baker, Carl G. "The Convergence Technique: A Method for the Planning and Programming of Research Efforts," Management Science, Vol. 13, No. 8, April 1967, pp. B420-438.

Description of a technique in planning-programming developed specifically for research efforts. It was used by the National Cancer Institute.

Cyphert, Frederick R., and Gant, Walter L. "The Delphi Technique: A Case Study," Phi Delta Kappan, January 1971, pp. 272-273.

Description of the method used to provide power structure perceptions for Virginia Needs Assessment.

Davis, Russell C. Planning Human Resource Development. Chicago, Illinois: Rand-McNally Company, 1966.

Primarily related to planning for education in developing countries. Detailed descriptions of manpower approaches. Discussions of weaknesses and strengths.

Dodd, Stuart C., and Christopher, Stefan C. "How to Produce a Consensus," Journal of Human Relations, Vol. 17, No. 4, Fourth Quarter.

Article lists conditions under which opinion change takes place. Factors involved are issues, people, situation or setting, and techniques. Discussion with intent to agree is the prime causal factor. Illustrates technique with "systematic conspectus of transact matrix."

Evaluative Research, Strategies and Methods. Pittsburgh, Pennsylvania: American Institute for Research, 1970.

Report on a seminar on evaluative research sponsored by AIR.

Fitzgerald, Peter. "A Discrepancy-Score Approach," SRIS (Phi Delta Kappa), Winter 1970, pp. 10-11.

Stresses the first step in process leading to ultimate change in learner behavior as an assessment of student needs. Describes a tricounty approach used in California to determine perceived educational needs. Procedures are described in some detail. Holds potential for AEL use.

Flanagan, John C. "The Critical Incident Technique," Psychological Bulletin, Vol. 51, No. 4, July 1954, pp. 327-358.

A method which has been in development for ten years. Technique is based upon procedures for collecting "direct observations of human behavior in such a way as to facilitate their potential usefulness in solving practical problems and developing broad psychological principles" (p. 327). Method is traced to Sir Francis Galton in 1880s. Detailed description of method is provided.

_____. Defining Educational Outcomes for Today's Schools and Assessing Their Attainment. Iowa University, Iowa Center for Research in School Administration, 1968.

Discusses major types of educational goals (occupation, citizenship, leisure). Describes Project PLAN. Suggests case studies as a method of assessment.

_____. "The Uses of Educational Evaluation in the Development of Programs, Courses, Instructional Materials and Equipment, and Administrative Arrangements," Sixty-eighth Yearbook of the National Society for the Study of Education. Chicago, Illinois: University of Chicago Press, 1969.

Defines summative and formative evaluation. Includes a description of Projects TALENT and PLAN.

Gephart, William J. "Application of the Convergence Technique to Basic Studies of the Reading Process," Phi Delta Kappan, 1970 (ERIC 037 587).

Lists five conditions on which work was conceived. Stresses cumulative resolutions to problems. "Critical

path methods cannot be applied to research." Outlines the approach with examples of flow charts. A diagram called a Convergence Chart is the basis of the procedure.

Gordon, William J. J. Synectics. New York, New York: Collier-Macmillan, 1961.

Excellent descriptions of the techniques and procedures used in industry. Illustrations are helpful. Set criteria for selection of the synectors.

Guidelines for Project Applicants and Grantees. Nashville, Tennessee: Tennessee Department of Education, 1969.

Sets procedures for conducting a needs assessment. Lists a framework for needs considerations.

Helmer, Olaf. Social Technology. New York, New York: Basic Books, Inc., 1966.

The purpose of scientific endeavor is to achieve a better understanding of the world and develop valid theories concerning observable phenomena. These theories are used to predict future events and the consequences of alternative courses of action. A measure of control over the future can be an outcome. Method is described as "systematic use of expertise." Delphi Technique is described and analyzed.

_____. The Use of the Delphi Technique in Problems of Educational Innovations. Santa Monica, California: Rand Corp., December 1966.

Method produces group consensus and occasional polarization around opposing points of view. Approach reduces domination of decision making by influential or vociferous committee members. It crystalizes the reasoning process. Can be applied to all phases of educational planning.

Kaufman, Roger A., and Harsh, J. Richard. Determining Educational Needs-An Overview. Paper prepared for Planned Leadership for Evaluating Development of Goals for Education (PLEDGE), HEW, 1969.

Discussed "discrepancy" as a means of assessing needs. Includes definition of educational needs with illustrations of what they are and are not. Describes critical incident technique as a means of assessment of need. Generic strategies for assessing need are charted (p. 8).

Kirkbride, Keithe. A Study to Identify Educational Needs of Non-college Bound Students in a Rural Public High School of Six Hundred Students. Olympia, Washington: Washington Research Coordinating Unit for Vocational Education.

Illustrates a needs study. Resulted in six recommendations for change. Students who had graduated chose typing as most essential skill. English and math were key areas of need selected by graduates.

Methods and Statistical Needs for Educational Planning. Paris, France: Organization of Economic Cooperation and Development, 1967.

A handbook for "educational investment planning." This method is not concerned with the wider aims of education. Stresses a systems approach to educational planning. Examples of input-output matrices. Cohort analyses is defined and illustrated. An excellent publication and important to manpower planning.

Needs Assessment. Tucson, Arizona: Educational Innovators Press, 1970.

Reviews assessment techniques. Defines need and identifies procedures for assessment of needs. An emphasis on "student performance objectives."

Pfeiffer, John. New Look at Education. New York, New York: Odyssey Press, 1968.

Book is a treatise on systems analysis in "our schools and colleges." Consensus and the Delphi Method are described. Excellent reference for systems approaches.

Provus, Malcolm. "Evaluation of Ongoing Programs in the Public Schools," Sixty-Eighth Yearbook of the National Society for the Study of Education. Chicago, Illinois: University of Chicago Press, 1969.

Reviews theory of evaluation practice. Describes the Pittsburgh model as a discrepancy model. A good flow chart is presented.

_____. "Evaluation of Research, Research or Evaluation," Educational Technology, August 1970, pp. 50-54.

Discusses the distinction between evaluation and research. Emphasis on establishment of standards against which measurements can be made. "Therefore, research is

defined as that which creates criterion models. Evaluation is defined as that which uses criterion models" (p. 52). A discrepancy model is illustrated.

_____, and Lundin, G. Edward (eds.). Journal of Research and Development in Education, Summer 1970.

Article describes the use of models. Criteria for deriving models are knowledge, value, and utility. A system flow diagram for decision making is on page 5. Other models are described and illustrated.

Runkel, J. Philip. Some Recent Ideas in Research Methodology. Eugene, Oregon: University of Oregon, Center for the Advanced Study of Educational Administration, 1967.

A description of facet design and analysis. May be applicable to new approaches to needs study.

Tyler, Ralph W. "National Assessment: A History and Sociology," School and Society, December 1970, pp. 471-477.

Emphasizes the importance of data for educational planning. States that "dependable information is essential to intelligent planning and wise action to improve our national life." Excellent background for understanding NAEP.

Virginia Educational Needs Assessment Study, Vols. I and II. Richmond: Virginia State Department of Education, 1970.

Illustrates the use of the Delphi Method as a means of validating educational goals. Goals then become standards for discrepancy measures. Details on needs assessment based upon discrepancy approach.

Weaver, W. Timothy. "The Delphi Forecasting Method," Phi Delta Kappan, January 1971, pp. 267-271.

Describes strengths and weaknesses of the Delphi Method. Suggests that Delphi is "a device for teaching people to think about the future of education in more complex ways than they ordinarily would."

Woodbury, Charles A. Jr., and others. Research Model for State Educational Needs Assessment. Charlottesville, Virginia: University of Virginia, 1970.

A description of the "project strategy" of the Virginia Needs Assessment Study. Includes a planning design for continuing needs assessment.

Ziegler, Warren L. An Approach to the Futures--Perspective in American Education. Syracuse, New York: Educational Policy Research Center, June 1969.

Supports a theory of futures oriented planning. Methods for thinking about alternative futures are outlined. Five models for American educational planning are described. Problems involved are discussed. Excellent reference for needs assessment planning.

## Part III

## Feasibility Analysis

Bressler, Marvin, and Tumin, Melvin M. Evaluation of the Effectiveness of Educational Systems, Vol. I. Princeton, New Jersey: Princeton University, 1969.

Five European nations and the United States have developed plans for "more adequate estimates of their elementary and secondary schools." A taxonomy of claimed and confirmed educational outcomes is presented. Describes "disparities" between goals and outcomes as "tension creating." Criticism of Project TALENT and NAEP.

Bushnell, Don D. The Automation of School Information Systems. Washington, D.C.: National Education Association, 1964.

Chapter on the use of simulation. Author says we "can determine in advance the effect of change."

Cleland, David I., and King, William R. "Regional Educational Planning: A Case Study," Phi Delta Kappan, January 1971, pp. 272-273.

Educators must plan for change. Presents projects in terms of a life cycle analysis.

Davis, Russell C. Planning Human Resource Development. Chicago: Rand-McNally Company, 1966.

Methods are primarily from work in developing countries. Manpower approach for planning and evaluations is very well described. Discusses a measurement of system outputs.

Flanagan, John C. "The Uses of Educational Evaluation in the Development of Programs, Courses, Instructional Materials and Equipment, Instructional and Learning Procedures, and

Administrative Arrangements," Sixty-Eighth Yearbook of the National Society for the Study of Education. Chicago, Illinois: University of Chicago Press, 1969.

Describes basis for developing a systems approach to decision making regarding development.

Guba, Egon G. "The Failure of Educational Evaluation," Educational Technology, May 1969, pp. 29-38.

Presents criticisms of current evaluation procedures. Stresses the use of new concepts in evaluation design which would "result in evaluations which would stimulate rather than stifle dynamic development of programs."

Hartley, Harry J. Educational Planning - Programming - Budgeting. Englewood Cliffs, New Jers : Prentice-Hall, Inc., 1968.

Author says that PPBS "provides a more rational basis for the efficient allocation of scarce resources among competing programs." Focus is on outputs rather than inputs. Good descriptions and definitions.

Kershaw, J. A., and McKean, R. N. Systems Analysis and Education. Santa Monica, California: The Rand Corporation, 1959.

Purpose was to assess the possibilities of making quantitative comparisons of education systems. Good presentation to approaches for evaluation of outputs. Describes Project TALENT.

Miles, Matthew B. Innovation in Education. New York, New York: Bureau of Publications, Columbia University, 1964.

Reviews innovation and describes attempts at innovation including success and failure. Import case studies are outlined. A final chapter by the author discusses generalizations.

Morgan, Robert M. A Systematic Approach to Educational Change. American Educational Research Association, Paper Presented, 1969.

Sets perceptions about educational systems for the 70s. Believes that activity of the highest priority is "goals setting." Management of learning will make use of the computer.

Morphet, Edgar L., and Ryan, Charles O. (eds.). Planning and Effecting Needed Changes in Education. Denver, Colorado: Publishers Press, Inc., 1967.

Describes an eight-state planning study for Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming under Title V of ESEA. Strategies for planning are outlined.

O'Toole, John F. Jr. Education in the 1980s: An Overview. Santa Monica, California: Systems Development Corporation, 1968.

Discusses the interface of education with society. Conjecture about the future is done with "contextual mapping." Forecasts new educational roles and attendant problems.

Pfeiffer, John. New Look at Education. New York, New York: Odyssey Press, 1968.

Stresses educational systems analysis as a necessary part of planning to control cost and obtain quality. Diagram on page 32 provides a structure for feasibility analysis. Excellent book on all phases of planning.

Piele, Philip K., and Eidell, Terry L. (eds.). Social and Technological Change. Eugene, Oregon: University of Oregon Press, 1970. (CASEA)

Systems approaches are presented in Chapter 17 (Roger A. Kaufman). Describes needs, goals, and the consideration of alternatives.

Provus, Malcolm M. "Evaluation of Ongoing Programs in the Public Schools," Sixty-Eighth Yearbook of the National Society for the Study of Education. Chicago, Illinois: University of Chicago Press, 1969.

Bases management practice upon a pertinent and reliable information system. Pittsburgh discrepancy model for evaluating content and development is described. An exemplary flow chart for stages of educational development is a strong portion of the reference.

_____. "Evaluation or Research, Research or Evaluation," Educational Technology, August 1970, pp. 50-54.

Explains decision making process as choosing information from an infinity of phenomena and then choosing alternatives which lead to choosing between alternatives. Insists on established standards to compare alternatives.

_____, and Lundin, G. Edward (eds.). Journal of Research and Development in Education, Summer 1970.

Page six gives a diagram for systems analysis that relates to feasibility studies. Models are basis of analysis. A discrepancy model for decision making is adequately discussed.

Runkel, J. Philip. Some Recent Ideas in Research Methodology. Eugene, Oregon: University of Oregon, (CASEA) 1967.

A presentation of facet design and analysis. "Principle of contiguity" is developed. Possible new approach to development of programs.

Toffler, Alvin. Future Shock. New York, New York: Random House, 1970.

Page 100 has a statement that is applicable to Appalachia's problem. A theoretical and philosophical background for consideration of program analysis and development.

Ziegler, Warren L. An Approach to the Futures-Perspective in American Education. Syracuse, New York: Educational Policy Research Center, June 1969.

Considers the future environment as a necessary part of educational policy formulation. A good discussion of educational planning models.

## Part IV

## Information About Appalachia

Appalachian Bibliography, Vols. I and II. Morgantown, West Virginia: West Virginia University Library, 1971 (for ARC).

Very complete listing by subject of published information and research on Appalachia. Includes theses and agency reports.

Appalachian Outlook. Morgantown, West Virginia: West Virginia University Library (28 issues to July 1971).

A listing of new sources of regional information for each period.

Appalachian Profile. Charleston, West Virginia: Appalachia Educational Laboratory, 1970.

A compilation of statistics, maps, and other information relative to educational planning.

Branscome, James. "The Crisis of Appalachian Youth," Appalachia, Vol. 2, No. 8, May 1969, pp. 16-21.

A criticism of current schools and methodology. Author suggests successful approaches of high-risk programs such as Upward Bound as a possiblity. Data is not documented.

Brooks, Maurice. The Appalachians. Boston: Houghton Mifflin Company, 1965.

A foreword by Roger Tory Peterson and John A. Livingston. Very good book to obtain information relative to geological history, flora and fauna which make the region unique. Basis for understanding problems and prospects.

Ford, Thomas R. (ed.). The Southern Appalachian Region, A Survey. Lexington, Kentucky: University of Kentucky Press, 1967.

The most comprehensive survey ever taken. Data was first basis for discussing region-wide programs. Much of data refers to 1950, 1960 census. Study has some relevance but is now largely outdated. Important reading for background to problems.

Link, A. D. A Planner's Reference Guide to Socioeconomic Factors Within Appalachia as Applied to Public Education. Las Cruces, New Mexico: New Mexico State University, 1970.

Review of literature covers delinquency, health services, dropouts, job opportunities, age factors, labor force, population characteristics, resources, disadvantagement and related documents. Includes only literature contained in the ERIC system.

Mathews, Elmore Messer. Neighbor and Kin. Nashville, Tennessee: Vanderbilt University Press, 1966.

A study of kinship and neighbor patterns in rural Appalachia. Sociological data and diagrams are illustrated as "deme." Contrasts two communities in terms of violence. Good reading to develop understanding of regional problems.

Nafziger, Alyce J. Analysis of Attitudes Relative to Education in the Appalachian Region. Las Cruces, New Mexico: New Mexico University, January 1971.

Lists four characterizations which limit cultural integration--individualism, traditionalism, familism, and fatalism. Family life seen as hindrance to education.

Nichols, Robert C. "Where the Brains Are," NMSC Research Reports, Vol. 5, No. 5, 1969.

An attempt to analyze the concentration of talent. An index was developed to rank order standard metropolitan statistical areas (SMSAs) and states on the National Merit Scholarship Test. Appalachian areas are generally low on the index.

Pearsall, Marion. Little Smoky Ridge. University, Alabama: University of Alabama Press, 1959.

Details the sociological information on one small mountain community. Lists characteristics and gives exact documentation. A good bibliography is included. Reference is made for school implications. Fixes problem for school on page 149.

Photiadis, John D. Selected Social and Sociopsychological Characteristics of West Virginians in Their Own State and in Cleveland, Ohio. Morgantown, West Virginia: Center for Appalachian Studies and Development, 1970.

Relevance for educational program development. Provides sociological and demographic data which can be used as variables for feasibility analysis.

_____, and Schwarzweller, Harry K. (eds.). Change in Rural Appalachia. Philadelphia, Pennsylvania: University of Pennsylvania Press, 1970.

Broad summary of social changes taking place in Southern Appalachia. Studies include the family, the church, the economy, government, and power structure. A chapter by Dr. Stanley A. Ikenberry on the topic of educational reform discusses relevance, strategies, and priorities for change.

Schwarzweller, Harry K., Brown, James S., and Mangalam, J. J. Mountain Families in Transition. University Park, Pennsylvania State University Press, 1971.

A well documented study of an Appalachian community. Included are origins, out-migration and adaptation characteristics. Supplies data for school development.

Weatherford, W. D., and Brewer, Earl, D. C. Life and Religion in Southern Appalachia. New York, New York: Friendship Press, 1962.

Provides a history of regional settlement Demographic data on area, population, and industr s.

Welier, Jack E. Yesterday's People. Lexington, Kentucky: University of Kentucky Press, 1965.

Provides one of the best insights into the demographic and sociological characteristics of Appalachia. High relevance to the development of educational programs designed to initiate educational change.

## Part V

## Relevant Miscellaneous Information

Best, Billy F. An Insider's Outlook. Paper presented to Appalachia Educational Laboratory, Survey 1971.

A viewpoint of an Appalachia-born educator toward his own education and effect of the educational system upon the disadvantaged. Suggests a consortium of independent colleges and universities to develop capability to deal with the problems of the region.

Bishop, C. E. The Changing Educational Needs of Rural People. Fayetteville, Arkansas: University of Arkansas, 1970.

Lists basic forces which are altering educational needs in rural areas. Implications for education are stated.

Branscome, James. Annihilating the Hillbilly: Appalachia's Struggle with America's Institutions. Paper presented to Appalachia Educational Laboratory, Survey 1971.

A discussion of the problems of Appalachia. Stresses the exploitation of the area. Points out the need to strengthen the pride in a heritage which resists the technology of "mainstream" America.

_____. Educating the Disadvantaged: A New Description of the American Dilemma. Address to Virginia Council on Social Welfare Conference, November 12, 1970.

A presentation on the educational system and its relation to disadvantaged Appalachian youth.

Carey, Walter F. The Development of our Manpower Resources. Washington, D.C.: Chamber of Commerce of the United States, 1965.

Paper is composed of those speeches delivered by the Chamber of Commerce president. An emphasis on education for economic goals. No documentation is provided.

Donohew, Lewis, and Parker, Joanne M. Impacts of Educational Change Efforts in Appalachia. Las Cruces, New Mexico: Clearinghouse on Rural Education and Small Schools, University of New Mexico, 1970.

States that the region has many similarities to underdeveloped nations of the world. Reference is made to studies of Schwarzweller, Brown, and Branscome. The most isolated were the most susceptible to change, thus a prime target group for educational change. "A ruling elite hesitates to initiate actual major alterations in the social structure, which in turn could affect their positions of power." Efforts at changing the power structure are reviewed.

Flanagan, John C., and others. The American High School Student. Pittsburgh, Pennsylvania: Project TALENT, American Institute for Research, 1964.

Findings from Project TALENT are reviewed and some indepth analyses are made. Variability within grades is greater than variability between grades which leads to a supporting statement for individualized instruction. The writers point to sectional differences but state the differences within each section are more striking. An important reference.

Frymier, Jack R. "Stimulation and the Need to Know," Motivation Quarterly, January 1971.

The "need to know" is man's only insatiable need. All other human needs can be satisfied. The confusion of wants and needs is discussed and sources of need are listed.

Graff, Orin B. "Appalachia's Educational Situation: Twelve Basic Propositions," Appalachian Advance, May 1968.

Paper presents twelve propositions with regard to basic problem areas of the educational situation. Attempts to define, describe, and justify the problem areas which need first attention.

Johns, Roe L., and others. Dimensions of Educational Need. Gainesville, Florida: University of Florida, National Educational Finance Project, 1969.

A review of all facets of education and the relationship to school finance by a select group of national leaders. Need to develop "human capital" is stated. A discussion of rural problems on page 214. An essential reference for planners.

Jung, Steven M. "Evaluative Uses of Unconventional Measurement Techniques in an Educational System," California Journal of Educational Research, Vol. XXII, No. 2, March 1971, pp. 48-57.

A good description of Project PLAN (Program for Learning in Accordance with Needs). A Critical Incident Technique (CIT) was used to develop a student self-report survey.

Kaufman, Roger A., and Harsh, J. Richard. Determining Educational Needs--An Overview. Paper prepared for Planned Leadership and Evaluative Development of Goals for Education (PLEDGE), HEW, 1969.

Describes the necessity of goals for education. Pennsylvania's ten goals are listed as an example. Needs assessment is presented and definitions of need are given. The Critical Incident Technique is illustrated as a reliable technique. Three strategies of need assessment are discussed.

Kirkbride, Keithe. "A Study to Identify Educational Needs of Non-college Bound Students in a Rural Public High School of Six Hundred Students." Olympia, Washington: Washington Research Coordinating Unit for Vocational Education.

Description of a study group through extension courses for all staff to find suggestions for curriculum from the community.

McClure, William P., and Pence, Audra May. Early Childhood and Basic Elementary and Secondary Education--Needs, Programs, Demands, Costs. Urbana, Illinois: Bureau of Educational Research, University of Illinois, 1970.

A portion of the National Educational Finance Project, Special Study No. 1. Exhaustive review of the literature. Needs are divided into personal, vocational, and social. A summary of needs is an outcome.

Miller, Jim Wayne. A Mirror for Appalachia. Charleston, West Virginia: A paper presented to Appalachia Educational Laboratory in an opinion survey on critical problems, 1971.

Discusses Weller's book Yesterday's People and presents a differing viewpoint. Paper stresses the need to consider the Appalachian culture and to support efforts to preserve the strengths of that culture. Contains many key points for regional educators to consider.

Morgan, Robert M. A Systematic Approach to Educational Change. Paper presented at AERA, 1969.

Author suggests individualized instruction as the means of providing a comprehensive education for all in the 70s. An 18-school sample is described as an experiment in new approaches.

Ojemann, Ralph H. "Who Selects the Objectives for Learning--and Why?" The Elementary School Journal, February 1971, pp. 262-273.

An interesting discussion of goal development with some unique contributions. The author states that the "basic goal should be to enhance the learner's development."

Phipps, Lloyd J., and others. Development of Human Resources Through a Vocationally Oriented Educational Program for Disadvantaged Families in Depressed Rural Areas. Urbana, Illinois: University of Illinois, 1970.

A 665-page final report on the program. Contains detailed information. Has high relevance for programs in Appalachia.

Resnik, Henry S. "High School with no Walls--It's a Happening in Philadelphia," THINK, November-December 1969, pp. 33-36.

Good description of the Philadelphia Parkway Program, an experimental high school. The school has no grades, marks, arbitrary rules, authority figures, buildings--or boredom. City as a resource is featured.

Rieder, Rem. "The Many Faces of Appalachia," Focus. Philadelphia, Pennsylvania: Philadelphia Evening Bulletin, July 11, 12, 13, and 14, 1971.

A series of articles documenting the problems of Appalachia.

Shaycoft, Marion F. The High School Years: Growth in Cognitive Skills. Pittsburgh, Pennsylvania: Project TALENT Office, American Institute for Research, 1967.

Article reviews the procedure of testing for data on Project TALENT. The author states that the data produces evidence that "schools are affecting performance" and that there are school differences which are not now identifiable. Points out the lag of reading comprehension in vocational schools.

Status Report--Education. Washington, D.C.: Chamber of Commerce of the United States, November-December, 1970.

Poses the question as to whether performance contracting is a better approach to school management. A pro discussion of the issue.

Summary of Education Workshops of the Urban Action Forums. Washington, D.C.: Chamber of Commerce of the United States (Mimeograph), October 15, 1969.

Summarizes 15 urban action forums which involved educators and businessmen. A list of suggested projects is included.

Targeted Program in Development and Related Research. Washington, D.C.: National Center for Educational Research and Development (NCERD), USOE, 1970.

Provides a list of targeted areas which will receive priority. Areas or aspects of education "where excellence is essential yet where problems are serious and growing."

Technology and Innovation in Education. Aerospace Education Foundation. New York, New York: Frederick A. Praeger, 1968.

Interesting foreword by B. F. Skinner. Some excellent examples of experiments with high relevance to educational development. A chapter describes Project PLAN.

Virginia's Supply of Public School Instructional Personnel. Richmond, Virginia: State Department of Education, 1970.

A complete description of instructional personnel on a county-city-state basis. Includes sources, certification, and distribution.

Walker, W. Hugh. Organizing for Education. Washington, D.C.: American Association for the Advancement of Science, 1969.

Author says that the most important resource of any country is people and that education is the most potent instrument for development of this resource. Stresses need for middle-level persons with specialized skills. Cites lack of statistical information.

Weaver, Charles E. Students of Appalachia. Columbus, Ohio: Ohio Department of Education, Guidance Field Services. Paper presented to Education--Business Relations Program Planning Workshop, 1971.

Description of Appalachian educational problems and status. Includes interesting report of interviews with out-migrants in Columbus, Ohio.

Whisnant, David E. "Response to Appalachia Educational Laboratory Questionnaire," June 18, 1971.

Suggests that Appalachian development must be thought of as a part of a general quest for educational, cultural, economic, and spiritual alternatives to the "badly flawed majority culture" of the United States. Education is calculated to reinforce most of the worst aspects of American culture. Includes suggestions for education to make use of the best in Appalachian culture.

## Part VI

## Sources of Data

Appalachian Data Book, Vol. 9, Sec. Ed. Washington, D.C.: Appalachian Regional Commission, April 1970.

Contains demographic data on the 13-state region.

Appalachian Profile. Charleston, West Virginia: Appalachia Educational Laboratory, 1970.

Data includes list of Appalachian counties for each state. Contains lists of educational leadership for each state. Maps are included.

Digest of Educational Statistics, 1970. Washington, D.C.: National Center for Educational Statistics, USOE, 1970.

Extensive tables on educational statistics for all levels. Data from Census, Labor Department, NEA, and USOE reports are summarized.

Dochterman, Clifford L. National Assessment of Educational Progress, Summary of Report 1. Denver, Colorado: Education Commission of the States, 1970.

Reviews the background of the project and procedures for collecting and analyzing data.

Flanagan, John C. A Survey and Follow-up Study of Educational Plans and Decisions in Relation to Aptitude Patterns: Studies of the American High School.

Analyses of Project TALENT data indicates that only four factors are uniquely and closely associated with school outcomes: teacher salaries, teacher experience, number of books in the school library, and per-pupil expenditure. Important reference for considering new program development.

"The Hidden Promise of the 1970s," Time, February 15, 1971, pp. 70-71.

Article quotes George Hay Brown, Director of the Bureau of the Census. Data relative to persons below poverty level, working wives, and population changes are reviewed.

Marland, Sidney P. Data Gathering--A Time for Planning. Address delivered at annual Commissioner's Conference of the Council of Chief State School Officers, Washington, D.C., June 17, 1971.

Surveys the state of data about education and emphasizes "how little the nation knows" about the educational endeavor. Lists priorities of the Belmont System.

Nichols, Robert C. "Where the Brains Are," NMSC Research Reports, Vol. 5, No. 6, 1969.

The author has developed an index for the comparison of Standard Metropolitan Statistical Areas and areas outside of these SMSAs. Data shows relative rank of Appalachian SMSAs and states.

Parker, Franklin. "Dropout Rate 1960-1970," Phi Kappa Phi Journal, Vol. L, No. 4, 1970.

Brief review of new census data with comparisons to the 1960 data.