ASSESSMENT OF FOOD SERVICE WORKER KNOWLEDGE AND ON THE JOB PERFORMANCE

By

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THE JOB PERFORMANCE

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CHAPTER I

INTRODUCTION

The need to provide sound, effective educational training for foodservice supervisors and staff in the field of dietetics is a nation-wide challenge to dietetic educators. Many small foodservice operations and government-funded nutrition programs do not have access to the services of a full-time registered dietitian for staff training. Since qualified professionals are needed to train food service staff, if registered dietitians are not available, these professionals often rely upon food service supervisors for staff training. Considering current economic conditions and cuts in government funding, the services of dietitians in small programs are not likely to increase while the services of foodservice supervisors and staff are expected to increase. The foodservice supervisor who has limited knowledge in staff training and is accountable for overall operational needs however may leave staff training as a lesser priority. (Duties and resp., 1954 and Calvert, 1982)

The 1972 Study Commission on Dietetics stated that "dietitians must learn to delegate some of their historic

tasks and roles to other less highly trained workers. With a rising demand for their services and with those services requiring higher levels of knowledge and skilled dietitians simply cannot be used in the performance of duties which are routine and repetitive" (Study Commission, 1972, p. 42). The 1972 commission envisioned that a large number of support personnel would be needed in the future.

Since that time, programs to train support personnel have been established throughout the country as part of high school vocational programs, adult education programs and hospital education programs (Study Commission, 1984). Accordingly, such a program was desired and implemented in Oklahoma entitled The Dietetic Support Personnel Training Program (ODSPTP) (Appendix A).

Three levels or types of support personnel were identified and incorporated in the design of the competency-based curriculum. The type levels were Food Service Worker, Food Production Worker, and Food Service Supervisor. The need to evaluate the effectiveness of the first level (Food Service Worker) was of high interest to the State Vocational-Technical Administration.

Purpose and Objectives

The purpose in this study was to compare the relationship between the Food Service Worker students'

test scores following completion of the training course to the employee rating scores for the Food Service Worker as related to job performance.

Specific objectives are: 1. To determine the overall affect of the state foodservice workers' test scores to on the job performance ratings. 2. To determine if selected institutional variables affected the association of test scores with on the job performance scores.

Hypothesis

1. There will be no significant correlations between Food Service Worker test scores and each of the one the job performance ratings (Total Duty Ratings, TDR; Rated Quality, RQ; Rated Effectiveness, RE; Rated Productivity, RP).

2. There will be no significant correlation between Food Service Worker test scores and each of the on the job performance ratings based on four institutional variables.

a) urban - rural

b) nursing home - hospital

c) bed size lower than 80 - bed size higher than 80

d) limited visits - frequent visits

Assumptions

1. All teaching done by the registered dietitians was similar.

2. All the subjects started out at the same basic knowledge level before taking the Food Service Worker course.

3. All evaluators rated subjects in a similar method.

Limitations

1. Tests were administered at the conclusion of the foodservice training by the instructors of each course. Therefore, the date and time of test administration varied for each group of students.

2. The students' supervisors completed the performance evaluation ratings at varying times.

3. The length of time between completion of the course and on the job performance evaluations varied for respondents.

4. Only students completing the Food Service Worker course during 1984 were studied.

Definition Of Terms

Competency--the quality of being functionally adequate in performing tasks and assuming the role of a specified position (Gale and Pol, 1975).

Competency-based education--an educational process in which the recipient (prospective learner) is required to demonstrate mastery or attainment of the specified criteria (Palardy and Eisele, 1972).

Dietary manager--a skilled professional who has successfully completed a high school education or the equivalent and a training program approved by the American Dietetic Association (as of January, 1985 by DMA) and who meets the continuing education requirements of the Dietary Managers Association.

Dietary Managers Association (DMA)--the professional organization of dietary managers.

Duty Ratings--eight task/duty areas rated by employers for the performance evaluations.

Duty Scores--eight task/duty areas dealing with skills and knowledge of each scored on the Food Service Worker tests.

Effectiveness--the degree to which the system accomplishes what it set out to accomplish; the degree to which the "right" things were completed. A measure of an organizational system's performance which focuses on the output side of the system. (Sink, 1985, p. 42)

Food Service Worker (FSW)--a person completing 30 class hours and 50 clinical hours according to the first course level of the Oklahoma Dietetic Support Personnel Training Program. He or she may work in such occupations

as dietary aide, dishwasher, cafeteria worker, trayline worker, or other entry-level food service positions (ODSPTP, 1983).

Food Production Worker (FPW)--a person completing the Food Service Worker level or challenge exam, as well as 48 class hours and 80 clinical hours according to the second course level of the Oklahoma Dietetic Support Personnel Training Program. He or she may work in such occupations as cook's helper, baker's helper, salad cook, or entry-level cook (ODSPTP, 1983).

Food Service Supervisor (FSS)--a person successfully completing High School or General Educational Development Testing (GED), Food Service Worker, Food Production Worker or challenge exams for these levels. The person must also have successfully completed 90 class hours and 150 clinical hours according to the third and final course level of the Oklahoma Dietetic Support Personnel Training Program. He or she may work in the capacity of dietetic services supervisor in a nursing home or small hospital with a registered dietitian or supervisor of a designated area within a large health care facility dietary department (ODSPTP, 1983).

Job Competency/Performance--those activities, skills, or performances deemed essential to assume the duties of a specific employment position (Morris, 1973).

Oklahoma Dietetic Support Personnel Training Program (ODSPT)--a dietetic training program developed for

Oklahoma's food service needs. The program is taught in vocational-technical schools across the state. (ODSPTP, 1983)

Performance Ratings (PR)--employee ratings that measure the subject on quality (RQ), productivity (RP) and effectiveness (RE) of his/her job performance.

Productivity--the relationship of the amount produced by a given system during a given period of time, and the quantity of resources consumed to create or produce those outputs over the same period of time. (Sink, 1985, p. 3)

Quality--the degree to which the system conforms to requirements, specifications, or expectations; conformity to specifications and a timeliness criteron determined by quality attributes. (Sink, 1985, p. 43)

Rated Quality (RQ)--a term used to measure and evaluate the subjects quality (meeting job standards) of work on the job (Appendix E).

Rated Productivity (RP)--a term used to measure and evaluate the subjects productivity on the job (Appendix E).

Rated Effectiveness (RE)--a term used to measure and evaluate the subjects effectiveness on the job (Appendix E).

Task/Duty Criteria--this criteria was determined from the daily tasks and duties needed by foodservice workers for satisfactory job performance. Therefore, specific skills and knowledge levels were determined for each and

incorporated into the FSW training course.

Total Duting Ratings (TDR)--employee ratings that measure the subjects on the job performance in the eight task/duty areas.

CHAPTER II

REVIEW OF LITERATURE

Educational Overview

There are many educational theories and techniques used for planning and implementing dietetic training curriculum across the nation. The Oklahoma Dietetic Support Training Program used a competency-based approach for three levels of dietary support personnel (Food Service Worker, Food Production Worker, Food Service Supervisor). The following material gives a brief overview about competency-based education.

Competency-Based Education

Competency-based education (CBE), also referred to as "performance-based education" (PBE), has attracted widespread attention in past years (Houston, 1977). Although first applied to teacher education in the form of competency-based teacher education (CBTE) and performance-based teacher education (PBTE), the movement has spread to the education of professionals and non-professionals in many other fields and to the training of personnel in industry. In 1972, the American Dietetic Association

(ADA) endorsed CBE by stipulating that by 1980 all undergraduate programs must meet "Plan IV" of the Association's "Minimum Academic Requirements for ADA Membership." Requirements in Plan IV are expressed in terms of basic competence and knowledge areas rather than in specific credit hours and courses as in the previous "Plan III" (ADA Directory, 1976). According to Hart (Hart, 1974) these requirements are competency based to allow for greater freedom in curriculum planning. The competency-based approach was also used in various diet technician and dietetic support personnel training programs. (How To Qualify, 1986 and ODSPTP, 1983)

History and Background of Dietetic Education and Training

As early as 1943, the American Dietetic Association (ADA) recognized the need for delegation of duties to non-professional personnel. (Commission to Develop a Glossary...,1974) A committee within the association's council on war activities studied the problem of training "nutrition aides". The following year, the Community Nutrition Section sponsored a project to prepare a training outline for dietary aides.

After World War II, dietitians were still in short supply and the profession gave serious thought to training supervisory personnel. Between 1945 and 1950, leaders in the profession placed emphasis on developing the

executive ability of the dietitian, including the functions of policy-making and overall management, and delegating day-to-day work of routine supervision to non-professional personnel.

During this time of study and sharing among concerned dietitians the title "foodservice supervisor" was chosen as most suitable for the non-professional worker who was to assist the dietitian in routine administrative tasks. The next step was to define the duties and responsibilities of the foodservice supervisor. These were published in 1954 (Duties and Resp., 1954) together with an organizational chart showing the responsibility of this position.

In 1955, a "Tentative Trial Outline of Classroom Instruction-The Training of the Food Service Supervisor" manual was published (Comm. to Study, 1954). This outline was to serve as a guide for establishing a standardized educational program for food service supervisors. The American Dietetic Association committee proposed the course to be offered in two parts: the first semester consisted of 90 hours of classroom work in a vocational school, followed by a second semester of supervised practice in a hospital. A second manual "First Tentative Trial Outline of Hospital Experience", was prepared (Comm. to study; Part II, 1954) for the dietitian's use in supervising the practice period of the

student in the hospital. During the next five years, training programs were established in various areas of the country, usually in cooperation with adult and vocational high school systems (Williams, 1977).

Originally, the position of foodservice supervisor was envisioned as existing only in a hospital where at least one professionally qualified dietitian might serve as the supervisor's superior. In the intervening time, some change in the philosophy has emerged concerning this position. As the position of foodservice supervisor has become firmly established, in larger institutions it has in some cases come to encompass specializations, such as administration or patient foodservice. In other situations, usually in small institutions of less than 100 beds, supervisors have been designated as responsible for daily over-all operation of food service and are usually directly responsible to the administrator (The Food Service Supervisor, 1965; Kline, 1972).

Dietary Managers Association

By 1958, a number of foodservice supervisors had been trained in recognized courses, and an ADA committee was appointed to investigate the possibility of an organization of foodservice supervisors. The report of that committee led to establishing such an organization (The Food Service Supervisor,1965).

In 1960, the committee reported to the executive board of ADA that the organization would be known as "The Hospital, Institutional and Education Food Service Society (HIEFSS)". By 1976, HIEFSS reported over 8,000 members, with 44 state affiliate societies. The organization was sponsored by ADA at both national and state levels and ADA members acted as advisors to the society. Today, the society is called the Dietary Managers Association and has approximately 12,000 members (Beilstein, 1984; D'Costa and Schreck, 1983).

The Dietetic Team

In 1968, a publication of a two-part manual of guidelines for the education of the Food Service Supervisor was issued (For the Education, 1968), setting forth standards for an approved training course in both classroom and supervised work experience. The outlines covered a minimum of 90 hours of classroom instruction and 36 weeks of supervised experience.

The concept of a career ladder as a part of the allied health movement began to emerge in the nutrition profession, due to the upgrading of training and curriculum development. By 1971, the career ladder was identified with the levels in the dietetic team as dietetic assistant, dietetic technician, and dietitian (Simonis, 1983).

With experience and evaluation came the need to change and enlarge training requirements for these personnel. In 1974, ADA published a guideline for dietetic assistant programs, requiring a coordinated program of not less than 90 hours of classroom and 150 hours supervised field experience. Also recommended was one year program of 30 units credit and 225 hours supervised field experience. (ADA Directory, 1976)

A rapid growth in demand for supervisor training came about with passage of federal legislation, "H.R.1". These requirements specified that the dietetic service supervisor be a graduate of a dietetic assistant or dietetic technician training program, corresponding or classroom, approved by the ADA or is a graduate of a state approved course that provided 90 or more hours of classroom instruction and had experience as a supervisor in a health care institution with consultation from a dietitian (Essentials...Dietetic Tech., 1974; Essentials...Dietetic Asst., 1974). This led to the continual upgrading of the program through the years and the final development of the Oklahoma Dietetics Support Personnel Training Program for all levels of support personnel in 1983.

Training of Supportive Personnel

The need to provide sound, effective educational

training for supportive personnel in the field of dietetics is a nationwide challenge to dietetic educators. Many small foodservice operations and government funded nutrition programs do not have access to the services of a full-time registered dietitian. Trained and untrained foodservice workers are often relied on in these programs. Considering current economic conditions and cuts in government funding, the services of dietitians in small programs are not likely to increase while the services of auxillary personnel is expected to increase. Qualified professionals and an approved dietetic training program are needed to train foodservice staff (Calvert, 1982).

Training indeed has been recognized as essential through the years, and it has been predicted that the role of training would expand sharply. A variety of major issues such as the energy crisis, minorities in organizations, women's liberation, and ethics in business were expected to and have affected the workplace and workforce in the 1980's (Ninemeir, McKinley, and Montag, 1970). The pressure for economic efficiency will also necessitate the delegation of less demanding duties to less highly trained personnel, at all levels. Such delegation would permit concentration toward efforts of highly educated professionals on the tasks requiring the highest level of skill and responsibility. This type of manpower substitution was probably the most effective way to improve the average productivity of medical

professionals (Rose, Zolber, and Vyhmeister, 1980). According to Rose, dietitians have delegated many repetitious tasks to non-professional personnel and would delegate more if educationally qualified personnel were available.

The institutions' administration must decide what problems can be helped by training. The key will be to identify those problems in which a change in human knowledge, skills and attitudes will be needed. Only educational training can help in these situations. Although no sure way to bring out the potential in employees has been identified, certain ingredients and functions must be mastered. Entry level foodservice supervisors may have the knowledge and skills needed by the school foodservice operation, but planned continuing education paves the way for career development. (Ricks and Kannwischer, 1982; Neill, 1983)

Why, then, is training important? In most cases, the aim of training has been to change people's behavior in a desirable way. A training program must incorporate the goals of the organization and the competencies for the employees necessary to achieve these goals. Employees must become committed to the goals of the organization in order to be motivated to changed their behavior. (Ricks, 1982)

Training in the foodservice industry has been identified as a way to improve work performance. If

employees understand why and how their jobs are important through training they have a base on which to grow and develop (Reed, 1982).

Before a training program is implemented or integrated into a system employees are given the opportunity outside the institution to be trained, professional staff must understand the total need. Re-education of the dietitian, administrator and personnel department is needed to ensure optimal role performance and employment of the diet technician as well as other levels in dietetics. The greatest need would be re-educating professional staff about the value of a diet technician and other dietetic support personnel as part of the health team (Rose, 1980). People perform better if there is a clear understanding by others such as administrators and supervisors about what they have been trained to do and their capabilities.

Reduced cost, increased efficiency, and lower employee turnover are also emphasized as positive side effects from training. (Fraser and Gore, 1978; Batdorf, 1980; Boylen, 1980; and Training, 1977) Through training programs (Monroe-Lord, 1982), the knowledge and skills of participants can be upgraded. By implementing training programs, the operation and management of the food service programs can increase in efficiency.

The Maryland State Department of Education initiated a food and nutrition education training course for school

foodservice personnel in Princess Anne, Maryland (Monroe-Lord, 1982). The objectives of the course were to improve foodservice employee's knowledge of the principle and application of menu planning, food preparation and service, food safety, sanitation, and merchandising school feeding programs. The results revealed the following activities foodservice workers were implementing after this type of training: 1. Following quantity recipes closely; 2. Sanitation as a number one priority; 3. Display of nutrition and food posters in the kitchen and cafeteria; 4. Using ovens correctly and often; 5. Reduced amount of water and time used in cooking vegetables; 6. Pre-preparation; 7. Awareness of proper temperatures for food storage, dishwashing, and line service; and 8. Improved equipment upkeep.

According to Robinson (Robinson, 1967), the consulting dietitians are able to function best when competent, trained members of the dietetic support personnel are available to work with them since their time is limited. The amount of time required varies according to the competency of the foodservice personnel, and in particular, the foodservice supervisor, the size and complexity of the facility and the number and type of therapeutic diets served. Employee turnover rates further complicate this problem. Some nursing home officials in the state of Oklahoma estimate turnover rate as high as 150 percent (Reasons for Nursing Home Problems, 1982).

A study by Griffith's (1974) and others showed that dietetic employees in the hospitals having lowest turnover had more training in terms of time spent in training and were more likely to have received more than one type of training as compared with employees in the high turnover group. More than half of the employees in the highest turnover group who had only one type of training were trained by another employee on the job. A higher proportion of hospitals in the lowest turnover group provided classroom training for dietetic employees, than did those with high labor turnover. Perhaps training is effective in reducing turnover because it helps to satisfy a need of employees to be recognized and appreciated by management as also mentioned previously. It probably also helps to make employees realize that their jobs are important because management would not expend the time and effort to train them to do their job well if it were not (Puls, Moore, Tuthill, and Hefferman, 1974).

Training, therefore, becomes a vitally important, time consuming, and often a repetitive task of the consultant (Spears, Vaden, and Spears, 1961; Matthewson, 1973). Time problems may be greatly alleviated in the future as role delineation between dietitians allow for transfer of responsibility for repetitive tasks to their assistants, thus freeing themselves for higher level management tasks and long range planning (Brenner, 1971).

The importance of accountability is being emphasized at all educational levels because of budgetary constraints and societal pressure. Dietetic educators need to demonstrate to their administrators that their programs are meeting the needs of students and of society (Shanklin and Beach, 1980). Not unlike other programs or businesses, dietetic programs must periodically assess whether they are accomplishing their goals and objectives (Rhoades, Gines, Manasco, and Schweitzer, 1981).

Educational Theories

Much of the controversy and confusion surrounding the CBE movement appears to exist as a result of the numerous definitions used in addressing CBE. Compentency has been defined as the quality of being functionally adequate in performing the tasks and assuming the role of a specified position with the requisite knowledge, ability, capability, skill, judgment, attitudes, and values (Gale and Pol, 1975).

Thorndike (Thorndike and Woodworth, 1901) suggested that the "powers of the mind" could not be strengthened by prolonged practice, that individuals do not possess the ability to reason, and that they must relearn particulars for every novel situation encountered. Following these findings, Thorndike continued his research over many years and developed the theory of "Connectionism". This theory further maintains that learning is always specific and

that transfer of learning is extremely limited, because it can only occur if elements in one situation are identical with elements in another, meaning that it is extremely difficulty for human beings to transfer learned elements to an unrelated situation (Thorndike, 1911, 1913). This may be the reason some students score and perform better than others depending on their work situation being more like the classroom examples.

Despite this extremely pessimistic view of man's learning ability, based almost solely on in animal studies, Thorndike's findings have been quite pervasive and influential. It has given way to other more positive approaches, such as the cognitive learning theories of Tolman (1949); and works of the Gestalt psychologists, who maintain that human beings are able to solve problems, sensibly, structurally, and intelligently because of their ability to transfer learned patterns of relationships to novel and unrelated situations. In short, this theory stresses the idea of "insightful" learning (Wertheimer, 1959; Kohler, 1947; Koffka, 1935). Even with CBE's definition and theory controversy, it still appears to be the most used approach for the basic repetitive, and observable skills required of many support staff personnel. Thus, it is expected to be appropriate for teaching dietitians and support staff certain technical skills they must perform (Rinke, 1980). A re-appraisal of CBE should provide dietitians and the dietetic profession

with a better understanding and more realistic expectations of the benefits that may be derived from a competency-based education approach.

Adult Learning Theories

Most studies have concentrated on children and adolescent learning, with little documented information on how adults learn. Lanese (1983) reviewed five adult learning theories utilized in several companies. The theories are as follows:

1. Individual Differences: Individual differences are apparent in adult learners. One participant may learn better by hearing information and another may learn better when he/she reads or visualizes something. The delivery methods used by training departments to compensate for individual differences are self-instructional materials, lectures, discussions, interactive programs (ie: role-plays) or simulations. (Steers, 1974 and Lanese, 1983)

2. Positive Learning Environment: Adults are more aware than children and adolescents of the relationship between successful learning or failing to learn and job success. Adults want to look competent, therefore, the trainer/employer needs to provide a relaxed and trusting atmosphere.

3. Personalized Needs: Success of learning is also connected by the closeness of training goals to the participants own goals or objectives. Adults' increased

experiences in life cause them to develop more specific individual objectives and goals to accomplish their life tasks.

4. Experience as a Resource for Learning: Training programs can use experience in a variety of ways to promote successful learning such as: pre-requisites for training courses, developing groups by homogeneity or heterogeneous gender.

5. Formalizing Practice: Adults need to practice a new skill or application of information received by a training program. Practice reinforces skills. Practice can link previous skills with new ones.

Transfer Of Learning

In exploring the relationship between knowledge to work experience and performance, the ability of the individual to transfer learning from one situation to another is imperative. According to Ellis (1965), defined transfer of learning as experience of performance on one task influences performance on some subsequent task. He indentified three types of transfer: positive, negative, and zero. Positive transfer occurs when past learning facilitates performance on a subsequent task, negative transfer occurs when past performance inhibits the performance on a subsequent task and zero transfer means that performance of a task has no effect on the performance of a subsequent task.

Several factors influence the positive transfer of learning including task similarity, time lapse between tasks, degree of original learning, variety of previous tasks, and task difficulty (Ellis, 1965). Of these, task similarity is of primary importance because the other effects depend on task similarity.

The transfer of learning is greater for tasks that are similar. The influence of time lapse between tasks depends on the type of task. If transfer does not depend on the memory of specific items, the time lapse does not significantly affect transfer. Generally, transfer increases as practice on a task increases. With small increases in variety, the amount of positive transfer increases. In relation to task difficulty, the more similar the two tasks are the greater the transfer. Tasks that are either very easy or difficult resulted in negative transfer. It was found that it is difficult to generalize about the relationship between task difficulty and transfer (Ellis, 1965; Sjogren, 1977).

Oklahoma Training Program

In 1968, the need to offer a coordinated training for food service supervisors for the entire state was recognized. This came about in great part because of medicare and medicaid requirements for dietary supervision in nursing homes and small hospitals. It was further determined that the newly developing systems of area

vocational schools around the state would offer an ideal means of establishing a statewide program for the education of food service supervisors for health care facilities (ODSPTP, 1983). Accordingly, classes were formed by geographic area of the state where adequate numbers of supervisors were available to make up classes. Dietitians' volunteered to teach the classes. An assumption was made that training begins at a very basic level for all procedures, methods, and techniques. In 1981, the Oklahoma Dietetic Assistant Program in its present form was planned by an advisory committee at the Vocational Technical Center in Stillwater, Oklahoma. The competencies required by a dietetic assistant and the determination as to how the program should be designed and enlarged as a validated educational curriculum to best meet current needs in the state was then developed. The committee recommended that a competency-based program be planned to train dietary personnel at all levels starting with the basic level.

Course Levels

In April 1983, the ODSPTP was introduced and provided three entry level courses that could be taken by support personnel. The three employee levels identified were: Food Service Worker, Food Production Worker, and Food Service Supervisor (ODSPTP, 1983).

There are no admission requirements for the Food Service Worker but, 30 hours of class time and 50 hours of clinical time are required. The Food Service Worker is the first course in the Oklahoma Dietetic Support Personnel Training Program (ODSPTP). This course provides the core curriculum for the program (Appendix A).

The Food Production Worker requirements consists of the successful completion of the Food Service Worker course or the challenge exam. Forty-eight class hours of class time plus 80 hours of clinical time are required for course completion. The Food Production Worker course builds on the core curriculum which began at the Food Service Worker level (Appendix A).

The Food Service Supervisor requires a High School diploma or GED, successsful completion of the Food Service Worker, and Food Production Worker courses or challenge exams for these levels for admission. The course requires 90 class hours and 150 clinical hours. The third course begins with an orientation to dietary department organization and includes a discussion of ethical conduct for the Food Service Supervisor (Appendix A) (ODSPTP, 1983).

The FSW course was implemented in six area vocational-technical schools during 1983-84. Classes were scheduled to enable students to continue to work full time while enrolled in the program. This system allows students to complete courses specific to current job

requirements and also an opportunity for continued growth and career advancement. Those that successfully complete all three levels are eligible for membership in the Dietary Managers Association. (Oklahoma Dietetic Support Training Program, 1983) Since 1983, all three levels have successfully been implemented into the vocational technical school system.

Summary

As early as 1943, the American Dietetic Association (ADA) recognized the need for delegation of duties to non-professional personnel. Since that time, various steps have been taken through developing and implementing training programs throughout the United States to train dietetic support staff.

The competency-based approach to curriculum has been the most used among educators in the United States and Oklahoma. The Oklahoma Training Program (ODSPTP) was developed to meet the states' need for training on a competency-based approach for the three dietetic personnel levels. As the literature reveals, continual upgrading and testing of a program or curriculum is needed to see if it is meeting the educational needs.

CHAPTER III

METHODS AND PROCEDURES

Under the auspices of the Oklahoma Dietetic Association and the state office of Vocational-Technical Education, eight Dietetic Support Personnel Training Programs (ODSPT) were conducted in vocational-technical schools in 1984. The effectiveness of the training programs was important to know in determining if students perform well in the educational program and in actual practice. As a result of this, an administrative committee from the Oklahoma State Vocational and Technical Education system suggested a research study. Hence, the research planning and development of this study was completed during the fall of 1984.

Research Design

This study used descriptive research. This type of research is concerned with hypothesis formulation and testing, analysis of relationships between non-manipulated variables in a natural setting and the development of generalizations, principles or theories through the use of inductive-deductive reasoning (Best, 1981).

The research design chosen for this study was a pre-experimental one-shot case study. This type of design involves a group that has been exposed to some prior treatment (independent variable) or event. An illustration of the one shot case study appears below: X represents exposure of the group to the independent variable; 0 refers to either measurement or observation of the dependent variable (Huck, 1974).

X (FSW test) O_1 (test scores)

O_2 (performance ratings)

The independent variables in the study were the Food Service Worker test, employee rating scale and institutional variables. The dependent variables were the subjects performance on the Food Service Worker test and job.

Sample

The students taking the Food Service Worker courses in the eight Oklahoma vocational-technical schools during the summer and fall of 1984 comprised the invited sample. Seven of the eight Food Service Worker instructors consented to have their students participate in the research study. Sixty-one students who had completed the Food Service Worker course of 30 hours of class and 50 hours of clinical experience participated in this study, however only 54 of the students' tests were usable for analysis.

Data Collection

Instrument Development

An Oklahoma Dietetic Support Program Training (ODSPT) advisory committee compiled recommendations for the development of a competency-based curriculum and testing which included three course levels (Food Service Worker, Food Production Worker and Food Service Supervisor). From the recommendations, a vocational technical content test specialist devised a state standardized test for each course level of the new program. The Food Service Worker test was used for this research (Appendix B). A testing and evaluation specialist also developed the performance rating scales which were constructed on the basis of quality, productivity and effectiveness job criteria.

The Food Service Worker test was previously administered to other students similar to the sample in the study. The vocational technical specialist further selected a sample of 30 employees across the state who were administered the Food Service Worker test, but had not previously been introduced to the Food Service Worker curriculum. The 30 employees were also evaluated by their employer using the employee performance rating scales. The employees were chosen from institutions such as hospitals, school foodservice, nursing homes, and emotionally disturbed centers. The test scores and rating scores were compiled and evaluated. Through repeated

testing, the specialist was able to assess the tests validity.

After testing in the classroom and work sites, the specialist applied the standard reliability test on the Food Service Worker test and rating scales. The Spearman rank-order correlation coefficient (r_s) test was also performed on the test and employee rating scale and corrected with the validity correction correlation. The results revealed a high reliability (N = .90).

The test and rating scale predict about a 50 percent variation among employers on the job assessments with the test scores. This is similar to the national standards for testing, therefore, the first course level (Food Service Worker) test and rating scales were used in this study. The researcher arbitrarily eliminated every third question so the test would be more conducive for this research. The test originally consisted of 149 questions, but was decreased to 100 in final format for administration.

The content of the test covered the eight task/duty areas covered in the Food Service Worker course. These areas include human relations and communications; personal hygiene and safety; nutrition; receiving, handling and storage; equipment; food production and service; warewashing; and housekeeping and pest control (Appendix B).

The employee rating scale included one question per task/duty area (N = 8) plus three questions that dealt with effectiveness, quality and productivity (Appendix E). The number scales used per question were 1 (needs improvement) to 10 (superior), which gave the employee a possibility of 80 points in the task/duty ratings and 30 points concerning the rated effectiveness, quality and productivity. The total possible points for the employee ratings were 110 points. The task/duty ratings or total duty ratings (TDR) and performance ratings' (RE, RQ, RP) scores were kept separate for analysis in this study.

Procedure

Upon receiving permission from the State Vocational Dietetic Program Coordinator to proceed with the research, each of the seven Dietetic Instructors in the vo-tech school system were contacted by phone. The researcher also sent a letter to the instructors explaining the complete plan and procedures.

Soon thereafter a second mailing was sent out including guidelines, tests, answer sheets and student list sheets to be administered by the instructor (Appendix C). The tests were scheduled for one hour as requested by instructors and program director, since it was not feasible for the testing procedure to utilize limited class time. The tests were coded and corresponding coding was applied to the answer sheets and student list sheets

(Appendix C). As the various schools completed the testing, the requested information was returned to the researcher in self-addressed envelopes.

The employers' names and addresses were obtained from the student list sheets after completion of the testing. The employers were sent coded performance rating scales to evaluate their employee. A letter (Appendix F) explaining the research procedures was sent to each employer along with guidelines and rating scales for each employee (subject). The researcher asked the employers to evaluate the employee (subject) in job performance for the eight task/duty areas which correspond with the training program curriculum. The overall job performance was evaluated by the productivity, quality and effectiveness criteria. The performance rating scale is shown in Appendix E.

Data Analysis

The data collected was transcribed and processed for statistical analysis using the Statistical Package for Social Sciences (SPSS-X, 1984). The standard measures of central tendencies (mean, median and mode) and measures of variability (range, variance, and standard deviation) assessed the test scores and employer rating scores. The Spearman rank-order correlation coefficient (r_s) (Siegel, 1956) was chosen to evaluate the non-parametric data (test scores and performance rating scores). The researcher

chose a correlation level of ($r_s = \geq .4$) as being significant in this study. The scale below was used as a guide to describe correlation strengths (Guilford, 1956).

Less than .20	slight; almost negligible relationship
.20 - .40	low correlations
.40 - .70	moderate correlations
.70 - .90	high correlations
.90 -1.00	very high correlations

The probability level selected to define the significance used for this study was ($p = \leq .05$).

Selected institutional variables (rural-urban, nursing home-hospital, bed size lower than 80-bed size higher than 80, limited visits-frequent visits) were analyzed to determine the variables that may indicate a transfer of classroom knowledge to on the job performance. The test scores (TS) were compared to the total duty ratings (TDR) and overall performance ratings (RE, RQ, RP) of the employer rating scales for each institutional variable.

CHAPTER IV

RESULTS AND DISCUSSION

The purpose of this study was to compare the relationship between the Food Service Worker (FSW) students' test scores following completion of the Food Service Worker training course to the employee rating scores as related to job performance. The Food Service Worker test contained 100 questions which were divided into the eight task/duty subject areas, and adapted for this research. The employee rating scale also covered the eight task/duty subject areas plus the three overall performance ratings (RE, RQ, RP). These were described in detail in Chapter III. The employee rating scales were sent out for the matching 61 subjects that had taken the test.

The sample was composed of students (subjects) that had completed the Food Service Worker course level of the Oklahoma Dietetic Support Personnel Training Program. Copies of the test instrument were sent to seven vocational-technical Food Service Worker course instructors and administered to 61 students (subjects).

The employee rating scales were sent to the subjects' employer for the same 61 subjects. Only 54 of the 61 subjects' scores and ratings were acceptable for analysis.

This chapter describes the state (N = 54) overall test scores, means, standard deviations, and correlations data. The descriptions of the selected institutional variables, the data and results generated from those variables are also presented. Finally, data analysis necessary to test the null hypotheses are discussed.

Overall State Data

The overall state data includes the total samples' (N = 54) results generated from test scores, performance ratings, and correlations. These results are included in Tables I and VII.

Total Test Scores (TS)

The subjects test scores ranged from 53 to 91 out of a possible 100 points. The largest distribution of scores fell in the 79 to 70 range (N = 27), with the 89 to 80 range coming in second with (N = 19) scores. This resulted in 85 percent of the scores falling in these ranges. (Table I). The mean test score (TS) for the entire subject sample (N = 54) was 76.8 with a standard deviation of 6.98.

Employee Performance Ratings (TDR; RE, RQ, RP)

The subjects were evaluated by their employer using a standardized performance evaluation entitled the Food Service Worker Employee Ratings (Appendix E). The evaluation tool consisted of one rating per task/duty area plus three overall performance ratings quality (RQ), effectiveness (RE), and productivity (RP) (Appendix E).

The subjects total duty rating (TDR) scores, which were taken from the eight task/duty areas, ranged from 8 to 77 out of a possible 80 points. Thirty-nine percent of the scores were distributed in the 69 to 60 range and 22 percent of the scores were distributed in the 80 to 70 range. This data revealed that 61 percent of the subjects were in the above average to superior ratings as rated by their employers. The mean rating score for the group was 56.5 with a standard deviation of 2.41 (Table II). These data implies that 75 percent of the students are reaching an above average to superior rating for task/duty knowledge. This appears that the curriculum may be accomplishing the transfer of knowledge to the workplace through the eight task/duty areas.

Rated quality (RQ) for the total sample (N = 54) revealed a mean score of 7.27 and a standard deviation of 2.42. The rating scores measured the quality of the subjects' work in the health care institution. Eighty-two percent (N = 44) of the rating scores fell in the

TABLE I

THE STATE TOTAL TEST SCORES (TS)
(N = 54)

Score Ranges (100 = highest)	Frequency & Percentage Of Scores	
90 - 100	1	1%
80 - 89	19	35%
70 - 79	27	50%
60 - 69	6	11%
50 - 59	1	1%

Mean (TS) = 76.8
Std. Dev. = 6.98

TABLE II

THE STATE TOTAL DUTY RATINGS (TDR)
(N = 54)

Score Ranges (80 = highest)	Frequency & Percentage Of Scores	
70 - 80	12	22%
60 - 69	21	39%
50 - 59	8	15%
40 - 49	5	9%
30 - 39	2	3%
20 - 29	1	2%
7 - 9	5	9%

Mean (TDR) = 56.59
Std. Dev. = 17.73

above average to superior ratings (Table III).

The subjects' effectiveness performance in the health care institutions are indicated by the rated effectiveness (RE) scores. The rated effectiveness (RE) mean score was 7.29 with a standard deviation of 2.46. Forty-two scores (78%) were in the above average to superior ratings (Table IV).

The subjects' productivity performance in the health care institutions are indicated by the rated productivity (RP) scores. The rated-productivity (RP) mean score was 7.33 and a standard deviation of 2.54 for the subjects. Seventy-six percent (41 subjects) fell in the above average to superior ratings (Table V). The high percentages of subjects rated in the above average to superior range indicate that knowledge and skills practiced for quality, productivity and effectiveness at work may have transferred from the classroom at some time.

State Classroom-Workplace Correlations

The classroom to workplace correlations revealed significant data (Table VI). The overall state test scores (TS) (N = 54) when compared to the total duty ratings (TDR) exhibited a low correlation level (r_s = .329), but a high significance level (p = .015). The test scores as correlated to the performance rated quality (RQ), rated effectiveness (RE), and rated productivity

TABLE III

THE STATE QUALITY PERFORMANCE RATINGS (RQ)
(N = 54)

Rating Range (10 = highest)		Frequency & Percentage Of Ratings	
6 - 10	above average to superior	44	82%
1 - 5	needs improvement to average	10	18%

Mean Rating (RQ) = 7.27
Std. Dev. = 2.42

TABLE IV

THE STATE EFFECTIVENESS PERFORMANCE RATINGS (RE)
(N = 54)

Rating Range (10 = highest)		Frequency & Percentage Of Ratings	
6 - 10	above average to superior	42	78%
1 - 5	needs improvement to average	12	22%

Mean Rating (RE) = 7.29
Std. Dev. = 2.46

TABLE V

THE STATE PRODUCTIVITY PERFORMANCE RATINGS (RP)
(N = 54)

Rating Range (10 = highest)		Frequency & Percentage Of Ratings	
6 - 10	above average to superior	41	76%
1 - 5	needs improvement to average	13	24%

Mean Rating (RP) = 7.33
Std. Dev. = 2.54

TABLE VI

THE STATE CLASSROOM TO WORKPLACE CORRELATIONS
(N = 54)

	r_s	p
TS-TDR	.329	.015*
TS-RP	.36	.007**
TS-RE	.31	.02*
TS-RQ	.37	.006**

* = $p \leq 0.05$ ^ = $r_s \geq .4$
** = $p \leq 0.01$

TS = Test Score
TDR = Total Duty Rating
RP = Rated Productivity
RE = Rated Effectiveness
RQ = Rated Quality

(RP) showed low correlations. All performance ratings were at significant levels (Table VI). These results showed a significant relationship between classroom knowledge and on the job performance. This may be due to the classroom knowledge actually gained and being applied at the subject's workplace.

Selected Institutional Variables

Descriptions

The institutional variables were based on four factors which include population (rural-urban), type of institution (nursing home-hospital), number of beds (few beds-many beds), and frequency of visits by the registered dietitian (limited visits-frequent visits). The complete descriptions are given in the following text.

Rural-Urban: The area, town or city population was attained from a 1985 map with population listings. The "urban" population was set at 14,000 and up, and 15 of the respondents, from the 54 evaluated, came from this setting. The "rural" population was set at 8,999 and below which constituted the remaining 39 institutional locations.

Nursing Home-Hospital: The type of health care institution was determined by the title the classroom instructor indicated on the student list sheets. If the type (nursing home or hospital) could not be determined a phone call was made by the researcher to the institution's

administrator or dietitian for verification. Out of 54 institutions, 34 were "nursing homes" and the remaining 20 institutions were "hospitals".

Few Beds-Many Beds: The number of beds in each institution were indicated by employers. The 80 beds and below category was classified as "bed size lower than 80" which accounted for 39 cases. The 80 beds and above category was classified as "bed size higher than 80" which accounted for 15 cases.

Limited Visits-Frequent Visits: The frequency of visits by Registered Dietitians was a factor that determined what the last variable would be. The researcher contacted the supervising dietitians to determine the frequency of their visits to the institutions. This was to determine if the frequency of the visits was a significant performance factor. If the Registered Dietitian was not available for this information the dietary supervisor or the administrator provided the information. "Limited visits", were designated as once a month or once every two months. Forty of the subjects worked under this type of supervision. "Frequent visits" were defined as every day or once a week. Fourteen of the subjects were under this type of supervision.

Results

A summary of the findings regarding attained class-

room knowledge and carryover to the workplace of selected institutional variables are presented in this chapter. For simplicity of presentation, the findings are divided into the institutional variables as follows:

a) "rural-urban"
   - test scores
   - employee rating scores
   - classroom to workplace correlations

b) "nursing home-hospital"
   - test scores
   - employee rating scores
   - classroom to workplace correlations

c) "bed size lower than 80-bed size higher than 80"
   - test scores
   - employee rating scores
   - classroom to workplace correlations

d) "limited visits-frequent visits"
   - test scores
   - employee rating scores
   - classroom to workplace correlations

"Rural": The mean test score for respondents working in the "rural" sector (N = 39) was 77.1 and the standard deviation (SD) was 5.79. This was slightly higher than the state overall scores (Table VII). The total duty rating mean was 57.38. The rated-quality (RQ), rated-effectiveness (RE), and rated-productivity (RP) revealed mean rating scores of 7.3 and SD of 2.3 (RQ), 7.28 and SD

TABLE VII

STATE MEAN AND DEVIATION SCORES FOR THE TEST SCORES, PERFORMANCE AND DUTY RATINGS
(N = 54)

Variable	Mean	Std. Dev.
TS	76.8	6.98
RQ	7.27	2.42
RE	7.29	2.46
RP	7.33	2.54
TDR	56.59	2.41

TS = Test Score
TDR = Total Duty Rating
RP = Rated Productivity
RE = Rated Effectiveness
RQ = Rated Quality

of 2.38 (RE), and 7.3 and SD of 2.48 (RP) respectively (Table VIII).

Analysis of the Spearman correlations (r_s) and significance levels (p) showed none of the "rural" classroom to workplace relationships as being statistically significant, except for the test score to rated productivity (TS-RP) (Table IX). The TS-RP showed a low correlation level (r_s = .319), and a significance level (p = .047). This may be due to the subjects working faster and harder but not producing the quality of work expected or not completing what was set out to accomplish in the correct manner. In the ODSPTP Instructors Teaching manual the term "be productive" was emphasized and read, "when you waste time, you are being unfair to your employer by accepting pay for work you have not done". This may have been implanted in their minds more than effectiveness and quality (ODSPTP manual, 1984, p. 11-A). There were no definitions found for effectiveness and quality in the manual. This may have influenced the subjects to be conscience about time spent and quickness of performing a task on the job. Thus the RP correlation was higher than RE or RQ.

"Urban": The mean test score for the "urban" sector (N = 15) was 76.06 with a standard deviation of 9.63 (Table VIII). This test score was slightly lower than the state overall mean score (Table VII). The total duty rating mean (TDR = 54.5) was beneath the state TDR mean

TABLE VIII

THE MEAN AND STANDARD DEVIATION SCORES FOR THE RURAL AND URBAN INSTITUTIONAL VARIABLE

Variable	Rural (N=39) Mean	Std. Dev.	Urban (N=15) Mean	Std. Dev.
TS	77.10	5.79	76.06	9.63
RQ	7.30	2.33	7.2	2.73
RE	7.28	2.38	7.3	2.74
RP	7.30	2.48	7.4	2.79
TDR	57.38	17.01	54.53	19.967

TABLE IX

CLASSROOM TO WORKPLACE CORRELATIONS FOR THE RURAL-URBAN INSTITUTIONAL VARIABLE

	Rural (N=39)		Urban (N=15)	
	r_s	p	r_s	p
TS-TDR	.186	.25	.63^	.01**
TS-RP	.319	.047*	.375	.16
TS-RE	.271	.09	.33	.22
TS-RQ	.27	.09	.46^	.08

* = $p \leq 0.05$
** = $p \leq 0.01$
^ = $r_s \geq .4$

(Table VII). The rated quality (RQ), effectiveness (RE), and productivity (RP) presented mean rating scores and standard deviations of 7.2 and SD of 2.7 (RQ), 7.3 and SD of 2.7 (RE), and 7.4 and SD of 2.79 respectively (RP) (Table VIII).

The "urban" classroom to workplace correlations concerning the test scores (TS) and total duty ratings (TDR) were correlated at r_s of .63 and p of .01 level. The moderate correlation and very significant level may be due to the classroom knowledge to workplace transfer in the eight task/duty areas. The overall performance in productivity and effectiveness were not as likely to be transferred. The test scores (TS) and the rated quality (RQ) were correlated at a moderate r_s level of .46 . The TS-TDR and TS-RQ were the only correlations indicating that classroom knowledge may be helping the subjects to meet job standards at the workplace (Table IX). All the urban significance levels were lower than the state overall data except TS and TDR, which were highly significant (Table IX).

"Nursing Home": When categorized by the "nursing home" variable (N = 34) a mean of 77.1 was revealed for the total test score (TS) with a SD of 5.48. The mean test score was slightly above the state overall mean (Table X and VII). The three mean scores for the performance ratings (RQ, RE, and RP) were fairly consistent with the state mean ratings. The total duty

TABLE X

THE MEAN AND STANDARD DEVIATION SCORES FOR THE NURSING HOME AND HOSPITAL INSTITUTIONAL VARIABLE

Variable	Nursing Home (N=34) Mean	Std. Dev.	Hospital (N=20) Mean	Std. Dev.
TS	77.11	5.48	76.30	9.13
RQ	7.20	2.57	7.4	2.18
RE	7.20	2.63	7.45	2.18
RP	7.23	2.74	7.5	2.23
TDR	55.73	19.06	58.05	15.56

TS = Test Score
TDR = Total Duty Rating
RP = Rated Productivity
RE = Rated Effectiveness
RQ = Rated Quality

TABLE XI

CLASSROOM TO WORKPLACE CORRELATIONS FOR THE NURSING HOME-HOSPITAL INSTITUTIONAL VARIABLE

	Nursing Home (N=34)		Hospital (N=20)	
	r_s	p	r_s	p
TS-TDR	.17	.32	.53^	.01**
TS-RP	.30	.08	.456^	.04*
TS-RE	.225	.20	.426^	.06
TS-RQ	.269	.124	.488^	.029*

* = $p \leq 0.05$
** = $p \leq 0.01$
^ = $r_s \geq .4$

TS = Test Score
TDR = Total Duty Rating
RP = Rated Productivity
RE = Rated Effectiveness
RQ = Rated Quality

rating mean (TDR = 55.73) was also above the state data (Table VII). The Spearman correlations for the "nursing home" classroom to workplace revealed correlations that were not significant (Table XI).

Perhaps the lack of acceptable correlation and significance levels were due to less supervision by the consulting dietitian or instructions not enforced by the supervisor. The consulting dietitian's instructions may not have been clearly communicated or understood by the supervisor or subject about their task/duty performance.

"Hospital": The "hospital" employed respondents' test scores (N = 20) exhibited a mean score of 76.3 and a standard deviation of 9.13. The test scores were slightly lower than the state level. The RQ, RE, and RP were slightly higher, and the TDR mean was also higher than state (Table X and VII).

The classroom to workplace Spearman correlations data were very significant. All the significance levels were high except TS-RE ($p = .06$) (Table XI). The state overall correlations (r_s) were somewhat lower than the "hospitals", but the state's significance levels were slightly higher (Table VI). This may be attributed to the fact that hospitals maintain higher standards and may also have a dietitian who provided continuous monitoring of the subjects. The hospitals may have required the subjects to attend in-service trainings which would have reinforced classroom-knowledge.

"Bed Size Lower Than 80": The mean test score (TS) for this variable was 77.7 and a SD of 5.7. This presents a higher mean score than the state overall mean level. The TDR mean stands at 57.79. The three performance ratings (RQ, RE, and RP) were all 7.4 and were higher than the mean state ratings (Table VII and XII).

The Spearman Correlation (r_s) revealed high significance levels of test scores compared to the rated quality ($p = .008$) and rated productivity ($p = .007$). The test scores to total duty ratings ($p = .02$) and test score (TS) to rated effectiveness ($p = .027$) revealed significant levels, but only low r_s correlations. All the r_s correlations were higher than state overall correlation levels. The significance level (p) was highly significant for all variables (Table XIII).

It appears that subjects working in smaller institutions tended to be more likely to transfer knowledge to the workplace. Perhaps with less employees the supervisor or dietitian may provide more one on one instructions or trainings. The employees may also have an opportunity to work more dietary positions due to the limited number of foodservice employees. This experience could have provided them with an opportunity for more knowledge application.

"Bed Size Higher Than 80": The subjects working in institutions of "bed size higher than 80" displayed a mean test score (TS) of 74.4 and a SD of 9.36. This was

TABLE XII

THE MEAN AND STANDARD DEVIATION SCORES FOR THE BED SIZE LESS THAN 80 AND BED SIZE GREATER THAN 80 INSTITUTIONAL VARIABLE

Variable	< 80 (N=39) Mean	Std. Dev.	> 80 (N=15) Mean	Std. Dev.
TS	77.74	5.7	74.4	9.36
RQ	7.43	2.25	6.86	2.85
RE	7.48	2.25	6.8	2.95
RP	7.46	2.37	7.0	3.02
TDR	57.79	16.14	53.46	21.65

TABLE XIII

CLASSROOM TO WORKPLACE CORRELATIONS FOR THE NUMBER OF BEDS INSTITUTIONAL VARIABLE

	Sizes < 80 Beds (N=39)		Sizes > 80 Beds (N=15)	
	r_s	p	r_s	p
TS-TDR	.35	.02*	.28	.30
TS-RP	.426^	.007**	.163	.56
TS-RE	.35	.027*	.167	.55
TS-RQ	.416^	.008**	.24	.38

* = $p \leq 0.05$
** = $p \leq 0.01$
^ = $r_s \geq .4$

slightly lower than the state overall mean. The TDR mean revealed a low score of 53.46 as well. The performance ratings' means were also very low compared to the state overall mean data (Table XII and VII).

The classroom to workplace correlations were not highly correlated or significant (Table XIII). This may be due to the greater patient demands on the subjects employed in this type of institution which could interfer with classroom knowledge application. The subject may have only experienced one foodservice position, due to more foodservice employees. Supervisors and/or dietitians may not monitor subjects as closely as in smaller institutions.

"Limited Visits": The total mean test scores for subjects infrequently visited by dietitians was 77.8 with a SD of 5.57, which is higher than the state overall mean scores. The TDR mean revealed a 58.15 score. The three performance ratings (RQ, RE, and RP) and TDR were all above the state overall levels (Table XIV).

The classroom to workplace correlations, however, were lower and not at significant levels as compared to the state overall data (Table XV and VII). Due to infrequent visits, consulting dietitians' instructions may not have been carried through and reinforced at the workplace. The subjects classroom knowledge may not have been reinforced by the consulting dietitian as much as in the "frequent visits" variable.

TABLE XIV

THE MEAN AND STANDARD DEVIATION SCORES FOR THE LIMITED AND FREQUENT VISITS INSTITUTIONAL VARIABLE

Variable	Limited (N=40) Mean	Std. Dev.	Frequent (N=14) Mean	Std. Dev.
TS	77.8	5.57	73.92	9.69
RQ	7.4	2.36	6.85	2.62
RE	7.47	2.37	6.78	2.72
RP	7.50	2.51	6.85	2.68
TDR	58.15	17.07	52.14	19.46

TS = Test Score
TDR = Total Duty Rating
RP = Rated Productivity
RE = Rated Effectiveness
RQ = Rated Quality

TABLE XV

CLASSROOM TO WORKPLACE CORRELATIONS FOR THE FREQUENCY OF VISITS BY THE REGISTERED DIETITIAN INSTITUTIONAL VARIABLE

	Limited Visits (N=40)		Frequent Visits (N=14)	
	r_s	p	r_s	p
TS-TDR	.198	.22	.47^	.08
TS-RP	.28	.07	.40^	.15
TS-RE	.264	.09	.307	.28
TS-RQ	.25	.11	.458^	.099

* = $p \leq 0.05$
** = $p \leq 0.01$

^ = $r_s \geq .4$

TS = Test Score
TDR = Total Duty Rating
RP = Rated Productivity
RE = Rated Effectiveness
RQ = Rated Quality

"Frequent Visits": The mean test score, TDR mean and performance rating mean scores, as compared to the state overall means scores were lower for subjects frequently visited by dietitians (Table XIV and VII). An analysis of the classroom to workplace correlations showed no statistically significant relationships at the .05 level. Several of the Spearman (r_s) calculations in the "frequent visit" variable, however, are significant and may indicate a closer relationship between classroom knowledge and workplace appraisal than in institutions with "limited visits" by the dietitian (Table XV). This may have occurred because of closer observation by the dietitian of the subject and therefore a stricter performance evaluation.

Testing The Hypotheses

Hypothesis 1

"There will be no significant correlations between Food Service Worker test scores and each of the job performance ratings (TDR, RE, RQ, RP)." The researcher rejected the null hypothesis 1, because some significant correlations were found. Table VI showed that all the state test scores and job performance ratings were highly significant. The r_s showed low correlation levels for all the variables.

Hypothesis 2

"There will be no significant correlations between Food Service Worker test scores and each of the job performance ratings (TDR, RE, RQ, RP) based on four institutional variables." The institutional variables were:

a) urban-rural

b) nursing home-hospital

c) bed size lower than 80-bed size higher than 80

d) limited visits-frequent visits

The researcher rejected a, b, and c institutional variables and failed to reject the last (d) institutional variable in Hypothesis 2. Table IX showed the TS-RP "rural" variable as the only correlation at a significant level, and the "urban" TS-TDR at a highly significant level. The table IX revealed no significant variables for the "nursing home" but all the hospital variables were significant except TS-RE. In table XIII the "bed size lower than 80" variable all (p) were highly significant, but the "bed size higher than 80" variable (p) were not significant. The "hospital" and "bed size lower than 80" revealed the highest overall classroom-workplace significance levels for each test score to employee performance ratings. The "urban" variable provided a significant level for only the TS-TDR but had a higher correlation level (r_s = .63) than "hospital" (r_s = .53) or

"bed size lower than 80" (r_s = .35) for the TS-TDR variable.

This revealed the significant institutional variables that may have contributed more than their counterpart to the transfer of classroom knowledge to on the job performance. The institutions with a more desirable environment for classroom knowledge to job performance transfer were "urban", "hospital" and "bed size lower than 80 beds".

CHAPTER V

SUMMARY

The need to provide sound, effective educational training for foodservice supervisors and staff in the field of dietetics is a nationwide challenge to dietetic educators. With a rising demand for skilled dietitian services they cannot be used in the performance of duties which are routine and repetitive (Study Commission, 1972, p.42).

The purpose of the study was to evaluate the Food Service Worker component of the Oklahoma Dietetic Support Personnel Training Program. This was accomplished through evaluating the Food service Worker students' test scores following completion of the course to the employer rating scores for the Food Service Worker as related to job performance. This chapter summarizes the purpose, important findings, and conclusions of the study. Recommendations for further research are also presented.

Findings

The overall state classroom to workplace correlations revealed low r_s levels but very high significance (p) levels for each test score to employee performance rating

(Table VI). This may be due to the classroom knowledge gained by the subject was also applied at the workplace.

The four institutional variables revealed varying results when the classroom knowledge and employee performance ratings were analyzed. These subjects may have successfully transferred classroom knowledge to on the job performance of that knowledge. The TS-TDR "urban" variable produced a high correlation and very significant level (r_s = .63 and p = .01). The other variable showed a significance level of .047 for the TS-RP variable. The subjects productivity job performance was more acceptable than effectiveness and quality. They may be working faster and harder but not producing the quality of work or an effective end product.

The "nursing home" variable showed no significant level for classroom knowledge to on the job performance (Table XI). Perhaps this was due to less supervision by the consulting dietitian or instructions not enforced by the supervisor. The consulting dietitian's instructions may not have been clearly communicated or understood by the supervisor or subject.

The "hospital" variable revealed the highest correlations (r_s) over all the institutional variables (Table IX). This variable was likely to reveal a consistent test score to rating score (ex: high test score produced a high rating score, low test score produced a low rating score). This may be attributed to

the fact that hospitals maintain higher standards and may also have a dietitian who provided continuous monitoring of the subjects. The hospital may have required the subjects to attend in-service trainings which would have reinforced classroom knowledge.

The "bed size lower than 80" showed the highest significance (p) levels than any other institutional variable (Table XIII). Perhaps with less employees the supervisors or dietitians may provide more one on one instructions or trainings. The employees may also have an opportunity to work more dietary positions due to the limited number of foodservice employees. This experience could have provided them with an opportunity for more knowledge application.

The "bed size higher than 80" variable showed no significant correlation levels for classroom knowledge to on the job performance (Table XIII). Perhaps the supervisors and/or consulting dietitians may not have monitored the subjects as closely or possibly closer and gave them stricter performance appraisals. There are greater patient demands on the subjects employed in this type of institution which could interfere with classroom knowledge application. The subject may have only experienced one foodservice position, due to more foodservice employees.

The classroom to workplace correlations for the "limited visits" and "frequent visits" variables were not

at significant levels (Table XV) but the frequent visit variable showed low to moderate correlation levels for all test scores to employee performance ratings. These results in comparison to the limited visits may have occurred because of closer observation and reinforcement given by the consulting dietitian. The "frequent visits" lowest mean test TD-TDR and TS to employee performance scores were recorded. This set of data may be more consistent in low test score to low performance ratings.

Conclusions

The institutional variables that contributed to a more conducive environment for transfer of classroom knowledge to on the job performance were: "urban", "hospital", and "bed size lower than 80". The "hospital" and "bed size lower than 80" had significant levels for nearly all their variables. The overall state correlations indicated some type of Food Service Worker classroom knowledge was transferred to the subjects' on the job performance. Further research is recommended to present a more comprehensive evaluation of the Oklahoma Dietetic Support Personnel Training Program for all levels.

Recommendations

The researcher recommended the following areas for further research.

1. An indication of course outcomes related to individual characteristics would reveal more data about learning and transfer of knowledge.

2. Set up a pre-test and post-test research design.

3. A longitudinal or replicated study of subjects in subsequent classes for transfer of knowledge and performance.

4. More detail in the rating scales used for defining the range of rating scale.

5. Further studies with the Food Production Worker (FPW) and Food Service Supervisor (FSS) component of the Oklahoma Dietetic Support Personnel Training Program (ODSPT) to complete the evaluation of the training series.

6. Program evaluation of subject matter content based on test scores and performance ratings.

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APPENDIXES

APPENDIX A

DIETETIC SUPPORT PERSONNEL TRAINING PROGRAM FOR THE FOOD SERVICE WORKER, FOOD PRODUCTION WORKER, AND FOOD SERVICE SUPERVISOR

FOOD SERVICE WORKER

Admission Requirements: None

Class Hours: 30

Clinical Hours: 50*

This first course provides the core curriculum for the dietetic support personnel training program. Students are given an orientation to the health field and dietetics. An introduction to basic normal nutrition is included. Sanitation is emphasized with attention to personal hygiene, warewashing, housekeeping and pest control, and the prevention of food-borne illnesses. Safety in food service areas is stressed. Basic principles of receiving, food handling, and storage are presented, as well as operation and cleaning of equipment a food service worker would be expected to use in performing simple food preparation and service tasks. Work simplification techniques, importance of teamwork, and basic communications skills are also incorporated into the curriculum.

Successful completion of this course prepares students for employment in such occupations as dietary aide, dishwasher, cafeteria worker, trayline worker, and other entry-level food service positions.

**Clinical hours are completed in the student's place of employment and must be supervised by a registered dietitian.*

FOOD PRODUCTION WORKER

Admission Requirements: Successful completion of Food Service Worker or Challenge Exam

Class Hours: 48

Clinical Hours: 80*

The second course builds on the core curriculum begun in the Food Service Worker level. Nutrition and diet therapy are presented as they relate to food preparation. Application of principles of sanitation and safety in food preparation areas is stressed. The use of menus is presented, along with an overview of purchasing, receiving, and storage of food and supplies. Emphasis is placed on food preparation skills including operation and cleaning of equipment and use of standardized recipes. Preparation of specific categories of foods is included, as well as methods for production scheduling and service of food. Cost control measures in food production are presented. Students also have the opportunity to develop basic supervisory skills to prepare them to temporarily assume supervisory responsibilities.

Successful completion of this course prepares students for employment in health care facilities in such occupations as cook's helper, baker's helper, salad cook, or entry-level cook.

**Clinical hours are completed in the student's place of employment and must be supervised by a registered dietitian.*

FOOD SERVICE SUPERVISOR

Admission Requirements: High School Diploma or G.E.D., Successful Completion of Food Service Worker and Food Production Work Courses, or Challenge Exams for these Levels

Class Hours: 90

Clinical Hours: 150*

The third course begins with an orientation to dietary department organization and includes a discussion of ethical conduct for the food service supervisor. Skills related to assisting int he provision of nutrition care are expanded. A diet manual is used to provide practice in planning diet modifications routinely prescribed. Techniques for communicating effectively with patients and methods of documentation are presented. Supervision of sanitation and safety are stressed. Student are provided opportunities to develop skills in the supervision of food production and service, including menu planning, purchasing, receiving, storage, equipment management, and productivity. Development of management skills such as human relations, leadership, personnel management, and cost control is included. The use of written policies and procedures and an overview of various regulations pertaining to health care facility dietary departments are also covered.

Successful completion of this course prepares the student for employment in such positions as dietetic services supervisor in a nursing home or small hospital with consultation from a registered dietitian or supervisor of a designated area within a large health care facility dietary department.

**Clinical hours are completed in the student's place of employment and must be supervised by a registered dietitian.*

APPENDIX B

OKLAHOMA OCCUPATIONAL ACHIEVEMENT TEST, FOOD SERVICE WORKER WRITTEN TEST (FORM 1)

OKLAHOMA OCCUPATIONAL ACHIEVEMENT TEST

FOOD SERVICE WORKER

WRITTEN TEST (FORM 1)

Each of the items provided in this test is followed by four possible responses. Choose the one which best answers or completes the statement in each case. Mark your selection on your answer sheet. DO NOT write on this test booklet.

A. HUMAN RELATIONS AND COMMUNICATIONS

1. When using the dietary department telephone, you should
   a. let the phone ring four times before answering
   b. avoid letting the caller know who they are talking to
   c. not use the caller's name
   d. speak distinctly

2. Mrs. Nelson, a diabetic, received Mrs. Smith's regular tray and ate the entire meal before the mix-up was discovered. This incident could have been prevented if
   a. the tray had a diet card with patient's name and diet
   b. dietary delivered the trays
   c. nurses were better trained about special diets
   d. Mrs. Nelson had told the tray server

3. Respect is <u>not</u> demonstrated by
   a. showing understanding of other's feelings
   b. finding fault in everyone
   c. helping people feel useful and important
   d. remembering manners and common courtesy

4. Starting to work on time and not leaving work early are examples of
   a. initiative
   b. cooperation
   c. honesty
   d. enthusiasm

5. For effective communication, it is important to
   a. talk rapidly
   b. use as many gestures as possible
   c. speak in a high pitched voice
   d. maintain eye contact

6. Obstacles to listening would <u>not</u> include
   a. pretending
   b. distractions
   c. understanding ideas
   d. emotional blocks

7. Communication is <u>less</u> effective when you
   a. pronounce words distinctly
   b. use proper English
   c. use slang
   d. avoid trite phrases

8. When you are criticized by your supervisor, it is best to
   a. take it constructively
   b. act indifferent
   c. shrug it off
   d. tell him/her to do it himself/herself

9. A food service worker should be loyal to their place of employment
   a. only during work hours
   b. all the time
   c. just when they feel like it
   d. only to and from work

10. Which of the following contains organizational and departmental objectives, organization chart, policies, procedures and job descriptions?
    a. work schedule
    b. job analysis
    c. policy and procedure manual
    d. departmental information book

11. The <u>most</u> important reason for using teamwork in a health care facility is to
    a. provide the best possible patient care
    b. satisfy other employees
    c. make the administrator happy
    d. save money

12. When working with personnel in other departments, it is most effective to
    a. always demand your way
    b. cooperate
    c. try to "run the show"
    d. yell at them when they do something wrong

13. A form of communication that does <u>not</u> require words is called
    a. nonverbal communication
    b. verbal communication
    c. conversation
    d. written communications

14. Good communication can create an atmosphere that leads to
    a. confusion
    b. disagreement
    c. cooperation
    d. inefficiency

15. Certification of dietetic assistants is done by what organization?
    a. ADA
    b. HIEFSS
    c. USDA
    d. FDA

16. An individual who has completed a four-year degree in dietetics and a one-year dietetic internship is called a
    a. dietetic assistant
    b. certified dietetic assistant
    c. dietetic technician
    d. dietitian

B. PERSONAL HYGIENE AND SAFETY

17. When working in food service, a sanitary practice is to
    a. smoke cigarettes
    b. leave comb in hair
    c. wear hair restraints
    d. scratch head

18. Which of the following shoes are appropriate for food service workers?
    a. low heeled
    b. sandals
    c. high heeled
    d. tennis shoes

19. Handwashing should be done at
    a. the hand sink
    b. the pot and pan sink
    c. the cooks sink
    d. any sink in the food service unit

20. Strains can be prevented by
    a. lifting heavy items alone
    b. reaching to place heavy objects on high shelves
    c. using your back muscles to lift
    d. using carts or dollies for moving heavy items

21. Cuts are most often caused by
    a. using safety guards on equipment
    b. removing lids from cans
    c. cutting toward the body with a knife
    d. storing knives in a rack

22. When holding hot pots and pans, it is appropriate to use
    a. dry towels
    b. flameproof potholders
    c. damp potholders
    d. aprons

23. When washing hands, soap should be used
    a. only in the palms of the hand
    b. only between fingers
    c. only under nails
    d. both between fingers and under the nails

24. It is proper to grasp a
    a. plate by its rim
    b. glass by its rim
    c. fork at the tine end
    d. spoon at the bowl end

25. When opening cans, it is important to
    a. leave the lid partially attached
    b. remove the lid completely
    c. remove the label before opening
    d. open the top of the can not the bottom

26. After washing your hands, faucets should be turned off with
    a. cloth towel
    b. paper towel
    c. bare hand
    d. dish towel

C. NUTRITION

27. The food groupings designed to help in planning regular diets are called the
    a. Food Exchanges
    b. Recommended Dietary Allowances
    c. Daily Food Guide
    d. U. S. Recommended Dietary Allowances

28. Fats, salad dressing, candy, and soft drinks are examples of foods in the food group called
    a. other
    b. meat
    c. miscellaneous
    d. junk

29. The most concentrated source of calories is
    a. fat
    b. carbohydrate
    c. protein
    d. alcohol

30. The class of nutrients that has the main function of building and repairing body tissue is called
    a. fat
    b. carbohydrate
    c. minerals
    d. protein

D. RECEIVING, HANDLING, AND STORAGE

31. Before a food thermometer is used it should be
    a. washed and rinsed
    b. washed, rinsed and sanitized
    c. wiped off with a damp cloth
    d. cooled below room temperature

32. Before storing leftovers, containers should be labeled with the
    a. name and room number of patient
    b. amount of food stored and date last served
    c. preparation method and number of servings prepared
    d. name of food and date prepared

33. Mashed potatoes should be portioned with a
    a. dipper
    b. solid spoon
    c. scoop
    d. measuring cup

34. Hot foods should always be re-heated to an internal temperature of _____ before being served
    a. 125 degrees F
    b. 140 degrees F
    c. 165 degrees F
    d. 180 degrees F

35. Cutting boards should be sanitized after each use to prevent cross-contamination. Which of the following is at particular concern?
    a. salmonella
    b. Clostridium botulinium
    c. Trichinae
    d. both (a) and (b)

36. Refrigerator and freezer temperatures should be checked and recorded
    a. hourly
    b. daily
    c. twice weekly
    d. weekly

37. A list of food and/or supplies ordered from a vendor, the amount delivered and the amount charged to the institution is called a(n)
    a. invoice
    b. purchase order
    c. inventory
    d. product catalog

38. Storeroom temperatures should be maintained at
    a. 40-60 degrees F
    b. 50-70 degrees F
    c. 70-80 degrees F
    d. 70-120 degrees F

39. Refrigerator shelves should <u>not</u> be covered with aluminum foil because it
    a. prevents air circulation
    b. is difficult to clean
    c. is expensive
    d. appears unsightly

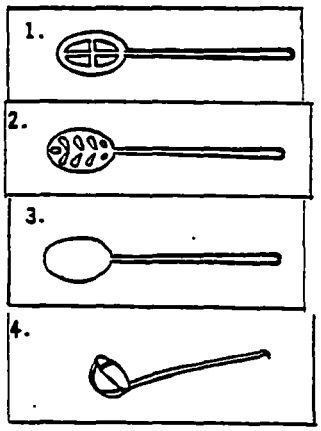
40. Canned foods that are delivered may be accepted if the cans are
    a. bulging
    b. dented
    c. leaking
    d. sealed properly

41. Storage time and temperature are most critical for
    a. fresh fruit
    b. cream pie
    c. cooked peas
    d. biscuits

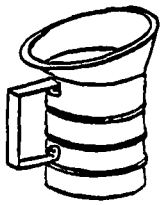
E. EQUIPMENT

42. When using a portion scale, the weight of the weighing pan must be accounted for by
    a. placing the pan on scales and zeroing the scale
    b. using red weights to account for pan weight
    c. estimating the weight of the pan
    d. subtracting the weight of the pan from the total weight

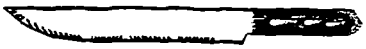
43. When cleaning the base of a baker's scale, the scale should be
    a. sanitized
    b. wiped with a damp cloth
    c. washed in the pot and pan sink
    d. wiped with a dry cloth



44. The spoon shown above that would be most appropriate for folding, stirring, and serving is spoon number
    a. 1
    b. 2
    c. 3
    d. 4



45. The measure shown above would be most appropriate for measuring
    a. 1 quart milk
    b. 4 cups flour
    c. 3 cups macaroni
    d. 2 cups cornmeal



46. The knife pictured above is a
    a. paring knife
    b. butcher knife
    c. bread knife
    d. french knife

47. To determine the weight of a food being weighed on a platform scale you must
    a. zero the scale before adding the food to be weighed
    b. use red weights
    c. estimate the weight of the pan
    d. subtract the weight of the pan from the total weight

48. The type of scale that should be kept locked when not in use is the
    a. portion scale
    b. baker's scale
    c. platform scale
    d. balance scale

49. When cleaning an electric can opener, the first step is to
    a. assemble the cleaning supplies
    b. unplug the can opener
    c. remove the cutting blade
    d. scrub the cutting blade

50. The faucet of the coffee dispenser should be cleaned each time the urn is cleaned otherwise deposits will collect and cause
    a. the faucet to plug up
    b. discoloring of the coffee
    c. the coffee to heat improperly
    d. off flavors in the coffee

51. When using a utility cart, you should
    a. load it as full as possible
    b. pull it at all times
    c. push it into elevators
    d. load it so you have a clear view

52. When using a institutional blender, the speed
    a. should be changed only when machine is stopped
    b. may be changed without stopping the machine
    c. should be changed frequently
    d. used will be the same for all products

53. When cleaning an instant iced tea machine, the tea compartment should be washed with
    a. a mild detergent solution
    b. warm water
    c. a strong detergent
    d. a strong sanitizing solution

54. The temperature of a coffee urn should be checked to be sure the coffee is brewed at
    a. 175 degrees F
    b. 180 degrees F
    c. 185 degrees F
    d. 190 degrees F

55. If toast sticks in a rotary toaster, pry it out
    a. with a fork
    b. before the toast cools
    c. only after the toaster is unplugged
    d. immediately

56. When cleaning a rotary toaster, the first two steps are
    a. wash the tray and the frame
    b. unplug the toaster and wash the frame
    c. wash the frame and remove tray from beneath the toaster
    d. unplug the toaster and brush away crumbs

57. Accuracy cooking time is most important when using a
    a. convection oven
    b. conventional oven
    c. microwave oven
    d. equally important for all three ovens

58. Microwave ovens should be cleaned with a(n)
    a. abrasive cleaner
    b. mild bleach solution
    c. rinsing agent
    d. mild detergent solution

59. When steam tables are used with hard water, it is necessary to
    a. wash them more frequently
    b. delime them weekly
    c. delime them monthly
    d. use a rinsing agent each time you clean

60. When cleaning a milk dispenser, the milk should be drained and refrigerated. This milk cannot be used for
    a. custard
    b. cream sauce
    c. cake
    d. drinking

61. When cleaning a food transport cart, you should not
    a. clean it while hot
    b. allow it to air dry
    c. scrub the wheels
    d. polish it with stainless steel polish

62. When cleaning a food warmer, it should be rinsed with
    a. warm water
    b. a sanitizing agent
    c. a rinsing agent
    d. a deliming solution

63. When using food service equipment, which of the following is a safety precaution?
    a. wear loose clothing
    b. turn on machine when making adjustments
    c. grasp plug to remove it from the socket
    d. wear rings

64. When using equipment, the supervisor should be notified if
    a. you know how to use the equipment
    b. the equipment is operating properly
    c. a machine part has been misplaced
    d. all parts are present

65. All of the following are portion control utensils except
    a. pie marker
    b. dipper
    c. ladle
    d. scoop

66. A safety rule for knife use is
    a. use knife only for cutting
    b. cut toward the body
    c. cut vegetables in the palm of the hand
    d. use a dull knife

67. When storing equipment, you should
    a. store bowls right side up
    b. store utensils in their proper place
    c. store knives loose in a drawer
    d. store pans next to cleaning compounds

68. When serving bread, you should use
    a. a fork
    b. your hands
    c. tongs
    d. a spatula

F. FOOD PRODUCTION AND SERVICE

69. A cup contains _____ tablespoons
    a. 4
    b. 8
    c. 12
    d. 16

70. Eight quarts is equal to
    a. 16 cups
    b. 2 gallons
    c. 12 pints
    d. 24 cups

71. Ice should be served using a
    a. glass
    b. cup
    c. hand
    d. scoop

72. If coffee is to be held for long periods it should be stored
    a. at room temperature
    b. in the refrigerator
    c. just below the boiling point
    d. at the boiling point

73. To ensure quality, salads should be held at room temperature no longer than
    a. 15-20 minutes
    b. 20-30 minutes
    c. 30-45 minutes
    d. 45 minutes to 1 hour

74. When putting cottage cheese in the center of a salad, the most appropriate utensil is a
    a. dipper
    b. ladle
    c. measuring cup
    d. solid spoon

75. When preparing tossed green salads, dressing should be added
    a. the evening before it is to be served
    b. one hour prior to service
    c. as close to service time as possible
    d. as soon as possible after preparation

76. When sectioning citrus fruit, you should
    a. cut the fruit crosswise
    b. cut the fruit lengthwise
    c. serve directly from the package
    d. leave seeds in each section

77. A recipe calls for 8 oz. flour. The best equipment to use to measure this is a
    a. 1/2 cup dry measure
    b. 1 cup dry measure
    c. 1 cup liquid measure
    d. scale

78. When measuring, which of the following ingredients should you pack?
    a. flour
    b. sugar
    c. cornstarch
    d. brown sugar

79. A factor that would not affect motion economy would be
    a. arrangement of work area
    b. use of body
    c. age of equipment
    d. design of equipment

80. When arranging food and equipment for motion economy, it is most important that they be
    a. in alphabetical order
    b. in order by size
    c. clearly labeled
    d. within the mixiumum work range

G. WAREWASHING

Refer to the following illustrations of a pot and pan sink to answer questions #81 and #82.

Compartment 1	Compartment 2	Compartment 3

81. Compartment 2 shown in the above illustration is used for
    a. soaking
    b. washing
    c. rinsing
    d. sanitising

82. For most efficient work flow, compartment 3 shown in the above illustration should be used for
    a. soaking
    b. washing
    c. rinsing
    d. sanitising

83. The first step in preparing a dishwashing machine for operation is to
    a. place scrap trays in machine
    b. check the temperatures of the wash and rinse cycles
    c. fill the tank to the specified level
    d. add detergent and drying agent

84. Before beginning to wash dishes, always run the dishwashing machine through a complete cycle to
    a. insure that the machine has adequate detergent
    b. check the temperature of the wash cycle
    c. check the temperature of the final rinse cycle
    d. both (b) and (c)

85. Since all surfaces of the dish must come into contact with wash and rinse sprays, it is important to
    a. pre-rinse all dishes
    b. avoid stacking dishes in racks
    c. use proper detergent and rinsing agents
    d. place several types of dishes in each rack

86. Before washing, all flatware should be
    a. sorted
    b. rinsed
    c. soaked
    d. sanitized

87. Stained coffee cups are caused by
    a. incorrect detergent in wash cycle
    b. lack of rinsing agent
    c. wash temperatures less than 150 degrees F
    d. rinse temperatures less than 180 degrees F

88. Before handling clean dishes the food service worker should
    a. wash hands and inspect them to be sure they are clean
    b. wash hands and dry them on a cloth towel
    c. rinse hands in warm water and dry on a disposable towel
    d. wash hands with soap and water or immerse hands in sanitising agent

89. The process of checking to see if dishes are clean and free of visible soil is called a
    a. bacterial count
    b. visual inspection
    c. employee check
    d. dishwashing evaluation

90. Chipped china should be
    a. handled with care to avoid breakage
    b. used only in emergencies
    c. discarded
    d. hand washed to prevent breakage

H. HOUSEKEEPING AND PEST CONTROL

91. Sanitation practices that aid in the control of insects and rodents would not include
    a. discarding spoiled food immediately
    b. removing standing water
    c. leaving garbage can uncovered
    d. using a professional exterminator

92. For proper garbage disposal in a large kitchen area, you should
    a. use watertight containers
    b. leave garbage cans uncovered
    c. use only one garbage can
    d. empty garbage once a day

93. When storing wet mops they should be
    a. left to drip dry
    b. left in the mop bucket
    c. propped against wall
    d. hung with the head up

94. When using cleaning compounds, you should
    a. mix cleaning compounds
    b. store chemicals in food containers
    c. read the label and follow directions
    d. allow the compound to remain on the clean surface

95. When mopping a floor, you should mop
    a. in a circular motion
    b. in a side-to-side motion
    c. in a figure-eight motion
    d. in a back-and-forth motion

96. Which of the following items should be avoided in order to maintain a clean restroom?
    a. paper towels
    b. cloth towels
    c. handwashing soap
    d. toilet paper

97. When checking the cleanliness of floors, it is important that the floor be
    a. stained by chemicals
    b. cleaned near the legs of equipment
    c. rinsed at the corners with a sanitizing solution
    d. waxed until they are slippery

98. Cleaning supplies and other harmful chemicals should be stored
    a. in the food storeroom
    b. in a separate storeroom or locked cabinet
    c. on a separate shelf from food
    d. under the sink

99. Garbage cans should always be
    a. kept outside of the kitchen
    b. emptied after each meal
    c. covered tightly
    d. stored in the stockroom

100. The final step after cleaning, garbage cans should be
    a. wiped dry with a sponge
    b. allowed to air dry
    c. immediately lined with a plastic liner
    d. sterilized before returning to use

APPENDIX C

GUIDELINES, ANSWER SHEETS, AND STUDENT LIST SHEETS

GUIDELINES

1. The scale is from one to ten (ten is the highest rating and one is the lowest rating). Please be very frank with your ratings as the students will not see the rating you give them and rating will never be identified by names or your name.

2. Please circle only one number for each question.

3. Please be sure the number circled is readable.

4. Please mail the rating scale back to me in the enclosed self-addressed stamped envelope.

5. Results will not be identified with the institution or supervisor at any time.

6. If you have any questions please call:

   Home - 405-372-6901

   Work - 405-624-6283

Please send the rating scale back as soon as possible. It would appreciate having them return by May 30.

Thank you for your cooperation and time you have spent helping me with this project.

ANSWER SHEET

Please circle the letter you select for each question.

A. Human Relations and Communications

1. a b c d	2. a b c d	3. a b c d	4. a b c d
5. a b c d	6. a b c d	7. a b c d	8. a b c d
9. a b c d	10. a b c d	11. a b c d	12. a b c d
13. a b c d	14. a b c d	15. a b c d	16. a b c d

B. Personal Hygiene and Safety

17. a b c d	18. a b c d	19. a b c d	20. a b c d
21. a b c d	22. a b c d	23. a b c d	24. a b c d
25. a b c d	26. a b c d		

C. Nutrition

27. a b c d	28. a b c d	29. a b c d	30. a b c d

D. Receiving, Handling, and Storage

31. a b c d	32. a b c d	33. a b c d	34. a b c d
35. a b c d	36. a b c d	37. a b c d	38. a b c d
39. a b c d	40. a b c d	41. a b c d	

E. Equipment

	42. a b c d	43. a b c d	44. a b c d
45. a b c d	46. a b c d	47. a b c d	48. a b c d
49. a b c d	50. a b c d	51. a b c d	52. a b c d
53. a b c d	54. a b c d	55. a b c d	56. a b c d
57. a b c d	58. a b c d	59. a b c d	60. a b c d
61. a b c d	62. a b c d	63. a b c d	64. a b c d
65. a b c d	66. a b c d	67. a b c d	68. a b c d

F. Food Production and Service

69. a b c d	70. a b c d	71. a b c d	72. a b c d
73. a b c d	74. a b c d	75. a b c d	76. a b c d
77. a b c d	78. a b c d	79. a b c d	80. a b c d

G. Warewashing

81. a b c d	82. a b c d	83. a b c d	84. a b c d
85. a b c d	86. a b c d	87. a b c d	88. a b c d
89. a b c d	90. a b c d		

H. Housekeeping and Pest Control

91. a b c d	92. a b c d	93. a b c d	94. a b c d
95. a b c d	96. a b c d	97. a b c d	98. a b c d
99. a b c d	100. a b c d		

STUDENT LIST SHEET

2-1. _____

2-2. _____

2-3. _____

2-4. _____

2-5. _____

2-6. _____

2-7. _____

2-8. _____

2-9. _____

2-10. _____

2-11. _____

2-12. _____

2-13. _____

2-14. _____

2-15. _____

APPENDIX D

INSTRUCTOR'S LETTER

Oklahoma State University

Department of Food, Nutrition and Institution Administration

STILLWATER, OKLAHOMA 74078
(405) 624-5039

November 27, 1984

Francis Tuttle AVTS
Ellen Barker, R.D.
12777 N. Rockwell Ave.
Oklahoma City, OK 73142

Dear Ms. Barker:

Hello again; I have conversed with most of you over the phone, briefly, about the testing to be included in the curriculum research project. As I mentioned earlier, I am working with Judy Milroy and the Vo-Tech Test Specialists on this project and also using it as my Thesis topic.

The purpose of the research is to evaluate the step one - Food Service Worker training materials. The process of evaluation will be accomplished by testing students who have recently completed the FSW section and then comparing the test scores with the employers rating scores.

If you wish and it fits your schedule better, the test may be used as the final exam. Please administer the test as soon as you FSW section is finished. If you have already completed this section please administer the test as soon as possible.

The tests are being finalized now and they should reach you by the end of the first week of December. Complete directions will be included for administration of the test. I will appreciate receiving the tests back as soon as your students have completed it, hopefully not later than January 2, 1985. If you have further questions about either the test or the procedures, please call me at (work) 405-624-6283 or (home) 405-372-6901.

Thank you very much for your assistance. I will be providing you with a summary of the results later this winter.

Sincerely,

Esther Winterfeldt
Dr. Esther Winterfeldt
Department Head, FNIA
Major Advisor

Janita Morgan
Janita Morgan
Graduate Student
Nutrition Education

APPENDIX E

OKLAHOMA OCCUPATIONAL ACHIEVEMENT TEST, FOOD SERVICE WORKER EMPLOYEE RATINGS

OKLAHOMA OCCUPATIONAL ACHIEVEMENT TEST
FOOD SERVICE WORKER
EMPLOYEE RATINGS

Instructions: Each question below is concerned with one aspect of a Food Service Worker's job. Circle the number on the scale below each question which indicates your evaluation of _____'s job performance.

1. Food service workers must communicate clearly with one another, with supervisors and with consumers. They must also maintain good working relationships with one another, with their supervisors and with food consumers. This employee's communications and human relations:

   Need Improvement — Are Superior
   1 2 3 4 5 6 7 8 9 10

2. Food service workers must practice cleanliness and good personal hygiene, as well as follow standard safety precautions on the job. This employee's personal hygiene and safety practices:

   Need Improvement — Are Superior
   1 2 3 4 5 6 7 8 9 10

3. Food service workers should know the basics of nutrition. This employee's knowledge of basic nutrition:

   Needs Improvement — Is Superior
   1 2 3 4 5 6 7 8 9 10

4. Food service workers must know how to receive foods from delivery persons, how to handle foods when preparing and serving them, and how to store foods after their initial use. This employee's food reception, food handling, and food storage practices:

   Need Improvement — Are Superior
   1 2 3 4 5 6 7 8 9 10

5. Food service workers must be able to properly identify and to use the common kitchen equipment. This employee's knowledge of and use of food service equipment:

   Needs Improvement — Is Superior
   1 2 3 4 5 6 7 8 9 10

6. Food service workers must know how to prepare common menu items, as well as how to present them to consumers. This employee's food production and service:

   Needs Improvement — Is Superior
   1 2 3 4 5 6 7 8 9 10

7. Food service workers must know how to care for and wash common kitchen equipment and utensils. This employee's equipment care and washing:

   Needs Improvement — Is Superior
   1 2 3 4 5 6 7 8 9 10

8. Food services workers must keep their work areas clean, and must practice the usual housekeeping and pest control skills. This employee's housekeeping and pest control skills:

   Need Improvement — Are Superior
   1 2 3 4 5 6 7 8 9 10

Instructions: Each question below is concerned with your employee's overall job performance. Circle the number on the scale below each question which indicates your evaluation of his/her job performance.

9. Food service workers must meet very high job standards. The quality of this employee's work:

   Is Very Low — Is Superior
   1 2 3 4 5 6 7 8 9 10

10. Food service workers must perform their jobs effectively. This employee's performance:

    Is Ineffective — Is Extremely Effective
    1 2 3 4 5 6 7 8 9 10

11. Food service workers must be productive. This employee's productivity:

    Is Unproductive — Is Extremely Productive
    1 2 3 4 5 6 7 8 9 10

Please indicate the number of beds in _____ _____health care facility _____.

APPENDIX F

EMPLOYER'S LETTER

Oklahoma State University

Department of Food, Nutrition and Institution Administration

425 HOME ECONOMICS WEST
STILLWATER, OKLAHOMA 74078
(405) 624-5039

April 17, 1985

See attachment

Dear

As a part of my research for the Masters Degree at Oklahoma State University in Food and Nutrition, I am working with the State Vo-Tech Department under the direction of Judy Milroy and the Vo-Tech test specialists.

The purpose of my research is to validate the course content of the Dietetic Support Personnel Training Program taught at the Vo-Tech schools in Oklahoma. I will only be looking at the first step of the training program or Food Service Worker.

In this follow up study, I am including two steps as follows: Step 1. Administering a test to the students who have completed the Food Service Worker section. This part has been completed. Step 2. An employer rating of the student, based on work done after completing the Food Service Worker program. This is the step I am asking you to complete as the consultant supervisor of the student.

Your assistance is very important to the study as I want to be able to indicate knowledge gained in the course as it relates to performance on the job.

Guidelines are enclosed with the rating scale. If you have any questions please call me at work 405-624-6283 or home 405-372-6901. Thank you.

Sincerely,

Janita Morgan, Graduate Student
Nutrition Education

Esther Winterfeldt, Ph.D.
Faculty Advisor

CENTENNIAL DECADE
1980 • 1990

VITA

Janita Fay Morgan

Candidate for the Degree of

Master of Science

Thesis: ASSESSMENT OF FOOD SERVICE WORKER KNOWLEDGE AND ON THE JOB PERFORMANCE

Major Field: Food, Nutrition and Institution Administration

Biographical:

Personal Data: Born in Shawnee, Oklahoma, May 23, 1958, the daughter of Max and Winona Morgan.

Education: Graduated from Dale High School, Dale, Oklahoma in 1976; Attended Oklahoma Christian College, Oklahoma City, Oklahoma 1976 - 1978; received Bachelor of Science degree in Food, Nutrition and Institution Administration from Oklahoma State University, Stillwater, Oklahoma in May 1981; completed requirements for Master of Science degree in Food, Nutrition and Institution Administration at Oklahoma State University, Stillwater, Oklahoma in December 1986.

Professional Experience: Interim Expanded Food and Nutrition Education Program (EFNEP) Coordinator, August 1984 - present; Graduate Teaching Assistant Nutritionist, Oklahoma State University Child Development Laboratories, January 1984 - August 1984; Extension Home Economist, Alfalfa County Oklahoma, October 1981 - August 1983; Renal Dietetic Technician, Oklahoma Memorial Hospital, June 1981 - September 1981.

Professional Organizations: Omicron Nu Honor Society; Society of Nutrition Education; Affiliate Member, The American Dietetic Association.