

A PROCEDURE FOR THE IDENTIFICATION OF CONCEPTS  
WHICH ARE COMMON TO MULTI-DISCIPLINARY  
STUDIES AS RELATED TO MANPOWER  
RESEARCH

By

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## TABLE OF CONTENTS

Chapter	Page
I. THE PROBLEM . . . . .	1
Introduction . . . . .	1
Need and Purpose of the Study . . . . .	1
Research Questions to be Answered . . . . .	2
Background Information . . . . .	2
Definition of Terms . . . . .	3
II. REVIEW OF LITERATURE . . . . .	5
Part I . . . . .	5
Part II . . . . .	8
III. PROCEDURES AND ANALYSIS OF DATA . . . . .	11
Introduction . . . . .	11
Procedures . . . . .	11
The Population of Selected Manpower Fellows . . . . .	13
Analysis . . . . .	13
Disposition of the Research Questions . . . . .	19
IV. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS . . . . .	21
Introduction . . . . .	21
Summary . . . . .	21
Conclusions . . . . .	22
Recommendations . . . . .	23
A SELECTED BIBLIOGRAPHY . . . . .	24
APPENDIX A - LETTER OF INSTRUMENT . . . . .	25
APPENDIX B - SUGGESTED MAJOR TASKS . . . . .	27
APPENDIX C - THE INSTRUMENT . . . . .	29

LIST OF TABLES

Table		Page
I.	Concepts in Technical Education Which Were Identified As Relevant to Manpower Research . . . . .	14
II.	Concepts in Economics Which Were Identified As Relevant to Manpower Research . . . . .	15
III.	Concepts in Sociology Which Were Identified As Relevant to Manpower Research . . . . .	16
IV.	Concepts in Psychology Which Were Identified As Relevant to Manpower Research . . . . .	17

## CHAPTER I

### THE PROBLEM

#### Introduction

Human resources development represents one of the nation's top priorities or goals. Every President to hold office since the Employment Act of 1946 has given attention to this critical area. In order to achieve human resources development goals, manpower researchers are needed to pose and test new hypotheses.

The problems which the manpower researcher must attempt to resolve are interdisciplinary in nature. Oklahoma State University has attempted to train manpower researchers at the master's degree level, however, there is not sufficient time at this level to adequately cover subject matter in several fields. Therefore, ways must be found to train manpower researchers so as to expose them to critical elements in several disciplines.

#### Need and Purpose of the Study

There is a definite need for a procedure involving the collection, analysis and evaluation of common concepts as related to any type of studies which cross disciplinary boundaries. If such a procedure was to be established, a great deal of valuable time would be saved by educators and students; and the subject matter might be more relevant to the manpower researchers' performance requirements.

It was the purpose of this study to establish a procedure for the collection, analysis and evaluation of common concepts from different fields of study as they relate to manpower research. A subsidiary purpose of this study was to collect, analyze and evaluate data pertaining to the manpower research fellowship program at Oklahoma State University which could be used to improve the program.

#### Research Questions to be Answered

The following research questions were investigated in this study.

1. Can a group of concepts relevant to manpower research be identified which are common between the fields of Economics, Sociology, Psychology and Education?
2. If the answer to research question number one above is affirmative, is there a significant number of common concepts to warrant a set of "core courses" which could serve as a guide to a manpower research training program?

#### Background Information

The Manpower Research and Training Center was established at Oklahoma State University in September, 1966. The Center is funded by the Manpower Administration, U. S. Department of Labor. The primary purpose of the Center is to train students to be manpower researchers with an interdisciplinary orientation. The program was designed to be interdisciplinary due to the tasks which a manpower researcher would be called upon to perform. The Center is composed of four contributing departments: Economics, Psychology, Sociology and Technical Education.



These departments are for students enrolled in the manpower fellowship program at the master's degree level.

In September of 1966, the training program started with twelve students (hereafter referred to as Manpower Fellows). At that time a total of 48 credit hours were required in order to complete the program. Later the credit hour requirement was reduced in lieu of the additional assignment of working quarter time on research projects during the school year. Each "Manpower Fellow" received a stipend of \$273 per month for eleven months. During the summer term, students were placed in an actual working situation.

During the past three years the Center has completed 18 research projects and currently has 32 research projects underway. These research projects involve a group of 19 Faculty members. The program is guided by a steering committee with representation from all the four departments mentioned previously.

#### Definition of Terms

The term "expert" for the purpose of this study refers to one who is highly trained and informed in some special field.

The term "task" for the purpose of this study refers to work assigned or demanded of a manpower researcher while conducting manpower research.

The term "core course" for the purpose of this study refers to a body of knowledge in a particular field of study which is necessary for a student's knowledge to facilitate advancement in the field.

The term "manpower researcher" for the purpose of this study refers to an individual who is involved with the application of

interdisciplinary knowledges and skills to research and study related to the utilization and distribution of jobs and man's working environment.

The term "concept" for the purpose of this study refers to an idea or group of ideas which universally express the nature of a body of knowledge in a particular field of study.

The term "field of study" for the purpose of this study refers to a body of knowledge which can be explored by the student with respect to a specific discipline.

## CHAPTER II

### REVIEW OF LITERATURE

This review of literature is divided into two parts; (I) The exploration of several articles and studies which are directly or indirectly related to the identification of concepts in the area of manpower research, and (II) a review of the interdisciplinary manpower involvements of the Manpower Research and Training Center at Oklahoma State University.

#### Part I

Most of the excerpts that follow are related to the need for identifying concepts to further the utilization of manpower research.

In an article by Harold L. Sheppard entitled "An Integrated Approach to Manpower and Economic Development", Mr. Sheppard stresses the need for a closer relationship between disciplines through the identification of concepts common to the study of manpower. This point is most clearly stated in the following excerpt:

An interdisciplinary endeavor cannot depend on a strict division of labor between economists and sociologists or psychologists. Economists have to integrate the concepts and variables of the other social scientists into their traditional approaches, and sociologists and psychologists interested in the same phenomena have to do likewise.

Each social science, of course, has a reason to view its own subject matter as primarily a set of abstractions logically developed from selected facets (or "data") of the total reality. Each has an established charter

for pursuing the construction of mutually exclusive (and closed, noneclectic) "theoretical systems." As long as the "users" of such neatly departmentalized conceptual schemes recognize that they and their fellow conceptualizers are making excursions into the realm of "as if," no harm really follows.

But when individuals and organizations (public and private) are seeking solutions to, and making decisions pertaining to, employment and economic and manpower development, they have to be aware that "pure" noneclectic theories of economics, psychology, and sociology used separately alongside each other (or used singly to the neglect of the others) can result in practical failures and in inaccurate predictions. The practical pursuit of such ideals as "rational utilization of manpower," and "mobility in response to opportunities," requires a synthesis or distillation of pertinent ideas and approaches characterizing the various existing social sciences.

He goes on to emphasize that:

.... Interdisciplinary endeavors on the analytical level are more likely to be successful when relevant concepts and variables drawn from the several disciplines are at the command of one individual. This is one of the major implications of the development of a formal "manpower social science." Similarly, the practical planning and application phases of programs to meet the challenges of unemployment and manpower development are more likely to prove successful when administrators who sense the need for such a "manpower social science" are responsible for policy and program implementation. Greater alertness to the interdisciplinary aspects of real manpower situations and problems should, in any case, help to remedy the deficient supply of well-rounded practitioners.<sup>1</sup>

In the following overview of the study, An Interdisciplinary Approach to Manpower Research, Neil A. Palomba and Edward B. Jakubauskas relate the need for interdisciplinary research:

The single major point that continually recurs is the need for interdisciplinary research in the manpower field. No one or two disciplines can ever hope to answer the major questions that we encounter in the world of work. At the minimum the anthropology, economics, education, management, psychology, and sociology sciences will have to cooperate in order to advance manpower research and solve the important manpower problems.<sup>2</sup>

An excellent approach to a specific problem is the paper by Dr. Thomas Lyons entitled, "Organizational Theory and Manpower Withdrawal," where the question of manpower withdrawal is examined through the conceptual framework of four different sciences. While Dr. Lyons is a psychologist, he surveys the economics, management, and social literature, in an attempt to shed some light on manpower withdrawal.

Joseph Epstein in his paper entitled, "Manpower Research Programs of U. S. Department of Labor", discusses the interdisciplinary nature of the Department of Labor staff and how his staff tries to further cooperative research in manpower.

I happen to be an economist, but I am fully aware of the contributions by the other disciplines in arriving at total answers. The department itself has recognized this. We have a research psychologist on our staff. We have demographers. We have several sociologists. So our own research office is in itself an example of the multi-disciplinary approach that we like to see developing further in the country to get answers on various aspects--of which no discipline by itself can give the total answer.<sup>3</sup>

In the paper by Robert Herman entitled, "Manpower Research Programs U. S. Office of Education", stresses the interdisciplinary theme from the point of view of the educational community playing a large role in the manpower development program by cooperating with the behavioral science researchers.

We really have to go to the beginning of the program to formulate our opinion. The Advisory Committee on Vocational Education (designated by the President in 1961 to take a look at the whole vocational education program in the United States) suggested that behavioral scientists, psychologists, economists, and sociologists be included in any activity the federal government was to undertake in the streamlining and development of a new approach to vocational education in this country. It encouraged non-educators to begin to participate on the theory that manpower education has to be viewed as a continuous process of development and utilization of a scarce resource. It meant to these people that they

needed a continuing information gathering and dissemination process and also an exchange within and between educationists and the manpower people.<sup>4</sup>

## Part II

The Manpower Research Fellows, in addition to their interdisciplinary course work, were expected to participate in research internships designed around on-going research projects associated with the Manpower Center.

The following excerpts taken from the pamphlet, The Manpower Research Institute Grant Program: The First Three Years, demonstrate the interdisciplinary involvement of the Manpower Research and Training Center at Oklahoma State University.

1. Based on a statewide analysis of technical training programs and the mobility of their graduates, the researchers planned a system for such education as part of a manpower development program for the State. As a side benefit of this study, major employers were brought together with both researchers and personnel at training institutions for the first time.
2. In a further effort to match vocational education with industry needs, an Occupational Training Information System is being developed under a Manpower Administration contract. The System will provide continuous information to manpower planners to facilitate adjustments of research, three doctoral dissertations and seven master's theses explore aspects of this problem.
3. Two studies have dealt with labor force participation of residents in the Ozark area of Northeast Oklahoma. Based on the manpower center's analysis of Ozark labor force characteristics, the Northeast Oklahoma Community Development Corporation has requested further research on the most effective ways of motivating, recruiting, and utilizing local manpower.
4. Concern with the State's economy and minority population is reflected in a current study of sources of recent economic growth, and in two evaluations of the training offered American Indians through the U. S. Bureau of Indian Affairs (One of the latter was completed under a Manpower Administration dissertation grant). Considerable research was also performed in conjunction with a national conference on rural-urban migration.

5. On health manpower, a current project is analyzing the potential of discharged military corpsmen for use in civilian health occupations. Another project examined utilization of female registered nurses.
6. Jobseeking is being examined in two projects: (1) An experimental program under which selected registrants at public employment service offices are given supplemental labor market information (sponsored under a Manpower Administration contract); and (2) a comparison of labor market information, jobseeking behavior, and socioeconomic mobility of Negro and White college graduates.
7. Finally, a series of international manpower studies has been undertaken. A comparison has been made of the manpower environments confronting firms in Western Europe and the United States. Active studies include an assessment of the relevance of training in the United States for graduate students who return to Latin America.<sup>5</sup>

FOOTNOTES

<sup>1</sup>Sar A. Levitan and Irving H. Siegel, ed., Dimensions of Manpower Policy: Programs and Research (Baltimore, 1966), p. 266-267.

<sup>2</sup>Neil A. Palomba and Edward B. Jakubauskas, ed., An Interdisciplinary Approach to Manpower Research (Ames, 1968), p. 2.

<sup>3</sup>Ibid., p. 11.

<sup>4</sup>Ibid., p. 17.

<sup>5</sup>U. S. Department of Labor, Manpower Administration, The Manpower Research Institutional Grant Program: The First Three Years, 1966-1969 (Washington, 1969), p. 22-23.



## CHAPTER III

### PROCEDURES AND ANALYSIS OF DATA

#### Introduction

The primary purpose of this study was to investigate the following research questions.

1. Can a group of concepts relevant to manpower research be identified which are common between the fields of Economics, Sociology, Psychology, and Technical Education?
2. If the answer to research question number one is affirmative, is there a significant number of common concepts to warrant a set of "core courses" which could serve as a guide to a manpower research training program?

This chapter is involved with (1) description of the procedures used to investigate the above questions and (2) analysis of relevant information and the disposition of the above questions.

#### Procedures

The first step in this investigation was to establish a list of tasks which the manpower researcher might be called upon to perform in his everyday activities. These tasks were identified in discussions with Dr. Paul V. Braden<sup>1</sup> who was familiar with the jobs taken by past graduates from the Manpower Research Training Program.

The second step in the investigation was to present the defined tasks to selected Manpower Fellows for their comments and suggestions. Their suggestions were incorporated into the list when determined appropriate by the total group of Fellows.

The third step was to design an instrument that could be used to collect information on critical concepts needed for the performance of the tasks previously defined. The instrument was completed with the help of members of the Manpower Research and Training Center staff. (See Appendix C)

The fourth step was the distribution of the questionnaire to the selected Manpower Fellows asking for concepts from their particular field which they felt would be critical to the performance of each task in the list. In addition, the selected Manpower Fellows were asked to list the twenty most critical concepts in their particular field which they felt were necessary in the conduct of manpower research. All Manpower Fellows completed and returned both the questionnaire and the lists.

The fifth step was to call a meeting of the selected Manpower Fellows and discuss the concepts which had been collected on the questionnaire to determine the meaning of the concepts in the broadest possible terms with reference to finding duplication across all disciplines.

The sixth and last step was to define the five interdisciplinary concepts which were recognized in terms that would be meaningful in the particular fields involved.

## The Population of Selected Manpower Fellows

The population of selected Manpower Fellows who provided the information used in this investigation consisted of one Sociology Fellow, one Psychology Fellow, two Economics Fellows and Two Technical Education Fellows.<sup>2</sup> The reason that a small population was selected was that this size group could be utilized as a discussion unit with each member having ample opportunity to participate.

### Analysis

The critical concepts identified in this study are presented in the following tables. Table I contains concepts identified in Technical Education; Table II contains concepts identified in Economics; Table III contains concepts identified in Sociology and Table IV contains concepts identified in Psychology. The concepts which the Manpower Fellows found to exist in all of the four disciplines mentioned above are marked with an asterisk.

The five concepts identified, were found to cross all four disciplines involved in this study. These were:

1. The Theory of Work (Incentives in Economics, Protestant Ethic in Sociology and Psychoanalytic Theory of Motivation in Psychology);
2. The Decision Making Process (Game Theory in Economics, Authority in Sociology and Inductive Reasoning, Deductive Reasoning, Approach - Approach Conflict, Approach - Avoidance Conflict or Avoidance Conflict in Psychology);
3. Group Theory (Grouping in Sociology and Formal Grouping and Informal Grouping in Psychology);

TABLE I  
 CONCEPTS IN TECHNICAL EDUCATION WHICH WERE IDENTIFIED  
 AS RELEVANT TO MANPOWER RESEARCH

Vocational Education	Dynamics of Storage and Mobility
Stimulus - Response* (1)	Behaviorilization
Job Preparation	Decisions as to Choices* (4)
Knowledge Builds Citizenship	Statistical Procedures* (5)
Human Resources	D. O. T. Codes
Skill Training	Occupational Analysis
Concept of Work* (2)	Systems Approach
Job Matching	Total Education
Task Analysis	Time Constants
Group Theory* (3)	Office of Education Program Codes

TABLE II

CONCEPTS IN ECONOMICS WHICH WERE IDENTIFIED  
AS RELEVANT TO MANPOWER RESEARCH

---

Game Theory* (4)	Multipliers
Incentives* (2)	Options - Alternatives
Statistical Analysis* (5)	Full Employment
Group Theory* (3)	Under Employment
Supply and Demand* (1)	Productivity
Expectations	Automation
Labor Intensive	Aggregate Demand
Real Wage	Labor Force
Mobility	Utility
Diminishing Return	Cost/Benefit Analysis

---

TABLE III

CONCEPTS IN SOCIOLOGY WHICH WERE IDENTIFIED  
AS RELEVANT TO MANPOWER RESEARCH

---

Status	Stimulus - Response* (1)
Community	Culturation
Alienation	Cultural Determinism
Role	Ecology
Norm	Folkway
Authority* (4)	Statistical Testing* (5)
Grouping* (3)	Mores
Social Systems	Cooley's Looking Glass Self
Institutions	Protestant Ethic* (2)
Bureaucracy	Cognitive Dissonance

---

TABLE IV  
 CONCEPTS IN PSYCHOLOGY WHICH WERE IDENTIFIED  
 AS RELEVANT TO MANPOWER RESEARCH

Inductive Reasoning* (4)	Law of Effect* (1)
Deductive Reasoning* (4)	Monism
Approach - Approach Conflict* (4)	Parallelism
Approach - Avoidance Conflict* (4)	Stimulus - Response* (1)
Avoidance - Avoidance Conflict* (4)	Formal Grouping* (3)
Psychoanalytic Theory of Motivation* (2)	Informal Grouping* (3)
Independent Variable* (5)	Rigidity
Dependent Variable* (5)	Libido
Dynamism	Ego
Homeostatis	Gestalt Theory

4. Stimulus - Response (Supply - Demand in Economics); and
5. Statistical Procedures

From the above common concepts, the following cross-disciplinary definitions were synthesized. (Note: The Technical Education titles are used in this study although titles appropriate to other disciplines would be just as meaningful.)

The Theory of Work -- This concept pertains to the idea that man is compelled to work in order to survive. (Although the background of 'why' man is compelled to work to survive varies relative to discipline, the underlying theme is multi-disciplinary.)

The Decision Making Process -- This concept pertains to the decision making process which the individual uses to make a judgement as to which alternative from a given set of alternatives best satisfies his needs.

Group Theory -- This concept pertains to the systems of human organization both formal and informal, in society. These groupings extend through both the industrial and private life of the individual.

Stimulus - Response -- This concept pertains to the idea that in order to achieve a result, either a positive or negative action (no action) must occur. In other words, for every effect, there is a cause (either positive or negative).

Statistical Procedures -- This concept pertains to the use of mathematical methods to evaluate data collected by various research techniques.

Although only five concepts were determined to be cross-disciplinary relative to Technical Education, Economics, Sociology and Psychology; there were sub-relationships between concepts found in two



or three of the disciplines which could be considered to be interdisciplinary on a limited scale. These relationships were, however, outside the scope of this study.

#### Disposition of the Research Questions

Question 1 which states "Can a group of concepts relevant to manpower research be identified which are common between the fields of Economics, Sociology, Psychology and Technical Education" can be answered affirmatively. In the material above, five such concepts were, in fact, identified.

Question 2 which states "If the answer to research question one is affirmative, is there a significant number of common concepts to warrant a set of "core courses" which could serve as a guide to a manpower research training program?" must be answered negatively based on the limited research of this study. There are only five concepts that were found to be common to all of the disciplines and of these, only one (statistical procedures) was of a scope to warrant an entire course. It is possible that an extended list of concepts, if identified, could yield enough interdisciplinary concepts to form a set of "core courses", however, the possible marginality of the additional concepts should be considered.

## FOOTNOTES

<sup>1</sup>Dr. Paul V. Braden is Acting Director of and Associate Professor in the School of Occupational and Adult Education at Oklahoma State University. He is also an Occupational Analysis Specialist with the Manpower Research and Training Center.

<sup>2</sup>The Manpower Fellows who consulted on this paper were Neil Willison and Larry Ann Holley from Technical Education, Marvin Perry and Edward Rousselot from Economics, Terry Bixler from Sociology and Craig Robinson from Psychology. These Fellows are all students at Oklahoma State University who are presently working on Master's degrees.

## CHAPTER IV

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### Introduction

The primary purpose of this study was to investigate the following research questions.

1. Can a group of concepts relevant to manpower research be identified which are common between the fields of Economics, Sociology, Psychology and Technical Education?
2. If the answer to research question number one is affirmative, is there a significant number of common concepts to warrant a set of "core courses" which could serve as a guide to a manpower research training program?

This chapter is concerned with summarizing the findings presented in Chapter III, drawing conclusions from these findings and about the methods used to collect, analyze and define concepts and making recommendations based on these conclusions.

#### Summary

The following is a brief summary of the findings presented in Chapter III.

1. A group of concepts which are common between Economics, Sociology, Psychology and Technical Education and relevant to manpower research can be identified.

2. The question as to whether a significant number of common concepts exist in this area to warrant a set of "core courses" must be answered negatively.
3. Of the twenty concepts ascribed to each of the disciplines by the Manpower Fellows, five were found to be common to all disciplines defined in this study, i.e., the theory of work, the decision making process, group theory, stimulus - response and statistical procedures.

### Conclusions

The following conclusions relative to the findings and the method used to reach these findings follows.

1. Neither method of identifying concepts (questionnaire or listing) are satisfactory in themselves but by combining these two methods with a meeting of the respondents for further discussion, concepts can be identified. It is felt that direct identification of tasks with concepts in a questionnaire is limiting.
2. The use of a small group of respondents is highly satisfactory in that even the most retiring member of the group had adequate opportunity to contribute and in this case took advantage of the opportunity.
3. The use of the small group facilitated the interpretation of concepts across discipline lines which in turn provides a method to determine differences and similarities between concepts.

4. Broad definitions of concepts that have meaning in both a particular discipline and an interdiscipline setting can be synthesized. Again, the small group was instrumental in formulating these broad definitions. It is doubtful that any single person or group of persons from a single field of study could formulate the definitions without violating parameters from at least one of the other fields. It was felt that a larger group might require structure which would limit the interchange which is so necessary in performing this task.

#### Recommendations

1. A common language or method should be developed which would allow manpower researchers to more easily cross discipline lines.
2. Small groups should be used as a method of solving interdisciplinary problems.
3. While identification of tasks is necessary to identifying concepts needed for the performance of these tasks, no attempt should be made to tie the tasks directly to the concepts as this is limiting.

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APPENDIX A

LETTER OF INSTRUMENT

April 8, 1970

Dear Manpower Steering Committee Members and Manpower Fellows:

A study is presently being conducted in an attempt to use the conceptual approach in building a set of "core courses" in the area of Manpower Research. With your help an attempt is being made to collect the concepts which you as a specialist in your field would help a manpower researcher complete the stated tasks.

Please read each task and write down a concept in your field that you feel might be critical in completing the task. If possible, please list any reference(s) from which this concept may be further identified.

Thank you very much for your cooperation.

Sincerely,

Curtis H. Haire Jr.

*Curtis H. Haire Jr.*

Master's Committee

Dr. Paul V. Braden, Chairman



APPENDIX B

SUGGESTED MAJOR TASKS

## MAJOR TASKS

This is a suggested list of major tasks which a manpower researcher might be called upon to perform:

Design research studies.

Formulate and structure survey instruments.

Formulate a solution(s) to statistical problems.

Structure and write research papers.

Communicate and work with people from all socio-economic levels.

Design and perform an occupational analysis.

Work with vocational-technical educators.

Review literature relevant to specific manpower research areas.

Distinguish between and among various organizational structures.

Work with people on all levels of authority.

Identify and name the major funding organizations for manpower research.

APPENDIX C

THE INSTRUMENT

## Task #1

The manpower researcher must be able to design research studies.

Concept(s) which are basic to the above task:

Additional Explanation (if any):

Suggested References (if any) which would be helpful in further identifying the above concept:

[Note: The definition of a concept used in this study is as follows: A concept is an idea or group of ideas which universally express the nature of a body of knowledge in a particular field of study.]

## Task #2

The manpower researcher must be able to formulate and structure survey instruments.

Concept(s) which are basic to the above task:

Additional Explanation (if any):

Suggested References (if any) which would be helpful in further identifying the above concept:

## Task #3

The manpower researcher must be able to formulate a solution(s) to statistical problems.

Concept(s) which are basic to the above task:

Additional Explanation (if any):

Suggested References (if any) which would be helpful in further identifying the above concept:

## Task #4

The manpower researcher must be able to structure and write research papers.

Concept(s) which are basic to the above task:

Additional Explanation (if any):

Suggested References (if any) which would be helpful in further identifying the above concept:

#### Task #5

The manpower researcher must be able to communicate and work with people from all socio-economic levels.

Concept(s) which are basic to the above task:

Additional Explanation (if any):

Suggested References (if any) which would be helpful in further identifying the above concept:

#### Task #6

The manpower researcher must be able to communicate and work across interdisciplinary lines.

Concept(s) which are basic to the above task:

Additional Explanation (if any):

Suggested References (if any) which would be helpful in further identifying the above concept:

#### Task #7

The manpower researcher must be able to design and perform an occupational analysis.

Concept(s) which are basic to the above task:

Additional Explanation (if any):

Suggested References (if any) which would be helpful in further identifying the above concept.

#### Task #8

The manpower researcher must be able to work with vocational-technical educators.

Concept(s) which are basic to the above task:

Additional Explanation (if any):

Suggested References (if any) which would be helpful in further identifying the above concept:

#### Task #9

The manpower researcher must be able to review literature relevant to specific manpower research areas.

Concept(s) which are basic to the above task:

Additional Explanation (if any):

Suggested References (if any) which would be helpful in further identifying the above concept:

#### Task #10

The manpower researcher must be able to distinguish between and among various organizational structures.

Concept(s) which are basic to the above task:

Additional Explanation (if any):

Suggested References (if any) which would be helpful in further identifying the above concept:

#### Task #11

The manpower researcher must be able to work with people on all levels of authority.

Concept(s) which are basic to the above task:

Additional Explanation (if any):

Suggested Reference (if any) which would be helpful to further identifying the above concept:

## Task #12

The manpower researcher must be able to identify and name the major funding organizations for manpower research.

Concept(s) which are basic to the above task:

Additional Explanation (if any):

Suggested References (if any) which would be helpful in further identifying the above concept:

## Additional Tasks

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VITA

Curtis Harmon Haire Jr.

Candidate for the Degree of

Master of Science

**Thesis:** A PROCEDURE FOR THE IDENTIFICATION OF CONCEPTS WHICH ARE COMMON TO MULTI-DISCIPLINARY STUDIES AS RELATED TO MANPOWER RESEARCH

**Major Field:** Technical Education

**Biographical:**

**Personal Data:** Born at Longview, Texas, September 21, 1946, the son of Curtis and Marguerite Haire, Sr.

**Education:** Graduated from Lawton High School, Lawton, Oklahoma in 1964; attended Cameron State College with a major in Pre-engineering until 1966; received the Bachelor of Science Degree from Oklahoma State University with a major in Technical Education in Electronics in 1969; completed requirements for the Master of Science Degree in Technical Education at Oklahoma State University in July, 1970.