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THE UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

CAREER ORIENTATION RATING: AN INDICATOR OF THE CAREER ORIENTATION AND THE VALIDITY OF EXPRESSED TRAINING NEEDS OF HEALTH MANPOWER IN OKLAHOMA

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JOHN BRUCE AMADIO

Oklahoma City, Oklahoma

1970

CAREER ORIENTATION RATING: AN INDICATOR OF THE CAREER ORIENTATION AND THE VALIDITY OF EXPRESSED TRAINING NEEDS OF HEALTH MANPOWER IN OKLAHOMA

APPROVED BY

DISSERTATION COMMITTEE

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CAREER ORIENTATION RATING: AN INDICATOR OF THE CAREER ORIENTATION AND THE VALIDITY OF EXPRESSED TRAINING NEEDS OF HEALTH MAN POWER IN OKLAHOMA

CHAPTER I

INTRODUCTION

Production of Health Services

In spite of massive efforts during the last decade by government, universities, and private interests, the output of health services in America has steadily fallen behind the rising demand for such services. The gap between the demand for health services and the supply of services rendered by the available health manpower has created a crisis that will not disappear in the foreseeable future. The national commitment of "optimum health and quality of life for all" adds urgency to the need for finding solutions to the problem of meeting the increasing health service demands.

While many government agencies, universities, medical schools and schools of health have been working to increase the number of persons trained to produce health services, others have been urging in-service continuing education as a means of improving the productivity of existing health workers.

Since almost all services produced in the health industry are

the result of personal effort, any training that would reduce the effort needed to produce a service is a net gain. If, for instance, the productivity of health workers could be increased by twenty per cent, the nation would receive a boost in output of services equivalent to adding approximately six hundred thousand workers to the present estimated three million health workers in the United States.[1] The cost of producing this boost would be far less than that required for training new personnel and it would take much less time to accomplish.

The writer has not suggested anything startling or new in this statement. The literature indicates that many writers in the health and education fields have been urging continuing education as a means of increasing health services for several years. The Report of The National Commission on Community Health Services recommended the following:

> Effective utilization of available health personnel will reduce the current manpower shortage, and continuous evaluation of the use of manpower, accompanied by necessary changes and retraining, will provide additional manpower for existing and new health services.[2]

John Hanlon stated in his Fourth Edition of Principles of Public Health Administration:

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[1]Herman E. Hilleboe, "Public Health in the United States in the 1970's," American Journal of Public Health, Vol. 58, No. 9 (September, 1968), pp. 1588-1609.

[2]National Commission on Community Health Services, "Health Is a Community Affair," (Cambridge, Massachusetts: Harvard University Press, 1966), p. 211.

> The process of learning should stop only with the last breath of life. The knowledge and ability that the public health worker brings to his job in the first instance should represent, at most, only the beginning of an ever-growing fund of ability upon which he may base professional action. An organization which does not aid and abet continued improvement of its employees is remiss in its responsibilities and, in the long run, handicaps itself.[3]

Steen boldly stated the following for the American Public Health Association in 1967:

> Programs in continuing education properly organized and funded offer this nation its only opportunity for "instant" health manpower. We have waited much too long to initiate the planning needed for long-term training that will produce physicans, nurses and the other thirty (or more) health disciplines which are called upon to deliver the broad range of health service now being demanded by the American public.[4]

Increasingly, health administrators are turning to continuing education as a means of providing their staffs with the skills and abilities needed to keep up with the rising demands for health services.

The Problem

Upon making the decision to provide some staff training opportunities, the administrator finds himself figuratively buried in the proliferation of possible programs, short courses, seminars, conferences and college classes available from numerous local and national sources. He is hard-pressed to decide which of his staff members

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[3]John J. Hanlon, Principles of Public Health Administration (4th ed.: C. V. Mosby Company, 1964), p. 284.

[4]Wilson D. Steen, "A Critical Analysis," Short-Term Training and Continuing Education in Public Health, A Pilot Project, The American Public Health Association, August 1967, p. 58.

should attend a given course or even what courses he should request for his staff. He is seldom able to predict, other than intuitively, what training will be meaningful to his individual staff members.

Given the limited funds and time available for staff development, it is of paramount importance that training resources be utilized to their full potential in order to maximize the benefits of training while minimizing the expenditures of human and material resources. Since he cannot afford to train all the staff in all areas of skill and knowledge, the planner in staff development, be it the health administrator, the training officer, or the purveyor of educational programs, needs to know who should receive further training, what training they should receive, who will benefit most from specific training, and how the training will affect the agency's operating efficiency.

The present methods of determining staff training requirements in use by the most state health departments are wholly subjective, and systems to predict which staff members will benefit from specific training are non-existent. These subjective methods of selecting who should receive training have led to charges of favoritism, waste, and discrimination due to the lack of objective evidence to substantiate the administrator's decisions. More information is needed as to which workers will make effective use of training and whether or not a health worker knows his training needs and can express them in terms of needs which can be met through training programs. This information must relate to both the individual and the agency. The importance of bridging this gap in administrative knowledge is emphasized in the

recent increase of national and local interest in health manpower development and the increasing cost of such training. This lack of knowledge is further magnified by the fact that subjectively established systems of determining continuing education needs are inadequate in providing the necessary justification that is required for such accounting systems as Program Evaluation and Review Technique, the Planning - Programming - Budgeting System, and Cost Benefit - Cost Effectiveness Analysis. Effective planning in staff development cannot begin without objective measures of staff training needs and career motivation.

Need for the Study

A search of the literature in the areas of public health, health administration, business administration, training, management, education, training and development, continuing education, career counseling, motivation, in-service education, adult education, behavioral psychology, industrial psychology, nursing, environmental health, health careers, vocational interests, work adjustment, psychological testing, personality and adjustment, vocational rehabilitation, learning theory, and attitude measurement, revealed no instrument or proven indicators that could be used to determine the personal training needs or the degree of self-motivation of an employed worker.

The need for this study, then, arose from the lack of objective measures for making administrative decisions regarding priorities in health manpower development. The literature pertaining to motivation and career choice indicates that all adults have varying degrees

of achievement motivation and career interests. Many of the indicators of interests and self-improvement motivation can be recognized in an individual's expression of his perceptions.[5] A trainee's interests and motivations toward self-improvement are factors known to directly affect the success or failure of training.[6] An objective method for measuring the interests, career objectives, and motivations toward self-improvement of health workers would greatly assist the health administrator in his selection of potential trainees.

Objectives

Any selection process presupposes that there are differences between individuals. This study assumes that there are differences in the individual self-interests, career objectives, and motivations toward self-improvement of health workers. The measurable indicators of an individual's interests, objectives, and motivations toward self-improvement were combined and designated as his "career orientation." The objectives of the study were to construct a model of a career oriented health worker and answer the following questions:

Are there differences in the career orientation of health workers?

Are there significant differences in the career orientation of the major categories of public health workers?

Is there a significant difference between professional health workers' and allied health workers' career orientation?

What factors seem to contribute to the differences (if any) between major categories of public health workers?

Does the occurrence of career orientation in health workers increase significantly with increased formal education?

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[5]John W. Atkinson, An Introduction to Motivation, (Princeton, New Jersey: D. Van Nostrand Company, Inc., 1964), pp. 228-268.

[6]See pages 14-17 for the literature review of this topic.

Are there significant differences in the career orientation of the various age groups of health workers?

Do male health workers exhibit a significantly higher career orientation than female health workers?

Does the length of a health worker's public health experience influence his career orientation rating?

Is there a relationship between a worker's career orientation and his ability to express his training needs in a manner which will assist an administrator to establish training priorities.

Hypotheses

Based on the instrument developed in this study to measure individual levels of career orientation, the following null hypotheses were to be tested in order to answer the above questions:

There are no measurable differences in the career orientation of individual public health workers in Oklahoma.

There is no significant difference in the career orientation rating of the major categories of public health workers.

The career orientation rating of professional health workers is not significantly higher than that of allied health workers.

There are no significant differences in the mean career orientation ratings of the various levels of education found in public health workers.

There are no significant differences between the career orientation rating of the various age groups of health workers.

There is no significant difference in the career orientation rating of the sexes.

There is no difference in the career orientation rating of health workers with differing lengths of service in public health.

Health workers judged career oriented in this study will not request more specific training than health workers who are judged career indifferent.

Many other interesting factors could be analyzed in a study of career orientation and training need indicators but the above hypotheses should be verified before an administrator can place any confidence in other findings.

Limitations of the Study

A limitation of this study, which is common to mailed survey studies, was the necessity of relying upon the willingness and ability of respondents to give reliable and accurate answers.

Another limitation was that the findings can only be applied to public health workers in Oklahoma.

Furthermore, the study instrument was not intended to identify specific training courses but to indicate areas of needs which would require more specific follow-up data collection by the Oklahoma State Department of Health's Training Office.

Definitions

For the purpose of this study the following definitions shall apply:

1. A CAREER is the progress or general course of action of a person through life, or through some phase of life, as in some profession or undertaking. It is a planned program of activities for use in one's vocational life.

2. A worker's CAREER ORIENTATION is his existing self-improvement motivation and career achievement interests.

3. A CAREER ORIENTATION RATING is a numerical rating of how career oriented a health worker appears to be as indicated by his response to the Training Analysis Questionnaire.

4. A CAREER ORIENTED HEALTH WORKER is described by at least seven of the following statements:

a) He has set definite career goals and objectives for his working life.

b) He has written these goals and objectives down and updates them periodically.

c) He is aware of the immediate steps he must take in order to approach achievement of his career goals and objectives. These steps will include any further training needs he may have.

d) He wants to prepare himself for advancement or expansion.

e) He feels that he can do more than what he is presently doing.

f) He seeks a broader view of how what he does contributes to his employer's overall program.

g) He seeks new and challenging situations.

h) He belongs to a variety of professional organizations that relate to achieving his goals.

i) He has clear ideas on what his past important decisions have been.

j) He expresses bothersome work situations in terms of blocks to good performance or self-improvement.

5. The CAREER INDIFFERENT HEALTH WORKER is one who receives a career orientation rating of below fifty-six on his responses to the Training Analysis Questionnaire. This individual is characterized by a majority of the following statements.

a) He lacks clear career goals.

b) He has little interest in the health field.

c) He is unaware of the steps he must take to correct his self-improvement deficiencies.

d) He lacks interest in how his job affects public health.

e) He exhibits a low interest in more challenge in his work.

f) He expresses bothersome work situations in terms of environmental conditions or interpersonal relationships.

g) He does not identify any important past career decisions.

6. A CAREER STABILIZED HEALTH WORKER is one who feels that he has reached his career goals and objectives. He feels he is performing his job satisfactorily and may not be looking for much self-improvement. This individual is characterized by most of the following:

a) He prefers his present position, and admits it.

b) He has only a slight interest in advancement or self-improvement.

c) He participates in a number of his professional organizations.

d) He is strongly committed to the health field.

7. In this study CONTINUING EDUCATION shall mean: all formal learning experiences which increase the knowledge and skills of an individual and may be used to improve his capabilities in performing his work role in his chosen occupation. These experiences may either broaden and improve a worker in his present job or prepare him for advancement. They may be official college courses, short courses, in-service training, correspondence courses, seminars, conferences, workshops, field training, or other adult educational activities. Continuing education usually consists of part-time educational offerings which fully employed adults pursue after they have terminated formal full-time education. Continuing education includes varied offerings such as basic literacy programs for grade school dropouts and sophisticated educational experiences for physicians, dentists, lawyers, teachers, and businessmen for refresher and growth purposes.

8. A HEALTH WORKER is generally considered to be any person working in the public or private health "systems." Health workers include the professional and the allied health worker and all those engaged in direct support of these deliverers of health services. In this study, the above-described "health worker" is meant in all instances of general statement. When discussing the health workers specifically covered by this study, persons employed in official public health agencies in Oklahoma are those to whom the title refers.

9. MANPOWER DEVELOPMENT is the process of upgrading the performance and potentials of each employee to the fullest feasible extent. This process includes skill and knowledge training and the development of personal worth and confidence. "Development" connotes future or general applicability and suggests heavy emphasis on concepts, theory, and intellectual

and emotional growth. Also included are seminars in such areas as organizational theory, production management, business and its environment, and human aspects of administration. A private conference between superior and subordinate which summarizes performance to date and makes plans for the subordinate's future growth is also called "development."

10. The definition of TRAINING is included as a part of Continuing Education for the purposes of this study.

11. The TRAINING ANALYSIS QUESTIONNAIRE is the official title of the instrument used in this study. A copy of this instrument may be reviewed in Appendix I.

12. A TRAINING NEED is the demand to impart knowledge, skill, ability or desire to those persons who at present are either not performing their job satisfactorily or who, through ignorance or indifference, fail to realize their potential in preparation for greater responsibilities. These needs in terms of lacks have been more simply stated in terms of people who:

Don't Know	(Lack Knowledge)
Can't Do	(Lack Skill or Ability)
Don't Care	(Lack Desire).

CHAPTER II

BACKGROUND

Introduction

Today's health administrators are turning to continuing education as a means of providing their staffs with the skills and abilities needed to keep up with the rising demands for health services. Since he cannot afford to train all his staff in all areas of skill and knowledge, the administrator must select individuals for specific training courses. In order to do this adequately he needs to know who should receive further training, what training they should receive, who will benefit most from specific training, and how the training will affect the agency's operating efficiency. Is this a possible task for health administrators?

Most writers in the areas related to training and development list similar major information inputs which must be approximated in order to introduce objectivity into training decisions. In a study of training research in business and industry conducted from 1949-52, Mahler and Monroe reported fifteen methods of determining training needs in general use.[1] In 1967 Johnson reported a massive thirty-three

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[1]U.S. Department of the Army, How Industry Determines the Need for and Effectiveness of Training, Technical Research Report PRB 929, by Walter R. Mahler and Willys H. Monroe, March 1952, p. 138.

ways available for determining training needs.[2] These two major works dealing with training need determinations are representative of the thinking of most persons writing on this subject.

The writer examined the methods suggested for determining training needs, applied them to the public health organizational structure, and classified them into three categories based upon the sources which must supply the information sought by each method. The categories of information sources are:

1. The direction and objectives of the Health Department's operating and proposed programs.

2. The supervisor's evaluation of the training needed by his subordinates.

3. The employee's perception of his training and career needs.

Methods of Determining Training Needs

Health Department Programs

A thorough knowledge of present and future program emphasis is mandatory for the good health administrator. This knowledge is even more important to the administrator who must organize an agency's training efforts. New programs, methods, procedures, laws, perceptions and equipment are excellent indicators of training needs. These program needs easily justify what new knowledge or skills are needed; however, they do not indicate how the new knowledge must be presented or who should receive the training. Since health administrators

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[2]Richard B. Johnson, "Determining Training Needs," Training and Development Handbook, ed. Robert L. Craig, (New York: McGraw-Hill Book Company, 1967), pp. 16-27.

currently have the management tools needed to systematize their program objectives and activities, this study does not include program direction information. It must be remembered, however, that program information is an essential input in the planning of a training experience.

Supervisory Evaluation

Traditionally, the supervisor has been relied upon to specify staff training needs. Many of these training needs have been determined by experienced supervisors who had an intimate knowledge of a stable staff's strengths, weaknesses, goals, needs, and interests. Experienced supervisors are increasingly hard to find and stable staff patterns have been diminishing in recent years. Supervisors need an information bank upon which to base objective decisions regarding their staff training needs. This information bank should include program goals, objectives of the work unit, performance and job standards, cost effectiveness reports, quality and quantity reports, performance ratings, staff weaknesses, inventories of employee skills and abilities, employee education and experience records, and staff career aspirations.[3]

Armed with adequate personnel information the new or old supervisor can objectively contribute his essential input to the determination of manpower training needs.

Parts I and II of the Training Analysis Questionnaire used as the test instrument in this study were designed to provide much of the information needed to establish an employee information bank.

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[3] Ibid., pp. 17, 32.

The Employee

What does the employee feel are his weaknesses? What are his interests? What are his career goals? How does he perceive his work role? What is his attitude toward training? Are his perceptions and needs important?

There is general agreement among most writers in the fields of education, motivation, behavioral psychology, training, work adjustment and vocational rehabilitation, that training programs should be predicated on the needs of those to be served. The individual's need for educational training, and his motivation should be used to full advantage if such training is to be efficient. "Learning and remembering," say Snygg and Combs, "are aspects of an active, purposeful, and continuous process carried on by the individual for the satisfaction of his need. It is impractical to think of the learner except in terms of his need, his own desires, and his own point of view."[4]

Hamilton concluded, "In addition to being a source of motivation, it is important to know the learner's needs in order to encourage him to continue his education."[5]

Schmidt and Svenson give top priority to the importance of finding the needs of the learner and cite ways in which these needs may be identified.

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[4]Donald Snygg and Arthur W. Combs, Individual Behavior: A New Frame of Reference for Psychology, (New York: Harper and Brothers Publishers, 1949), p. 51.

[5]Kellis A. Hamilton, "Educational Needs and Desires of Savings and Loan Employees as Perceived by Interested Personnel of Savings and Loan Associations," (Doctoral Dissertation, Colorado State College, 1968), p. 15.

> A first step in the development of an educational program is to assess and articulate the needs of the prospective learner. This may be done in several ways: making tentative assumptions about the learner's needs, based on previous experience; conducting a survey, oral or written; involving representatives of the potential learning group as participants in the planning phase of the program; conducting a problem census with the learning group; or a combination of the above.[6]

In discussing the analysis of training needs, Johnson says that the worker's chance to do a better job "comes in part through the provision by the company of opportunities for a person to improve his knowledge, skill, or attitude. In doing this, the company increases productivity and the individual advances his career. Again, the first step is to determine valid training needs."[7]

A 1966-67 survey of health professionals conducted by the Western Branch of the American Public Health Association indicates the importance of including the health worker in determining training needs. The Western Region's program of continuing education, which was developed over a six year period by university faculty and advisory committees composed of high level health practitioners, was found to have performed poorly in determining areas of health manpower training needs.[8]

A favorable report of the findings of this survey stated that

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[6]Warren H. Schmidt and Elwin V. Svenson, "Chapter 7 -- Methods in Adult Education," Handbook of Adult Education in the United States, ed. Malcom S. Knowles (Chicago: Adult Education Association of the U.S.A., 1960), p. 91.

[7]Johnson, op. cit., p. 16.

[8]Nicholas Parlette, ed., Public Health Professionals and Continuing Education, (San Francisco, Western Regional Office, American Public Health Association, 1968), p. 5.

the program's structure was only a "reasonably reliable mechanism for determining interests and needs in continuing education." A closer look at the findings indicated that of the nineteen courses receiving the highest percentage of selections by health professionals as training needs, only eleven were currently available or in the process of development at the time of the study. Even more alarming was the fact that the "experts," prior to the survey, had identified only two of the five highest rated courses.

The importance of including the employee in determining overall training needs is well summarized by the following statement by Steen:

> While a great percentage of the programs in continuing education are offered in order to increase the efficiency of an agency's operation in a particular program, it is just as important in the overall success of training programs that the educational needs of the individual are recognized and that some attempt is made to meet these needs. In doing this, it will be possible to increase the quality of individual participation in continuing education. With this increase in participation, the advantages that will emerge from continuing education programs will accrue to increased program activity and higher agency efficiency resulting in better quality service to individuals.[9]

In spite of the preponderence of opinion that all three sources of training information (i.e., program, supervisor and employee) should be used in planning continuing education experiences, few health departments are using them.

A survey asking each State Department of Health in the United States how they determine their training needs was conducted by the writer in September 1969. Forty-six (ninety-two per cent) of the

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[9]Steen, op. cit., p. 53.

state health departments responded. Twenty-nine (sixty-three per cent) of the respondents indicated that their supervisors were their main source of information regarding staff training needs. Nine states (twenty per cent) indicated that they used a combination of the direction of their programs and the recommendations of their supervisory staff to determine what was needed in training programs. Four states (nine per cent) indicated that they obtained information from all three recommended sources for training information (i.e., the program, the supervisor and the employee). Three (six per cent) of the respondents indicated that they made no determination of staff training needs at all. Only four states (nine per cent) indicated that they maintained any system of recording their staff's training experience. Only two (four per cent) health departments expressed confidence in their method of determining their training needs. All respondents indicated a desire to be more objective in their assessment of training needs.[10]

Means for Obtaining Employee Perceptions

The methods suggested by Johnson for obtaining from the employee what he perceives as his training and career needs are listed below:

1. Analysis of grievances.
2. Brainstorming via homogeneous groups.
3. Buzzing -- mixed small groups.
4. Card sort -- relating "how to" statements to

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[10]See Appendix V for a summary of The Methods of Determining Health Manpower Training and Development Needs in U.S. State Departments of Health.

training needs.

5. Checklist of job details.
6. Counseling.
7. Impromptu or scheduled talks with operating personnel.
8. Published tests.
9. Questionnaires.
10. Rumors -- analysis of common topics.
11. Self-analysis.
12. Simulation.[11]

The analysis of grievance reports is a supervisory function that depends on the individual or collective courage of the employees. Often a grievance arises from a lack of information or the need for a procedural change. This type of grievance can lead to training programs designed to correct the situation. This method seldom includes all employees and is always tardy in its application.

Brainstorming, buzzing, and simulation exercises are effective techniques for working through problems or situations in small groups. The time and funds required for these techniques in special program areas or specific disciplines are well within reasonable cost limits. When these techniques are expanded to determine the overall training needs of a large organization the cost becomes prohibitive.

Counseling, impromptu talks, and rumors are generally direct discussion methods used by a trainer or supervisor for determining individual training and career needs. These may relate to specific job problems or to the identification of growth needs. The grapevine

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[11]Johnson, op. cit., pp. 16-27.

or rumor mill is a feedback medium. It reflects reactions of individuals and groups to past, current, or anticipated events viewed as affecting them personally in real or imagined ways. These three methods of obtaining training needs information from employees are very effective, but become very time consuming when applied to large numbers of workers. These methods also generate training needs in that trainers, supervisors, and managers must be competent in counseling techniques.

In his discussion of self-analysis, Johnson says that all "good" people constantly evaluate themselves. They want to do their best. They set high standards for themselves. They are critical of their performance against these standards. They "know" what they need in the way of additional knowledge, skill, or insight. Given an opportunity to express these thoughts, as through a company program of formal periodic self-appraisal for growth purposes, they give direct clues to training needs. Where a number of people have this opportunity, a summary of their statements can reveal group training needs.[12]

Some companies establish and annually update an inventory of the skills of their employees. Listed are the skills these employees currently are using on their present jobs, plus other skills they possess which have value for other jobs. This inventory permits flexible use of manpower, especially under expansion or reorganization. It also identifies gaps or blind spots in reserve or stand-by

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[12]Johnson, op. cit., p. 25.

skills. The gaps give clues to training needs. Skill and knowledge inventories are excellent methods for obtaining employee perception of training needs. They can be easily applied to either few or many workers.

A questionnaire is a written or printed form used in gathering information on some subject or subjects, consisting of a list of questions to be submitted to one or more persons. The questionnaire is a well-accepted method to determine training needs. Each question is brief; each is specific; each is phrased to get a short answer, each is designed to elicit information which can be used to determine training needs, delimit the scope of the training and identify course content.

Mahler and Monroe reported:

> One of the most effective "yardsticks" which can be used for measuring the need for or the results of training is the questionnaire. There are many times when this is the only objective measure of a training program. Questionnaires may be used to measure attitudes, opinions, or job knowledge and may be tailor-made for a specific purpose or purchased from a publisher of standard questionnaires.[13]

Testing is a well-established method of determining training needs. Tests can measure skill, knowledge, opinion or attitude. Tests can require a performance response (the manipulation of tools, materials, or equipment) or can require a written or oral response. Results indicate gaps, if any, in the testee's skill or knowledge, thus suggesting training needs. These are equally effective with either large or small groups.

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[13]U.S. Department of the Army, op. cit., p. 38.

The above means for obtaining a worker's perceptions provided a vehicle for assessing career orientation.

Indicators of Career Orientation

Man's failure to plan his career is perhaps the major reason administrators have failed to utilize the employee in attempts to determine training needs. Fosdick said:

> The curse of man has been his aimlessness, his paucity of ideas in regard to his own career, his disbelief in his own powers to shape his future. -- Let us have a plan, a chart, an objective. Let us determine where we want to go and the best methods of advance.[14]

How can career orientation information assist an administrator in planning his training programs? Career orientation gives objective evidence of improvement motivation. Motivation is critical to learning. Before a man can improve, he must sense a need for improvement and have a desire to change.[15] Career orientation is in part a measure of the self-improvement interest sustained by a worker. By definition, a career oriented person knows what he wants and needs. Therefore, he knows his training needs. If an administrator could measure a worker's career orientation he would know how much confidence he could place in the training the worker expressed as a personal need.

While no direct instruments for measuring worker career orientation or training needs appeared to have been published in the

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[14]Raymond B. Fosdick, The Old Savage in the New Civilization, (Doubleday, 1928), p. 198.

[15]Guy B. Ford, Building a Winning Employee Team, (New York: American Management Association, 1964), p. 54.

literature, the areas of motivation, training and development, career counseling, psychological testing and work adjustment proved to be excellent sources of information for developing such instruments.[16,17,18]

One objective of the study was to provide a means to separate health workers into groups composed of similar career orientation and to measure their specificity in expressing training needs. The notion of employee grouping has been popular for many years. Some of the most recent writers' comments are briefly summarized below. Presthus, in The Organizational Society, identified three groups of workers usually found in a bureaucratic organization. He called them the "upward-mobiles," the "indifferents," and the "ambivalents." He defines "upward-mobiles" as those who react positively to the bureaucratic situation and succeed in it. The "indifferents" are the uncommitted majority who see their jobs as mere instruments to obtain off-work satisfactions. The "ambivalents" are a small, perpetually disturbed minority who can neither renounce their claims for status and power nor play the disciplined role that would enable them to cash in such claims.[19]

Peter and Hull, in The Peter Principle, identified a variety of bureaucratic types which fall into a population that approximates a normal curve. These groups range from "super-incompetent" to

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[16]Robert Presthus, The Organizational Society, (New York: Random House, Inc., 1962), p. 15.

[17]M. Scott Myers, "Who Are Your Motivated Workers?", Harvard Business Review, (January-February 1964), pp. 73-87.

[18]William C. Cottle, Interest and Personality Inventories, (Boston: Houghton Mifflin Company, 1968), p. 47.

[19]Presthus, op. cit., p. 15.

"Super-competent" employees.[20]

Myers divided workers into two groups on the basis of their pre-occupation with either motivational or maintenance needs. He defined maintenance needs as those dealing with physical, economic, security, orientation, status and social needs. Motivation needs were defined as those dealing with growth, achievement, responsibility and recognition.[21]

Indicators of career orientation are noted in the literature in terms of those characteristics needed for achievement and self-improvement. The supporters of the "trait-factor" approach to career selection such as Parsons, Strong, Kuder and Hewer suggest that a person's interests should lie in the same area as his work.[22] "Self-concept" theorists like Super, Samler and Ginzberg contend that an individual's decisions are based on the similarity between the individual's self-concept and his view of the employer's overall program, while Holland and Roe suggest that workers make work decisions on the basis of the potential for the satisfaction of their needs.[23] Needs that lead to motivation are reported by Herzberg to be: "achievement, recognition for achievement, the work itself, responsibility, challenge, and growth or advancement." He states that blocks to achievement of work, growth, recognition or responsibilities act

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[20]Laurence J. Peter and Raymond Hull, The Peter Principle, (New York: William Morrow & Co., Inc., 1969), pp. 1-50.

[21]Myers, op. cit., pp. 73-87.

[22]Samuel H. Osipow, Theories of Career Development, (New York: Appleton-Century-Crofts, 1968), p. 10.

[23]Ibid., p. 11.

as demotivators to the worker.[24] Myers describes career oriented and indifferent workers in terms of motivation and maintenance interests.

> For most individuals, the greatest satisfaction and the strongest motivation are derived from achievement, responsibility, growth, advancement, work itself, and earned recognition. People like this, whom Herzberg terms "motivation seekers," are motivated primarily by the nature of the task and have high tolerance for poor environmental factors.
>
> "Maintenance seekers," on the other hand, are motivated primarily by the nature of their environment and tend to avoid motivation opportunities. They are chronically preoccupied and dissatisfied with maintenance factors surrounding the job, such as pay, supplemental benefits, supervision, working conditions, status, job security, company policy and administration, and fellow employees. Maintenance seekers realize little satisfaction from accomplishment and express cynicism regarding the positive virtues of work and life in general. By contrast, motivation seekers realize great satisfaction from accomplishment and have positive feelings toward work and life in general.
>
> Maintenance seekers show little interest in kind and quality of work, may succeed on the job through sheer talent, but seldom profit professionally from experience. Motivation seekers enjoy work, strive for quality, tend to overachieve, and benefit professionally from experience.
>
> Maintenance seekers are usually outer-directed and may be highly reactive or ultraconservative. Their values tend to blow with the wind and take on the coloring of the environment (such as parroting top management, or acting more like top management than top management itself). Motivation seekers are more often inner-directed, self-sufficient persons whose belief systems are deliberately chosen and developed, and are less subject to influence by the environment.
>
> Although an individual's orientation as a motivation seeker or a maintenance seeker is fairly permanent, it can be influenced by the characteristics of his various roles.[25]

Presthus says that the worker who succeeds in today's organizations "identifies strongly with the organization and derives strength from his involvement." On the other hand, he describes the indifferent

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[24]Frederick Herzberg, "One More Time: How Do You Motivate Employees?", Harvard Business Review, Jan.-Feb. 1968, pp. 53-62.

[25]Myers, op. cit., pp. 166, 205-209.

workers as

> those who have come to terms with their work environment by withdrawal and by a redirection of their interests toward off-the-job satisfactions. While the upward-mobile strives for the values of success and power, obtainable today mainly through big organizations, the indifferent seeks that security which the organization can also provide for those who merely "go along." The employee "goes through the motion," paying lip-service to organizational values, but he no longer retains any real interest in the organization or in work for its own sake.[26]

Presthus also describes a third group of workers which he calls the "ambivalents."

> Ambivalents have high aspirations, complicated by habitual underrating of their own performance. Compared with extroverts, their intellectual interests are narrow and deep, accuracy and persistence are highly developed, and verbal facility and intelligence are markedly superior.
>
> The ambivalent ordinarily plays a specialist, "cosmopolitan" role. He honors theory, knowledge, and skill. Socialization as an independent professional often blinds him to legitimate organizational needs for control and co-ordination. Believing explicitly that both motivation and expertise come from within, he resists bureaucratic rules and supervision. . . .
>
> The heart of the ambivalent reaction is a tenacious self-concern. Most events are perceived by the ambivalent in terms of himself; personal goals are usually primary. His own experiences and skills seem unique; and when his career expectations prove unrealistic, as they often do, he may invoke humanistic themes to buttress his claims for preference. In terms of an earlier distinction, we may regard the ambivalent as an idealistic, independent personality.[27]

Fosdick indicates that to have a career one must have a plan and objectives and must determine the steps needed to advance.[28]

McClelland has shown that success in achievement comes mostly

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[26]Presthus, op. cit., pp. 166, 205-209.

[27]Ibid., p. 259.

[28]Fosdick, op. cit., p. 198.

through "focus on specific personal plans, [and by the worker] writing out specific goals, how he plans to achieve them, what personal or other difficulties he is likely to encounter, how he will feel under various conditions, and so on." He further says: "Much of the success [of management training] depends on getting the man to be specific, realistic, and practical in his goal setting."[29] In his discussions on n-achievement measurement (motivation to achieve) McClelland refers to the individual's frequency of thoughts about competing with a standard of excellence, or doing something better than before, as indicators of achievement motive.[30] He concluded that one of the major factors in motivation was "to be anticipatory or forward looking." He also concluded that individual differences in n-achievement scores might represent differences in the strength of a relatively stable disposition to achieve that is acquired early in life.[31]

A combination of the suggestions of the above writers and concepts gleaned from the areas of manpower development, psychological testing, work adjustment and career counseling provided the writer with the basis for developing tentative definitions and measurement items describing a career oriented worker. These definitions and items were refined through consultations with

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[29]David C. McClelland, "Achievement Motivation Can Be Developed," Harvard Business Review, Nov.-Dec. 1965, p. 4.

[30]David C. McClelland, The Achieving Society, (Princeton: D. Van Nostrand Company, Inc., 1961), p. 297.

[31]Atkinson, op. cit., pp. 228, 230.

knowledgeable persons from both the above areas and the fields of business administration, health administration, education, training and the behavioral sciences. As a result of these studies and conferences the definitions for career oriented, career stabilized, and career indifferent health workers found on pages 8 and 9 of this study and the preliminary draft of Part V of the study instrument were developed.[32]

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[32]For details of the preliminary draft of Part V, see Appendix VI.

CHAPTER III

THE METHOD

Procedural Steps

The procedural steps used in this study consisted of:

1. A literature search to determine the existence of career intensity instruments and possible indicators of career orientation.

2. A survey of existing practices in health manpower training and development in U.S. State Health Departments.

3. Consultations with selected knowledgeable educators, trainers, and management personnel in Oklahoma, New York, Arizona and California.

4. Defining indicators of career orientation.

5. Developing the survey instrument.

6. Selection of the test groups and the cultivation of their participation in the study.

7. Pre-testing the instrument.

8. Administering the instrument.

9. Analyzing and rating each response.

10. Tabulating and analyzing the data.

11. Post-testing the instrument for reliability.

12. Reporting the findings and conclusions.

The literature search produced no proven instrument for measuring an employed person's career orientation. However, considerable evidence was noted to indicate the existence of a positive relationship

between self-motivation, learning and behavioral change. A number of indicators of achievement motivation and career interest were described. In addition, a pattern of agreement among writers regarding the grouping of organizational employees was evident. A survey to determine the existing methods in use in U.S. State Health Departments for determining their health manpower's training and development needs was conducted by the writer during the summer of 1969. The survey results indicated that the states had varying degrees of expertise in determining training or development needs. The Arizona, California and New York State Health Department training units were visited by the writer in order to learn more about their programs and philosophies. Approximately forty-five persons, in Oklahoma, reported to be knowledgeable in some phase of manpower training and development were contacted by the writer for consultation in regard to the study. The comments and suggestions of these "experts" were sifted and incorporated into the design of the Training Analysis Questionnaire. The definitions of the indicators of career orientation are covered on pages 8-9 and 22-26.

Developing the Survey Instrument

In Chapter II the necessity of including the health worker as a source of information for use in developing continuing education programs was delineated. Further, it was evident that health administrators need a practical means to obtain worthwhile training information from health workers. To be considered practical, an instrument should:

1. Be easy to obtain or develop.

2. Be relatively inexpensive to obtain and administer.

3. Encompass the wide variety of disciplines found in public health.

4. Generate useful training information.

5. Provide a written record of individual training needs and perceptions.

6. Facilitate easy tabulation and statistical analysis.

7. Require no special training to interpret.

8. Be reliable.

9. Include an indicator of the worker's committment to utilizing training opportunities.

It was assumed that if health administrators had an objective instrument that met the above requirements, they would put it to use as part of their system for determining their needs for training programs.

A practical method of determining an employee's perception of his training and career needs is to ask him via a written questionnaire. Once developed, a questionnaire becomes an inexpensive easily administered instrument capable of providing a written record of individual employee training needs that can be adapted to electronic data processing systems. The analysis of worker questionnaire results can be greatly simplified by using check-off lists, rating scales, intensity scales and a minimum of open-ended items. By pre-rating open-ended items, a complete questionnaire can be machine scored and recorded, thus providing a fast, economical analysis.

The writer developed a practical instrument which met the nine

requirements presented above by combining the methods of self-analysis, attitude and interest tests, check-off lists, and analysis of grievance into a mail questionnaire. The questionnaire was composed of five parts: education summary, experiences, skill inventory, knowledge area inventory, and personal interests.[1]

Education summary. The education summary was included to provide complete up-to-date education data for inclusion in the Oklahoma State Department of Health's employee information bank. The section was a straightforward check-off list wherein the employee indicated his years of education and degrees or licenses earned. Space was provided to fill in undergraduate and graduate majors, minors and other interest areas. The respondents were also asked to give information on trade or business school studies and major continuing education courses attended.

Experience. The experience section was included to obtain from each employee a complete history of all work, social activities, civic involvement, hobbies, and other personal pursuits. This information was primarily collected to develop the Oklahoma State Department of Health's employee information bank described on page 14. The writer's study used only the number of years each respondent had worked in public health and the extent of their participation in continuing education courses.

Skill inventory. The skill inventory was a two-phase check-off list containing thirty-nine skills which were considered of value

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[1]A sample of the Training Analysis Questionnaire may be reviewed in Appendix I.

to public health personnel. The list of skills was originally developed from skills described in the Dictionary of Occupational Titles.[2] This rough list was refined through conferences with nine Oklahoma State Department of Health administrative staff members and twenty-seven field staff members. Ample space was included for "write in" skills that an employee may have had or wanted to acquire. The skills were listed by areas with two check-off columns on each side of the list. In the left-hand columns, the employee could indicate if he had the skill and how well he could perform it. In the right-hand columns the employee could indicate if he wanted beginning or advanced training in the skill.

Knowledge area inventory. The knowledge area inventory consisted of a listing of major knowledge areas considered to be of value to health personnel. The list was developed from departmental listings in the University of Oklahoma course catalogues. This list was refined with the assistance of Oklahoma State Department of Health administrative and field personnel. The areas of Health, Human Relations, and Law were broken down into more specific areas of study than were applied arts, sciences, and business administration. The employee was informed in the instructions that he would later receive a listing of the courses that might be available in each of the knowledge areas he indicated as being needed personally.

The knowledge areas were arranged so the employee could check

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[2]U.S. Dept. of Labor, Dictionary of Occupational Titles, Vol. I, "Definitions of Titles," third edition, 1965, U.S. Government Printing Office, Washington, D.C., Section 074.

off in the left-hand column those areas in which he had received some training. In the right-hand column he was instructed to indicate the areas of knowledge he needed in order to achieve his career goals. He was to indicate how soon he needed the training by writing the number one (1) in the blank for those knowledge areas needed within the next six months; the number two (2) in the blank for those knowledge areas in which training was needed within the next eighteen months; and a three (3) opposite those areas where training was needed sometime in the future to meet future responsibilities. The instructions and expectations in this section required the highest level of understanding of the entire questionnaire but the responses indicated that the employees had no difficulty in comprehending what was expected. Ten persons (one and four-tenths per cent) did not follow the instructions correctly. Many of these mistakes could be attributed to carelessness or laziness on the part of the respondent.

Personal interests. The final form of the personal interests section consisted of twenty-seven items: eleven statements designed to measure interest and attitude via a seven point Likert Scale, eight multiple choice items, one rating scale, and seven open-ended questions. These items were selected from the pre-test instrument for their specificity and ability to show differences between individuals.[3]

The "Likert Scale" method provides summated ratings of the

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[3]Evidence of this section's ability to show differences between individuals is noted in the fact that the Oklahoma City-County Health Department employee who scored highest on the career orientation scale in the pre-test has, as of this writing, gone to graduate school to work on her M.P.H. degree.

individual's attitude toward his work, his career, his training experiences, and the health field. In such a scale the respondents are asked to respond to each statement in terms of several degrees of agreement or disagreement.[4] The instrument used in this study presented eight choices: strongly agree, moderately agree, slightly agree, undecided, slightly disagree, moderately disagree, strongly disagree, and don't understand the statement. Whether agree or disagree is the favorable response to an item depends on the wording and content of the item and which of the three worker characteristics is being considered. The responses to the various items were rated so that a response indicative of the defined characteristic was given the highest rating (ten) and a response indicative of the lack of the characteristic received a zero rating. The responses between the two extremes were rated in descending order. The multiple choice items provided a forced choice situation wherein the respondent indicated what was most important to him in his work and future training. The rating scale item was designed to obtain information on the employee's preference of training situations.

The semi-structured open-ended questions provided the respondent with an opportunity to express his opinions regarding his career and work situation. These items were structured enough to elicit specific ratable responses. The final combination of these methods netted fourteen items designed to indicate the career orientation of a health worker. In addition to these fourteen, the writer included

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[4]Bernard S. Phillips, Social Research Strategy and Tactics, (New York: The MacMillan Company, 1966).

three items shown by Todd to reveal training attitudes.[5] The nine items regarding training interests or work problems were included to provide the Oklahoma State Department of Health with additional training information and to provide a "smoke screen" to obscure the "career" related items. This "smoke screen" of items and the questionnaire title, "Training Analysis," were a deliberate attempt to prevent career indifferent workers "accommodating," as described by Presthus, by answering the items in terms of what they thought the administrator might "want" them to say.[6]

Test Populations

The entire staff of the Oklahoma State Department of Health was selected as the basic test population. The final test population consisted of all health workers under the Oklahoma State Merit System as of September 1969, with the exception of those in Oklahoma and Tulsa Counties. (The Oklahoma City-County Health Department personnel were used for the pre-test of Part V of the instrument and the Tulsa City-County Health workers were excluded for possible follow-up studies. The pre-test participants are described on page 33.) A major factor in the selection of the test population was the need for a large diversified group of healthworkers. The Oklahoma State Department of Health worker population provided a wide variety of health workers with differing backgrounds and work situations. Oklahoma's system of central state control facilitated the collection

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[5]John G. Todd, "Attitudes of Selected Indian Health Personnel Toward Continuing Education," (Unpublished Doctoral Dissertation, University of Oklahoma, December 1969), pp. 83-84.

[6]Presthus, Organizational Society, pp. 209, 257.

of data. The interest and support of the Oklahoma State Health Commissioner and his assistant were major factors in the success of the study. The final test population consisted of eight hundred and five health workers. Approximately one-third of the employees worked in the central office of the Oklahoma State Department of Health and the remaining two-thirds worked in fifty-seven of the fifty-nine county health departments scattered throughout Oklahoma. The test group contained twenty-one medical and dental personnel, one hundred and eighty-four public health nurses, ninety-two home health aides and licenced practical nurses, one hundred and twenty-eight sanitarians and other environmental health personnel, one hundred and ninety-six clerical, twenty-one machine operators and maintenance workers, forty-seven administrative and supervisory staff, and one hundred and sixteen miscellaneous personal health service workers.

Pre-tests

Each of the five parts of the Training Analysis Questionnaire were pre-tested separately to determine if they would perform their individual functions. Each section was distinct and independent from all others. There was no dependence between parts in the analytical procedure. The results from each section were used for comparative purposes only.

Parts I and II -- Education summary and experiences. These parts were an adaptation of previous standardized forms and were tested for the clarity of the instructions and the design. Their main purpose was to provide data for the Oklahoma State Department of Health's employee information bank described on page fourteen.

The population description data supplied from these sections were used for grouping and comparative purposes only. During the final test of the instrument it was discovered that these two sections were too burdensome in conjunction with Parts III through V.[7]

Thirty-six health workers, consisting of nine administrative staff, eleven central office staff, and sixteen county personnel, participated in pre-testing Parts I and II for clarity. Only slight adjustments were necessary in compiling the final draft.

Parts III and IV -- Skills inventory and knowledge area inventory. The two check-off inventory sections of the questionnaire were tested simultaneously three times and improved between each test. Essentially the same persons who participated in the pre-tests of Parts I and II assisted in these tests.

Part V -- Personal interests. This part originally consisted of thirty-six items found by the writer and knowledgeable persons from many fields to be of value in determining either career interest, job satisfaction, motivation, training attitudes, work commitment, achievement, or career goals. These thirty-six items were prepared as a mailed training questionnaire. In November 1969, the eighty-one employees of the Oklahoma City-County Health Department were selected as the pre-test population. A cover letter co-signed by the writer and the County Health Director informed each employee that this form

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[7]This study not only included the writer's research but also an attempt by the Oklahoma State Department of Health to set up a complete electronic employee information bank and employee career development program. Hence, much more information was collected than actually reported in this study.

was his opportunity to speak out anonymously about his training needs. Each response was strictly confidential and voluntary. No follow-up was made on the original request. Fifty-three (sixty-five per cent) of the employees responded within two weeks. The distribution consisted of twelve nurses, thirteen sanitarians, fourteen clerical, and fourteen miscellaneous personnel. The responses were tabulated and these tabulations were analyzed by a committee composed of a behavioral psychologist, a training officer, and two manpower researchers. The committee suggested consolidation of some items and elimination of others.[8]

Administering the Instrument

The initial mailing of the seven-page questionnaire was made to the employees on November 25, 1969. The "personalized"[9] questionnaire was accompanied by two cover letters -- one from the State Commissioner of Health and one from the researcher.[10] These letters reminded the employees of the previous publicity they had received in their employee newsletters about the benefits of the training analysis and urged their cooperation in the study.

By December 21, 1969, four hundred and twenty-two (fifty-two and one-half per cent) of the employees had returned the questionnaire. On December 22, 1969, all non-respondents were mailed a letter from the

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[8]See Appendix VI.

[9]An IBM print-out label containing personal data such as name, employee number, birth date, sex, classification, and location was affixed to each questionnaire and mailed in a personal addressed envelope.

[10]See Appendix III.

State Commissioner of Health encouraging them to complete their questionnaire. By January 29, 1970, six hundred and seventeen (seventy-six and six-tenths per cent) of the employees had returned their completed questionnaires. On January 30, 1970, the remaining non-respondents were sent a form specifying February 12, 1970, as the deadline for returning the Training Analysis Questionnaire. This form asked them to return the complete Training Analysis Questionnaire or fill in the reason they didn't wish to respond. One hundred and twelve (sixty per cent) of the recipients of the third letter returned a completed questionnaire. It was concluded during the analysis that the data obtained from the third group, and the attitudes they showed, represented virtually the same quality information as that received from the first mailing. In all, seven hundred and forty-eight (ninety-three per cent) of the employees returned a questionnaire. On February 11 and 12, 1970, phone calls were made to twenty-seven (fifty per cent) of the remaining non-respondents to gain insight into the type of person not responding. The non-respondents indicated during the phoning that they were "too busy," "too old," or lacked the interest or faith in personal growth to take the time to respond.

A cursory analysis of the individuals who didn't fill out the questionnaire indicated that they were similar to the respondents. They varied in approximate proportions as to age, discipline and job classification as did the respondents. The only differences noted were: (1) there were a higher proportion of central office personnel who did not respond and (2) each felt there was nothing in it (the study) for them.

The writer surmised that these individuals would not supply much additional information if forced to participate in the study. Therefore, the findings of the study can only be applied to interested health workers in Oklahoma. In all, seven hundred and thirty-three (ninety-one percent) of the respondents provided responses which could be analyzed and rated.

Analyzing Rating and Tabulating the Data

The Analysis. Following the pre-designed standards in Appendix II, the writer and a clerk coded, separated, scored and rated each questionnaire in preparation for keypunching.

Rating system. A worker's career orientation rating could range from zero to one hundred. Each score was determined by adding the arbitrarily assigned values of each response to the fourteen career orientation items in Part V of the Training Analysis Questionnaire. The total possible points was two hundred.[11] The raw score was then divided by two to produce the career orientation rating.

The assigned score for each item was based on the results of the pre-test of Part V and the recommendations of its review committee. Each item's score was assigned on the basis of its relative importance to the other items. The descending order of each item's response scores was based on amount of response spread that was observed in the pre-test.[12] The item analysis of both the pre-test and the study indicated that a health worker's career orientation

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[11]See Appendix II for the rating of each item.

[12]See Appendix VI for the details of the pre-test.

rating could be as low as sixty and he still be relatively career oriented.

In order to include the most possible career oriented workers the dividing line between career orientation and career indifference had to be near this rating. Observation of the frequency distribution of the fifty-three pre-test ratings and the seven hundred and thirty-three study ratings showed a marked break at fifty-five.

Fifty-six, the beginning of the lower edge of the career oriented workers' distributions of rating frequencies, was chosen as the lowest level of career orientation. This judgment was based on the estimated lower level of career orientation (approximately sixty points) and the observed frequency distribution. Point fifty-six was less than five points away from the original estimated separation rating. The estimated rating error tolerance was $\pm$ five points. Point fifty-six was then within the error range and insured against a Type I error of saying a worker was not career oriented when in fact he was.

Tabulating the data. The keypunching and retrieval of the data was done by the Oklahoma State Department of Health statistical section. To insure the anonymity of the respondents, Part V was punched separately and was identified by a private code system. The ratings in this section had to be compiled by hand due to the Oklahoma State Department of Health data processing equipment's inability to add items within a card. This tedious task would be avoided with more modern equipment or with computers. The results recorded on the I.B.M. cards were tabulated and analyzed and reported to the Oklahoma

State Department of Health.[13]

Post Tests

Reliability of the responses. A random sample of ten employees was used to test the reliability of reporting. The sample was selected by taking a series of four-digit numbers from a random numbers table and matching these to the Oklahoma State Department of Health Employee Numbering System.[14]

The ten health workers selected by this process appeared to be a representative cross-section of the total population. The test group scattered throughout the state consisted of a Public Health Administrator -- non-medical, an X-Ray Technician, a Sanitarian III, a Chief Clerk, a Microbiologist, a Clerk Typist, a Home Health Aide, a Public Health Nurse I, a Sanitarian II, and a Stenographer. Their career orientation ratings ranged from twenty-six to seventy-eight, the ages ranged from twenty-four to sixty-two, and the length of employment in public health ranged from one to fifteen years. Each of the ten employees were interviewed in March 1970, by the writer, using the Training Analysis Questionnaire. The responses were then compared with the original form returned by each person in the sample during the survey. The results showed that on the twenty-two applicable items in Part V, there was an average of only a one and six-tenths

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[13]John B. Amadio, "The Oklahoma State Department of Health Manpower Development and Training Needs Study," Oklahoma State Department of Health, Oklahoma City, Oklahoma, 1970.

[14]Robert G. D. Steel and James H. Torrie, Principles and Procedures of Statistics, pp. 428-31.

item (seven and three-tenths per cent) change in attitude and career orientation. Two of the sample made no changes. Considering that up to three months had passed since the original questionnaire had been completed, this was very acceptable error. The results of the retest of the skill and knowledge area training requests showed almost no change in the original requests (six changes or less than one per cent). However, eighty-seven (forty-two per cent increase) additional training opportunities were requested in the retest. The influence of the interviewer may have increased the respondents' confidence in obtaining training opportunities. Hence, they increased their requests. When comparing these changes with the one thousand and six possible changes, the actual difference amounted to only eight and four-tenths per cent.

This post-test indicated that the information given by the respondents was reliable. The interviewer appeared to have had little or no influence on their career orientation. Due to the small amount of test-retest change in the attitude-interest section over an approximate three month period, it was evident that the items used as indicators of career orientation are stable within individuals. This confirms Myers' findings that motivation characteristics are "fairly permanent within an individual."[15]

Reliability of the subjective analysis. Five semi-structured open-ended items in Part V were included in the computation of the career orientation rating of each respondent. The analysis of these

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[15]Myers, op. cit., p. 74.

responses required a subjective evaluation of the specificity of each response. A set of instructions was developed to control personal bias and a major portion of the subjectivity inherent in such an analysis.[16]

Ten middle administrative personnel at Oklahoma State Department of Health were selected to test the reliability of the instructions. Ten identical sets of ten sample questionnaires were given to these administrators along with one set of instructions. The only verbal instructions they received were: "Please rate these items in accordance with the rating which it best matches and place your rating on the left-hand margin." The samples were chosen from actual questionnaire responses for their ambiguity.

After the administrators completed their independent rating of the ten sample responses the total group was compared. All ten sets of ratings were very similar. All mean ratings were within ± five points of the total mean. The error of the means for the total test was two and nine-tenths points. This error is not significant.

Validity

Except for subjective inferences that might be made from the reliability data and other findings, no attempt was made to establish the validity of the career orientation rating. It would take at least a ten year longitudinal study to establish the validity and stability of the career orientation rating system.

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[16]See Appendix II for the complete instruction set.

CHAPTER IV

FINDINGS

Participation

The Training Analysis Questionnaire was mailed in late November 1969, to all eight hundred and five Oklahoma State Department of Health workers listed under the Oklahoma Merit System as of September 1969. The list was compiled at the end of a state imposed "freeze" on personnel hiring; hence, the number of employees was slightly less than the normal state public health worker population. Due to the "freeze" practically all respondents had worked for the Oklahoma State Department of Health at least four months before filling in the questionnaire.

In all, seven hundred and seventy-eight (ninety-seven per cent) of the employees gave a response to the questionnaire. Seven hundred and thirty-three (ninety-one per cent) of the employees supplied completed questionnaires that could be analyzed and rated. Table 1 on the following page shows the distribution of these seven hundred and thirty-three workers grouped according to major discipline categories. It also shows the location, mean age, mean years of education, and the mean years of public health experience represented in each group. The ranges of these variables were all similarly spread with only one exception. This exception related to the

DISTRIBUTION OF THE MAJOR CATEGORIES OF 733 PUBLIC HEALTH WORKERS IN OKLAHOMA BY LOCATION, MEAN AGE, MEAN YEARS OF FORMAL EDUCATION AND MEAN YEARS OF PUBLIC HEALTH EXPERIENCE FEBRUARY 1970

Category	Location			Mean Years*		
	Total	County Units	State Office	Age	Formal Education	Public Health Experience
Medical	18	12	6	50	21	12
Public Health Nurses	176	167	9	45	15	10
Other Nursing Personnel	89	89	-	48	12	5
Misc. Personal Health Workers	94	53	41	38	17	8
Environmental Health	117	78	39	40	16	11
Administration	41	3	38	45	17	13
Clerical	182	99	83	41	13	9
Maintenance	16	2	14	45	12	10
Total	733	503	230	31,371	10,811	6,791
Mean Years				43	15	9

*All figures are rounded to the nearest whole number.

range of each group's years of formal education. The medical group's schooling ranged from sixteen to twenty-nine years, while the other nursing and maintenance groups' ranged from eight to fourteen years each. The remaining five groups covered the entire range. A listing of the job titles contained in each of the eight major categories is contained in Appendix IV.

Differences in Health Worker Career Orientation

Differences Between Individuals

The first question posed in the study was: Are there measurable differences in the career orientation of health workers? The null hypothesis relating to this question was: There are no measurable differences in the career orientation of health workers.

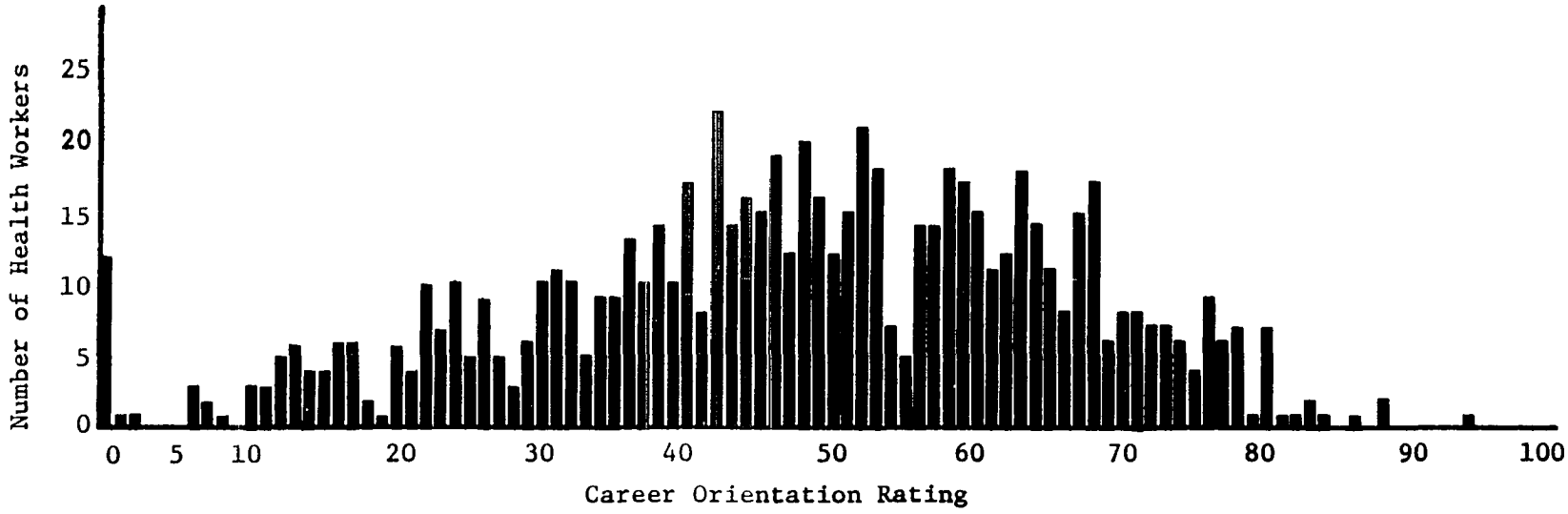
The differences in career orientation are revealed in differences noted between the individual career orientation ratings of the health workers in the study. The distribution of the career orientation ratings of the seven hundred and thirty-three health workers in Oklahoma is graphically presented in Figure 1 on the next page. This distribution approximates a normal curve in that it is symmetrical about and concentrated near the mean. The mean of the rating distribution was forty-seven and three tenths. The mode was forty-eight. One standard deviation from the mean equalled $\pm$ eighteen and five-tenths points. The individual career orientation ratings ranged from zero to ninety-four points. By definition the dividing line

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[1]See page 41 for explanation of the dividing line between career oriented and career indifferent workers.

GRAPH I

DISTRIBUTION OF 733 PUBLIC HEALTH WORKERS IN OKLAHOMA
BY CAREER ORIENTATION RATING, FEB., 1970



Mode = 48 Mean = 47.3 Variance = 343.8 One Standard Deviation = 18.5

Figure 1. Graphical Representation of the Frequency Distribution of the Career Orientation Ratings of 733 Public Health Workers in Oklahoma, February 1970.

between career oriented and career indifferent health workers was set at fifty-six points.[1] Accordingly, two hundred and sixty-two (thirty-six per cent) workers were classified as career oriented and four hundred and seventy-one (sixty-four percent) were classified as career indifferent.

The variations in health worker career orientation ratings provide prima facie evidence of the existence of individual differences in career orientation. The workers' responses to each of the fourteen items that were used to arrive at the career orientation rating are also evidence of individual differences in career orientation. Table 2 following compares the response variations between career oriented and career indifferent health workers for each of the fourteen measurement items. The response most indicative of career orientation is indicated by an asterisk (*).

The percentage below each figure represents its per cent of the total actual responses made by the particular career designation. The non-responses (NR) are not included in the percentage calculations. Hence, the direct comparison of the percentages between career indifferent and career oriented health workers is possible. The workers received the following instructions before they filled in this part of the questionnaire:

> This section is strictly confidential. It will be separated from the main questionnaire, coded and analyzed independently. PLEASE MARK EVERY STATEMENT BY CIRCLING the opinion which best describes how you feel. SA - Strongly Agree, MA - Moderately Agree, SLA - Slightly Agree, U - Undecided, SLD - Slightly Disagree, MD - Moderately Disagree, SD - Strongly Disagree, DU - Don't Understand the Statement.

Observation of the percentages in Table 2 indicates that in all items a higher percentage of career oriented workers than career

TABLE 2

PERCENTAGES AND DISTRIBUTION OF THE RESPONSES OF 733 PUBLIC HEALTH WORKERS IN OKLAHOMA TO THE 14 CAREER ORIENTATION MEASUREMENT ITEMS ON THE TRAINING ANALYSIS QUESTIONNAIRE. RESPONSES DIVIDED BY CAREER INDIFFERENT AND CAREER ORIENTED WORKERS.

Item 4. I would like to attain a higher classification even though it did not involve a salary increase.

Response[a]		SA*	MA	SLA	U	SLD	MD	SD	DU	NR
Career Indifferent	#	65	75	53	98	37	43	75	2	27
	%	14.5	16.7	11.8	21.8	8.3	9.5	16.7	.4	-
Career Oriented	#	75	53	35	31	15	14	26	5	4
	%	29.5	20.8	13.8	12.2	5.9	5.5	10.2	1.9	-

Item 5. My present job is utilizing all my capabilities well.

Response		SA	MA	SLA	U	SLD	MD	SD*	DU	NR
Career Indifferent	#	65	101	46	47	75	74	44	2	21
	%	14.3	22.2	10.1	10.4	16.5	16.3	9.7	0.4	-
Career Oriented	#	26	53	29	19	39	51	36	2	3
	%	10.2	20.7	11.3	7.4	15.3	20.0	14.1	0.7	-

Item 7. I would like to prepare myself for advancement.

Response		SA*	MA	SLA	U	SLD	MD	SD	DU	NR
Career Indifferent	#	188	102	45	78	7	15	4	4	24
	%	42.4	23.0	10.1	17.6	1.5	3.3	0.9	0.9	-
Career Oriented	#	199	33	8	11	1	3	0	0	3
	%	78.0	12.9	3.1	4.3	0.4	1.2	0	0	-

[a] Explanation of abbreviations: SA - Strongly Agree, MA - Moderately Agree, SLA - Slightly Agree, U - Undecided, SLD - Slightly Disagree, MD - Moderately Disagree, SD - Strongly Disagree, DU - Don't Understand the Statement.

TABLE 2 -- Continued

Item 8. I would like to know more about how what I am doing in my job relates to the overall public health picture.

Response		SA*	MA	SLA	U	SLD	MD	SD	DU	NR
Career Indifferent	#	138	126	75	30	19	24	14	12	37
	%	31.5	28.7	17.1	6.8	4.3	5.4	3.2	2.7	-
Career Oriented	#	132	60	38	5	5	4	6	4	4
	%	51.9	23.6	14.9	1.9	1.9	1.5	2.3	1.6	-

Item 11. I would like increased challenge in my work.

Response		SA*	MA	SLA	U	SLD	MD	SD	DU	NR
Career Indifferent	#	90	120	81	46	33	26	34	2	43
	%	20.8	27.8	18.7	10.6	7.6	6.0	7.8	0.4	-
Career Oriented	#	104	76	43	10	6	5	7	1	6
	%	41.3	30.2	17.0	3.9	2.4	1.9	2.8	0.4	-

Item 13. If you had a chance to move to another job outside the health field, what percent salary increase would you need to receive in order to accept the change.

Response		0	10	20	30	40	60*	80*	Other*	NR
Career Indifferent	#	20	33	80	78	55	40	27	52	90
	%	5.2	8.6	20.8	20.2	14.3	10.4	7.0	13.5	-
Career Oriented	#	14	18	35	42	30	39	27	42	11
	%	5.6	7.3	14.2	17.0	12.1	15.8	10.9	17.0	-

Item 14. How many professional organizations do you belong to?

Response		None	1	2	3	4*	5* or more	NR
Career Indifferent	#	183	97	84	40	18	16	37
	%	41.8	22.1	19.1	9.1	4.1	3.6	-
Career Oriented	#	73	49	42	45	18	25	6
	%	28.9	19.4	16.6	17.8	7.1	9.9	-

TABLE 2 -- Continued

Item 15. I have a personal career plan. Yes No It is written down and reviewed periodically. Yes No

Response		Yes*	No	Yes*	No	NR
Career Indifferent	#	60	350	20	40	65
		14.6	85.4	4.9		-
Career Oriented	#	108	93	54	54	57
	%	53.8	46.2	26.8		-

Item 17. I would like to notified of all training opportunities available through the state or local health departments. Yes No Undecided

Response		Yes*	No	Undecided	NR
Career Indifferent	#	339	33	58	45
	%	78.8	7.6	13.5	-
Career Oriented	#	237	6	8	6
	%	94.4	2.4	3.2	-

Item 20. List your career objectives.

Response Code[b]		0	1*	2	3	4
Career Indifferent	#	119	66	42	90	158
	%	25.0	13.9	8.8	18.9	33.2
Career Oriented	#	1	165	23	48	20
	%	0.4	64.2	8.9	18.8	7.8

Item 21. What are the first steps you would take in order to achieve each of the objectives in question 20?

Response Code		0	1*	2	3	4
Career Indifferent	#	213	32	4	129	97
	%	44.8	6.7	.8	27.1	20.4
Career Oriented	#	9	120	7	90	31
	%	3.5	46.7	2.7	35.0	12.0

TABLE 2 -- Continued

Item 23. Looking back over your working life what would you say were the best decisions that you made?

Code		0	1*	2	3	4
Career Indifferent	#	146	238	34	55	2
	%	30.7	50.1	7.1	11.6	0.4
Career Oriented	#	5	232	13	7	0
	%	1.9	90.3	5.0	2.7	0

Item 24. If you were free to take any job, how would you describe the ideal job for you?

Code		0	1*	2	3	4
Career Indifferent	#	165	99	42	98	71
	%	34.7	20.8	8.8	20.6	14.8
Career Oriented	#	11	119	44	62	21
	%	4.2	46.3	17.1	24.1	8.2

Item 27. What things or situations bother you most in your work?

Code		0	1*	2	3	4	5
Career Indifferent	#	99	47	132	50	98	50
	%	20.8	9.9	27.8	10.5	20.8	10.5
Career Oriented	#	10	93	78	37	32	11
	%	3.9	36.0	30.2	14.3	12.4	4.3

[b]For an explanation of the code numbers, see Appendix II.

indifferent workers selected the career orientation indicator. This ratio was not the same in all cases. Items 4, 7, 11, 14, 15, 20, 21, 24 and 27 show a positive ratio of at least two to one. Items 5 and 8 produce ratios slightly less than two to one. Items 13, 17 and 23 fell below the two to one ratio but they did give valuable information regarding the workers' commitment to public health and showed that by far the majority (eighty-four per cent) of the workers were interested in keeping up-to-date on training opportunities.

Differences in the Career Orientation Ratings of Major Categories of Health Workers

Are there significant differences in the career orientation of the major categories of public health workers? In order to answer this question, the following hypothesis was tested: There are no significant differences in the career orientation ratings of the major categories of public health workers.

The major categories of health workers were: medical; public health nurses; other nursing personnel; miscellaneous personal health services personnel; sanitarians and other environmental health workers; executive and supervisory staff; accounting, clerical and secretarial staff; and machine operators and maintenance personnel. A complete listing of the disciplines in each category is contained in Appendix IV.

The category means, sums of squares and variance of means were calculated. An analysis of the variance of the means using an F-test for significance was conducted. Table 3 on the following page indicates the major category means and the calculations for the analysis of variance. An F value of 10.47 was calculated. This value was larger than the Table F value (2.9) for this sample for probability level 0.05. This indicates that there are significant differences between the mean career orientation ratings of the major categories of health workers.

Duncan's New Multiple Range Test was used to determine which of the twenty-eight possible differences among the eight category means were significant and which were not. Table 4 on page fifty-seven graphically indicates these findings at the 95% confidence level. A dash (-)

TABLE 3

A COMPARISON OF THE MEAN CAREER ORIENTATION RATINGS OF EIGHT MAJOR CATEGORIES OF HEALTH WORKERS IN OKLAHOMA

STATISTICS				
Category	n	Mean C.O.R.	s^2	S.D.
Medical	18	62.33	428.59	20.7
Public Health Nurses	176	48.31	312.40	17.7
Other Nursing	89	46.88	354.31	18.8
Miscellaneous Personal Health	94	54.37	300.86	17.4
Environmental Health	117	50.30	253.30	15.9
Administration	41	51.73	309.30	17.6
Clerical	182	39.76	330.75	18.2
Maintenance	16	36.06	441.66	21.0
Total	733	47.38	316.36	17.8

ANALYSIS OF VARIANCE[a]				
Source of Variance	D.F.	SS	MS	F
Between Categories	7	23,190.78	3,312.97	10.47
Error	725	229,361.53	316.36	
Total	732	229,361.53		

[a]Source: Robert G. D. Steel and James H. Torrie, Principles and Procedures of Statistics, pp. 428-31.

TABLE 4

A COMPARISON OF THE DIFFERENCES BETWEEN THE MEAN CAREER ORIENTATION RATINGS OF EIGHT MAJOR CATEGORIES OF HEALTH WORKERS IN OKLAHOMA BY DUNCAN'S NEW MULTIPLE RANGE TEST[a]

Category	C.O.R. Mean	Significance .05 Probability Level
Medical	62.3	- - * * * * * *
Miscellaneous Personal Health	54.4	- - * * * * *
Administration	51.7	- - - - - * *
Environmental Health	50.3	- - - * *
Public Health Nurses	48.3	- - * *
Other Nursing	46.9	- * *
Clerical	39.8	- -
Maintenance	36.1	-

[a]Source of test: Robert G. D. Steel and James H. Torrie, Principles and Procedures of Statistics, pp. 428-31.

means there are not significant differences between career orientation ratings of the groups and an asterisk (*) indicates at the .05 probability level a significant difference between the group with the asterisk and the groups with a dash below it. The categories of health workers are arranged in the descending order of their mean career orientation rating.

Table 4 indicates medical and personal health service specialists do not significantly differ in their career orientation rating.

However, if a larger sample of medical personnel showed the same gap between these means it would be declared significant. Medical personnel differ in career orientation rating from all other groups except the miscellaneous group. Administration does not differ significantly from the miscellaneous group. Administrative staff, environmental health, public health nurses, and other nursing staff appear to have similar career orientation ratings. Clerical and maintenance personnel career orientation ratings are not significantly different from each other but are significantly different from all other categories of health workers.

Professional vs. Allied Health Worker Ratings

The categories of public health nurses, environmental health, administration, miscellaneous personal health, and medical workers are considered professional health workers while the categories of other nursing, clerical, and maintenance workers are considered allied health workers. The results in Table 4 indicate there are significant differences in the career orientation rating of professional and allied health workers although the home health aides and licenced practical nurses which make up the "other nursing personnel" group may not be significantly less career oriented than public health nurses, environmental health, and administrative personnel.

Factors Affecting Career Orientation Rating

General Consideration

In the following discussions of factors influencing career orientation rating scores the same data from the survey are used in

several different statistical tests. Clearly these separate tests are not independent one from the other and the probability levels cited are those for the particular groupings under consideration for that test.

Since there appear to be significant differences in the career orientation ratings of the major categories of health workers, the following question is naturally raised: What factors seem to contribute to the difference between major categories of public health workers? Table 5 following, gives a comparison of the means of the possible career orientation influencing factors common to, but variable with, each health worker. These factors are job location, years of public health experience, age, years of formal education, the number of recent continuing education courses received, and sex. The categories are listed in ascending order of career orientation ratings.

Observation of the raw data in Table 5 seems to indicate that five of the six possible influencing factors have no correlation with career orientation rating differences. The health workers' job location, mean years of public health experience, mean years of age, mean number of continuing education courses attended in the past ten years, and sex do not follow the same pattern as that of their career orientation ratings. However, the mean years of formal education does seem to follow a similar pattern to that of the career orientation ratings. The following sections analyze the distribution of the career orientation ratings grouped according to the variations in each of the possible influencing factors.

TABLE 5

DISTRIBUTION OF POSSIBLE CAREER ORIENTATION INFLUENCING FACTORS BY MAJOR CATEGORIES OF HEALTH WORKERS IN OKLAHOMA

FACTORS	Maintenance	Clerical	Other Nursing	Public Health Nurses	Environmental Health	Administration	Miscellaneous Personal Health	Medical
	CATEGORIES (RANKED BY MEAN CAREER ORIENTATION RATE)							
	36.2	39.8	46.9	48.3	50.3	51.7	54.4	62.3
Per cent Located in Counties	12.5	54.3	100.0	94.8	66.7	7.3	56.3	66.7
Mean Years Public Health Experience	10	9	5	10	11	13	8	12
Mean Years Age	45	41	48	45	40	45	38	50
Mean Years Formal Education	12	13	12	15	16	17	17	21
Mean Number Cont. Educ. Attended in Past 10 Years	0.0	0.2	1.2	1.7	1.7	1.5	1.2	1.2
Sex	Mixed	F	F	F	M	Mixed	Mixed	M

Influence of Education

Analysis of Variance. Does the occurrence of career orientation in health workers increase significantly with increased formal education? In order to obtain information concerning the effect of years of formal education on career orientation rating the subjects

in the study were grouped by years of education into twelve groups -- under twelve, twelve, thirteen, fourteen, fifteen, sixteen, seventeen, eighteen, nineteen, twenty, twenty-one, twenty-two and above. Summary statistics for these groups are presented in Table 6. With these groups regarded as the "treatments" in the context of a completely randomized design, an analysis of variance was performed to test the null hypothesis of no difference in mean career orientation ratings among the educational groupings. The individual comparison of group means was made by use of the Duncan's New Multiple Range Test. These results are indicated in Table 7 on page sixty-three. The analysis indicated that there is a significant difference between the career orientation ratings of individuals with eighteen or more years of education and those with less than eighteen years. The workers with fourteen and sixteen years of schooling had different career orientation ratings than those above and below them. The remaining years of formal education groups, seventeen, fifteen, thirteen, twelve and less than twelve formed a similar group which is different from the above two groups. The above analysis indicates a positive relationship between career orientation rating and years of formal education. In an effort to better explain this phenomena, a correlation analysis was performed on the data.

Correlation analysis. A Spearman's coefficient of rank correlation was performed on the data. The normal correlation coefficient (r) is applicable to the bivariate normal distribution, a distribution which is not too common. Spearman's coefficient of rank correlation does not require the assumption of a

TABLE 6

A COMPARISON OF THE MEAN CAREER ORIENTATION RATINGS OF 733 HEALTH WORKERS IN OKLAHOMA GROUPED ACCORDING TO YEARS OF FORMAL EDUCATION

STATISTICS

Years of Education	n	Mean C.O.R.	S^2	S.D.
Under 12	46	39.00	328.53	18.2
12	141	39.38	336.96	18.3
13	92	42.81	365.73	19.1
14	59	51.73	312.03	17.6
15	104	48.86	315.93	17.8
16	136	50.45	250.74	15.8
17	55	48.64	289.46	17.0
18	50	57.06	243.44	15.6
19	15	56.40	493.97	22.2
20	10	60.00	126.67	11.2
21	7	56.00	177.00	13.3
22 and up	18	60.16	487.91	22.1
Total	733	47.38	311.65	17.7

ANALYSIS OF VARIANCE

Source of Variance	df	SS	MS	F
Between Groups	11	27,851.59	2,531.96	8.12
Error	721	224,700.72	311.56	
Total	732	252,552.32		

Table $F_{(22,721)}$ Value at 0.05 Probability Level = 2.52

TABLE 7

A COMPARISON OF THE DIFFERENCES BETWEEN THE MEAN CAREER ORIENTATION RATINGS OF HEALTH WORKERS IN OKLAHOMA GROUPED BY YEARS OF FORMAL EDUCATION. DUNCAN'S NEW MULTIPLE RANGE TEST

Years of Formal Education	C.O.R. Mean	Significance at .05 Probability Level
22 and up	60.16	- - - - - - - - - - * * *
20	60.00	- - - - - - - - - * * *
18	57.06	- - - - - - - - * * *
19	56.40	- - - - - - - * * *
21	56.00	- - - - - * * *
14	51.73	- - - - - - *
16	50.45	- - - - - *
15	15.86	- - - - -
17	48.64	- - - -
13	42.81	- - -
12	39.38	- -
Under 12	39.00	-

bivariate normal distribution. It applies to data in the form of ranks.

Although the distribution of the career orientation ratings approximated a normal curve sufficiently to use the statistical tests for analysis of variance and chi square, it was thought advisable to use a correlation analysis that was independent of this requirement. The

responses were ranked according to the career orientation rating. A Spearman's coefficient of rank correlation was made to determine the correlation between years of schooling and career orientation rating. A positive correlation of 0.3086 was found to exist between the years of schooling received and the career orientation ratings of the seven hundred and thirty-three health workers in the study.

This correlation indicates that the relationship is positive and significant, but it is by no means a one hundred percent relationship.

Effects of Age on Career Orientation Ratings

Are there significant differences in the career orientation of the various age groups of health workers? The null hypothesis for this question was that there are no significant differences between the career orientation ratings of the various groups of health workers.

The data in Table 5 seems to indicate that the above hypothesis is valid. Nevertheless, an analysis of variance was carried out to establish the validity of an inference from Table 5. The statistical calculations for this test are shown in Table 8 on page sixty-five. The calculated F value (3.1) did exceed the Table F value (2.5) at the .05 probability level indicating significant differences in career orientation ratings due to the age of a health worker. However, a close look at the data indicates that the mean career orientation ratings of health workers below twenty years of age and those sixty-five and above were much different from the main body of age groups. Another analysis of variance of ages twenty through sixty-four was calculated. The mean squares were 749.5 and 338.0 respectively. The

TABLE 8

DISTRIBUTION OF MEAN CAREER ORIENTATION RATINGS OF HEALTH WORKERS IN OKLAHOMA BY AGE GROUPS

WORKING STATISTICS

Age Groups in Years	n	Σfx	$\bar{x}$	$\Sigma f(x)^2$	$\frac{\Sigma(\Sigma fx)^2}{\Sigma n}$
20	2	55	27.5	1,733	1,512
20-24	55	2,466	44.8	130,818	110,566
25-29	79	3,900	49.3	217,742	192,531
30-34	82	4,152	50.6	233,476	210,233
35-39	78	3,773	48.4	203,819	182,507
40-44	96	5,000	52.0	288,718	260,416
45-49	96	4,450	46.4	241,526	206,276
50-54	92	3,986	43.3	205,968	172,698
55-59	75	3,674	49.0	205,574	179,977
60-64	58	2,567	42.5	139,239	113,612
65+	20	675	33.8	29,279	22,781
Total	733	34,698	47.3	1,897,892	1,653,109

ANALYSIS OF VARIANCE

Source of Variance	SS	df	MS	F	
Between Groups	10,611	10	2,061	3.1*	
(Error)	244,783	722	339	$F_{(10,722)}$	= 2.52 at .05 probability level
Total	255,394	732			

* There are significant differences in the career orientation ratings of the standard age groupings of health workers in Oklahoma. (However, Note $\bar{x}$ for age groups 20 and 65+).

calculated F value (2.2) was smaller than the Table F value (2.7) indicating no significant difference in career orientation due to ages between twenty and sixty-four. This age range encompassed seven hundred and twelve (ninety-seven per cent) of the sample.

Effect of Sex on Career Orientation Rating

Do male health workers exhibit a significantly higher career orientation than female health workers? Table 5 is not clear as to the effect of sex on career orientation. Most major categories of health workers are defacto-segregated by sex due to the nature of the job. Sex may or may not be the cause of the differences in category career orientation rating means. In order to establish whether sex is a significant factor in career orientation, the following null hypothesis was tested by analysis of variance: There is no significant difference in the career orientation rating of the sexes.

The statistics of this test are shown in Table 9. The calculated F value (7.31) is smaller than the Table F value (7.88) at the .05 probability level, indicating that there is no significant difference in the career orientation ratings of the sexes.

Years of Public Health Service

Does the length of a health worker's public health experience influence his career orientation rating? The test hypothesis for this question was: There is no difference in the career orientation of health workers with differing lengths of service in public health. This hypothesis is confirmed by observing the data in Table 5.

TABLE 9

DISTRIBUTION OF MEAN CAREER ORIENTATION RATINGS OF HEALTH WORKERS IN OKLAHOMA BY SEX

WORKING STATISTICS

Sex	n	Σfx	$\bar{x}$	Σfx^2	$\frac{\Sigma(\Sigma fx)^2}{\Sigma n}$
Female	509	23,237	45.6	1,239,143	1,060,822
Male	224	11,491	51.2	658,749	589,478
Total	733	34,728	47.3	1,897,892	1,650,300

ANALYSIS OF VARIANCE

Source of Variance	df	SS	MS	F
Between Groups	2	4,960	2,480	7.31*
Error	729	247,592	339	$F_{(1, 729)} = 7.88$
Total	731	252,552		

*There is no significant difference in career orientation ratings between sexes at the .05 probability level.

The Relationship of Career Orientation Rating to A Health Worker's Expressed Training Needs

Is there a relationship between a worker's career orientation and his ability to express his training needs in a manner which will assist an administrator to establish training priorities? The test

hypothesis for this question was: Health Workers judged career oriented in this study will not request more specific training than health workers judged career indifferent.

A chi square analysis of a 2x2 correlation was used to test this hypothesis. One hundred and seventy-five career oriented and one hundred and seventy-seven career indifferent health workers indicated specific training needs. Seventy-seven career oriented and one hundred and twenty-nine career indifferent health workers gave non-specific training needs. Table 10 on page sixty-nine shows the chi square test.

The calculated chi square value (74.9) exceeded the Table value (3.84), indicating a significant difference in the ratio of specific responses between career oriented and career indifferent health workers.

By putting this information into percentages and including the health workers who did not answer the training needs question (ten career oriented and one hundred and sixty-five career indifferent), it was found that the one hundred and seventy-five career oriented workers represented a sixty-seven per cent specific response rate while the one hundred and seventy-seven career indifferent workers represented a thirty-seven and six-tenths per cent specific response. The percentages show that the differences between the two types of health worker is almost two to one. The data also indicates that useful training information can be obtained from both types of health worker.

Other Findings and Impressions

The Training Analysis Questionnaire was designed to study four different problems which were related to the Oklahoma State

TABLE 10

A COMPARISON OF THE CLARITY OF TRAINING NEEDS EXPRESSED BY CAREER ORIENTED AND CAREER INDIFFERENT HEALTH WORKERS IN OKLAHOMA

Type of Response	Type of Health Worker		Total
	Career Oriented	Career Indifferent	
Clear	175	177	352
Unclear	77	129	206
Total	252	306	558

Calculations:[a]

$$\text{Adjusted } X^2 = \frac{(|n_{11}\, n_{22} - n_{12}\, n_{21}| - \frac{N..}{2})\ n..}{n_1.n_2.n_{.1}n_{.2}}$$

$$X^2 = \frac{(|(175)(129) - (177)(77)| - \frac{558}{2})^2\ 588}{(352)(206)(252)(306)}$$

$$X^2 = \frac{41915224062}{5592545344} = 74.9$$

From table $X^2_{(1)(.95)} = 3.84$ at .05 probability level, $74.9 > 3.84$

∴ There are significant differences between the clarity of the expressed training needs of career oriented and career indifferent health workers.

[a]Source: Robert G. D. Steel and James H. Torrie, Principles and Procedures of Statistics, p. 371.

Department of Health's needs. There were:

1. To provide basic employee data for the Oklahoma State Department of Health employee information bank.

2. To determine what general knowledge and skill training was desired by Oklahoma State Department of Health employees in preparation for a manpower development program.

3. To distinguish career oriented health workers from career indifferent health workers in the Oklahoma State Department of Health.

4. To study the occurrence and distribution of career orientation and its relationship to the manner in which a health worker expresses his training needs.

This study was interested in problems 3 and 4. Data regarding problems 1 and 2 are purely descriptive and may be reviewed in the Oklahoma State Department of Health Training Analysis Report referred to in the bibliography of this study.

In the pre-test, it was discovered that some workers were highly satisfied with their jobs and/or were near retirement. These persons fell in the middle range of the career oriented rating scale. By using a different combination of ten items in Part V, it was found that Part V of the Training Analysis Questionnaire could also distinguish the stabilized worker from those who were career oriented or career indifferent. This "stabilized worker" type appears to approach Presthus' description of the ambivalent after he has resigned to fate. A relative rating system was assigned to these items to total one hundred so that all three types of workers could be compared on a zero to one hundred rating scale.

There was no specific pre-test made of this rating. The existence of the stabilized worker became apparent in the process of item analysis and was only described in the study. In the absence of pre-test data, no attempt was made to distinguish between the relative importance of the items. All ten items were assigned ten points each.

The raw score was also the career stabilization rating.[2]

The career stabilization rating was used primarily to separate stabilized health workers from the career oriented health workers to determine their impact on career orientation ratings. There was no noticeable impact, so they were not excluded from the analysis. Eighty-seven (eleven and nine-tenths per cent) of the respondents received career stabilized scores above fifty points (fifty points appeared to be where stabilization became a dominant factor). The career orientation rating of career stabilized health workers ranged from twelve to sixty-eight; their mean career orientation rating was forty-five and five-tenths with a standard deviation of twelve and eight-tenths. Their ages ranged from twenty to sixty-nine, and their education levels ranged from ten to twenty-six years of formal education. No significant differences were noted in the variable factors between career oriented and career stabilized persons other than their score on the career stabilized scale.

The career orientation rating of all categories of public health workers showed a range from zero or near zero to near eighty. During the analysis the writer was impressed by the large number of home health aides and clerical personnel who were highly career oriented. For the writer to consider a worker highly career oriented, the worker had to score above seventy on the rating scale. In all, seventy-two (nine and nin-tenths per cent) workers scored above seventy points. Fifteen (twenty-one per cent) of these highly career oriented

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[2]See Appendix II for details of the career stabilization items.

workers were either home health aides or clerical workers. These two groups represented thirty-seven percent of the total sample, indicating a less than proportional representation but nevertheless a representation.

Table 11, following, gives the proportional breakdown of the categories by total population and high career orientation.

TABLE 11

PROPORTIONAL DISTRIBUTION OF HEALTH WORKERS IN OKLAHOMA JUDGED HIGHLY CAREER ORIENTED. (RATED ABOVE 70 POINTS)

Category	Population		Highly Career Oriented	
	#	%	#	%
Medical	18	2.5	7	38.8
Public Health Nursing	176	24.1	17	9.7
Other Nursing	89	12.0	8	9.0
Miscellaneous Personal Health	94	12.8	17	18.1
Environmental Health	117	16.0	10	8.6
Administration	41	5.6	5	12.2
Clerical	182	24.8	7	3.8
Maintenance	16	2.2	1	6.2
Total	733	100.0	72	9.9

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Participation in the Study

The participation in this study by the Oklahoma State Department of Health personnel can be called nothing less than "outstanding!" Participation in the study was voluntary and there was no penalty for non-participation. The employees had no assurance that the promises of improvement in training and selection practices, or the promise of confidentiality of the information, would be honored. To the contrary was the generally held opinion that previous training studies conducted at the Oklahoma State Department of Health had been filed away and never used, and the common rumor among the staff was that few documents at the Oklahoma State Department of Health were confidential. In addition, the Training Analysis Questionnaire sought a massive amount of personal information and took one and one-half to three hours to complete. In spite of these factors, ninety-three percent of the staff participated in the study and an impressive seven hundred and thirty-three (ninety-one percent) of the workers provided usable information. This outstanding participation seems to imply at least two important factors: (1) there is strong interest in training, self-improvement and health services improvement among health workers in Oklahoma, and

(2) now is an opportune time to improve the selection and provision of continuing education for health workers in Oklahoma. These two factors are further demonstrated by the responses given to the items which measured training attitudes and needs. The percentages which follow represent the per cent positive responses given to each item in the questionnaire adjusted to exclude non-responses. Five hundred fifty-nine (eighty-four per cent) of the respondents felt that most of the training they had previously received had been beneficial. Five hundred seventy-five (eighty-two per cent) indicated that they would like to prepare themselves for advancement. Five hundred sixty-nine (eighty-two per cent) indicated that they wanted to know more about their present job. Three hundred fifty (fifty per cent) of the respondents wanted assistance in setting up a personal career plan and two hundred sixty-two (forty-two per cent) were willing to pay for forty per cent or more of their training costs. Five hundred seventy-six (eighty-four per cent) wanted to be notified of all health training opportunities that might be available. Five hundred fourteen (seventy-five per cent) wanted increased challenge in their work. In Parts III and IV, the Skill and Knowledge Area request sections of the Training Analysis Questionnaire, five hundred fifteen (seventy-one per cent) employees requested four thousand five hundred and ninety-eight training opportunities.

There was also strong evidence to indicate a need for competent counselling of the employees in career planning and training programs. Three hundred fifty (fifty per cent) of the respondents asked for assistance in planning a personal career. Three hundred

twenty-nine (forty-seven per cent) indicated that they thought their immediate supervisor should provide this help. While two hundred thirty-one workers demonstrated that they had specific career goals only one hundred fifty-two (sixty-six per cent) were able to express the specific steps they needed to take to achieve these goals. In contrast to these obvious needs only one hundred forty-seven (twenty-one per cent) of the respondents said that their supervisor had discussed any training needs with them.

It is recommended that this opportunity to improve worker efficiency, effectiveness and morale in Oklahoma be seized now. The Training Office and Personnel Department should begin immediate steps to work with supervisors on career counselling techniques. The annual employee evaluation must be changed from a mere formality to a dynamic meaningful appraisal and planning session between the supervisor and each of his subordinates. It is here that the three important information inputs (the program, the supervisor, the employee) for determining training needs can be best focused. In this conference the supervisor can explain his program's goals and objectives and where the particular employee fits into the program picture. Together they can evaluate the worker's past performance and potentials. Here they can explore the worker's weaknesses and make plans for overcoming or eliminating them. The employee can express his perceptions of his role in the program and what he feels are his personal needs. This type of exchange, when properly prepared, can lead to improved worker understanding, morale and enthusiasm. It will also lead to better worker-supervisor relationships and communication, both of which are

major problems in all bureaucratic organizations.

The outstanding participation in the study also indicates that a mailed questionnaire can be a successful method for obtaining training information. The evident high degree of willingness and ability of the respondents to give reliable information reduces the importance of the first limitation of this study. This limitation was the previously unknown predictability of the willingness and ability of respondents to give reliable and accurate answers to a mailed training questionnaire.

Since the seven hundred seventy-seven (ninety-five per cent) health workers scattered throughout Oklahoma who provided data for this study are relatively representative of public health workers throughout most of the U.S., the strict limitations of the findings of this study to Oklahoma may not be necessary.

Career Orientation

General Differences

The study demonstrated that there are measurable differences in the career orientation of health workers. The item analysis showed that health workers scoring less than fifty-six career oriented points career indifferent workers) exhibited a much smaller percentage of the characteristics defined as part of the model career oriented health worker than did those judged career oriented. The hypothesis that there are no measurable differences in the career orientation of individual public health workers in Oklahoma was not confirmed. The wide differences demonstrated in the individual career orientation ratings of the health workers and the statistically significant differences

between groups of health workers jointly showed that there are, in fact, measurable differences in career orientation.

The finding that there are measurable differences in the career orientation of public health workers has important implications. Motivation and interest are principal factors in learning. Through career orientation rating and related interest items, the administrator can now measure the relative motivation toward self-improvement and the personal career interests of each of his employees. With this knowledge, he can plan pertinent training programs to meet his agency's needs that will have specific relevance to the trainee. Trainees may be grouped according to similar interests or motivation, or deliberately mixed for heterogeneous discussions. The career orientation knowledge will enable the administrator to select individuals for training. He will be able to predict who will take advantage of and be interested in a particular training course. He will be able to justify his training expenses on the basis of manpower development and leadership potentials. He will be able to identify those employees worthwhile "grooming" for added responsibility. He will also be able to predict who will not benefit much from a particular training course and thus save time, effort and money. Many of the health workers ranging between forty and sixty-five points on the career orientation scale could possibly be stimulated to higher levels of n-achievement by using some of McClelland's and Herzberg's techniques.[1,2] Through identification of

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[1]McClelland, op. cit., p. 4.

[2]Herzberg, op. cit., pp. 53-62.

the various levels of career orientation in his workers, the administrator could adjust his reward (motivation, job loading, or other achievement satisfiers) system to meet the individual needs of each employee. He would also be able to organize meaningful counselling sessions with employees to assist them in goal setting and development. Theoretically, this process should improve morale, increase production, and heighten personal involvement and interest in the job and work objectives. Further research is needed to find methods to improve career orientation in the indifferent and moderately career oriented workers. Home influences which appear to develop the achievement oriented individual should be explored with social science methods.

Scoring

The scoring system used was deliberately weighted to clearly establish a career orientation rating separation between those who exhibited a majority of career oriented characteristics and those who did not. Without this loading of the point system, it would have been much more difficult, if not impossible, to locate a dividing point between the career oriented and the career indifferent workers. An unweighted system would have produced a normal curve in which those in the forty-five to sixty-five career orientation rating point range would have had to be classified "of unknown orientation." The slight loading of items, while perhaps eliciting some criticism, eliminated this unknown group. A correlation of the written comments with the Career Orientation Rating on each response indicated that it was virtually impossible for a person who was definitely career oriented to score below fifty-six points or for a person who was definitely

career indifferent to score above sixty points. It is therefore recommended that a similar weighting system be used in future studies for simplicity of interpretation.

Useful Indicators

The post-tests for reliability confirmed the findings of Myers and McClelland in that self-motivation is a relatively permanent personal trait. Not all fourteen items used in the study to measure career orientation were found to be discriminatory for health workers. It is, therefore, recommended that future studies performed with health workers use items 4, 7, 11, 15, 20, 21, 24 and 27 for the establishment of the career orientation rating. Items 8, 13, 14 and 17 would still prove to be information items but are not selective enough to show significant differences in career orientation rating. Items 5 and 23 lend themselves too much to the "accomodation" phenomena to be reliable selectors; therefore, they should be dropped from the questionnaire. The findings indicate that the number of items necessary to establish an individual's career orientation is less than that used in this study. Further research is needed to refine these items more and to discover any additional indicator which can be measured. A proposed revision of the T.A.Q. for operational use recommends that the questionnaire be administered in two sections. It also recommends the reduction of the items in Part V from 27 to 20 items. These two modifications would simplify and shorten the periods needed for completing and analyzing the questionnaire.

The whole area of past performance was intentionally ommitted in this study due to the inconsistency in evaluations. A search for

reliable useful measures of a worker's past performance is needed to varify the findings of this study and to indicate trends or cycles in career orientation. Further research is also needed in the study of the career stabilized worker and how this type of worker may fit into the "Peter Principle."

Factors Affecting Career Orientation

The number of years of formal education acquired by a health worker was found to be a positive factor in increased career orientation ratings. Rather than education increasing career orientation, it may be that the career orientation was manifest in the individuals seeking more education. The correlation between education and career orientation was positive (.308) but not all highly educated persons showed a high career orientation rating. Also, many poorly educated persons showed high career orientation ratings. Therefore, we cannot accept education as an absolute measure of career orientation. Nevertheless, years of formal education appear to be a reasonable indicator of career orientation. Further study may reveal that certain types of education show a more positive correlation with career orientation than others. The findings indicated that years of formal education may be a worthwhile indicator of potential for growth but it should not be relied upon exclusively as it often is in government employment.

The job category of a health worker was also found to have a positive correlation with increasing career orientation rating. Again, the drive to attain the skills required for the advanced job categories may be the result of career orientation. The present "dead end" system of job classification in public health requires a person with strong

motivation to break through (by returning to school) the barriers to advancement.

While it was evident that the more advanced categories of health workers were generally higher in career orientation than those in the lower echelons, it was also evident that many of the lower echelon workers were strongly career oriented. They also appeared to be quite frustrated in their attempts to achieve recognition. The writer believes that the finding that career orientation rating increases with increased job level should be used sparingly in training selection. The data indicates that considerable benefit may be derived from training the upper echelons of a health department but the writer cautions that personal interests and relevance be kept uppermost in suggesting training to these expensive busy personnel.

Age, sex, years of public health service, continuing education courses attended and job location, did not significantly affect the career orientation ratings of health workers. These findings are important in that we now know that the above factors don't need to be considered when selecting training participants except in terms of interest groupings. The little or no influence that general factors seem to have on career orientation indicate that the instrument actually measured self-motivation and n-achievement and was not contaminated by these other factors.

The Relationship Between Career Orientation Rating And Training Needs

The results showed that most (sixty-seven per cent) career

oriented health workers expressed specific training needs that can be translated into training programs. Twice as many career oriented workers express specific training needs as compared to career indifferent workers. Career oriented health workers requested more training and appeared to know their needs better than non-career oriented workers. Their requests can be translated into meaningful training programs.

The hypothesis that health workers judged career oriented in this study will not request more specific training than health workers who are judged career indifferent was not confirmed. The data also indicated that many health workers (at least forty-eight per cent) would give specific needs if asked via a written questionnaire.

The writer believes that the percentage of specific responses would be better where health administrators laid a more effective ground-work for the survey than that used in Oklahoma. Many of the respondents knew nothing about the training analysis survey other than what they read in the cover letters. Consequently, considerable skepticism concerning the use of the information was expressed by the Oklahoma employees in impromptu conversations with the writer. The increase in training requests made in the retest survey after the writer had explained the purpose and use of the Training Analysis Questionnaire indicates the effect of the earlier poor communication.

Uses of The Study

The study demonstrated that the employee has an important contribution to make towards the determination of training needs. Large numbers of health workers are interested in self-improvement.

These interested workers must be discovered and encouraged to improve. There is a great need in health for a competent health careers counsellor -- one who would work in conjunction with the training office, the personnel office, and the supervisory staff. Supervisory staff need training in counselling to determine legitimate training needs and personnel grievances.

The Training Analysis Questionnaire can be a major instrument in assisting the trained supervisor to get the maximum benefits from his training investment. Parts I through IV provide him with an information bank of background data on each subordinant. Part V should be used every two or three years to evaluate any increase, or decrease, in the workers' motivation. Where changes are noted, influencing factors should be explored. Career orientation scores should not be discussed with the employee. If he feels he is competing for a score, the results may become biased. Parts III, IV and V should not be administered to new workers in the health field until they have worked at least six months. The study showed that new workers felt incompetent to answer many of the items in these sections. Continuous follow-up studies from the data in Parts III and IV will be needed to indicate which specific training courses are desired by the workers.

A Career orientation rating must not be considered an end in itself. It is part of an objective tool for predicting motivation and interest in training. In combination with the employee's expression of his perception of his deficiencies it constitutes a single input in the process of determining an agencies training and development needs. The program direction and supervisory inputs must be included

in any final decisions on training priorities.

Further study is needed to determine the relative weights that should be placed on each of the three sources of training information. Should the program needs, the supervisor's opinion, and the employee's perception of his need be all considered equally important or should circumstances make varying ratios of importance? Will career development improve employee loyalty to the organization? Can trainers, counsellors, personnel officers, and supervisors work together? Will employees become "wise" to career orientation indicators and begin "faking" them? How much savings in time, funds, and efficiency will result from a thorough career development program? How will it effect job turnover rates? Time and further research may give us these answers.

CHAPTER VI

SUMMARY

The recent national commitment of "optimum health and quality of life for all" adds urgency to the need for finding solutions to the problem of meeting the increasing health service demands in America. While many government agencies, universities, medical schools and schools of health have been working to increase the number of persons trained to produce health services, others have been urging in-service continuing education as a means of improving the productivity of existing health workers.

Upon making the decision to provide some staff training opportunities, the health administrator finds himself hard-pressed to decide which of his staff members should attend a given course or even what courses he should request for his staff. He is seldom able to predict, other than intuitively, who should receive further training, what training they should receive and how the training will affect his agency's operating efficiency. He needs an objective measure to aid him in making decisions relative to staff development.

The present study was designed to obtain information concerning the critical ingredients in the success or failure of in-service training programs -- trainee interest and motivation. An instrument was designed

to measure the presence of self-improvement interests and motivation (designated career orientation) in health workers. The "personalized" questionnaire was mailed to eight hundred and five public health workers in Oklahoma. Seven hundred seventy-eight (ninety-seven per cent) workers responded to the questionnaire indicating a considerable interest in training and self-improvement among Oklahoma health workers. Seven hundred thirty-three (ninety-one per cent) of the employees supplied completed questionnaires that could be analyzed and rated. The respondents represented all areas of public health workers in Oklahoma as to job classification, age, sex, years of formal education and years of public health experience.

The results of this study showed that there are considerable differences in the measurable career orientation of health workers in Oklahoma. Factors which were noted as having a positive correlation with career orientation were the worker's total years of formal education and his professional job classification. Factors which did not appear to affect career orientation were the job location in the state, age, years of public health service, sex, and the number of recent continuing education courses received. A positive correlation between career orientation rating and the worker's ability to express specific personal training needs was also noted.

The questions that were posed in the study and their results are summarized below:

1. Are there differences in the career orientation of health workers? Measurable differences were noted among seven hundred and thirty-three health workers in Oklahoma. According to the rating system used in the study these differences ranged from zero to ninety four points.

2. Are there significant differences in the career orientation of the major categories of public health workers? There are three statistically significant groupings of differences in career orientation of the major categories of health workers. These groups are: (1) Medical and miscellaneous specialty personal health service workers, (2) administrative, environmental health, public health nursing and other nursing personnel, and (3) clerical and maintenance personnel.

3. Is there a significant difference between professional health workers' and allied health workers' career orientation? There are significant differences between the groups collectively. However, individuals within the groups overlap considerably. Career orientation appears to be an individual characteristic that is not particularly dependent upon profession classification. A correllation between a workers professional classification and his career orientation rating was noted but the cause of this relationship was not identified.

4. What factors seem to contribute to the differences (if any) between major categories of public health workers? Only their years of formal education and job classification. Job classification appeared to contribute most to the differences noted in career orientation rating.

5. Does the occurrence of career orientation in health workers increase significantly with increased formal education? There is a positive correlation of 0.308. Again, individuals within various formal education groups varied considerably in their career orientation ratings.

6. Are there significant differences in the career orientation of the various age groups of health workers? Age was originally predicted to be a major factor in determining career orientation but this was not found to be the case. All age groups, with the exception of those under twenty years and those sixty-five or older, showed all possible ratings.

7. Do male health workers exhibit a significantly higher career orientation than female health workers? The study included five hundred nine females and two hundred twenty-two males and no statistical difference at the .05 probability level was found to exist between male and female health workers. The sample was of such size and variety as to include all normal variables common to health workers.

8. Does the length of a health worker's public health experience influence his career orientation rating? Except for the very new employees, years of public health experience do not affect a worker's career orientation rating.

9. Is there a relationship between a worker's career

orientation and his ability to express his training needs in a manner which will assist an administrator to establish training priorities? Health workers judged career oriented in the study expressed specific training needs on a ratio of two to one, when compared with those judged career indifferent. However, forty-eight per cent of all the respondents supplied specific useful training suggestions which would assist an administrator to establish training priorities. This finding indicated that health workers can be relied upon to assist in the development of in-service continuing education programs.

The findings of the study indicate that a worker's career orientation rating is a valuable indicator of his career interests and self-improvement motivation. This tool can be used by health administrators, training officers, personnel directors, and local supervisors, for predicting, in part, a worker's potential for growth and development. It will indicate his areas of interest and assist in the prediction of the use he will make of materials presented in particular training courses. Armed with the methods and materials described in this study, a health administrator should be able to put objectivity into his determination of training needs and his selections of training participants.

These findings and the outstanding voluntary response to this training and career interest study indicated that the time is right for staff development in Oklahoma. The employees expressed a positive need for more and better training. They were specific in their discussion of problems related to the accomplishment of their work and career goals.

This study implies that for Oklahoma: (1) Now is an opportune time to begin a staff development program, and (2) Oklahoma's public health workers have a much higher percentage of career goals than do

general workers in the U. S. (over three times higher). They show a high dedication to the health field and a positive attitude toward education.

This present career interest and opportunity could be exploited, via a well organized training program, to the point that the quality and quantity of health services in Oklahoma might be increased with the present personnel. The findings provide the Oklahoma State Department of Health with an objective base for planning continuing education, selecting training participants, and predicting who will best use training. The study promises to be an aid in justifying training budgets, insuring efficient use of training funds, identifying potential candidates for added responsibilities and improving employee morale.

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APPENDIX I

TRAINING ANALYSIS QUESTIONNAIRE

OKLAHOMA STATE DEPARTMENT OF HEALTH

TRAINING ANALYSIS QUESTIONNAIRE

INSTRUCTIONS: (1) Print in ink or type. (2) Answer each part clearly and completely. (3) If you need more space in any section please use the reverse side of the sheet.

NAME _____ EMPLOYEE No. _____ DATE OF BIRTH _____

DATE THIS FORM COMPLETED ___/___/___ , UPDATED ___/___/___ ___/___/___ ___/___/___ ___/___/___
Day Mo. Yr.

PART I EDUCATION SUMMARY

YEARS OF SCHOOLING COMPLETED: (Circle the highest grade completed in each level.)

GRADE SCHOOL 1 2 3 4 5 6 7 8 HIGH SCHOOL 9 10 11 12 H.S. Grad. Yes No COLLEGE 1 2 3 4 POST GRADUATE STUDIES 1 2 3 4 5 6 7 _____

COLLEGE AND UNIVERSITY EDUCATION: (Fill in the blanks and circle the appropriate degrees.)

1. UNDERGRADUATE STUDIES:

MAJORS	SEM HRS.	MINORS	SEM HRS.	OTHER AREAS OF STUDY INTEREST	SEM HRS.

TOTAL UNDERGRADUATE HRS: _____ DEGREES RECEIVED: None A.A., B.N., B.A., B.S., OTHER _____

2. GRADUATE STUDIES AND PROFESSIONAL EDUCATION:

MAJORS	SEM HRS.	MINORS	SEM HRS.

DEGREES RECEIVED: None M.A., M.S., M.D., M.P.H., Dr.P.H., Ph.D., OTHER _____

GRADUATE RESEARCH AREAS: _____

3. SPECIAL EDUCATION: (Business school, Trade school, Service school, etc. Do not include short courses or in-service training and continuing education coursework in this section!)

SCHOOL NAME AND LOCATION	ATTENDANCE Weeks	Hrs/Wk	PROGRAM OF STUDIES

DIPLOMAS, CERTIFICATES OR LICENCES RECEIVED: _____

CONTINUING EDUCATION:

(List all "Short Courses" and "In-service Training Programs" that you have participated in during the past ten years. Do not list seminar type courses or short course programs of less than 4 days duration.)

COURSE TITLES	LOCATION	ATTENDANCE DATES (Yr)	DAYS	HRS/DAY

LICENCES RECEIVED: _____ If additional space is needed, use reverse side of this sheet.

PART II EXPERIENCES

EMPLOYMENT RECORD: (List below in reverse order the positions you have held starting with your present or most recent employment. If more than one position or classification has been held with a given organization, list each position as a separate period of employment. Give as complete information as possible. If you need more space, use the reverse side of this sheet or an additional attachment. Please number each position.)

JOB TITLE	DATES OF SERVICE	SPECIFIC DUTIES
1.		

NON - EMPLOYMENT ACTIVITIES: (List non-job related activities you engage in, such as; civic or volunteer work, hobbies, club and professional memberships, extra curricular activities, sports and other community activities.)

ACTIVITY	No. YEARS OF INVOLVEMENT	ACTIVITY	YEARS OF INVOLVEMENT

PART III SKILL INVENTORY

INSTRUCTIONS: Listed below are groups of skills that are thought to be of value to public health personnel. Check each skill that you already have in the left-hand columns. Indicate how well you can do each skill. In the right-hand columns of each list check the type of training you would like to receive. Do not check a skill that you would not be willing to put forth the effort it takes to learn it.

I can do the skill checked to the following extent (✓)			I want training in the skills checked below. (✓)		I can do the skill checked to the following extent (✓)			I want training in the skills checked below. (✓)	
FAIR	WELL	TYPE OF SKILL	BEG.	ADV.	FAIR	WELL	TYPE OF SKILL	BEG.	ADV.
		OFFICE					**HOBBIES**		
		Typing _____ wpm					Drawing		
		Shorthand _____ wpm					Painting		
		Speedreading ____ wpm					Photography		
		Speedwriting ____ wpm					" Developing		
		Filing					Audiovisual machines		
		PBX Switchboard					(Type) _____		
		Telephone etiquette							
		Office Machines (Specify							
		TYPE) _____					Public Speaking		
							Therapy-type activities		
							(ie. Basketweaving, etc.		
		Bookkeeping					Specify) _____		
		Data Process machines							
		(type) _____					Talents (Specify)		
							Other _____		
		INDUSTRIAL							
		Auto repair					**LANGUAGES**		
		Construction					Read speak		
		Drafting					English ( ) ( )		
		Carpentry					Spanish ( ) ( )		
		Electrical					German ( ) ( )		
		Graphic Arts					Other ( ) ( )		
		Plans review							
		Plumbing							
		Surveying					**LICENCES**		
		Other _____							
							Drivers		
		LABORATORY					Chauffeur		
							Commercial Chauffeur		
							Other _____		

COMMENTS: _____

PART IV KNOWLEDGE AREAS

INSTRUCTIONS: Listed below are groups of knowledge areas considered to be of value to health personnel. In the left-hand columns please check (✔) each knowledge area in which you have already received some formal training. In the right-hand columns of each list please indicate the knowledge areas which you need and want in order to achieve your career goals. Indicate how soon you think you need the training by writing the number one (1) in the blank for those knowledge areas in which you think training is needed within the next six months; place the number two (2) in the blank for those knowledge areas in which training is needed within the next 18 months; and place a three (3) opposite those areas where you think you will need training sometime in the future to meet future responsibilities. It is expected that at a later date you will receive a checklist containing the specific courses that may be available in each broad knowledge area that you check. At that time you will be able to indicate the individual courses that you need. Do not check areas in which you have only an idle interest.

I have some training in the following checked areas.	KNOWLEDGE AREA	I need training in the areas below scheduled as 1, 2, or 3
	APPLIED ARTS AND SCIENCES	
	Aerospace studies	
	Anatomy	
	Biochemistry	
	Botany	
	Chemistry	
	Education	
	Engineering	
	Home Economics	
	Journalism	
	Mathematics	
	Microbiology	
	Pharmacy	
	Physical education/recreation	
	Physical Therapy	
	Physics	
	Political science	
	City and Regional Planning	
	Zoology	
	Other _____	
	BUSINESS ADMINISTRATION	
	Accounting	
	Business Communication	
	Economics	
	Finance	
	Management - Executive	
	" - Middle	
	" - Supervisory	
	Office Administration	
	The professional secretary	
	Other _____	
	LAW	
	Administrative	
	Business	
	Civil	
	Constitutional	

I have some training in the following checked areas.	KNOWLEDGE AREA	I need training in the areas below scheduled as 1, 2, or 3
	HEALTH	
	Biostatistics	
	Chronic diseases	
	Civil Defense	
	Communicable Diseases	
	Comprehensive health planning	
	Environmental health	
	Epidemiology	
	Health Administration	
	Health education	
	Health evaluation methods	
	Human Ecology	
	Laboratory practice	
	Nursing	
	Nutrition	
	Preventive Medicine	
	Safety/Accident prevention	
	School health	
	Technician courses (LPN etc.	
	Specify) _____	
	Other _____	
	HUMAN RELATIONS	
	Communication	
	Community organization	
	Consumer education	
	Counselling	
	Family life education	
	Human growth and development	
	Inter-personal relations	
	Public relations	
	Psychology	
	Race relations	
	Social work	
	Sociology	
	Urban development	
	Other _____	

PART V. PERSONAL INTERESTS

This section is strictly confidential. It will be separated from the main questionnaire, coded and analyzed independently. PLEASE MARK EVERY STATEMENT BY CIRCLING the opinion which best describes how you feel.
SA-Strongly Agree, MA-Moderately Agree, SLA-Slightly Agree, U-Undecided, SLD-Slightly Disagree, MD-Moderately Disagree, SD- Strongly Disagree, DU-Don't Understand the Statement.

EXAMPLE - The importance of Public Health in community life will decrease in the next ten years.

SA MA SLA U SLD MD SD DU

DEFINITION: For the purpose of this study, Continuing education/training shall mean; all formal learning experiences which increase the knowledge and/or skills of an individual that may be used to improve his capabilities in performing his work role in his chosen occupation. These experiences may either broaden and improve a worker in his present job or prepare him for advancement. They may be official college courses, short courses, in-service training, correspondence courses, seminars, conferences, workshops, field training, or other adult educational activities.

1. Continuing education/training in the health field is of interest and value to me in my professional role.

   SA MA SLA U SLD MD SD DU

2. The method(s) used to select individuals from my work unit for training is satisfactory.

   SA MA SLA U SLD MD SD DU

3. If I could continue to increase my salary I would prefer to remain in my present classification or job position.

   SA MA SLA U SLD MD SD DU

4. I would like to attain a higher classification even though it did not involve a salary increase.

   SA MA SLA U SLD MD SD DU

5. My present job is utilizing all my capabilities well.

   SA MA SLA U SLD MD SD DU

6. Most continuing education/training that I have received in the past has been of little value to me.

   SA MA SLA U SLD MD SD DU

7. I would like to prepare myself for advancement.

   SA MA SLA U SLD MD SD DU

8. I would like to know more about how what I am doing in my job relates to the overall public health picture.

   SA MA SLA U SLD MD SD DU

9. I would like assistance in planning my personal career.

   SA MA SLA U SLD MD SD DU

10. I would want my immediate supervisor to be the one to help in setting up my personal career plan.

    SA MA SLA U SLD MD SD DU

PART V. - contd.

11. I would like increased challenge in my work.

SA MA SLA U SLD MD SD DU

12. What percent of an individual's training costs should be paid by his employer?

0 10% 20% 40% 60% 80% 100%

13. If you had a chance to move to another job outside the health field, what percent salary increase would you need to receive in order to accept the change.

0 10% 20% 30% 40% 60% 80% Other

14. How many professional organizations do you belong to?

none 1 2 3 4 5 or more

15. I have a personal career plan. Yes No It is written down and reviewed periodically. Yes No

16. My immediate supervisor has discussed a plan for my continuing education/ training with me. Yes No Don't think so

17. I would like to be notified of all training opportunities available through the state or local health departments. Yes No Undecided

18. How did you select your first job in Public Health? (Check best one)
( ) Became interested through a friend.
( ) Through contact with public health workers.
( ) A Merit System referral.
( ) From a personal interest in health.
( ) Job advertisement
( ) Private employment agency referral.
( ) Other_____

19. Check the most important reasons why you don't attend more continuing education/training courses or programs.
( ) No time
( ) Cost
( ) Lack of availability of appropriate courses
( ) Home responsibilities
( ) Lack of interest
( ) No college credit
( ) Pressing workload
( ) Travel
( ) I am nearing retirement
( ) Other_____

Please answer the following questions briefly in your own words. If you need more space use the reverse side of the page.

20. List Your career objectives. _____
_____
_____

21. What are the first steps you would take in order to achieve each of the objectives in question 20? _____
_____
_____
_____

Part V. - contd.

22. How would you define an ideal program of training? _____

23. Looking back over your working life what would you say were the best decisions that you made? _____

24. If you were free to take any job, how would you describe the ideal job for you? _____

25. If you were being promoted and were asked to select a lower level employee to fill your present position, what training would he/she need in order to do what you do in addition to the minimum qualifications specified by the Merit System description of your job?

26. Please rank the ways of participating in training programs. Number from 1 to 5 only. List the most acceptable way as #1 and so on. In addition, please place an (X) next to the one least acceptable way to participate in training that you could accept and still participate in.

( ) A. On my own time and expense outside of working hours.
( ) B. On state or county time with all expenses paid by the state or county.
( ) C. On my own time if the state or county paid for course fees.
( ) D. On my own time and expense of my own work schedule could be adjusted to allow my attendance at day classes.
( ) E. During working hours if my pay continued and I paid for fees.
( ) F. At a professional training center such as the Oklahoma Center For Continuing Education at O.U. or the National Communicable Disease Center in Georgia at state or local expense.
( ) G. Other_____

27. What things or situations bother you most in your work? _____

28. Comments?_____

THANK YOU FOR YOUR COOPERATION IN THIS STUDY. PLEASE RETURN THIS COMPLETED FORM DIRECTLY TO ME, John Amadio, AS SOON AS YOU FINISH. A SELF-ADDRESSED ENVELOPE IS ATTACHED FOR YOUR CONVENIENCE.

APPENDIX II

INSTRUCTIONS FOR RATING THE WRITTEN RESPONSES TO THE OPEN ENDED QUESTIONS ON THE TRAINING ANALYSIS QUESTIONNAIRE

APPENDIX II

INSTRUCTIONS FOR RATING THE WRITTEN RESPONSES TO THE OPEN ENDED QUESTIONS ON THE TRAINING ANALYSIS QUESTIONNAIRE

The questions listed below must be rated on the basis of the question, "HOW clearly defined are the respondent's ideas about the subject covered in the question."

Listed below are the basic judgments that must be made in order to rate each response. Choose the rating number that most nearly describes the statements made by the respondent. If the response appears to be halfway in between two of the rating descriptions choose the rating with the largest number. When a response contains a number of items relating to the subject choose the rating number which is the smallest.

CAREER ORIENTED RATING

Number 20 - List your career objectives.

Rating No.

0 = No Response

1 = A clear, concise statement of specific occupational objectives. An indication the writer knows specifically what he wants to become. May even include where and when this will occur.

Examples: Get a M.P.H. degree. To retire. To be a farmer. Continue in my present job. I have reached my objectives.

2 = General, non-specific personal goals. Indicating that the writer has been thinking about his career objectives but has not come to a specific decision yet.

Examples: Advance in my field as far as I can. Keep my husband in school or other family goals. To take training in a specific field.

APPENDIX II -- Continued

INSTRUCTIONS FOR RATING THE WRITTEN RESPONSES TO THE OPEN ENDED QUESTIONS ON THE TRAINING ANALYSIS QUESTIONNAIRE

3 = A general statement of goals that reflect a repeat of the writer's professional or general work unit goals.

Examples: Be the best sanitarian in the state. Provide top quality nursing care to all my patients. Remove all air pollution from Oklahoma County. To improve my skills as a nurse, etc.

4 = A broad relatively meaningless statement about "ideals", personal need or work requirement.

Examples: Do my job well. Increase my pay. To enjoy my work. To enforce health laws. None or don't have any goal. To be needed. There is no chance for advancement in my area.

Number 21 - What are the first steps you would take in order to achieve each of the objectives you listed in question 20?

0 = No Response

1 = A clear, concise statement of specific, realistic steps planned to be taken in order to reach the objectives listed in #20. (The responses that do not relate to #20 should not be rated 1.)

Examples: Enroll at O.U. next fall. Get funding for my education. Place an advertisement. Apply for the job. Take a specific course (must be named).

2 = Specific steps are indicated but apparently not related to the objectives in #20.

3 = General statements that indicate very little planning.

Examples: Continue my education (previously not indicated). Take more training. Study (Must require some action on the part of the respondent.)

4 = Other statements or excuses for not improving themself, and statements showing little or no action.

Examples: Do my job well. Watch for opportunities. Read. I don't know. Please my supervisor.

APPENDIX II -- Continued

INSTRUCTIONS FOR RATING THE WRITTEN RESPONSES TO THE OPEN ENDED QUESTIONS ON THE TRAINING ANALYSIS QUESTIONNAIRE

Number 23 - Looking back over your working life what would you say were the best decisions that you made?

0 = No Response

1 = Positive specific decisions made in the past that relate to a career, including education. Does not need to relate to health.

Examples: Getting an M.P.H. Going into nursing. Getting married. Leaving a job in business. Joining the navy.

2 = General statement not indicating a particular career decision.

3 = Other responses not included above like "None" or "I don't know."

Number 24 - If you were free to take any job, how would you describe the ideal job for you?

0 = No Response

1 = A clear, specific position or job title, include "the one I have now".

Examples: Health Commissioner. President of the U.S. The one Mrs. Jones has. A legal secretary to _____. San. III

2 = Some clear description of a type of job.

Examples: Legal secretary. A nurse, to teach, Dictation.

3 = A general description of a "working condition" and/or situations that they feel are ideal.

Example: One with high salary, nice office, nice boss, good copy machines, cooperative co-workers.

4 = Other general responses not covered by the above.

Examples: Challenging. One I would be happy with. One that provides educational opportunities.

APPENDIX II -- Continued

INSTRUCTIONS FOR RATING THE WRITTEN RESPONSES TO THE OPEN ENDED QUESTIONS ON THE TRAINING ANALYSIS QUESTIONNAIRE

Number 27 - What things or situations bother you most in your work?

0 = No Response

1 = Clear response that relates to conditions or situations that tend to BLOCK work PERFORMANCE, Professional or personal GROWTH, or ACCOMPLISHMENT of program goals.

Examples: Not enough time to complete my work. Public apathy toward health activities. Lack of opportunity for advancement or self-improvement. Unnecessary paper work that keeps me from providing patient care.

2 = A description of problems or situations relating to administrative policy or supervisory techniques, where these are not specifically given as reasons for blocking job performance as in 1 above. Do not include interpersonal conflicts with supervisors.

Examples: Too many programs. Too many supervisors. Poor management. Unnecessary paper work (no reason why). Not "in" on things. Hazy lines of authority. Organization. Inconsistent administrative policies. Lack of recognition. Red tape. Supervisor expects too much. Lack of training opportunities. Favoritism. Personnel shortage. Unkept promises. Unnecessary paper work. (Reason not given to indicate it blocks performance.)

3 = Interpersonal relationship problems. Employee-supervisor conflicts. Communication problems.

Examples: Poor communication. Incompetent co-workers. Others not working hard. Indifferent workers. Short-tempered supervisors. Incompetent or poor supervision.

4 = Environmental or work conditions.

Examples: Lack of office space. Workload, supplies. Job requirements. (Like, inspection, lifting patients, travel). Inadequate travel allowance. Filling out questionnaires. Low salaries. Lack of privacy. Too much paper work. (not qualified)

APPENDIX II -- Continued

INSTRUCTIONS FOR RATING THE WRITTEN RESPONSES TO THE OPEN ENDED QUESTIONS ON THE TRAINING ANALYSIS QUESTIONNAIRE

5 = Other statements that reveal that the writer is satisfied with all conditions or has no problems.

CORRELATION OF IBM RATINGS TO ASSIGNED VALUES

CAREER ORIENTED

	IBM Rating	Point Value
20.	0	0
	1	25
	2	15
	3	10
	4	5
21.	0	0
	1	20
	2	15
	3	10
	4	5
23.	0	0
	1	20
	2	10
	3	5
24.	0	0
	1	20
	2	15
	3	10
	4	5
27.	0	0
	1	20
	2	10
	3	5
	4	2
	5	0

CAREER STABILIZED

	IBM Rating	Point Value	
20.	0	0	
	1	10	(Attained goal)
	2	5	(Prog. or Prof. goal)
	3	0	(Other)
24.	0	0	
	1	10	(Present position)
	2	5	(Satisfaction)
	3	0	(Other)

APPENDIX III

QUESTIONNAIRE COVER LETTERS

APPENDIX III

QUESTIONNAIRE COVER LETTERS

Oklahoma State Department of Health Letterhead

November 24, 1969

All Staff,
State and Local
Health Departments,
State of Oklahoma

Re: Health Manpower Training Analysis Questionnaire

Dear Fellow Health Worker:

Do you have any ideas concerning your training needs? The attached TRAINING ANALYSIS QUESTIONNAIRE is the first phase of a program designed to improve employee training and development. This questionnaire has been designed to assist health workers in expressing their training desires to their administration. Your completed questionnaire will be the base for continuing education/training programs designed to meet your needs. A method will be provided to keep this record up to date, ready for quick referral for purposes of assignment, promotion, education and career development.

Direct employee benefits will include: (1) accurate information concerning your interests and desires; (2) opportunities to use your individual talents; (3) elimination of surveys duplicating personal history information, and (4) all employees will be considered for all job opportunities for which they are qualified.

This is a project that will be of direct benefit to you, but in order for it to be effective all parts of the form must be complete and accurate. Although you may have furnished some of this information previously, please complete all sections. All responses will be treated confidentially and evaluated by an independent agent from the University of Oklahoma School of Health.

I solicit your full cooperation in completing these forms. Please take a few minutes today to complete the forms and return them in the enclosed self-addressed envelope.

Sincerely,

/s/ A. B. Colyar

A. B. Colyar, M.D.
Commissioner of Health

ABC:ok

Enclosures

APPENDIX III -- Continued

QUESTIONNAIRE COVER LETTERS

Oklahoma City,
Oklahoma

November 24, 1969

Dear Fellow Health Worker:

You have before you an opportunity to speak out about your training needs and at the same time contribute to the improvement of health training programs.

The attached TRAINING ANALYSIS QUESTIONNAIRE has been designed with you in mind. It was developed to demonstrate that health workers such as you could express their training needs to their administration. The possibilities for advantages to health workers that could come from this project have been enumerated in recent employee newsletters but there are many more. Basically, this is your chance to be heard.

Parts I, II, III, and IV will be processed electronically into your personal information record providing assurance that you will receive equal opportunities with all other health workers in the state. Part V will be separated from the rest of the questionnaire after receiving a coded identification. Only carefully selected individuals will have access to this code. Part V will then be analyzed for program weaknesses. A numerical summary will be published in a spring newsletter.

Please follow all directions carefully. Do not discuss the questions with your fellow workers or your supervisor. We want your opinions, not theirs. If you have a question or you do not understand any part of the questionnaire, please write to me about your problem in the margin or on the reverse side of the sheet. If the problem is severe, I will contact you.

This project is intended to be an aid to the public health worker but it can only aid you in the amount that you let it. Your first impressions may be your best answer. Do not look for tricky questions, there are none. I realize that you are constantly bombarded with questionnaires and are probably tired of them. Remember though, this one is for you. You will be hearing more on this in the near future. A confidential envelope is provided for your responses.

Yours truly,
/s/ John B. Amadio

John B. Amadio, M.P.H.
Graduate Student
O.U. School of Health

APPENDIX IV

DISCIPLINE COMPOSITION OF THE MAJOR CATEGORIES OF HEALTH WORKERS IN OKLAHOMA

APPENDIX IV

DISCIPLINE COMPOSITION OF THE MAJOR CATEGORIES OF HEALTH WORKERS IN OKLAHOMA

The Medical Group consisted of:

Area Medical Officer
Medical Officer
Senior Medical Officer
Dentist I
Medical Specialist
Senior Medical Specialist

The Public Health Nurses Group consisted of:

Public Health Nurse I
Public Health Nurse II
Public Health Nurse III
Public Health Nurse IV

The Other Nursing Group consisted of:

Home Health Aide
Licensed Practical Nurse
Public Health Community Worker
Nurse's Aide

The Miscellaneous Personal Health Group consisted of:

Assistant Chemist
Chemist
Principal Chemist
Sanitary Chemist
Entomologist
Laboratory Helper
Medical Technologist
Microbiologist I
Microbiologist II
Microbiologist III
Virologist
Psychological Consultant

APPENDIX IV -- Continued

DISCIPLINE COMPOSITION OF THE MAJOR CATEGORIES

OF HEALTH WORKERS IN OKLAHOMA

Psychologist I
Psychologist II
Psychologist IV
Child Development Specialist I
Child Development Specialist II
Child Development Worker
Social Worker I
Social Worker II
Social Worker Consultant
Speech and Hearing Coordinator
Speech Clinician
Health Service Civil Defense Officer I
Health Service Civil Defense Officer II
Information Representative I
Information Representative II

The Environmental Health, Sanitarians Group consisted of:

Sanitarian I
Sanitarian II
Sanitarian III
Assistant Engineer
Engineer
Engineer-in-Training (Architectural) II
Junior Architectural Engineer
Mechanical Engineer
Principal Architect
Principal Engineer
Public Health Engineering Aide I
Public Health Engineering Aide II
Senior Engineer
Environmental Program Specialist I
Environmental Program Specialist II
Field Representative
Accreditation Representative I
Accreditation Representative II
Public Health Assistant I
Public Health Assistant II

The Executive and Supervisory Group consisted of:

Chief Toxicologist
Chief Virologist

APPENDIX IV — Continued

DISCIPLINE COMPOSITION OF THE MAJOR CATEGORIES

OF HEALTH WORKERS IN OKLAHOMA

Chief of Administrative Services
Chief of Community Health Services
Chief of Environmental Health Services
Chief of Health Care Facilities Services
Chief of Health Planning, Research and Development
Chief of Lab and Communicable Disease Control
Chief of Preventive Medical Services
Assistant Director, Division of Health Facilities
Assistant Director, Division of Public Health Education
Assistant Director of Fiscal Services
Assistant Director of Public Health Nursing
Director, Division of Air Pollution Control
Director, Division of Food, Drug and Milk Control
Director, Division of Health Facilities
Director, Division of Occupation and Radiological Ht.
Director, Division of Personnel
Director, Division of Preventive Dentistry
Director, Division of Public Health Education
Director, Division of Public Health Nursing
Director, Division of Statistics
Director, Division of Water Quality Control
Director of Fiscal Services
Public Health Laboratory Director
Director, Hospital Division
Microbiologist IV
Public Health Nurse V
Supervisor of Duplicating Machine Operators
Supervisor of Health Planning, Research and Development
Supervisor of Hospital Patient Care Services
Supervisor of Milk Control
Supervisor of Nursing Home Services
Supervisor of Nutrition Services
Supervisor of Sanitarian and Plumbing Services
Public Health Administrator (non-medical)
Staff Assistant I
Staff Assistant II
Staff Assistant III
Administrative Assistant
Administrative Assistant to the Commissioner
Personnel Assistant

The Accounting and Clerical Group consisted of:

Account Clerk II

APPENDIX IV -- Continued

DISCIPLINE COMPOSITION OF THE MAJOR CATEGORIES

OF HEALTH WORKERS IN OKLAHOMA

Account Clerk III
Accountant I
Accountant II
Supervisor of Public Health Statistics
Public Health Statistician
Statistician
Clerk I
Clerk III
Clerk IV
Inventory and Supply Clerk
Statistical Clerk
Typist Clerk I
Typist Clerk III
Nosologist
Secretary I
Secretary II
Stenographer Clerk I
Stenographer Clerk III

The Maintenance Group consisted of:

Bookkeeping Machine Operator
Junior Photostat Operator
Key Punch Operator
Motion Picture Operator
Multilith Machine Operator
Photostat Operator
X-Ray Technician
Manual Helper, Local Health Departments
Manual Helper
Truck Driver

APPENDIX V

METHODS OF DETERMINING HEALTH MANPOWER TRAINING AND DEVELOPMENT NEEDS IN U.S. STATE DEPARTMENTS OF HEALTH

APPENDIX V

METHODS OF DETERMINING HEALTH MANPOWER TRAINING AND DEVELOPMENT NEEDS IN U.S. STATE DEPARTMENTS OF HEALTH[1]

Type of Training Program[2]	Total	METHOD USED TO DETERMINE STAFF TRAINING NEEDS				
		Supervisor Only	Program Thrust Only	Supervisor + Program	Supervisor + Employee	Supervisor, Program, Employee
No Organized Program	29	14	2	6	4	0
Partially Organized	10	3	0	5	1	1
Well Organized Program	7	0	0	0	4	3
Totals	46	17	2	11	9	4
Percent	92%	36.9%	4.3%	23.9%	19.6%	8.7%

[1]The information presented is the results of a survey conducted by the Oklahoma State Department of Health, August, 1969.

[2]Evaluations were based on written responses provided by individual state health officers or their training staff. Forty-six of the 50 states responded. Percentages were based on the 46 participants. The inclusion of the four states not responding would not significantly alter the findings.

Additional Information

Twenty-one states indicated that they had a training officer. Nine of these states indicated that they had recently created an office of man-

APPENDIX V -- Continued

METHODS OF DETERMINING HEALTH MANPOWER TRAINING AND

DEVELOPMENT NEEDS IN U.S. STATE

DEPARTMENTS OF HEALTH

power training and were currently in the process of planning and organization. All but two states expressed a dissatisfaction with their present method of determining staff training needs.

OSDH/JBA 11/'69

APPENDIX VI

PRE-TEST INSTR'JMENT AND PRE-TEST RESULTS -- PART V

TRAINING ANALYSIS QUESTIONNAIRE

APPENDIX VI

PRE-TEST INSTRUMENT AND PRE-TEST RESULTS -- PART V

TRAINING ANALYSIS QUESTIONNAIRE

Pre-test Period: November 3 - 17, 1969.

Population: All 81 full-time employees of the Oklahoma City-County Health Department.

Response: 53 questionnaires were returned within two weeks. The responses represented a 65% return. The distribution of the respondents were:

Nurses	12
Sanitarians	13
Clerical	14
Miscellaneous	14
Total	53

Explanation of Symbols Used in Tabulating Pre-test Results:

X = Statement dropped from the questionnaire

NR = No Response

The respondents indicated the opinion which best described how they felt by circling: SA - Strongly Agree, MA - Moderately Agree, SLA - Slightly Agree, U - Undecided, SLD - Slightly Disagree, MD - Moderately Disagree, SD - Strongly Disagree, DU - Don't Understand the Statement.

TABULATION OF PRE-TEST RESULTS -- OKLAHOMA CITY-COUNTY HEALTH DEPARTMENT

Part V. Personal Interests

1. The importance of Public Health in community life will decrease in the next decade.

SA	MA	SLA	U	SLD	MD	SD	DU	NR
1				1		50		1

(This item was used for example in final draft)

APPENDIX VI -- Continued

PRE-TEST INSTRUMENT AND PRE-TEST RESULTS -- PART V

TRAINING ANALYSIS QUESTIONNAIRE

2. Continuing education/training in the health field is of interest and value to me in my professional role.

SA	MA	SLA	U	SLD	MD	SD	DU	NR
41	9	2					1	

X 3. The training of personnel after they have worked at a job for a period of time is beneficial.

SA	MA	SLA	U	SLD	MD	SD	DU	NR
40	10		2				1	

4. The method(s) used to select individuals from my work unit for training is satisfactory.

SA	MA	SLA	U	SLD	MD	SD	DU	NR
3	15	3	7	7	7	7	3	1

X 5. I would like to increase my capabilities on my present job.

SA	MA	SLA	U	SLD	MD	SD	DU	NR
44	5	2						1

6. If I could continue to increase my salary I would prefer to remain at my present classification.

SA	MA	SLA	U	SLD	MD	SD	DU	NR
17	6	1	4	1	3	18	1	2

7. I would like to attain a higher classification even though it did not involve a salary increase.

SA	MA	SLA	U	SLD	MD	SD	DU	NR
14	10	1	4	2	6	15		1

8. My present job is utilizing all my capabilities well.

SA	MA	SLA	U	SLD	MD	SD	DU	NR
8	15	5	2	3	10	10		1

APPENDIX VI -- Continued

PRE-TEST INSTRUMENT AND PRE-TEST RESULTS -- PART V

TRAINING ANALYSIS QUESTIONNAIRE

9. Most continuing education/training that I have received in the past has been of little value to me.

SA	MA	SLA	U	SLD	MD	SD	DU	NR
	3	4	1	4	9	27	1	5

X 10. Continuing education/training gives me personal satisfaction.

SA	MA	SLA	U	SLD	MD	SD	DU	NR
37	10	3	1	1		1		

11. Continuing education/training takes too much time and money.

SA	MA	SLA	U	SLD	MD	SD	DU	NR
3	4	2	2	4	10	28		

12. I would like to prepare myself for advancement.

SA	MA	SLA	U	SLD	MD	SD	DU	NR
32	7	6	1	1	3	1	1	1

13. I would like increased challenge in my work.

SA	MA	SLA	U	SLD	MD	SD	DU	NR
29	10	6	1	1	3	2	1	

14. I would like to know more about how what I am doing in my job relates to the overall public health picture.

SA	MA	SLA	U	SLD	MD	SD	DU	NR
24	15	2	5	2	2	2		1

15. I would like help in setting up a personal career development plan.

SA	MA	SLA	U	SLD	MD	SD	DU	NR
18	8	7	5	3	15	16		1

APPENDIX VI -- Continued

PRE-TEST INSTRUMENT AND PRE-TEST RESULTS -- PART V

TRAINING ANALYSIS QUESTIONNAIRE

16. I would want my supervisor to be the one to help in setting up my career plan.

SA	MA	SLA	U	SLD	MD	SD	DU	NR
11	8	2	10	6	5	6	1	4

17. What percent of an individual's training costs should be paid by his employer?

0	10	20	40	60	80	100%	DU	NR
2	1	5	1	14	5	23	1	1

18. If you had a chance to move to another job outside of the health field, what percent salary increase would you need to receive in order to accept the change?

0	10	20	40	60	80	Other	NR
3	4	12	13	6	5	7	3

X 19. I would be willing to pledge future service time to an organization in exchange for the equivalent of one year full-time training. Indicate how much service.

None	6 mo.	1 yr.	2 yrs.	5 yrs.	Other	DU	NR
9	5	12	10	4	5	5	3

X 20. I have worked at my present position

Less than 2 yrs ( ),	2 to 4 yrs ( ),	5 to 9 yrs ( ),	over 9 yrs ( )
12	22	9	10

21. How many professional organizations do you belong to?

None	1	2	3	4	5 or more	NR
18	7	12	5	8	3	1

22. I have a personal career plan. Yes (16) No (36) 1
It is written down and reviewed periodically. Yes (10) No (35) 8

APPENDIX VI -- Continued

PRE-TEST INSTRUMENT AND PRE-TEST RESULTS -- PART V

TRAINING ANALYSIS QUESTIONNAIRE

23. My supervisor has discussed a plan for continuing education/training with me. Yes (7) No (39) I don't think so (6) NR - 1

24. List your career objectives. Clear-cut objectives - 10/53.

25. What are the first steps you would take in order to achieve each of these objectives in question 24? Clear-cut steps - 10/53 Not all same 10 as in #24

Please answer the following questions briefly in your own words. If you need more space use the reverse side of the page.

26. How did you select your first job in Public Health? Through a friend (9), Contact w/PH worker (6), Merit system referral (10), personal interest in health (8), other (8)

(Comment - this item was changed to a multiple choice item in final questionnaire.)

27. Indicate the five most important reasons why you don't attend more continuing education/training courses or programs. Time (18), cost (22), availability of appropriate courses (11), home responsibilities (5), No opportunities (8), Pressing work load (4), Travel (4), Retirement age close (2), Other (10)

(Comment - this item was changed to a multiple choice item in final questionnaire.)

X 28. What does continuing education/training mean to you? Clear description (12)

29. How would you define an ideal program of training? Clear description (16)

X 30. If you were the supervisor of the staff working in your present position, what would you see as the most important training needs of your group? Specific needs (12)

31. Looking back over your career what would you say were the best decisions that you made? Clear answers (27)

32. If you were free to take any job, how would you describe the ideal job for you? Clear description (22)

APPENDIX VI -- Continued

PRE-TEST INSTRUMENT AND PRE-TEST RESULTS -- PART V

TRAINING ANALYSIS QUESTIONNAIRE

X 33. What is the mission or goal of your work unit? Specific program goals enunciated (10).

34. If you were being promoted and were asked to select a lower level employee to fill your present position, what training would he/she need in order to do what you do in addition to the minimum qualifications specified by the merit system description of your job? Specific needs (23)

**35. Please rank the following possible ways of participating in training programs. Numbering from 1 to 5, list the most acceptable way for you to receive training. In addition, please place an (x) next to the least acceptable form of training you would accept.

** For	Against	
8	21	( ) On my own time and expense outside of working hours.
35	2	( ) On state or county time with all expenses paid by the state or county.
32	2	( ) On my own time if the state or county paid for course fees and supplies.
24	5	( ) On my own time and expense if my own work schedule could be adjusted to allow my attendance at day classes.
21	2	( ) On state or county time and expense, no travel or per diem.
28	2	( ) During working hours if my pay continued and I paid for fees, etc.
6	11	( ) I would rather not take training.
30	3	( ) On the job during working hours with local instructors.
28	0	( ) At Oklahoma College of Continuing Education, National Communicable Disease Center, or some such center at state or local expense.
1	0	( ) Other

No Response = 2

36. What bothers you most in your work? Answers: clear-cut problems (33) relating to: A. Environment (2); B. Interpersonal Relations

APPENDIX VI -- Continued

PRE-TEST INSTRUMENT AND PRE-TEST RESULTS -- PART V

TRAINING ANALYSIS QUESTIONNAIRE

(4); C. Emp-Supv. Relations (11); D. Policy (8); E. Use of Private Auto (1); F. Lack of Contact with overall health program (Field Orientation) (4); G. Incompetent co-workers (3); H. Non-dedicated personnel (4); I. Work load (7); J. Politics (2); K. Other (11).

37. I would like to be notified of all the training opportunities available through the health department. Yes (35) No (6) Undecided (5) NR (3)

THANK YOU FOR YOUR COOPERATION IN THIS STUDY. PLEASE RETURN THIS COMPLETED FORM DIRECTLY TO ME, MR. AMADIO, AS SOON AS YOU FINISH. A SELF-ADDRESSED ENVELOPE IS ATTACHED FOR YOUR CONVENIENCE.

11/'69
JBA