ENTRY-LEVEL CLINICAL DIETETICS: JOB PERFORMANCE VERSUS STANDARDS OF PRACTICE

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CHAPTER I

INTRODUCTION

One of the greatest challenges for dietetic educators today is provision of a curriculum with relevant content of sufficient breadth and depth to prepare the graduate dietitian for competent entry-level practice. Since establishing the first internship training program for dietitians, The American Dietetic Association has set forth the academic requirements for graduates to qualify for the practice of dietetics. These requirements were revised in 1972 as Plan IV Minimum Academic Requirements. A 1987 revision has been labeled Standards of Education.

Several factors have brought about an increased demand for changes in both the academic requirements and clinical experiences for entrance into the profession of dietetics. With the advent of accreditation, certification and more recently licensure, role delineation studies have provided a basis for improved courses of study to prepare dietetic practitioners.

Research to determine how closely these academic requirements are in concert with job activities for clinical dietitians is limited. Functional job analysis (FJA) has been suggested as a method used to observe work performance

and determine actual job activities. Using results from such observations, educational or learning task analysis (LTA) may provide a valuable tool for comparison of job activities and the required knowledge and skill gained from existing academic requirements.

A review of the literature shows that although the military and private industry make wide use of functional job analysis to classify jobs and to develop curriculum for on-the-job training programs, dietetics, health care and teaching professions do not. They more frequently follow the mandates of national or state accrediting agencies and national professional organizations when developing curricula to meet minimum standards of academic requirements for certification, registration or licensure. An example is the Plan IV Minimum Academic Requirements to meet the membership requirements of The American Dietetic Association (1976). Satisfactory completion of the requirements qualifies an individual to write an examination to become a registered dietitian. These requirements, adopted in 1972, were developed by a panel of experts in the field of dietetics to identify knowledge areas in which a graduate must be competent. Further, a review of curriculum guidelines for other health-related academic programs, such as those for the American Occupational Therapy Association (1973), presents evidence that many national professional organizations mandate knowledge or subject matter areas for study to meet academic requirements leading to certification as

competent professional practitioners.

As in the case of The American Dietetic Association, the requirements are usually developed by a panel without the benefit of a functional analysis of the jobs typically performed by the practicing professionals. Such an analysis can be very helpful for developing new requirements, confirming existing ones and identifying needed changes.

As a method of analysis, functional job analysis has been found to be very useful for determining the actual task performance of an individual in a given job by conceptualizing the whole and the part of human performance. The information gathered in the determination of the job actions, specifies and defines the expected functional performance of the worker being observed. Tasks identified are further analyzed as elements or component parts requiring knowledge, skills, and attitude to achieve a desired performance standard (Goldstein, 1974). Tasks requiring common knowledge and skills are grouped together.

There is still the need to know the actual tasks performed by dietitians in order to better determine and outline the knowledge and skills required. The differentiation for levels of dietetic practice was based on definition by academic degree, professional for the person having a baccalaureate degree and technical for the person having an associate degree. Many professional practitioners have indicated that if the professional schools had a greater awareness and knowledge of the tasks required in

their professional jobs, then the curricula studied would better prepare the future practitioner for employment. Having participated as an American Dietetic Association Commission on Accreditation site visitor for accreditation of dietetic internship and coordinated undergraduate programs throughout the United States from 1978 to 1986, this researcher had personal contact with practicing dietitians and educators who indicated that emphasis in college had been placed on learning facts that may not always relate to the type of tasks dietitians performed in the actual job setting. Dialogues with other health-related professionals demonstrated an almost identical concern among practitioners in their respective professions.

Importance of the Study

Educators of dietitians have traditionally followed guidelines (subject matter areas and/or competencies) provided by The American Dietetic Association for identifying subject matter areas for curriculum planning. Using these guidelines has allowed colleges and universities to determine what knowledge should be provided by specific courses to meet the standards. There is a possibility that the guidelines may not relate closely to the demands of actual job performance.

Changing needs for dietitians, as well as for other professionals, have required that methods be explored to improve curricula and assure relevancy to practice. In

this realm, The American Occupational Therapy Association (1973) completed role delineation studies which led to identification of tasks and role responsibilities for the therapist and provided guidelines for curricula relevant to standards of practice in the professional job. Role delineations, therefore, can provide the framework for a type of job analysis leading to the development of curriculum guidelines.

It is hoped that information gained from this study can be valuable to discplines where task analysis studies are not available to provide the framework for curriculum design. Also, the observation techniques as in this study could serve as an additional data gathering mechanism for further research into conceptual approach for curriculum development in other allied health sciences.

Since job task analysis studies in dietetics have not been reported in the literature, this study provides a methodology for research in the education and training not only of clinical dietitians, but also for those practicing in community, management, and general dietetics.

Purpose and Objectives

The purpose of this research was to conduct a functional job analysis of job activities of clinical dietitians to determine if current practice is in accord with the Role Delineation for Entry Level Clinical Dietetics (Baird and Armstrong, 1981) and the Accreditation/Approval

for Dietetic Education Programs (ADA, 1987) to prepare the graduate for entry-level clinical practice. Specific objectives include:

1. Perform a functional job analysis of entry-level practice of clinical dietetics which includes actual tasks performed, time required to perform tasks, perceived level of difficulty of task and number of times task is performed.

2. Verify if the functional job analysis is in accord with The American Dietetic Association (ADA) Role Delineation for Entry Level Clinical Dietetics (Baird and Armstrong, 1981) and the Accreditation/Approval Manual for Dietetic Education Programs (ADA, 1987).

3. From the functional job analysis and learning task analysis, infer the necessary knowledge and skill required to practice clinical dietetics.

4. Make recommendations to enhance the application of The American Dietetic Association (ADA) Role Delineation for Entry Level Clinical Dietetics (Baird and Armstrong, 1981) and the Accreditation/Approval Manual for Dietetic Education Programs (ADA, 1987).

Limitations and Assumptions

The limitations of this study are the 24 clinical dietitians in the 16 hospitals participating constitute an invited sample of the midwest and southwest geographic areas of the United States rather than a random sample of

all metropolitan hospitals.

Clinical dietitians observed were assumed to perform job activities similar to other clinical dietitians practicing in health care facilities in all geographic areas of the United States. In addition, the observation method used is a valid and reliable tool for verification of the standards of practice. The subjects in this study were assumed to perform job activities in the same manner as they would without an outside observer present.

Definitions

1. Clinical Dietitian:

> "A specialized dietetic professional who effects the nutrition care of individuals and groups in health and illness. The clinical dietitian provides nutrition assessment, planning, implementation (including education and referral) and evaluation services: . . . and maintains skill and knowledge in optimal nutrition" (Baird and Armstrong, 1981, p. 83).

2. Educational Task:

> What has to be done by a learner to achieve a specific learning outcome.

3. Functional Job Analysis:

> "An observation technique which breaks down work done into classifiable components. The task becomes the basic unit of observation, which may vary in size, consisting of either a few actions or a series of actions" (Wallington, Hyer, Bernotavicz, Hale, and Silber, 1971, p. 8).

4. Job Task Statement:

> The dividing of a job into classes of activities by analysis of schedules and job descriptions for the purpose of developing performance standards and identifying the knowledge needed to successfully perform the job.

5. Learning Task Analysis:

A method to determine the expected learning outcomes which require human capabilities of intellectual skills, cognitive strategy, knowledge, motor skills and attitudes.

6. Non-Teaching Hospitals:

Hospitals which do not sponsor dietetic internships or which are not primary affiliations for coordinated undergraduate programs in dietetics.

7. Task:

"A series of work (elements) that are needed to produce an identifiable output that can be independently consumed or used" (Gilpatrick, 1972, pp. 2-8).

CHAPTER II

REVIEW OF LITERATURE

The review of literature is presented in three sections. The first section discusses the historical aspects of dietetic education and current research in dietetics relative to job performance and the required capabilities. The second section provides the development and theoretical framework of functional job analysis (FJA) upon which this study is partly based. The third portion discusses both educational task analysis (ETA) and learning task analysis (LTA) important in this study to aid in identifying knowledge and skills required to develop curriculum guidelines.

Education and Research in Dietetics

The American Dietetic Association (ADA) was organized in 1917. Mitchell (1936) described the organizers as a group of women who believed there would be a growing demand for persons trained in the science of nutrition and the art of feeding people.

Early dietetic authors related educational concerns. Among these was Thoma (1928) who reported the activities of several committees who had responsibility for considering recommendations for courses of study for future dietetic

practitioners. From this report came a suggested curriculum plan that the committee recommended be available for distribution from The ADA office.

Since 1925 The ADA has been involved in approval and/or accreditation of dietetic programs. Bryan (1934) reported the primary works of an "Education Section" to be the personal inspection of hospitals on an approved list for training dietetic interns and the desire to pursue the development of a tentative list of colleges considered as offering adequate academic preparation for dietitians. Beginning in December, 1931, a list of approved educational institutions was made available from The ADA office. Today a list of approved and/or accredited programs is available in the Directory of Programs, updated annually by The ADA.

Frequently throughout the history of The ADA, concern was expressed about the quality of academic preparation and professional training for both the undergraduate and postgraduate education. Attempts at the evaluation of academic and clinical preparation were originally the responsibility of the educational institution and the dietetic internship directors. Morrill (1940) reports the first site visits for the purpose of increasing continuity between programs and to assure high standards of training. Since the first program was recognized, the process for review of both educational and clinical training programs has experienced change.

Educational standards used by The ADA for academic

programs were first published as a curriculum plan called Outline Number 1. Bryan (1934) made reference to this outline as a listing of the minimum distribution of semester hour course requirements necessary for students applying for postgraduate dietetic training. From Outline Number 1, the dietetic profession has addressed concern for quality education and training of dietetic students through revision of academic requirements. Presently the plan of study to qualify for entrance into the practice of dietetics is either Plan IV or V. The most recent plan is evaluated by use of the Accreditation/Approval Manual for Dietetic Education Programs (ADA, 1987).

Much of the research in dietetics describes the competencies required for job performance rather than human capabilities or skills. McManners and Barina (1984) measured current levels of clinical services and defined productivity standards. Job functions or duties performed and the length of time required spent on each function were used. Using this model as a type of FJA, duties could be prioritized resulting in a list of task statements.

Snyder, Schiller and Smith (1985) compare career-entry administrative competence with competence needed for current practice. They categorized competency statements as organization and administration; leadership and supervision; personnel management; space, equipment and materials management; communication; financial management; and quality assurance of service. Using these categories, educators

could define skills required for practice of dietetics and identify curriculum content according to educational task analysis.

Lawler and Fruin (1986) identified level of competence in clinical dietetics that is expected of Plan IV graduates. A survey questionnaire was used to determine perceived level of competency of dietetic interns. When reviewed, the competencies may become job task statements. Results of this study appear to provide appropriate information to identify curriculum needs for the entry-level dietitian.

Rinke, David and Bjoraker (1982) reported employers' perception of the entry-level generalist dietitians' preparation in administration and related them to the graduates' route to attainment. A questionnaire was used to survey employers to gain their opinion. Findings indicated that employers believed that the educational preparation varied in the routes. The routes were dietetic internship, coordinated undergraduate program, traineeship and advanced degree program. This research appears to demonstrate the need for identification of human capabilities or skills needed both in education programs and clinical training.

A Study Commission on Dietetics (1985) reviewed the profession of dietetics and proposed that education of dietitians be strengthened in one or more of the following ways:

> a broader base, particularly in the arts, humanities and behavioral sciences; greater emphasis on management and business; greater emphasis on

> communications and networking; greater emphasis on new technology, especially the use of computers; greater depth in scientific knowledge of nutrition.

Both FJA and ETA could provide data to implement these recommendations in education programs for the dietetic profession.

Functional Job Analysis

Job analysis is a method of gathering, analyzing, and presenting information about a given job. Commitment to the use of a specific method such as observation varies, depending upon the intended use of the information. Although the primary use of functional job analysis has been in the areas of personnel and manpower, this study has expanded the use of FJA to lend assistance to curriculum development.

The literature provides many definitions of functional job analysis (FJA). The definitions, however, most relevant to this study are the two which follow.

Fine and Wiley (1971) describe FJA as three things:

> (1) A conceptual system defining dimensions of work activity and thus a way of conceiving the world of work;
>
> (2) An observational method and thus a way of looking at people at work; and
>
> (3) A method of analysis--of evaluating the design of work and its performance. (p. 77)

The second definition is:

> An observation technique which breaks down work into classifiable components. The task becomes

> the basic unit of observation, which may vary in size, consisting of either a few actions or a series of actions. (Wallington, Hyer, Bernotavicz, Hale and Silber, 1970, p. 8)

Job analysis was the language used prior to 1950 to describe methods of gathering information about jobs. In a review of job analysis activities, Kershner (1955) reported the following purposes of job analysis:

> (1) health and safety of employees;
> (2) improvements of methods;
> (3) selection of employees;
> (4) training of employees;
> (5) wage and salary administration; and
> (6) vocational guidance. (p. 3)

Lacking in the list of purposes is the importance of job analysis for curriculum building in the field of education. Although training of employees is included, this classification was used for on-the-job training, rather than academic curriculum building. Kershner (1955) strongly recommended in this review observation as a method of analysis, but did not negate the use of interviews, questionnaires, and work participation as effective techniques to study jobs. Whatever the method of choice, the tools and activities of a particular job must be both recorded and described.

Changes in the economy following World War II began to impact the job market. The influx of those seeking jobs provided the impetus for the United States government to standardize occupational information essential for placement of persons entering the job market. The United States Employment Services (USES) was among those who sponsored research to study and develop a single job

classification system to replace the existing outdated classification structure in the Dictionary of Occupational Titles (1949). These studies evaluated 4,000 jobs according to eight predetermined components: aptitudes, interests, temperaments, physical capacities, working conditions, training time, work performed, and industry. Each component consisted of several sub-components which allowed for classification of materials required to perform the job, methods of getting work done, and actual job activities. Some information from this work was published in 1949 by The United States Department of Labor in the second edition of the Dictionary of Occupational Titles with additional changes published in the third edition in 1965 (Berwitz, 1975). This work was to mark the advent of concepts for FJA and subsequent use of the procedures or modified ones, and techniques to analyze jobs, to record the analysis, and to develop appropriate curriculum for vocational preparation.

Intensive research involving the analysis of jobs was undertaken during the years 1951-1959 (Berwitz, 1975). According to Berwitz, during 1951-1953, the United States Air Force provided support to explore application of the concepts for a new occupational classification system as developed at USES. The research included studies in job, family, and test development which led to the analysis and classification of all military occupational specialties that existed during World War II. Further, it was noted

that the Air Force developed classification systems on a theoretical basis, rather than on an empirical basis.

Under the auspices of USES, Fine (1955) carried out research using an observational technique to record actions of workers and methods of getting work done. To implement the observation procedures, a hierarchy of work functions (Things, Data, People) and their definitions were written which comprised a Work Performance Component that would classify the what, how and why of a job-worker situation. Once this component was defined, rules for observation of the job-worker situation were written. The method of observation as described provided standardized Worker Functions, Method, Groups and Materials, Products and Subject Matter categories necessary for functional job analysis.

The United States Department of Labor, Manpower Administration (1972) provided the definitions for Worker Functions (Data, People, Things) and Worker Traits (General Educational Development, Aptitudes, Interests, Temperaments, Physical Factors) used in many job analysis studies in its Handbook for Analyzing Jobs. Berwitz (1975) used the Department of Labor definitions to develop a task analysis study to develop an Affirmative Action Plan at Wagner College, New York. In order to develop job specifications for personnel decision making, Berwitz identified the Worker Functions and Worker Traits required for personnel at the college. Functional job analysis was utilized to obtain these characteristics. As a result of this study personnel

decisions related to employment, personnel training, promotion and salary increases were implemented.

Dickman (1969) explored the use of Worker Function traits of FJA as a means to define job classifications and subsequent use for career laddering. He proposed that a worker could progress as he develops his ability with Data, People, and Things. One must, however, include management and supervisory personnel and develop the appropriate standards for progression as ability increases.

Fine and Wiley (1971) describe a training course, "A System Approach to Task Analysis and Job Design," conducted for social welfare workers to assist them in increasing their accuracy and precision of descriptions of what workers do. FJA, as described by Fine, is applicable to other work fields and may be used as a tool to identify tasks for educational planning of curricula for a specific discipline. Further, Fine and Wiley (1971) described activities at the Upjohn Institute, under their direction, using the FJA methodology to identify task statements, performance variables, training content and materials used to determine required skill levels to perform assigned tasks based on worker function, general education level, and job responsibility. Observers were trained to follow an employee and record all of his actions and the materials used and instructions needed to accomplish the desired outcome. Data gathered provided the framework to develop curricula for employees. To increase skill and knowledge for workers,

Fine reported that the resulting curricula frequently formed the basis for on-the-job training programs.

The advent of new technology in industry, health care and instructional fields has resulted in the need for trained support personnel to allow the professional staff to perform functions requiring a higher degree of knowledge and skill. Wallington, Hyer, Bernotavicz, Hale and Silber (1970) analyzed jobs in instructional media, as well as set up guidelines for job structures and training curricula for work performed in instructional media. The Jobs in Instructional Media (JIMS) study used FJA as described by Fine. By using FJA, the JIMS study described what workers in instructional media do in jobs, and systematically classified tasks. These tasks were all observed activities within the domain of instructional technology, specifically the functions of management, personnel, research, design, production, evaluation, utilization, dissemination, and supply for the Worker Function category of the FJA matrix. Using observation methods, instructional media personnel were observed in order to identify tasks performed and to classify those tasks according to components or "domains" of the instructional media field developed for the JIMS study. The results of this study included the development of a two-dimensional matrix (Figure 1) that reflects a means for organizing jobs, providing career laddering, determining course content for training of employees and the number of employees required for a given number of jobs. One

		WHAT GETS DONE IN THE MEDIA FIELD (Field Specific Fields)									
		Management	Personnel	Research	Design	Production	Evaluation	Utilization	U/Dissemination	Support/Supply	
WHAT WORKERS DO (General Skills and Knowledges)	Data Significant										
	Data/People Significant										
	People Significant										
	People/Things Significant										
	Things Significant										
	Things/Data Significant										

Figure 1. A two-dimensional matrix of components and functions for development of job structures and curriculum guidelines. (From Jobs in Instructional Media by C. J. Wallington, A. L. Hyer, F. D. Bernotavicz, P. Hale, and K. Silber, 1970, p. 34). (Material used by permission of authors.)

dimension of the matrix includes the components people, materials, machines, ideas and procedures organized and applied to solve instructional media problems, whereas the other dimension includes those functions required to achieve the specific objectives for task accomplishment identified by the use of FJA. Information collected and classified according to the above components could be used as a data base for developing job structures and curriculum guidelines in many fields of employment.

Job task analysis has been employed by several professional groups to determine what workers do in performance of their job and to develop curriculum guidelines for the training of future professionals. Using The United States Department of Labor methodology to define Worker Functions and Worker Traits, Gilpatrick (1972, 1977) reported studies in the fields of Health Center Ambulatory Care and Radiology. In these studies the methodology used was comprised of a set of parameters, developed by a committee of psychologists, to describe any job in terms of the content of the job. Structured observations were used to determine the content of the job. In addition to the structured observations, a set of descriptions of task performance on a job were prepared by a panel of selected experts. Using the parameters established by the committee of psychologists, two groups of subjects were identified. One group was observed directly during job performance to gather information, whereas the second group completed the

prepared descriptions to list activities required by the job. A comparison was made between the two methods, direct observation and prepared description, for determining accuracy of information about activities required for job performance. It was concluded that direct observation of the worker in job performance led to greater accuracy in information gathered about what the performer needed to know and ultimately resulted in a more relevant curriculum for education of future educational or allied health practitioners.

In addition, two studies were completed using task analysis based upon the FJA concept for development of job descriptions and curricula for the professional occupational therapist. One was directed by the School of Allied Medical Professions at The Ohio State University (1972); the second study was directed by The American Occupational Therapy Association (1978). By observing techniques and by having roles defined by a panel of experts, task statements as well as standards of performance for each task were developed for a given entry-level position. It was concluded that these methods, for the purpose of task analysis and curriculum development, and, following a review of these manuals, one can recognize how an individual with expertise in instructional design could use them in curriculum design for a specific field of study in the health sciences. In addition to its function in curriculum development, the manuals are being used by academic programs in

occupational therapy as a model for assessment of academic needs for national accreditation and certification of graduates.

The use of FJA as a tool in the development and reassessment of curriculum content for existing professional fields and for new careers was reported by Lewis and Martin (1963). They evaluated vocational-technical education curricula related to manpower shortages and to the educational requirements in training new personnel. Jobs were identified, and with assistance from experts in the health sciences the researchers use FJA to develop task statements and to determine training content needed to train personnel for entry-level jobs of a given profession. The findings demonstrated that FJA is effective in determining content areas for training and educational programs.

Meyer, Laveson, Pape, and Edwards (1978), of the United States Air Force, employed a form of FJA to develop a task taxonomy for tactical flying. Rather than using direct observation, they interviewed pilots to gather data on the maneuvers to be studied. Subsequently, tasks were written and those pilots interviewed were asked to comment and to make corrections to the analyses. Tasks were then rewritten and classified according to maneuvers required for tactical flying. Results of the task analysis have formed the basis of technical training for Air Force pilots. Additionally, results showed that a task-taxonomy approach could be utilized to solve tactical flying problems.

Although interview was the mode used to gather data, the study demonstrates a method of job analysis where training content could be identified for developing educational programs.

Goldstein (1974) defined job task analysis "as that which is necessary to determine the objectives related to performance standards for skills, knowledge, and attitudes needed to successfully perform the task" (p. 31). Therefore, if functional job analysis is based on job task analysis, we must know the tasks or activities performed on the job and the conditions under which they were performed to determine the required knowledge and skills to design a curriculum model.

Successful uses of FJA as reported in the literature cited relating to its appropriateness in military and industrial settings, teacher education programs, as well as in certain health sciences areas suggest that FJA can be adapted to use as a tool in the development of curricula patterns for several other health sciences areas, especially in clinical dietetics educational programs. Moreover, FJA in concert with educational task analysis provides an even more effective tool in developing such curricula.

Learning Task Analysis

Educational task analysis (ETA) is defined for this study as the identification of human job tasks and the associated plans for achieving the related learning

outcomes. The paradigm proposed is partly based upon the learning analysis model of Gagné and Briggs (1979) (Figure 2).

Learning task analysis is often used in education to define mental processes and skills training that should be included in instruction to meet a performance objective which is ultimately based on job task analysis. The following definitions will show similarities:

"Learning task analysis is the means of identifying prerequisites of what is to be learned" (Gagné and Briggs, 1979, p. 105).

"Learning analysis seeks to identify the prerequisites for the learning of the total task and any of its subtasks which are not well established" (Gagné, 1977, p. 279).

"Task analysis deals with the question of how the task shall be taught, to whom, where" (Davis, Alexander, Yelon, 1974, p. 183).

Since learning task analysis is one method used to identify learning outcomes, designers of educational programs are charged with critical analysis of learning materials to assure that content sequencing will provide the appropriate development of knowledge and skills. Toward this endeavor, a variety of task analysis concepts have been used to assist with the classification of tasks, determination of learner conditions and learner outcomes. Some of these concepts have been selected as being relevant and are discussed.

Examples of Tasks Reflected in Target Objectives and the Learning Categories They Represent

Task	Learning Category
Discriminates letters g and p	Intellectual skill (discrimination)--perceiving objects as same or different
Identifies ovate shape of tree leaves	Intellectual skill (concrete concept)--identifying an object property
Classifies citizens of a nation, by definition	Intellectual skill (defined concept)--using a definition to identify a class
Demonstrates instances of the rule relating pressure and volume of a gas at constant temperature	Intellectual skill (rule)--applying a rule to one or more concrete examples
Generates a rule predicting the inflationary effect of decreasing value of currency in international exchange	Intellectual skill (higher-order rule)--generating a more complex rule by combining simpler rules
Originates a written composition on the cybernetic features of a bureaucracy	Cognitive strategy--inventing a novel approach to a problem
States the main kinds of fire extinguishers and their uses	Information--communicating organized knowledge in a way that preserves meaning
Chooses reading novels as a leisure-time activity	Attitude--choosing a course of personal action toward a class of events
Executes the tightening of a lag screw with a socket wrench	Motor skill--carrying out a smoothly timed motor performance

Figure 2. Learning analysis model. (From Principles of Instructional Design, 2nd edition, by Robert M. Gagné and Leslie Briggs. Copyright (c) 1974, 1979 by Holt, Rinehart and Winston. Reprinted by permission of Holt, Rinehart and Winston, CBS College Publishing.)

Task analysis for educators has often become ritual with little allowance for creativity, but it nevertheless is important in the design of both instruction and curriculum, especially related to defining the necessary learning outcomes. Davies (1973) uses Franklin Bobbitt's description of making a curriculum. According to the pioneer American educator, it is

> the process of task or activity analysis necessary for isolating the curriculum and identifying the objectives. It consists of 'going out into the world of affairs' and noting in minute detail what people do. Ability to perform these activities in an efficient manner then becomes the objective of the curriculum (p. 33).

Davies presents several approaches for task analysis in designing a learning system. One of these, the technical approach, is congruous with the philosophy and practice of functional job analysis. Tasks are broken down into components; relationships between components are identified. Sequencing of components is based on optimal learning required and objectives are written accordingly. Other approaches identified by Davies were the human-relation and socio-technical domains where human relations are relevant to motivation and attitudes, and socio-technical implies that people are decision makers and problem solvers. When attitudes are intended outcomes of instruction, the human-relations approach could have some importance. The planner should be cognizant of the knowledge and skill a job requires and employ one or all of the approaches in a given curriculum.

Analyses of tasks are one segment of a learning system design, according to Davis, Alexander and Yelon (1974). The actual process of task analysis requires the identification of objectives to determine what factors will influence the design of the system. Any one of these factors, learner characteristics, conditions or constraints, and types of learning required, can influence the final design. Using the influential factors, the analysis should determine instructional strategies, audience, and location. Evaluation of learner characteristics, such as physiological and cognitive maturation, psychological abilities and aptitudes, are important in the systems approach to task analysis.

Baird (1968) demonstrated the use of task analysis as one approach to the development of an instructional system for preparing elementary teachers. Using task analysis, he presented a set of task statements with accompanying behavioral objectives for three levels of development for all trainees in the sample: "(1) demonstrating repertoires of knowledge, (2) demonstrating knowledge of the elements of the task, and (3) demonstrating ability to perform elements of the task" (p. 75). A competency-based elementary teacher education program resulted from this study.

Curriculum guides with specific content areas for training programs have also resulted from ETA. Annett and Duncan (1977) proposed a system of categories each having specific training requirements. Using a system of

categories, they suggest analyzing each job by tasks, and categorizing the tasks. Following task analysis could come the development of content containing both procedures and principles. The next and last step of the training program would be the design of the instructional system.

In another study task analysis within the affective domain was proposed using a process-oriented approach (Foshay, 1977). Rather than use of specific performance objectives as the task analysis measures, Foshay suggested objectives written in terms of cue sensitivity and appropriate responses to determine feelings and attitudes. This method would provide an additional strategy for instructional developers to analyze and to design instruction for complex tasks.

Systematic course design is another result of educational task analysis. Segall, Vanderschmidt, Burglass, and Frostman (1975) proposed a method of course design which allows for instruction relevant to the professional role the student will assume. In their method performance can be described by identifying major tasks required for optimal and minimal performance of specific roles. Task statements are written to provide baseline data for a curriculum with learning experiences in the form of objectives to meet specific performance standards.

Sherman and Wildham (1980) discuss linking task analysis with student learning, and they propose links to bond-structured content to student learning. One of the

approaches proffered for such linking which is applicable to task analysis and relevant for this study is described as an optimal content presentation approach where the product of content analysis is a set of rules to be applied to examples identified from the content area.

Generally, curriculum guidelines are planned indicating subject matter areas required to meet institutional or accreditation requirements; a college or university may designate specific courses to meet stated requirements. This is the strategy frequently used for planning dietetic educational programs. Moreover, when using subject matter areas, an appropriate instructional development process is content analysis. Merrill (1973) described this as a step-by-step procedure for identifying a network of concepts. The author states that the steps involved are: (1) identify by label all of the concepts in a given area; (2) determine the change operations used to relate each of these concepts and plot a content network; (3) specify each change operation; (4) define each concept by identifying descriptive or relational operations; (5) symbolically represent each rule; and (6) identify one or more instances for each concept and each rule. In order to use this process of content analysis, courses must contain two types of content, concepts and operations.

A method of learning task analysis is one that requires categorizing tasks to be learned prior to determining target objectives which are based on capabilities to be

learned (Gagné, 1974). Target objectives assist in identifying prerequisites, knowledge or skill, for what is to be learned. Focus on the instructional system to be designed is on the target objective and the task analysis information.

Task description and task analysis are applicable to most instructional techniques, but the designation of importance and usage remains the prerogative of the administration and faculty of educational programs. Davis and Alexander (1977) provide an explanation showing the difference between task description and task analysis. The former describes all the steps required to perform a given task, whereas the latter not only includes the steps, but also the conditions for performance. The resulting information from task analysis is used to design specific learning experiences to develop required knowledge and skill.

Learning task analysis as a part of an instructional design is described by Gagné and Briggs (1979). Their system is designed to determine, first, what the expected learning outcomes are which require certain human capabilities. These capabilities they classified into five major categories: (1) intellectual skills; (2) cognitive strategies; (3) information; (4) motor skills; and (5) attitudes.

Intellectual skills make it possible for an individual to learn through the use of symbols and may require the use of recall. These skills are categories based on their complexity, and, given different levels of complexity, the

learner may begin with the ability to discriminate by making different responses to a set of stimuli and continue through to develop a skill in problem-solving. To achieve this ability in problem solving one must attain in sequential order the necessary prerequisites for development of intellectual skill. These prerequisites include recalling some rules, and identifying and classifying some concrete and defined concepts. When describing characteristics of each prerequisite, the instructional design must account for three distinct components of the learning situation: performance, internal conditions, and external conditions. Performance refers to what the learner should be able to do after the instruction occurs. Internal conditions are those capabilities the learner must recall from memory to add to the new capability. The external conditions are objects and events in the learning situation that support acquisition of new information.

Classifying tasks into the major categories of human capabilities for the purpose of learning task analysis is important in instructional design because it forces the educator to identify the necessary prerequisites for what is to be learned (Figures 3 and 4). Additionally, accounting for the components of the learning situation, performance, internal conditions, and external conditions further enhances the content material presented to the learner.

Examples of Essential and Supportive Prerequisites
For Five Kinds of Learning Outcome

Type of Learning Outcome	Essential Prerequisites	Supportive Prerequisites
Intellectual Skill	Simpler Component Intellectual Skills (rules, concepts, discriminations)	Attitude Cognitive Strategies Verbal Information
Cognitive Strategies	Specific Intellectual Skills (?)	Intellectual Skills Verbal Information Attitudes
Verbal Information	Meaningfully Organized Sets of Information	Language Skills Cognitive Strategies Attitudes
Attitudes	Intellectual Skills (sometimes) Verbal Information (sometimes)	Other Attitudes Verbal Information
Motor Skills	Part-skills (sometimes) Procedural Rules (sometimes)	Attitudes

Figure 3. Analysis of learning task model. (From Principles of Instructional Design by Robert M. Gagné and Leslie J. Briggs, 1979, p. 112). (Material used by permission of authors).

Examples of Useful Human Tasks and the Categories of Learning Outcomes They Represent

Task	Category of Learning Outcome
Reads with comprehension accounts of events printed in daily newspaper	Intellectual skills--applying rules for the decoding of words and the comprehension of language
Seeks enjoyment in watching a variety of sports events and dramatic shows	Attitudes--choosing courses of personal action toward particular kinds of entertainment
Communicates the precautions necessary in installing fiber-glass ceiling insulation	Information--stating information so that its propositional meaning is preserved
Manually lowers the needle onto a phonograph record so as to engage the initial groove	Motor skill--executing a smoothly timed motor performance
Originates a game of "Ecology," to be played on family outings in an automobile	Cognitive strategy--solving a novel problem by invention

Figure 4. Learning analysis model. (From The Conditions of Learning, 3rd edition, by Robert M. Gagné. Copyright (c) 1977, 1970, 1965 by Holt, Rinehart and Winston. Reprinted by permission of Holt, Rinehart and Winston, CBS College Publishing).

Cognitive strategy is defined as:

> an internally organized skill that selects and guides the internal process involved in defining and solving novel problems. It is a skill with which the learner manages his own thinking behavior (Gagné and Briggs, 1979, p. 72).

Learning information is the need for the learner to continue to have the background knowledge of a particular subject or discipline to assist in problem-solving. Again, the internal and external conditions must be present for learning to occur.

Attitudes are defined as "complex states of human beings which affect their behavior toward people, things, and events" (p. 85). Using this definition suggests that the attitude influences the choice of action to be taken by the learner to bring about a change in behavior.

Finally, motor skills are learned by the use of repeated practice involving body movement. Communication provides feedback so that the learner will know his progress or the lack of it. Positive reinforcement of appropriate motor skill development is most important.

By using these five categories and performance objectives the educator can develop a curriculum based on job-task statements. The resulting curriculum will be:

> A written document which may contain many ingredients, but (in any event) a plan for the education of pupils during their enrollment in a given school (Beauchamp, 1968, p. 6).

Gagné (1977) proposes a system of learning (task) analysis which requires the description of human tasks that

are categorized into learning outcomes. The instructional designer, using this analysis, will have information that allows for planning internal and external conditions of learning for each type of learning outcome shown in Figure 4 (page 33). Internal conditions are described as knowledge learned and are present in the learner's memory, whereas the external conditions for learning are new knowledge, such as that supported by environmental events that can be related back to the internal conditions. Further, this learning analysis scheme lends to the identification of prerequisites or what prior knowledge and skill the learner has. When preparing the learning task analysis, Gagné recommends two steps:

> (1) The task must be categorized as a learning outcome into one of the five categories--intellectual skill, cognitive strategy, information, motor skill, or attitude.
>
> (2) Each procedural component of the task must be analyzed to reveal its prerequisites (p. 264).

Further, tasks can be described as objectives using standard verbs which then give the learner an indication of the expected type of human capability that is presumed.

The literature provides examples of the success of educational task analysis to substantiate its importance in education, not only for development of cognitive skills, but for development of intellectual skills, verbal information, attitudes and motor skills as well.

In summary, this review of the literature has shown

that in the health sciences and other professions, FJA can yield job task statements with sufficient information to determine job performance standards and performance objectives, and that ETA can assist in determining ways and means of achieving learning outcomes. These components are considered important and necessary to the completion of a learning task analysis.

CHAPTER III

RESEARCH PROCEDURES

This research was conducted to determine the actual job activities of clinical dietitians and verify if they are in accord with Role Delineation for Entry Level Clinical Dietetics (Baird and Armstrong, 1981) and Accreditation/Approval Manual for Dietetic Education Programs (American Dietetic Association, 1987). Additionally this research will infer necessary knowledge and skills (Learning Task Analysis) required for practice of clinical dietetics and determine if the Accreditation/Approval Manual for Dietetic Education Programs (ADA, 1987) knowledge and performance statements are in accordance with the needs of the entry level clinical dietitian. The research design, sample, data collection and analysis will be discussed in this chapter.

Research Design

This research will use two research designs: survey to conduct functional job analysis and evaluation to compare the findings with some given criteria. Survey research has been very useful for health, social and educational planners in their studies of both large and

small populations when they were developing health strategies, programs, and curriculum requirements for specific disciplines. Also survey research is used to obtain accurate quantitative descriptions about a specific universe of people such as curriculum requirements (Stein, 1976). Observation as a research tool for data collection has been used to study teacher behavior, pupil work outcome, and activities of workers (Ebro, 1977; Medley and Mitzel, 1963; Rosenshine and Furst, 1973; Fine and Wiley, 1971). Fine and Wiley (1971) trained social workers to use observation techniques to collect job data related to job activities which provided for input into the development of curriculum needs for training social workers. Evaluative research is concerned with objective assessment of given criteria (Stein, 1976).

The research model illustrates the data collection and analysis sequence followed and is found on the following page (Figure 5).

Sample Definition

A total of 34 non-teaching hospitals having a bed capacity of 300 or more were identified from the American Hospital Associaton Directory of Hospitals (1980). Hospitals in four cities were then selected for this study and were: Kansas City, Missouri; Minneapolis/St. Paul, Minnesota; Houston, Texas; and Dallas/Fort Worth, Texas. The status of the hospitals selected were then checked with the

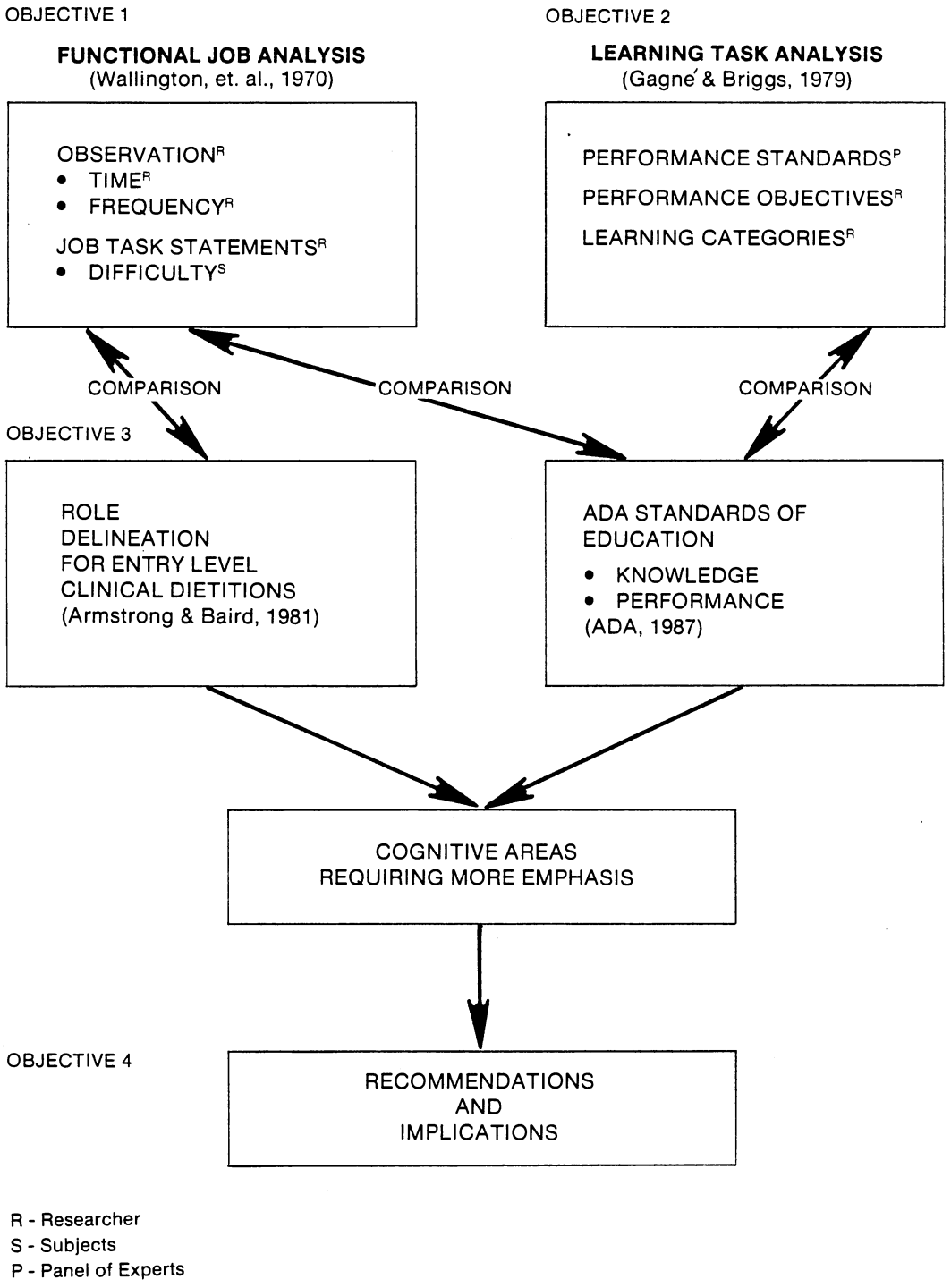

Figure 5. Research Model

American Dietetic Association Directory of Dietetic Programs Accredited and Approved (1981) for teaching status. Through this process it was determined that 10 hospitals sponsored dietetic internship programs and were therefore not included, and an additional six were eliminated because of affiliation agreements to provide learning experiences for coordinated undergraduate programs in dietetics.

Letters were written to the Directors of Dietetics in the 18 hospitals selected to explain the study and to request their participation (Appendix B). Follow-up telephone calls were made to confirm willingness to participate. Twenty-four clinical dietitians working in 16 hospitals responded affirmatively (four hospitals in each of the four cities), therefore the 24 clinical dietitians working in those hospitals became the sample for this study.

Methodology

Development of Instrument

An observation worksheet was selected for use in the functional job analysis (FJA) portion of the study to report activities of the clinical dietitians. The Louisiana Family Planning Project conducted in 1974 used the Worker Functions and Worker Traits described in the Handbook for Analyzing Jobs (1972) and the method of FJA developed by Fine and Wiley (1971) to develop task statements for each of the positions required to conduct a Family Planning

Clinic in New Orleans. Workers were observed in their actual job setting to determine work activities, materials required and desired outcome. The results of these observations were task statements and this format was adapted for this study. In the FJA the format of observation techniques, job task statements and job performance standards from the Wallington, Hyer, Bernotavicz, Hale and Silber (1970) Jobs in Instructional Media (JIMS) study were also adapted. The Observation Worksheet used for data collection was adapted from the model of the task analysis and job design project of the Louisiana Family Health Foundation (1975).

Pilot Study

The Observation Worksheet was tested in a pilot study conducted in Tulsa, Oklahoma for clarity of terms and understanding of instructions. Four non-teaching hospitals of 300 or more beds were selected. Using the worksheet shown in Appendix A three clinical dietitians were observed in each hospital for a minimum of three hours in their actual job setting. Sample completed worksheet is shown in Appendix A. Following the period of observation and subsequent to writing sample task statements, the four domains of clinical dietetic practice were identified. Based upon information from the observation worksheets, these domains were counseling, assessment, communication, and patient education and teaching. The sample task statements were

written and then reviewed for completeness and clarity by two presently employed dietitians in the same hospitals.

The purpose of the Pilot Study was to: (1) determine if the observation method proposed would elicit data needed to write task statements, (2) test the Observation Worksheet, (3) develop sample task statements for data collected on the worksheet. The results provided validation that the tools and techniques in the research design were appropriate for the Final Study. Final instrument is in Appendix A.

Functional Job Analysis Procedure

Twenty-four clinical dietitians in 16 positions and employed in non-teaching hospitals in the designated cities were observed in their actual job setting. The Director of Dietetics in each of the 16 hospitals provided schedules of work hours for the dietitians making up the sample. So that observations could be completed during one period of time in a given city without return visits, a master schedule was prepared. Each dietitian was observed by this researcher during regular scheduled work hours for one day. Additionally, each department director was requested to provide an overview of the hospital and routine responsibilities of the clinical dietitian, plus a job description for the selected dietitian.

Instructions to Subjects

Each dietitian was instructed to assume that the researcher was her "shadow" and to complete activities as she routinely would without an observer present. Further, questions would be directed to the dietitian only if a particular activity was not understood or when telephone conversations occurred and were related to patient nutritional care activities. On the other hand, this researcher would not participate in conversation unless specifically requested to do so, i.e., during patient rounds, consultation with physicians or with other dietitians. Dietitians were instructed to briefly describe their patient nutritional care responsibilities, i.e., all patients assigned to her unit were either renal, cardiac, general medicine or surgery, or other job responsibilities such as committees, classes or employee supervision.

Data Collection

A data collection plan using the Observation Worksheet (Appendix A) was devised to record the activities of the clinical dietitian as they occurred during the observation period. The record included the amount of time required to complete the activity plus the materials used, prior instructions, and the outcome of each activity. When the same activity was performed in sequential order involving more than one client or patient, a tally was completed to

indicate the total number of times that activity was performed plus the time required and the resulting outcome.

Following completion of all observations, the domains of clinical dietetic practice were identified. The domains from the pilot study were compared to those named by Baird and Armstrong (1981) and determined to be the same. They were identified as follows: I. Nutrition Care Process: Client Level; II. Nutrition Care Process: Intra-Professional Level; III. Nutrition Care Process: Intra-Organizational Level; and IV. Nutrition Care Process: Inter-Organizational Level.

Each activity was then assigned to an appropriate domain. Task statements were then written to encompass all activities performed by the dietitians. When task statements were completed, a Likert type difficulty scale and frequency of performance tool were designed (Appendix C).

Subjects received by mail a letter with instructions and the task frequency and difficulty scale form for their completion (see Appendix C). Included was a stamped addressed envelope for return of forms to this researcher. Prior to mailing, code numbers were assigned to each hospital and to each subject. Sets of task statements and difficulty scale and frequency of performance forms were coded accordingly.

Development of Job Performance Standards

Using the job task statements, job performance

standards were written by a selected panel. To identify the appropriate performance standards for each job task statement, a panel of three practicing Oklahoma dietitians and two dietetic educators was used. The practicing dietitians included two clinical dietitians and one administrative dietitian who interacts closely with clinical dietitians in the nutrition care process. During a scheduled workshop for development of performance standards, each panel member using written directions (Appendix C) worked independently to identify a job performance standard for each job task statement. Then convening as a group, each task and standard was discussed, and a consensus was reached as to the appropriate job performance standard for the task. The agreed upon standards are part of the Learning Task Analysis found in Appendix D.

Data Analysis

Data collected were entered into a computer to derive percent of clinical dietitians performing specified task, frequency of performance of given task and time required to perform task using the Statistical Analysis System (SAS) (Helwig and Council, 1979). Clinical dietitians participating in the study rated their perceived level of difficulty for each task statement using the Likert scale. Using the results of the levels of difficulty, means were computed. In order to make a comparison of tasks performed by regions, the four non-teaching hospitals were designated

midwest (Minneapolis/St. Paul and Kansas City) and southwest (Houston and Dallas/Fort Worth). Following the period of observation, the FJA was completed. The job task statements were then compared with the ADA Role Delineation for Entry Level Clinical Dietetics (Baird and Armstrong, 1981) and Accreditation/Approval Manual for Dietetic Education Programs (ADA, 1987) to determine similarities and congruence.

Using the job task statements the learning task analysis (LTA) was completed. The LTA model was adapted from Gagné and Briggs Principles of Instructional Design (1979). Learning outcomes from the model to be identified are job performance standards, intellectual skills, cognitive strategies, verbal information, attitudes and motor skills.

CHAPTER IV

RESULTS AND DISCUSSION

The purpose of this study was to conduct a functional job analysis and educational or learning task analysis of job activities of clinical dietitians to determine if current practice is in accord with the Role Delineation for Entry Level Clinical Dietetics (Baird and Armstrong, 1981) and if the present Accreditation/Approval Manual for Dietetic Education Programs (ADA, 1987) requirements are adequate to prepare the graduate for entry level clinical practice. Data were obtained using functional job analysis (FJA) as described in Chapter III "Research Procedures."

This chapter describes the characteristics of the respondents and presents an analysis of the FJA, learning task analysis (LTA), comparison of the Accreditation/ Approval Manual for Dietetic Education Programs (ADA, 1987), Role Delineation for Entry Level Clinical Dietetics (Baird and Armstrong, 1981), and FJA and perceived curriculum limitations and/or deficiencies. The FJA model adapted for this study was used to identify specific job activities of clinical dietitians as well as to provide a data base for the LTA determination of knowledge and skills necessary to the practice of clinical dietetics.

In 1981 a panel of experts appointed by the ADA developed role responsibilities for clinical dietetics which have not been verified by field study nor with the Accreditation/Approval Manual for Dietetic Education Programs (ADA, 1987), hereafter called Role Delineation and ADA Standards of Education. The standards have identified knowledge and performance standards for dietetic practice and verification with job activities as shown in this study.

Characteristics of the Survey Population

The survey population was female and was representative of members who had followed all available routes to ADA membership including dietetic internship, coordinated undergraduate program, master's degree with six months experience and traineeship. Twenty-five percent (N=6) graduated from coordinated undergraduate programs in dietetics while twelve percent (N=3) completed dietetic traineeships. Fifty-eight percent (N=14), the highest group, completed dietetic internships and less than one percent, 0.05 (N=1), completed a master's degree with a six-month clinical experience.

The subjects in the 16 identified positions had been employed for a period of time ranging from 3 months to 8 years. The mean years of employment was 1.22 years (Table I). All subjects were still employed in an entry level clinical dietetics positions.

Clinical dietitians were observed in entry level

TABLE I

DEMOGRAPHIC CHARACTERISTICS

Characteristic	Number	Percent
Route to ADA membership		
Dietetic internship	14	58.33
Coordinated undergraduate program	6	25.00
Dietetic traineeship	3	12.50
Master's degree + 6 month experience	1	4.17
Years experience in dietetics		
Less than one year	2	
1 year	7	
2 years	5	
4 years	4	
5 years	2	
6 years	1	
8 years	1	
Total	24*	

*Number equals 16 FTE positions.

positions in four hospitals in Minneapolis/St. Paul, Minnesota; Kansas City, Missouri; Dallas/Fort Worth, Texas; and Houston, Texas. These hospitals represented regional distribution of the midwest and southwest sections of the United States. The sample group included 16 entry level clinical dietitians.

Functional Job Analysis

Job tasks were identified and grouped into five categories of clinical dietetic practice: nutrition care, education, research, intra-organizational and social sciences including legislation and public policy. Thirty-eight specific job tasks were delineated within the five categories. Figures 6 through 22 indicate the percent of clinical dietitians observed performing each task as well as the mean frequency of performance, the perceived level of difficulty and the time required to perform each task.

Information in Figure 6 indicates that for Task I, 14 of the 23 elements or 60 percent were performed by all dietitians in the study, whereas the remaining nine elements were performed by as few as 20 percent and as many as 93 per cent of the subjects. The FJA activities for Task I are related to daily nutritional care of clients. These range from completing routine nutrition histories to nutrition assessment and education of clients and their families. When compared to professional level activities identified in the Nutrition Care Process: Client Level of the ADA

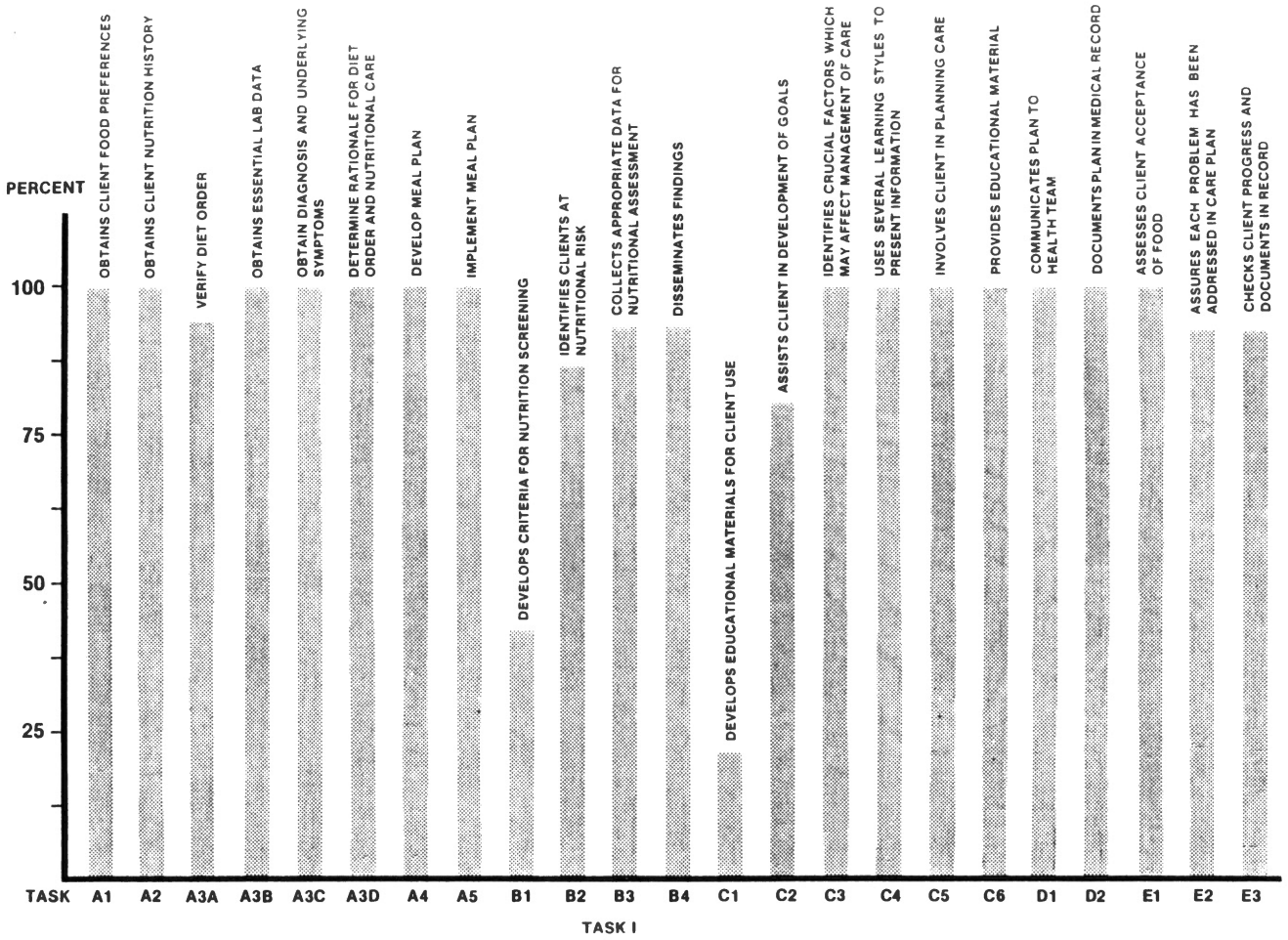

Figure 6. Percent of Clinical Dietitians Observed Performing Task Statement I

Role Delineation for nutrition assessment, nutrition care planning, implementation, evaluation and education, Task I of the FJA includes most of the same activities. Task I may be considered as those routine activities of the practice of clinical dietetics which are performed by the dietitian on a daily basis. When compared to the ADA Standards of Education, these results confirm that both knowledge and performance skills are included and required for job performance.

Task II is related to utilizing principles of education and the nutritional sciences to provide instruction to medical and other health professionals. Information in Figure 7 reveals limited participation in these tasks when employed in an entry level position. Only one of the seven elements was performed by 67 percent of the subjects. This required the dissemination of new information to nursing practitioners and other allied health personnel through conferences, seminars, committees and other modes of communication. The remaining six elements which included classes and educational opportunities for physicians and participation in application of principles of research design and data collection were performed less frequently. The range of performance for these tasks was from 7 to 13 percent. The ADA Standards of Education verify that knowledge of principles of education is an integral part of dietetic practice. Knowledge Statement 11 includes the area of research methodology and statistical analysis which

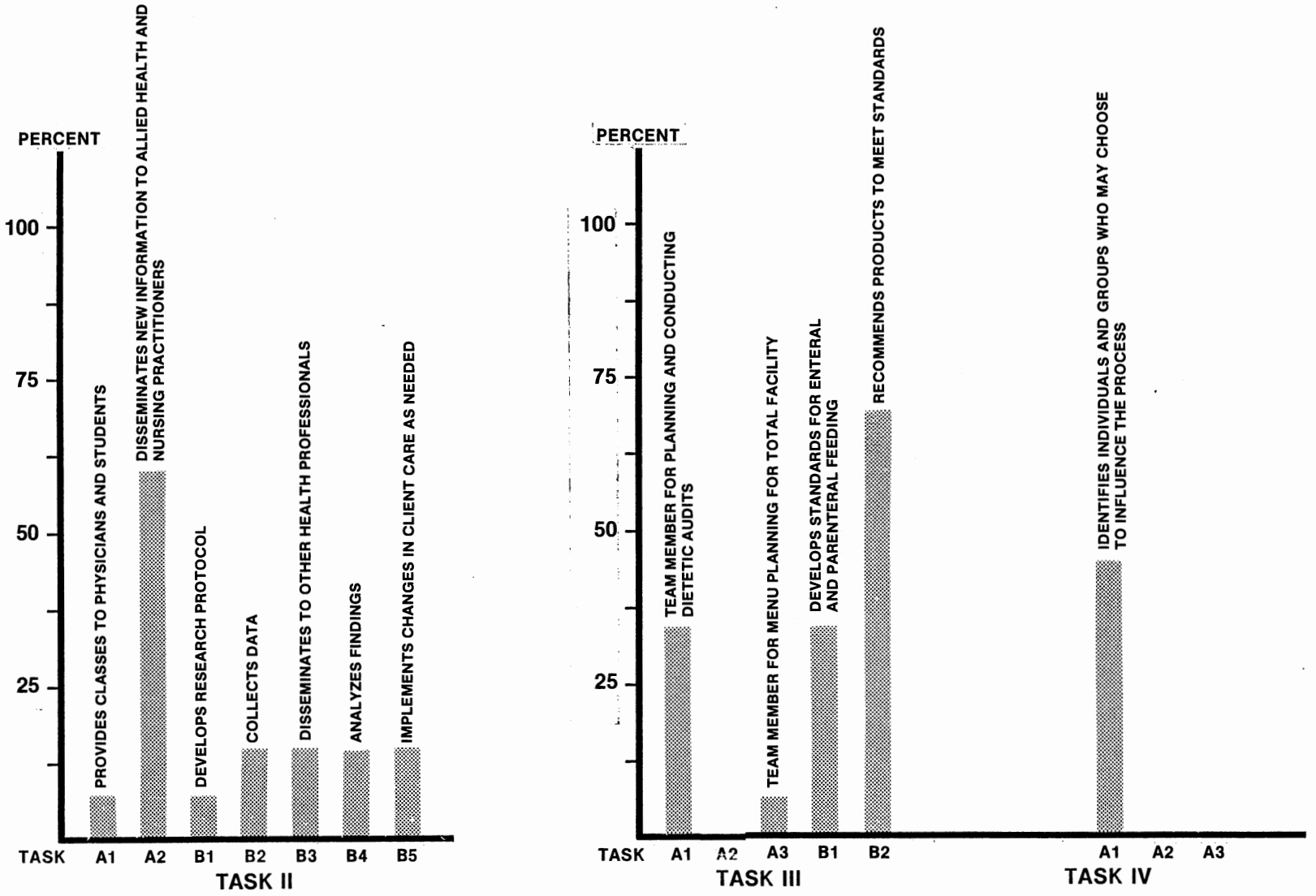

Figure 7. Percent of Clinical Dietitians Observed Performing Task Statements II, III, and IV

infers that entry level clinical dietitians will be involved in research. Dietitians in this study stated that there was limited opportunity to conduct research in an entry level position. These results have shown that those activities relative to "education of professionals other than dietitians" and "participation in research" are performed at a lower rate of occurrence and are not routine for the entry-level clinical dietitian.

Task III indicates the entry level clinical dietitians are involved in intra-organizational activities and procurement of products for nutritional care. Information in Figure 7 shows that only four elements of Task III were performed by subjects in this study. Planning and conducting dietetic audits were completed by 30 percent of the subjects. Only seven percent were members of intra-department committees and 73 percent who recommended products for enteral and parenteral feedings. Knowledge Statement 20 indicated that clinical dietitians should know the principles of procurement, food production, distribution, and service whereas the role delineation responsibilities show that this aspect of nutritional care is usually kitchen-based. This may account for the limited involvement by the entry level clinical dietitian. From review of job descriptions of participants, this limited participation may be attributed to the input and decision-making structure designated at the management level.

Although legislation and public policy are identified

in the ADA Standards of Education and FJA, for Task IV only 47 percent of subjects were involved in identifying individuals and groups who may influence the nutritional care process. In discussion with Directors of Dietetics in this study, developing policies and disseminating information regarding legislation were not considered a routine part of job activities, but some clinical dietitians were involved.

In summary, clinical dietitians perform a greater percentage of the activities described in all elements of Task I than of the combined elements of Task II, III, and IV. Task I appears to encompass all aspects of knowledge statement 19 which states the dietetic practitioner should know principles of nutrition assessment, planning, intervention, and evaluation. When comparing this data to information in Table II (see Appendix D), the entry level clinical dietitian should have knowledge in the social, behavioral and physical sciences, and communication sciences to function in dietetic practice as outlined in the ADA Standards of Education and FJA job task statements.

Frequency of performance of a given task was tallied during the observation period of the FJA. Information in Figures 8 and 9 describe the nutrition care process of dietetic practice. Tasks IA and IB include screening clients at nutrition risk, developing and implementing nutrition care plans and nutritional assessment. These job activities usually require the necessary knowledge and skill to, interview clients, collect laboratory data and document

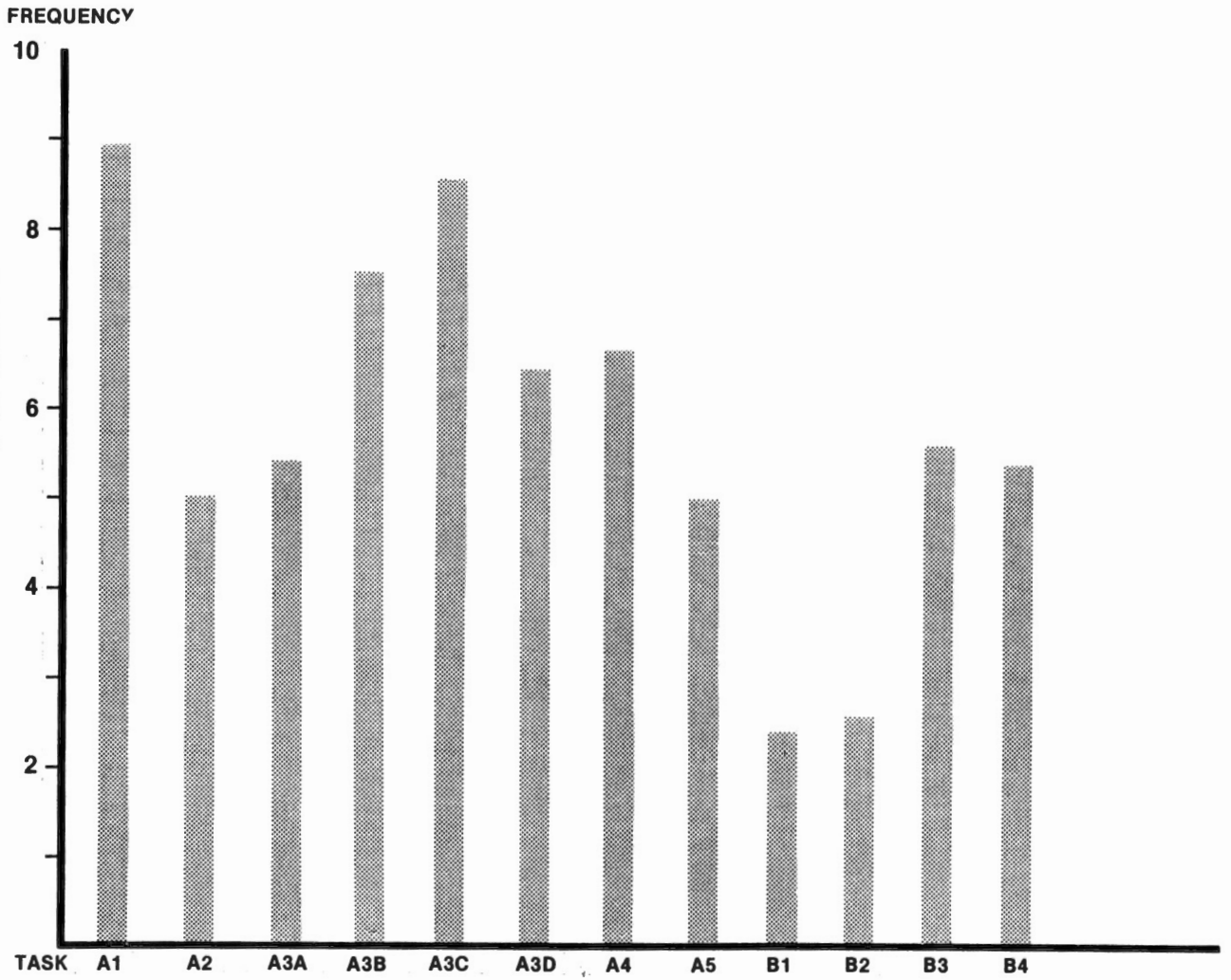

Figure 8. Mean Frequency of Performance of Task 1A Through Task 1B by Clinical Dietitians

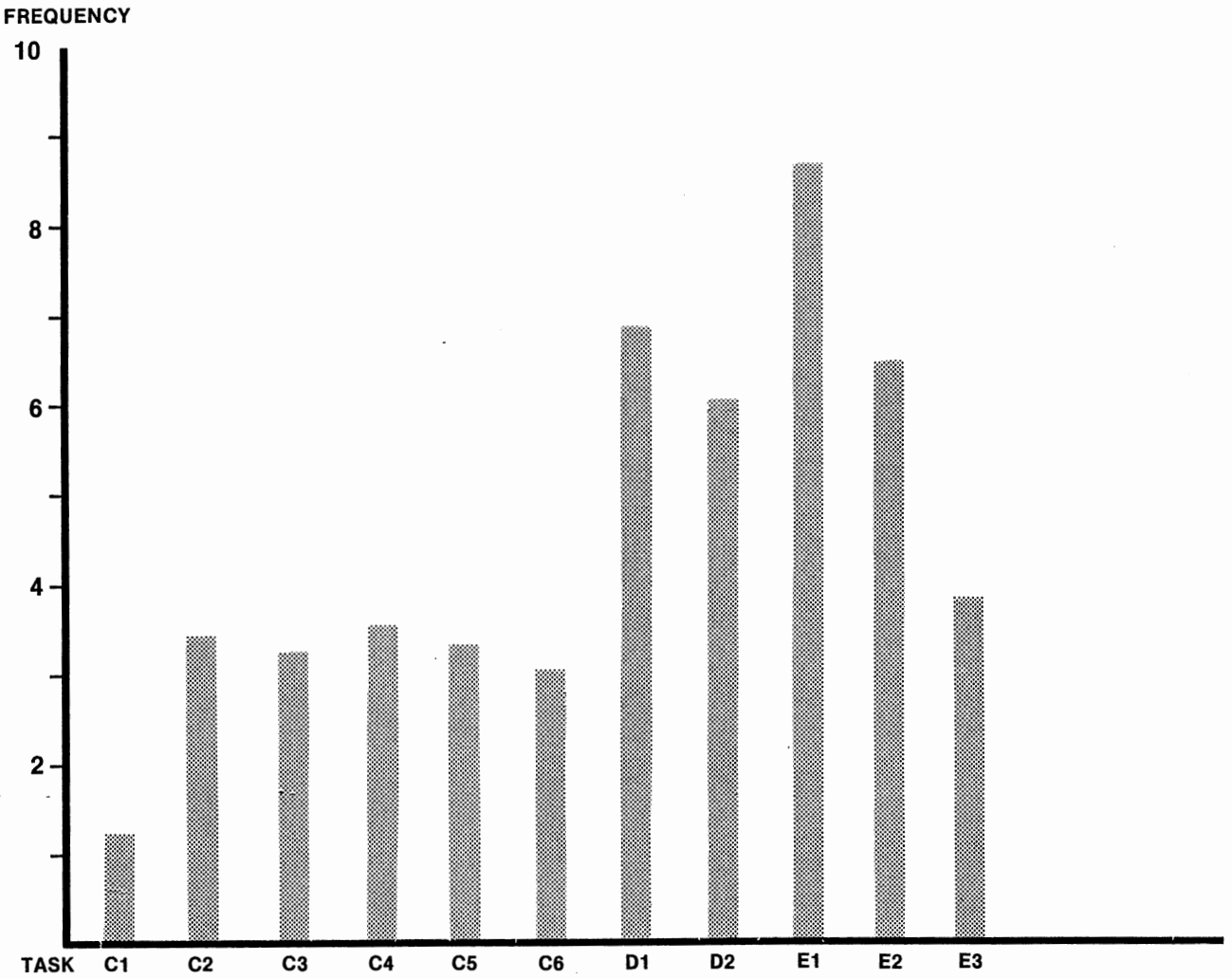

Figure 9. Mean Frequency of Performance of Task 1C Through Task 1E by Clinical Dietitians

communication to client and other appropriate personnel. Tasks IC through IE describe principles of education used in client teaching and identification of intervention strategies necessary in the nutrition care of individuals. Sixty-five percent of the elements of Task I were performed more frequently than all other elements. The range of frequency of performance or the number of times a task was performed in a work day for this group is 3.00 times to 8.93 times. The remaining 35 percent have a range of frequency of performance from 1.33 times to 2.25 times. This data is shown in Figures 8 and 9.

Tasks IIA through IVA identify the clinical dietitians involvement in education of medical and other health professionals, research, intra-organizational activities, and legislation and public policy. These activities also required use of both oral and written communication skills by clinical dietitians. Information in Figure 10 reveals that elements of Tasks II through IV were performed less frequently than the majority of all elements of Task I shown in Figures 6, 7 and 8. The range of frequency of performance is 1.0 times to 2.70 times per work day.

These data for frequency of performance suggest that job activities of Task I are recurrent and form the basis of the practice of clinical dietetics, according to Gilpatrick (1972), when the frequency of performance is known, the knowledge and skill level required for performance of that task can be determined for teaching purpose.

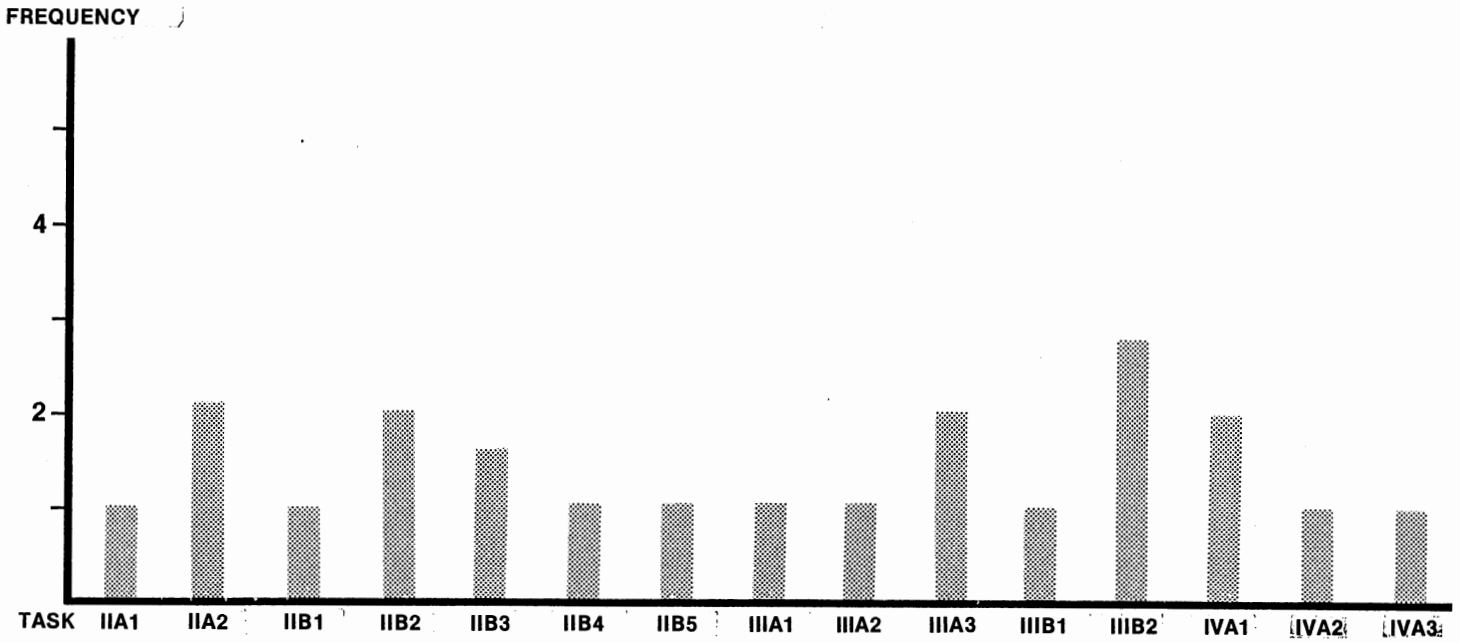

Figure 10. Mean Frequency of Performance of Task II Through Task IVA

When comparing the frequency of performance of all tasks by midwest and southwest regions, data shown in Figures 11, 12 and 13 reveal that all tasks, except IB1, IIIA1 and IVA1, were performed at a higher frequency in the southwest than the midwest region. The frequency of performance in the midwest ranged from 5 to 58 times per work day whereas in the southwest region the range is 5 to 85 times. Although the ADA Standards of Education are applicable in all regions of the United States, department directors and job descriptions revealed that dietitians in the midwest region utilize the skills of support personnel, such as dietetic technicians, to collect data from patient charts and to delegate other tasks which do not require knowledge of nutrition and the physical and biological sciences.

A perceived level of difficulty for each job task element was completed by the clinical dietitians. Using a Likert type scale of 1 to 5 where 1 is the least difficult and 5 the most difficult, the perceived level of difficulty was determined by each subject in the study. Information in Figures 14, 15 and 16 show that the mean level of difficulty of all elements ranged from 1.3 to 5.0. These data are insufficient to show a significance.

Data from the FJA included time in minutes required to perform each element of the tasks. Time was measured during the observation period to determine significance during task performance. Scattergrams were constructed to display

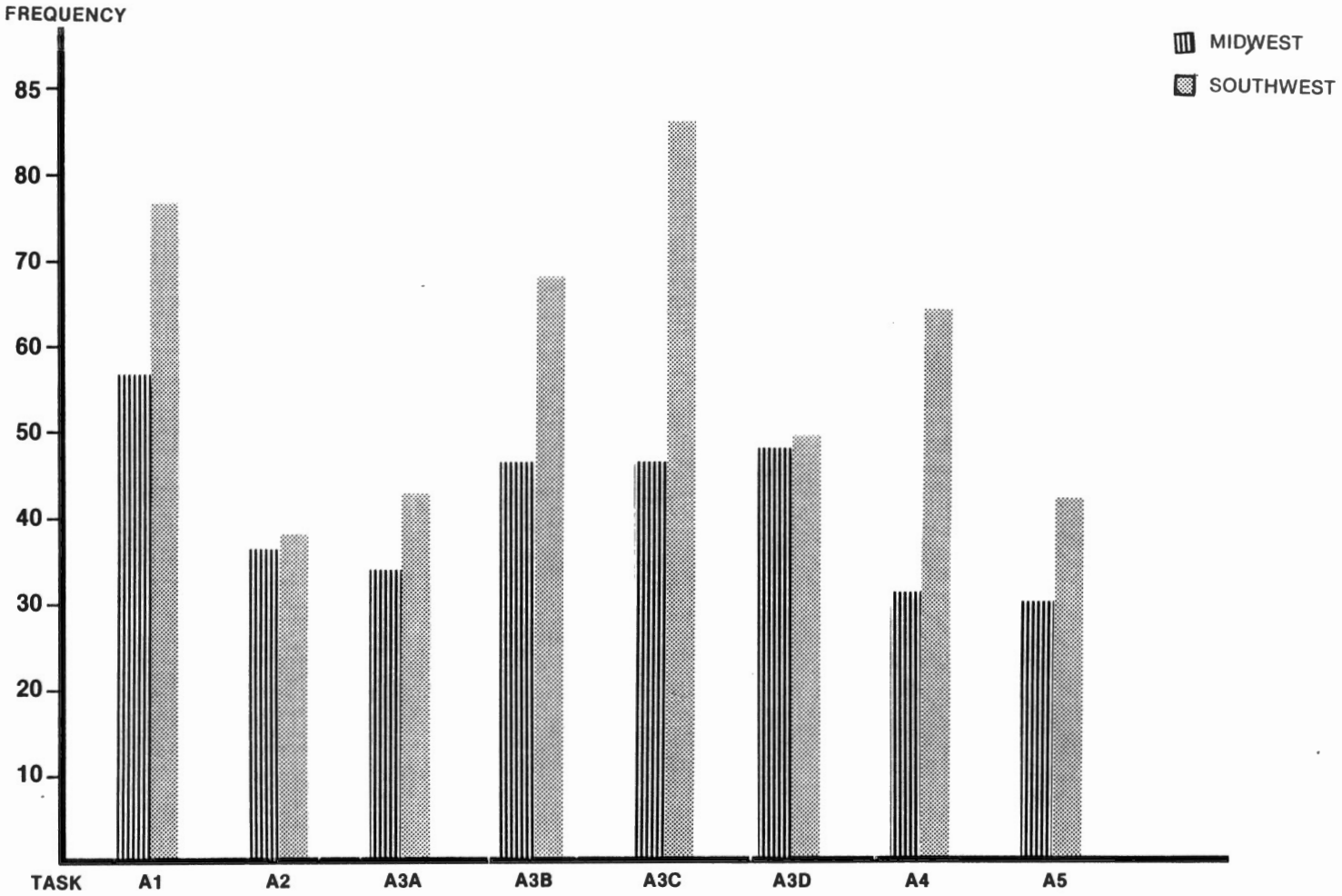

Figure 11. Comparison of Frequency of Performance of Task 1A by Region

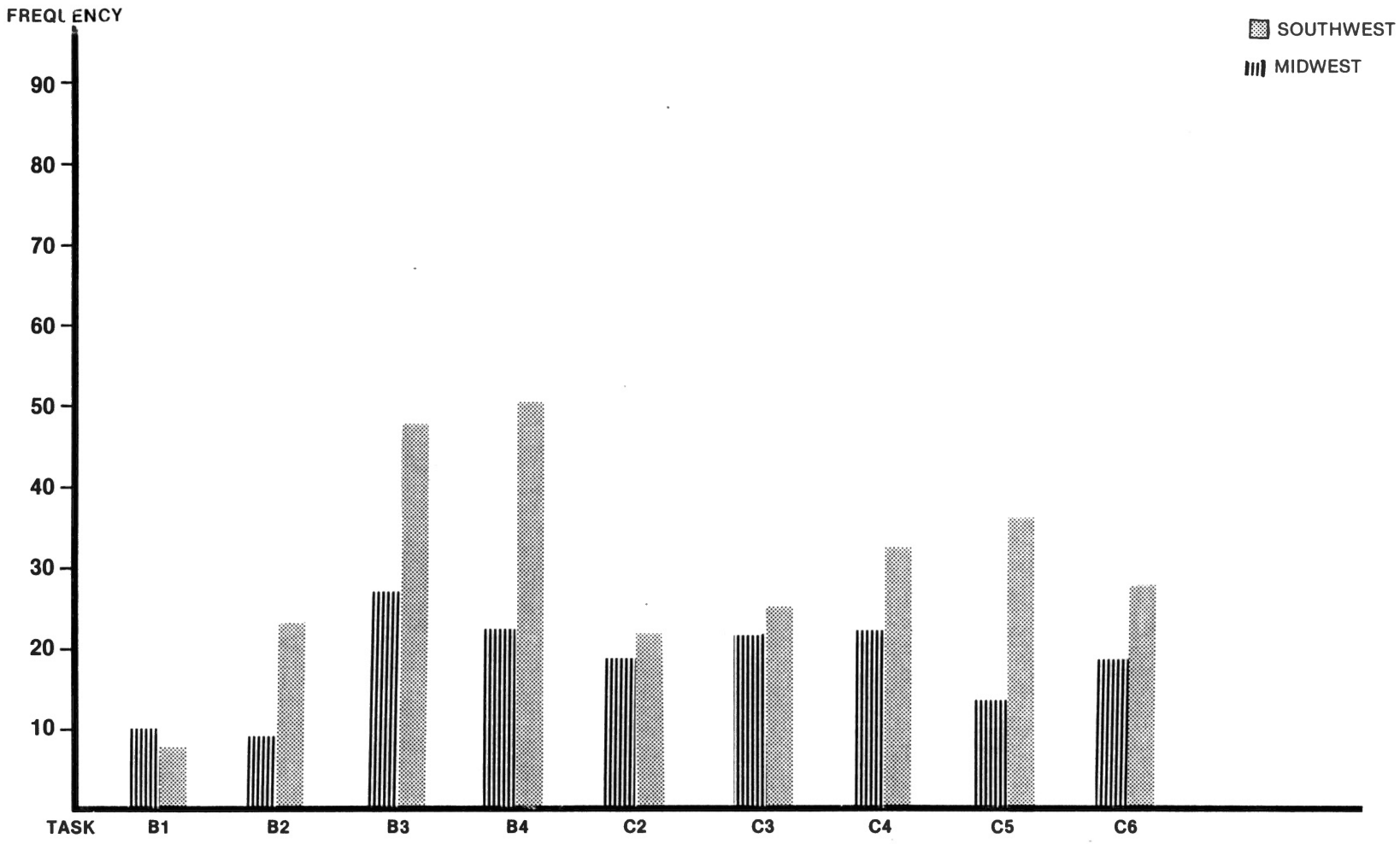

Figure 12. Comparison of Frequency of Performance of Task 1B Through Task 1C by Region

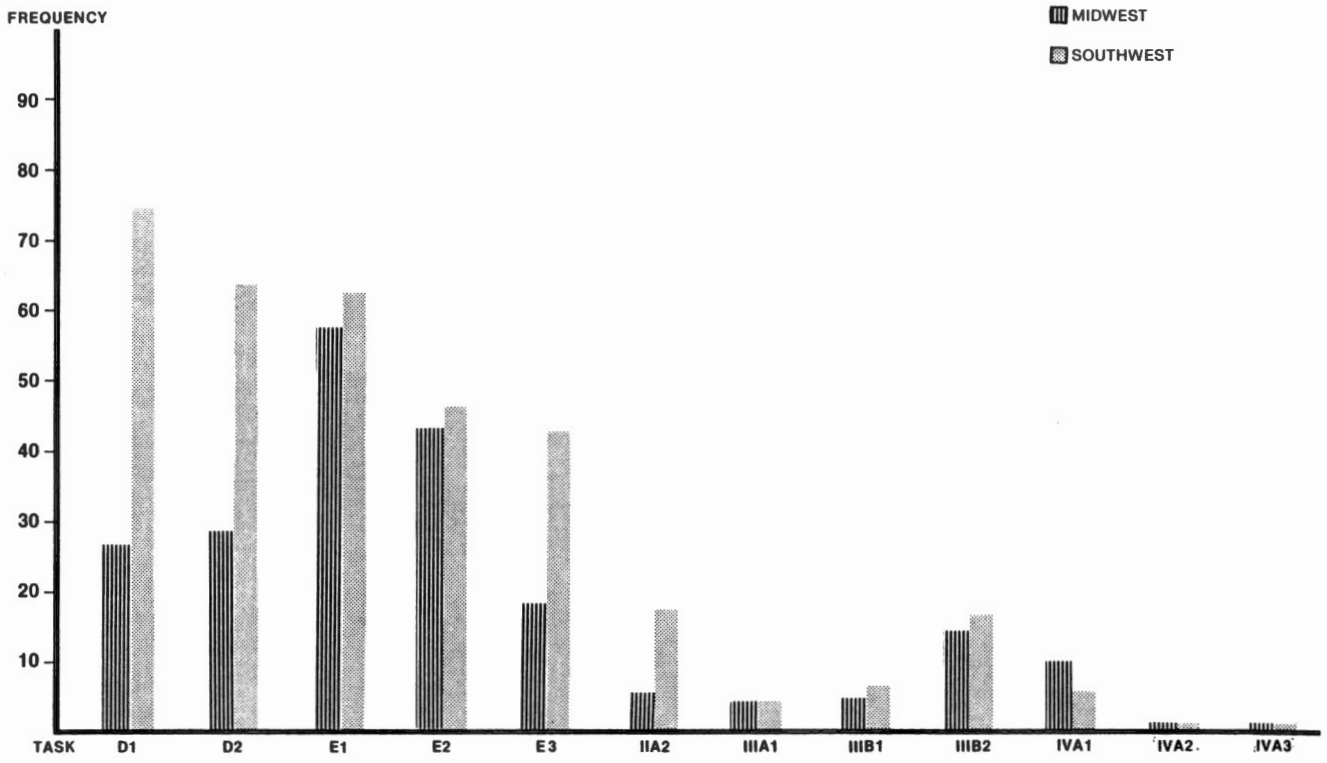

Figure 13. Comparison of Frequency of Performance of Task 1D Through Task IVA by Region

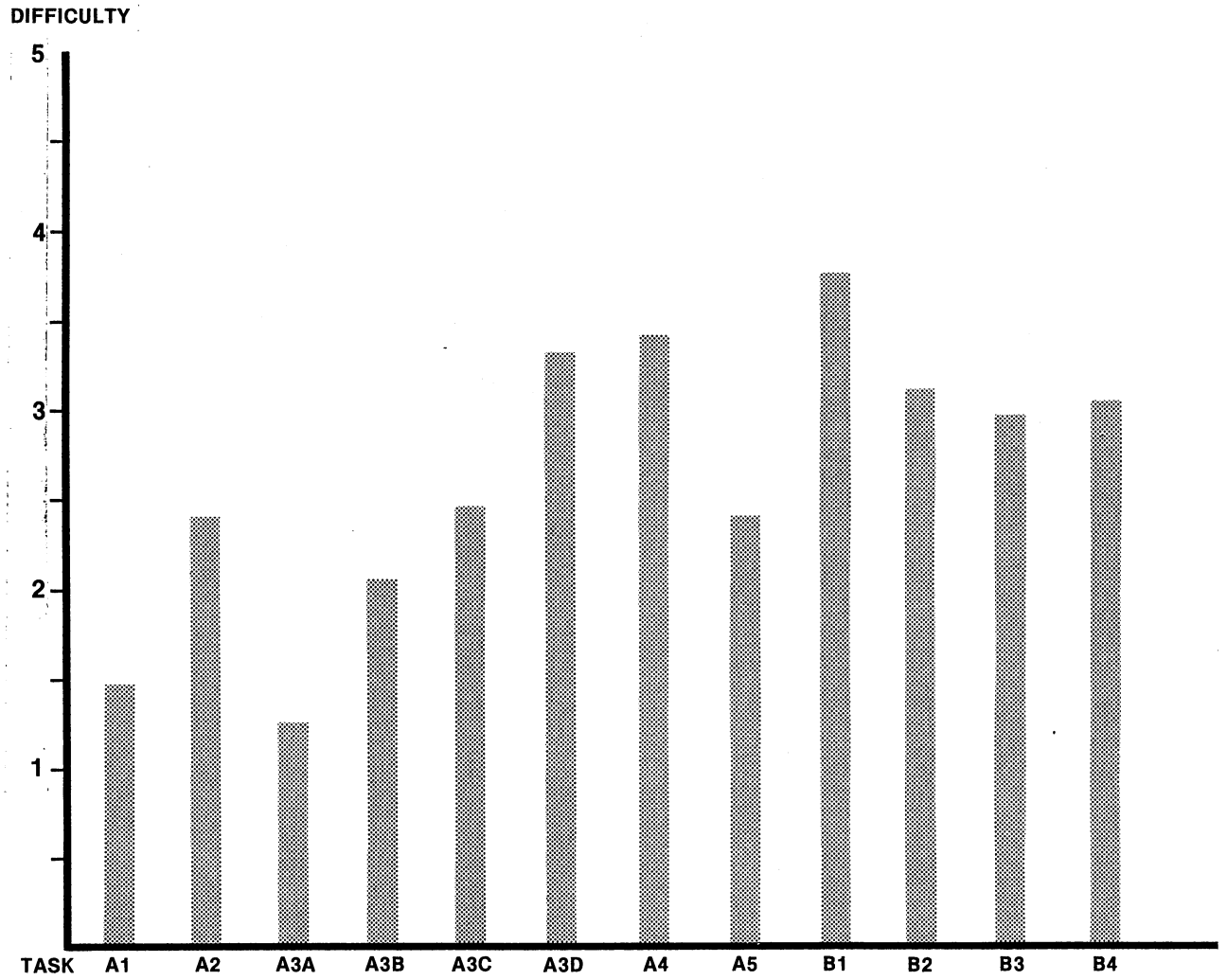

Figure 14. Mean Level of Difficulty as Perceived by Clinical Dietitians for Task 1A Through Task 1B

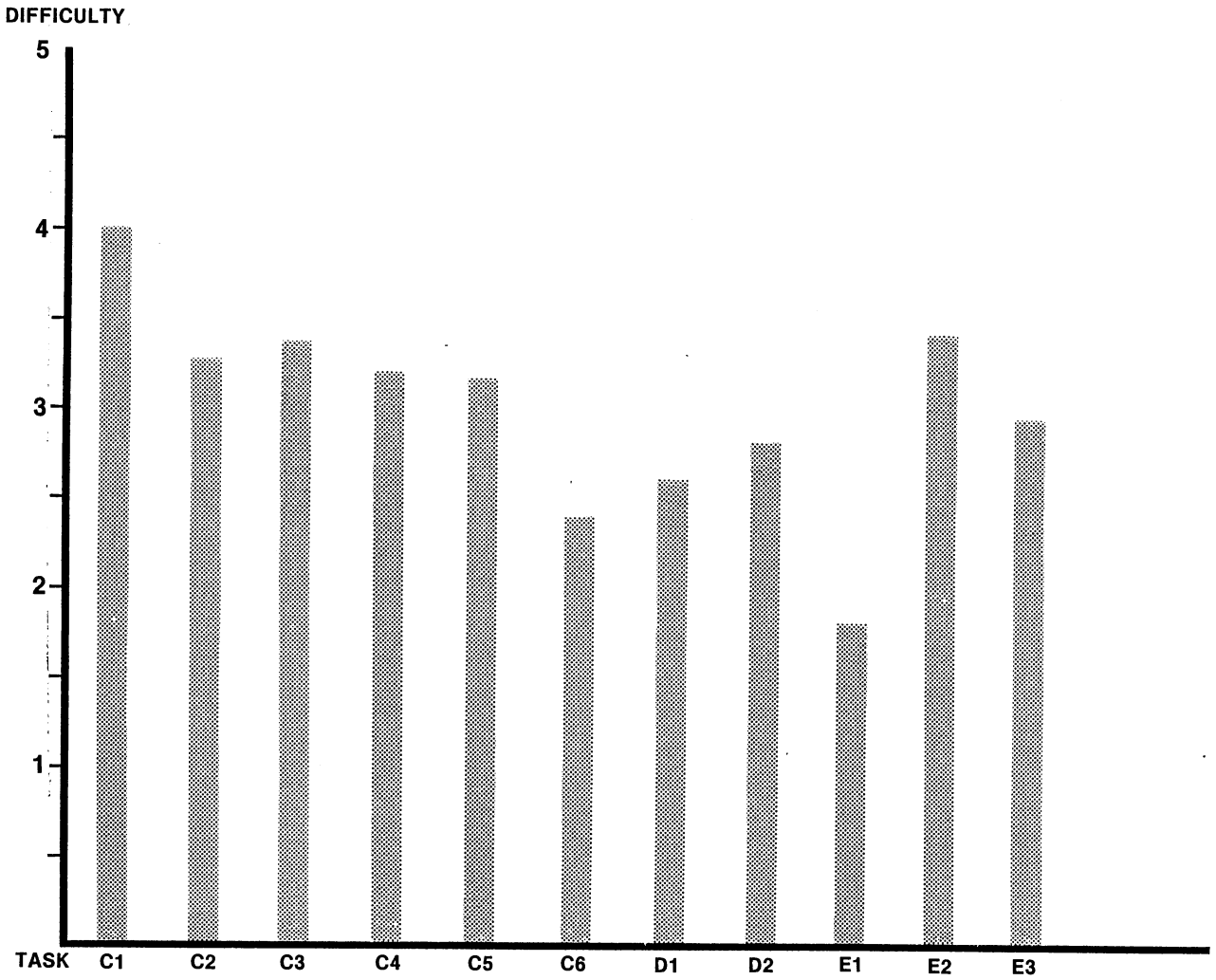

Figure 15. Mean Level of Difficulty as Perceived by Clinical Dietitians for Task 1C Through Task 1E

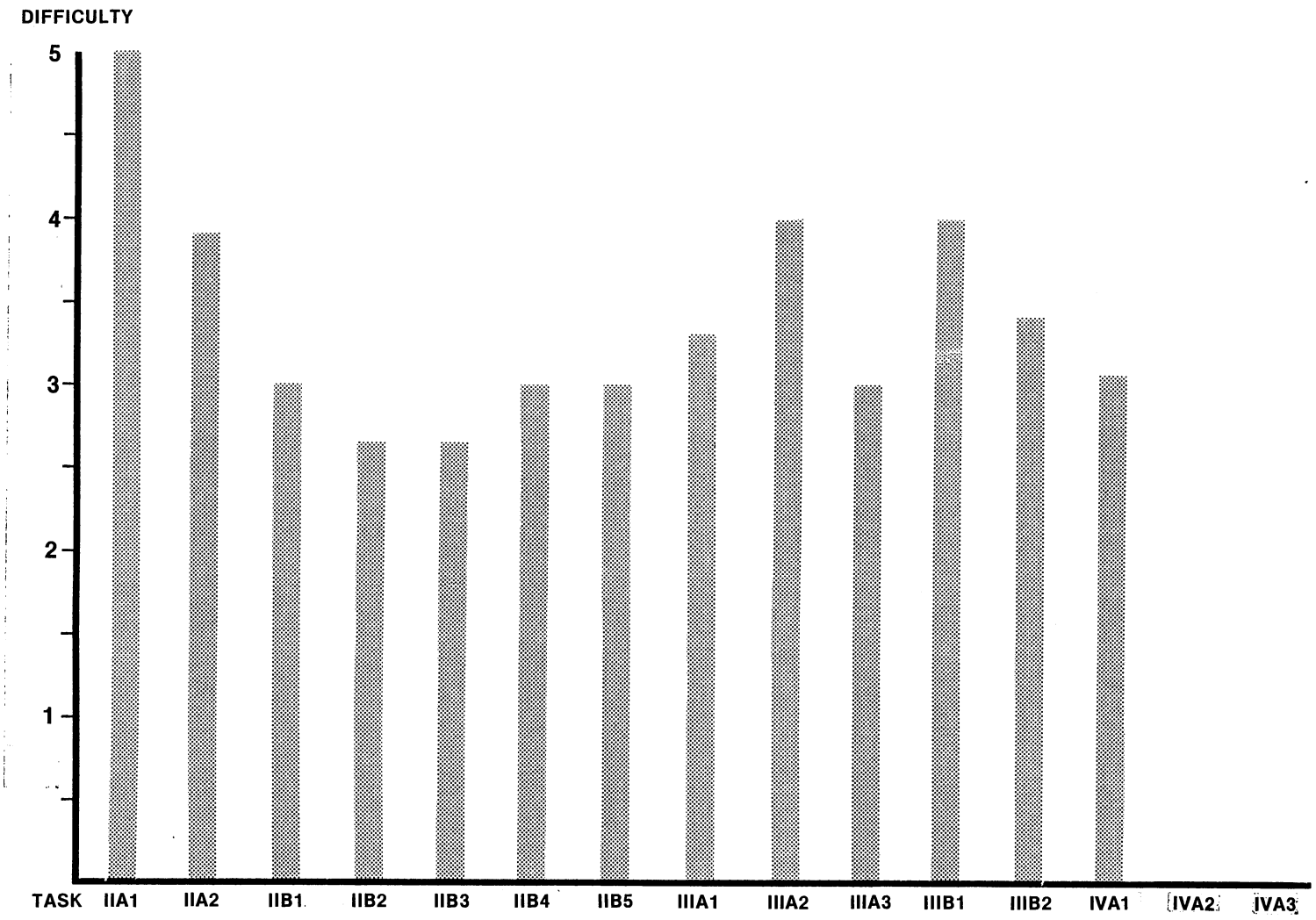

Figure 16. Mean Level of Difficulty as Perceived by Clinical Dietitians for Task IIA Through Task IVA

time required. Results in Figures 17, 18 and 19 indicate the higher the number of minutes required for performance of the task, the less frequently clinical dietitians were observed in performance of the task. Figures 20, 21 and 22 show those tasks requiring a greater amount of time. These are identified as those involving nutrition education of professional and patient education. The range of time required is from 6.8 minutes to 49.3 minutes per task. Additionally, the less time required for performance of the task, the more frequently the clinical dietitians were observed in performance of the task.

Learning Task Analysis

Learning task analysis (LTA) in this study provided the framework to determine performance objectives and the expected learning outcomes which require certain human capabilities. The learning outcomes are based on the Gagné and Briggs (1979) LTA model adapted for this study. They classified the required human capabilities into five categories: (1) intellectual skills where learning occurs through the use of symbols and recall; (2) cognitive strategies that select and guide the learner to define and solve problems; (3) information which provides background knowledge to assist in problem-solving; (4) motor skills that are learned through repeated use of body movement; and (5) attitude which affects behavior and influences action taken by the learner.

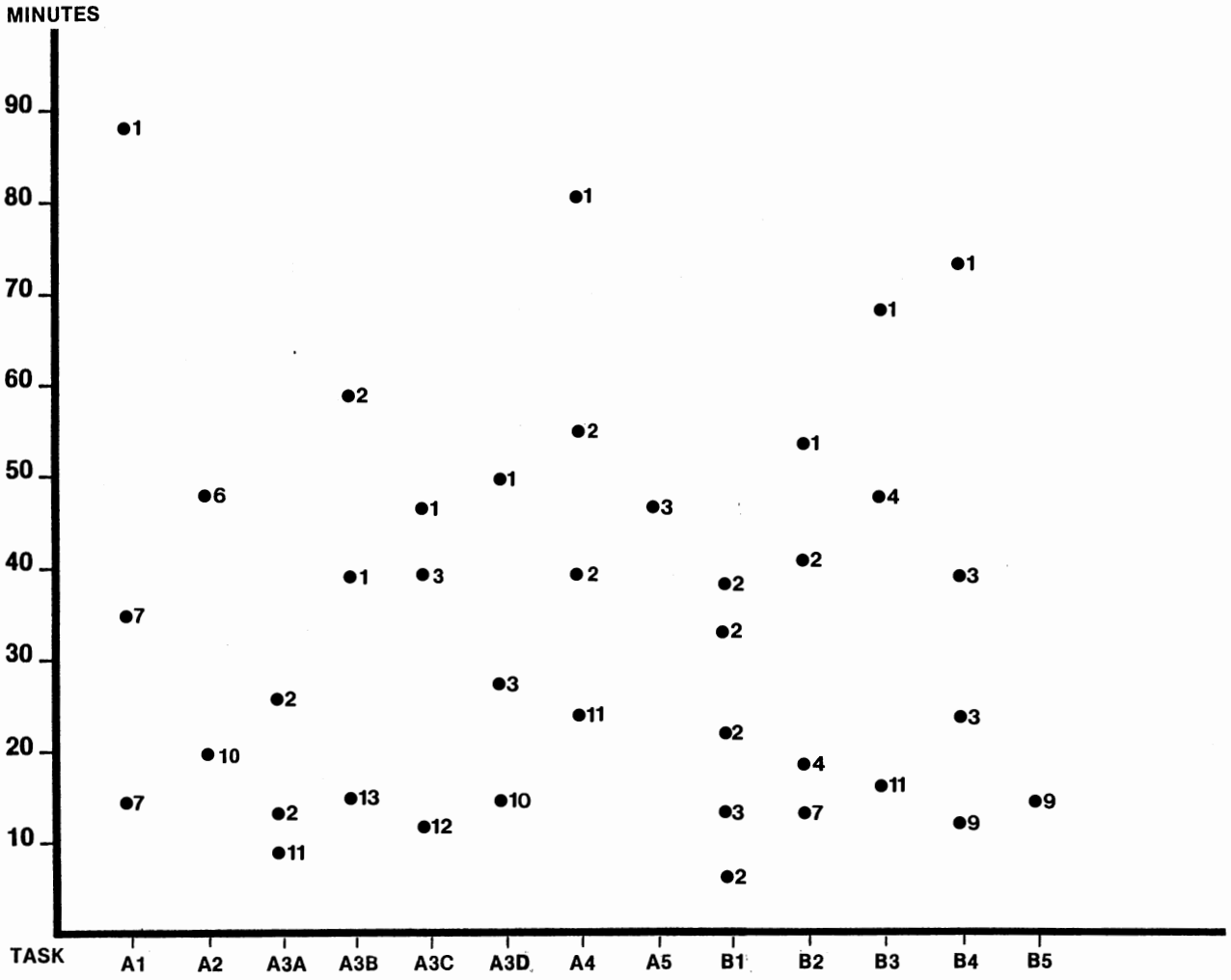

Figure 17. Time Required for Performance of Task 1A and 1B and Number of Clinical Dietitians Performing Task

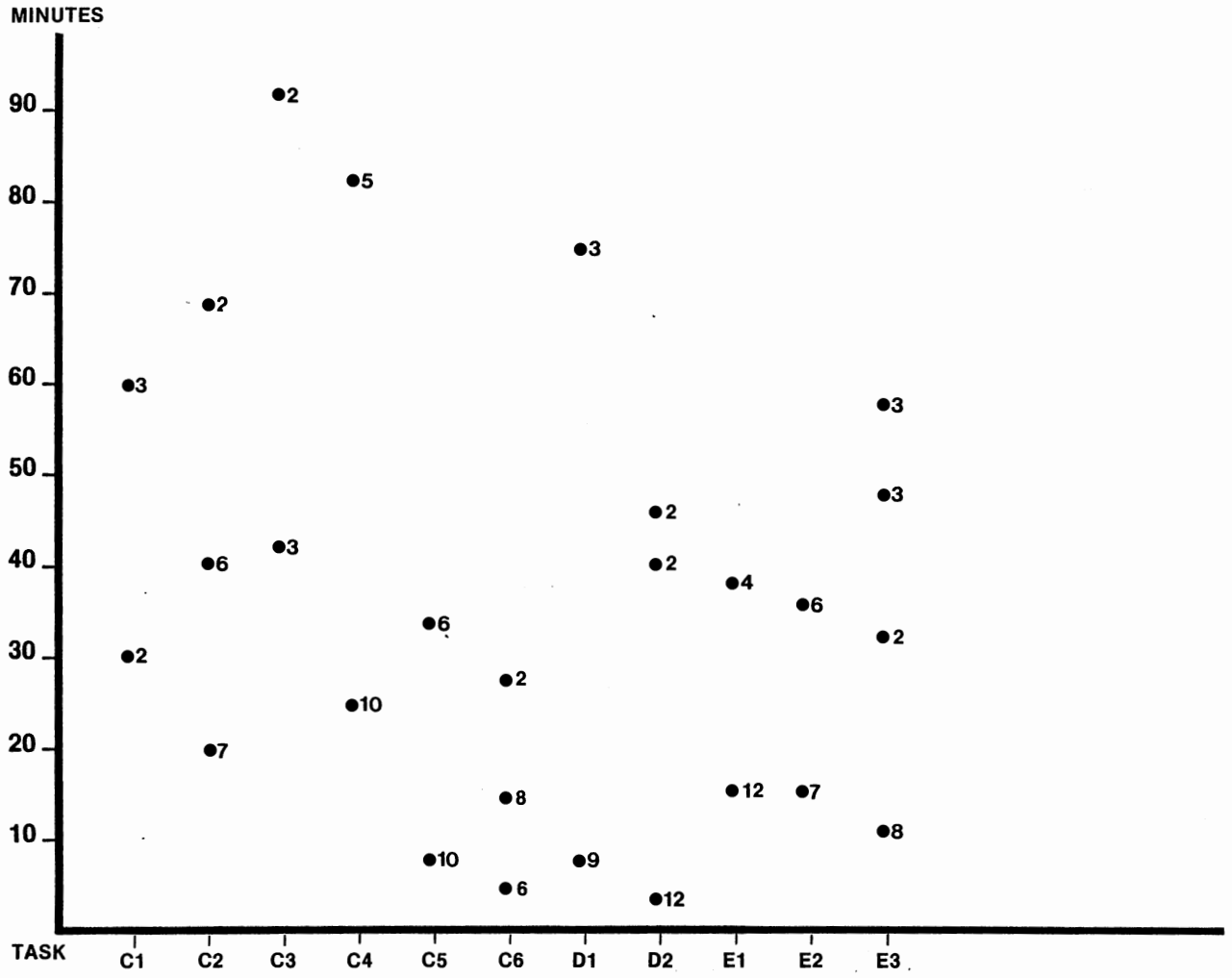

Figure 18. Time Required for Performance of Task 1C Through 1E and Number of Clinical Dietitians Performing Task

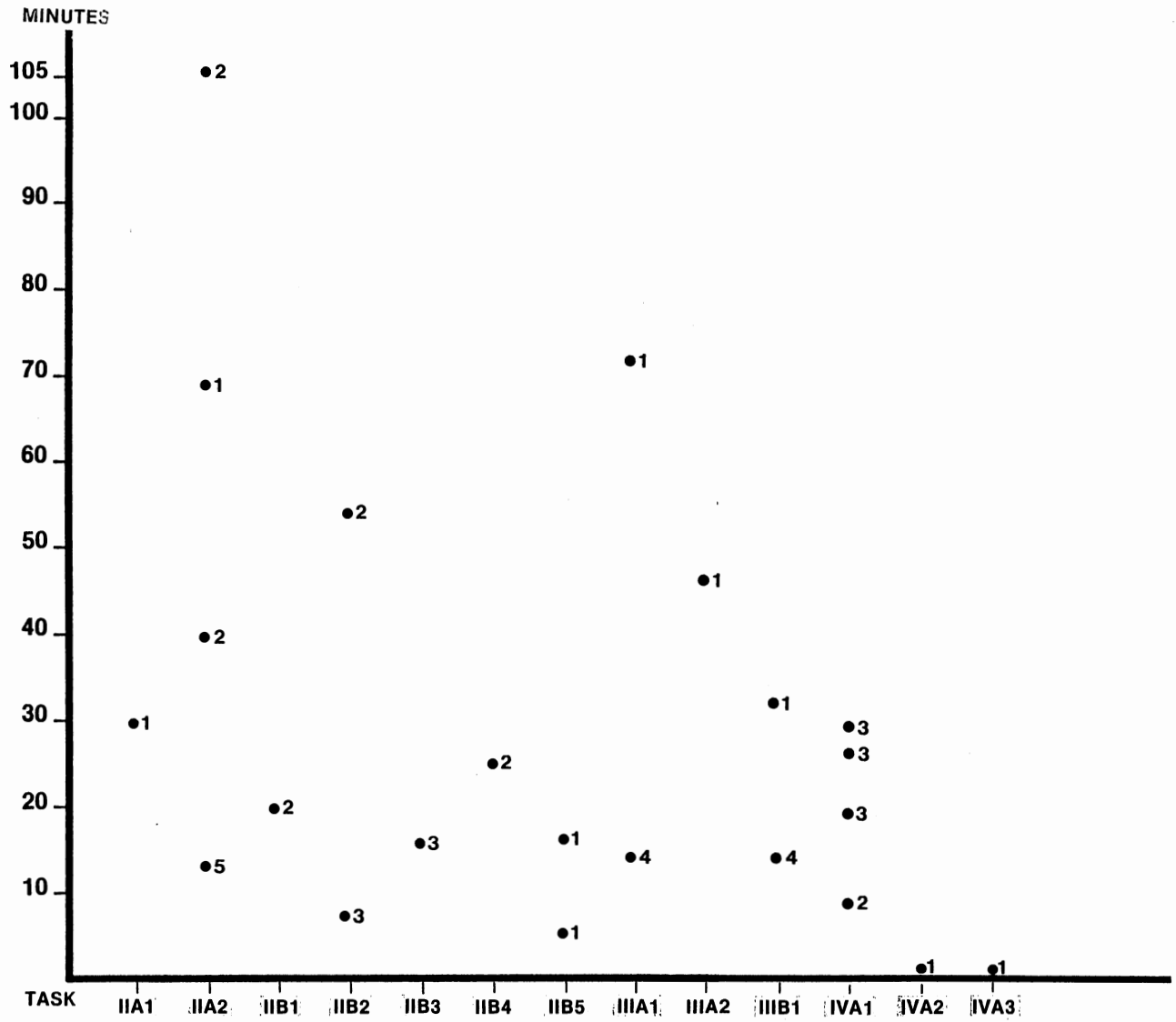

Figure 19. Time Required for Performance of Task II, III, and IV and Number of Clinical Dietitians Performing Task

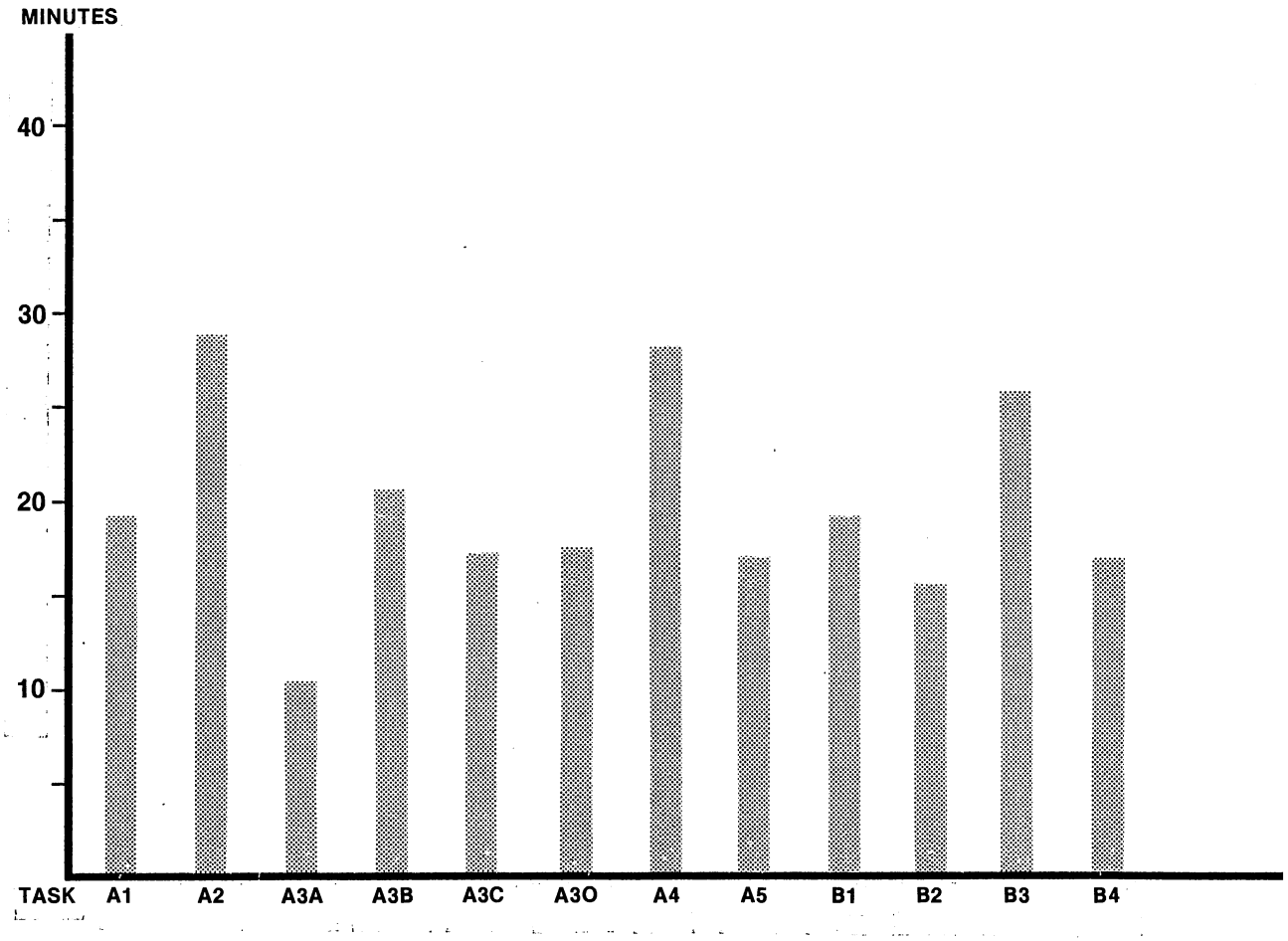

Figure 20. Mean Time in Minutes Required for Performance of Task 1A Through Task 1B

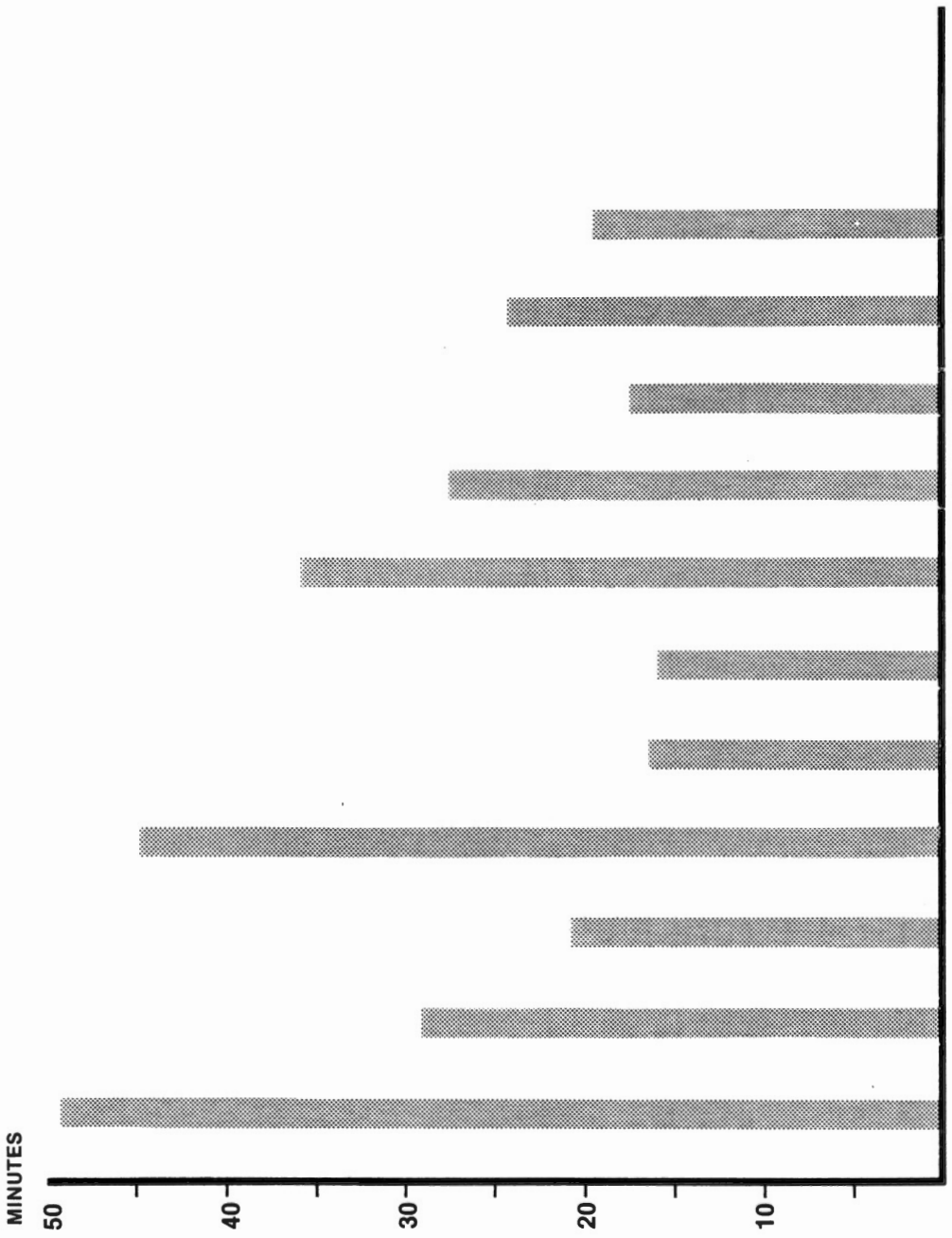

Figure 21. Mean Time in Minutes Required for Performance of Task 1C Through Task 1E

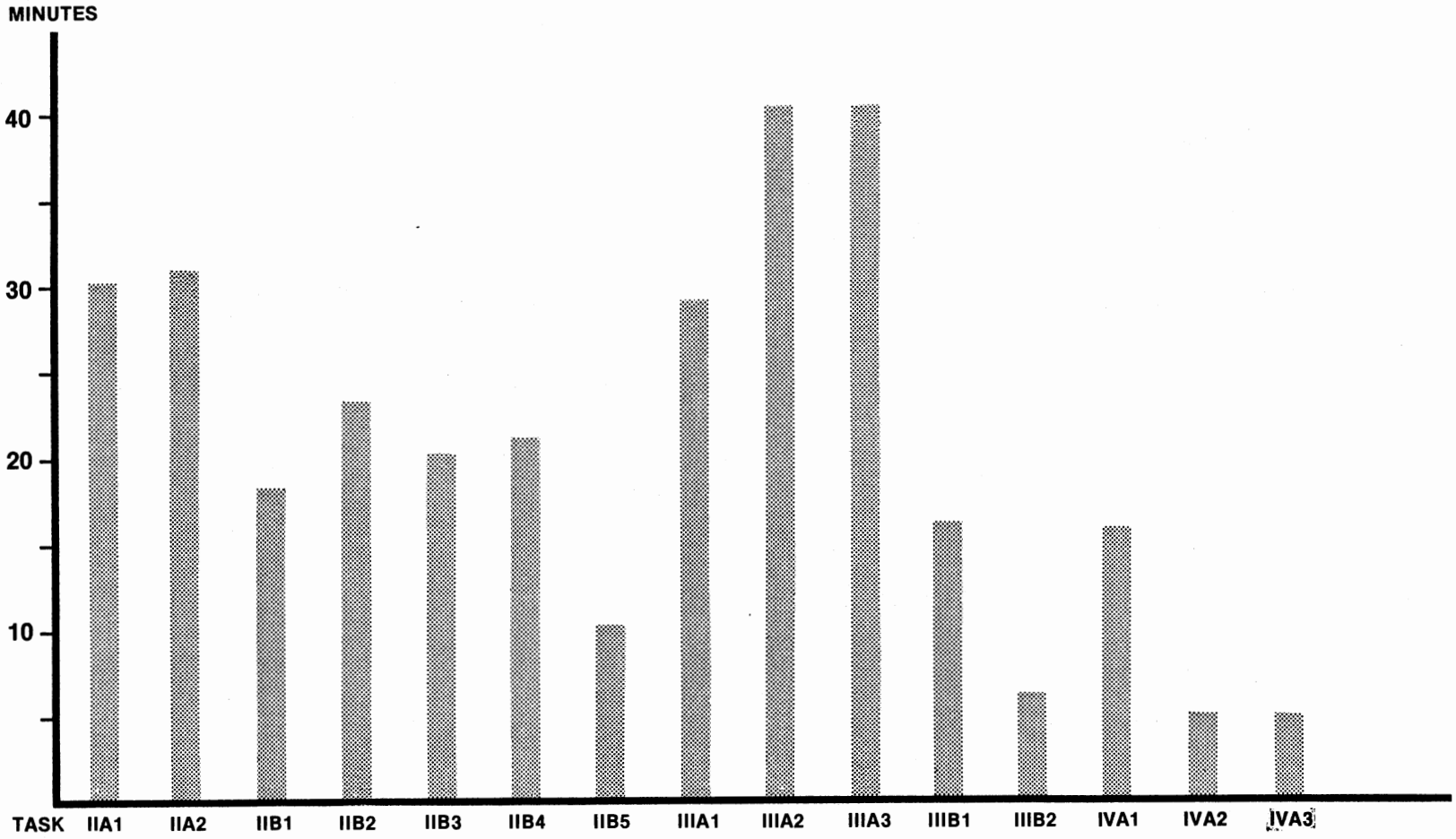

Figure 22. Mean Time in Minutes Required for Performance of Task IIA Through Task IVA

Based upon the model using human capabilities, the major activities of LTA were determined to be identification of performance objectives and learning outcomes, and these were accomplished by applying the following steps:

1. Identification of performance objectives.
2. Analysis of objectives.
3. Validation of completed LTA.

The first step, identification of performance objectives, was taken from previously completed job performance standards (Appendix D). Use of the five categories of learning outcomes, intellectual skill, cognitive strategy, information, motor skill, and attitude, provided a means for writing performance objectives. Writing these objectives involved incorporating the job task statements which describe the practice of clinical dietetics with various components of a learning situation.

The second step of LTA was analysis of objectives. This process incorporated the job task statements describing the practice of clinical dietetics and job performance standards with the performance objectives. The purpose of the incorporation was to determine the learning outcome based on human capabilities required for a job activity. Capability verbs were included in objectives to indicate learning outcome; action verbs were used to describe observable behavior required to indicate mastery of the objectives. Intellectual skills are those mental skills required to learn how to do something. Cognitive

strategies are those capabilities which allow the individual to manage his/her own learning.

The final activity of LTA was validation of the completed analysis. The validation included both the determination of the correctness of statement of the objective and its classification into one of the types of learning. Once the performance objectives and learning outcomes had been identified, two dietitians involved in dietetic education were invited to assist in the validation process. Following an independent review by each their comments were combined and changes were incorporated into the final LTA (Appendix D).

Review of Task IA through IE reveals that all components of intellectual skill describing human learning capabilities, discrimination, concrete concept, defined concept, rule, and higher-order rule are required by the clinical dietitian to implement the nutrition care process at the client level. This domain of dietetic practice is described as the activities of the clinical dietitian which are performed many times during any given day. Performance objectives, therefore, identify the learning task and the expected performance of the practitioner. Further, the clinical dietitian must be able to originate a care plan which implies the ability to use cognitive strategy, to gather information, and to implement problem-solving techniques incorporating appropriate attitude and motor skills.

Although Task II through IV are included in the job

activities of the clinical dietitian, they were performed less frequently during the FJA observation time. Review of Task II through Task IV, however, indicates that the same human capabilities determined for Task I are also required for competency development. Although the times performed per observation period are decreased, it cannot be concluded that a correspondingly decreased level of competency is required for job performance. Discussion with directors of dietetics resulted in this conclusion; the directors concurred that activities described in Task II through Task IV are completed by the clinical dietitian employed in positions other than entry-level in a majority of hospitals with more than 300 beds.

Comparison of Job Task Analysis With ADA Role Delineation Responsibilities and Standards of Education

The functional job analysis statements and ADA Standards of Education and ADA Role Delineation were compared through an identification and verification process. This comparison is shown in Table II (Appendix D) in which each knowledge statement from the ADA Standards of Education is listed with the corresponding performance statement, role delineation professional level responsibility statement and FJA job task statement identified in this study.

Knowledge Statement 1 - Knows principles of human anatomy and physiology, microbiology and biochemistry. The

basic biological and physical science background for the clinical dietitian to function in an entry level position is required. These sciences are identified in the professional level responsibilities of the role delineation report for activities describing nutrition assessment, planning, evaluation and education. The FJA verified that these sciences are used in dietetic practice as shown in Task I which described the major activities of clinical dietetic practice.

Knowledge Statement 2 - Knows scientific principles of human nutrition in health and disease. This knowledge area is identified in the ADA Standards of Education, Role Delineation and FJA. Preparation in nutritional sciences with background in the biological sciences is shown as a need to demonstrate performance skill in routine practice of dietetics. Clinical dietitians in this study utilized principles of diet modification in health and disease more frequently than all other job tasks. This is evidenced in the frequency of task performance as identified in the FJA.

Knowledge Statement 3 - Knows nutrient composition of food and appropriate source of data. This was verified as a component part of the practice of dietetics in provision of nutritional care to individuals and groups. Assessment, evaluation, and implementation of treatment modalities are verified in the ADA Standards of Education, Role Delineation and FJA. The Role Delineation identifies need for this knowledge at the intra-organizational level for

nutrition care whereas it is Task III of FJA.

Knowledge Statement 4 - Knows principles of food science and techniques of food preparation. When verified with actual job activities in FJA, there is minimal use of this knowledge by clinical dietitians. Menu writing and food production or preparation were not observed as core performance requirements for clinical dietetic practice, but recommendation for procurement of products needed for nutritional care of clients is shown as a job task in Task III. This knowledge statement is assumed in the Role Delineation as needed for education of client in the nutrition care process.

Knowledge Statement 5 - Knows principles of menu planning for optimal nutrition of individuals and groups in health and disease. Interpretation of this statement could mean that menu planning is a component of management practice in which entry level clinical dietitians are not a participant. Although menu writing is a segment of nutritional care in the health care setting, the actual menu is completed by supervising clinical dietitians rather than entry level dietitians. This activity was not verified by the FJA.

Knowledge Statement 6 - Knows principles of behavioral and social sciences. Behavioral and social sciences appear to form the basis for interaction with individuals and groups where education and counseling are integral parts of the total nutritional care process. This knowledge

statement, identified in the ADA Role Delineation, was verified in the FJA. Review of professional level activities from FJA observations shows use of these sciences in all aspects of dietetic practice.

Knowledge Statement 7 - Knows the influence of socio-economic, cultural, and psychological factors on food and nutrition behavior. Clinical dietitians must be aware of socio-economic, cultural, and psychological factors to provide education and counseling to individuals and groups. Job activities identified in the FJA did not clearly delineate that clinical dietitians considered outside factors in determining nutritional care plans. Nutrition Care Process: Clint Level of the Role Delineation show each of these factors are inherent in dietetic practice.

Knowledge Statement 8 - Knows fundamentals of nutrition care delivery in community programs. This was not identified in the ADA Role Delineation professional level responsibilities nor verified by the FJA. This study was conducted in non-teaching hospitals and it may be assumed that clinical dietitians do not participate in community based dietetic programs.

Knowledge Statement 9 - Knows principles of effective communication and documentation. This is identified in the ADA Role Delineation and is verified by FJA. Job activities identified in the FJA demonstrated that oral and written communication are major components of clinical dietetic practice. Documentation of specific aspects of

nutritional care is evidenced in the frequency of task performance and the percent of clinical dietitians performing the task as identified in the FJA.

Knowledge Statement 10 - Knows use of computer for data processing and information management in dietetics. This knowledge area was not identified in the ADA role delineation professional level responsibilities nor was it verified by FJA. Use of computer in nutritional care activities appeared to be available in some of the non-teaching hospitals, but did not include the dietetic service in the hospitals where the research was conducted.

Knowledge Statement 11 - Knows basic concepts of research methodology and statistical analysis. This knowledge statement is included in the ADA Standards, Role Delineation and FJA. Job activities in the FJA demonstrated limited performance of research. Clinical dietitians indicated a need for better understanding of data gathering and statistical analysis.

Knowledge Statement 12 - Knows principles of education and effective methods of teaching. This is identified in the ADA Standards, Role Delineation and verified by FJA. Nutrition education of individuals and groups appears to be an integral component of practice in all areas of dietetics. Development of plans for one-to-one client education was observed in a variety of nutritional care settings of the non-teaching hospitals who participated in the FJA. Methods of teaching were verified during observation of

group classes in the data gathering phase of this study.

Knowledge Statement 13 - Knows techniques of interviewing and counseling. This statement is identified and verified in the ADA Standards, Role Delineation and FJA. Interviewing and counseling are demonstrated in the job activities of FJA. Performance of these activities as an integral part of nutritional care of clients is documented in the FJA by the amount of time and frequency of task performance by the clinical dietitians.

Knowledge Statement 14 - Knows principles of organization and management. This is identified and verified in the ADA Standards, Role Delineation and FJA. Job tasks identified in the FJA demonstrated limited involvement by clinical dietitians in management except for intra-organizational committee work. Although management is verified in the Role Delineation professional level responsibilities, it may be that organization and management tasks are performed by supervising and administrative dietitians rather than entry level clinical dietitians. Training functions, however, may be considered a job activity of the clinical dietitian when personnel are being trained in tasks related to nutritional care of clients.

Knowledge Statement 15 - Knows fundamentals of human relations and group dynamics. This is identified and verified in the ADA Standards, Role Delineation and FJA. Interaction with individuals and groups was noted throughout the period of observation of clinical dietitians in

their work areas.

Knowledge Statement 16 - Knows fundamentals and techniques of financial management. This knowledge statement can be identified in the ADA Standards and Role Delineation, but was not verified in FJA. Cost containment and budget management appears to occur at supervisory level rather than the entry level for clinical dietetic practice and therefore was not part of entry level dietitian's activities.

Knowledge Statement 17 - Knows principles and techniques of human resource management. This area of knowledge is identified in the ADA Standards and Role Delineation but was not verified by FJA. Human resource management was reported by directors of dietetics to occur at the supervisory level as non-professional and technical level were responsible to staff other than entry level practitioners.

Knowledge Statement 18 - Knows fundamentals of "quality assurance." This was not verified by FJA. Although quality assurance programs are conducted in health care facilities they were not part of the job activities of the entry level clinical dietitian. One non-teaching hospital indicated that quality assessment of documentation in patient care records was completed by supervising rather than entry level clinical dietitians. The Role Delineation includes participation in an on-going program of quality assurance as part of strategic direction and personnel

management.

Knowledge Statement 19 - Knows principles of nutrition assessment, planning, intervention, and evaluation. This area of knowledge is both identified and verified in the ADA Standards, Role Delineation and FJA. The Role Delineation professional level responsibilities include all aspects of nutritional care of individuals including nutrition assessment, nutrition care planning, nutrition care implementation and nutrition care evaluation. Actual activities of the clinical dietitians observed in the hospital setting involved these aspects of nutritional care. The frequency of task performance and percent of clinical dietitians performing each task further verifies the need for knowledge of principles of nutrition assessment, planning, intervention and evaluation in dietetic practice.

Knowledge Statement 20 - Knows the principles of procurement, food production, distribution, and service. This knowledge statement was included in the ADA Standards, Role Delineation and FJA. The job task statement of the FJA shows that clinical dietitians in an entry level position may recommend products for purchase but may not have direct responsibility for procurement, production, distribution and service as they relate to nutritional care of the hospitalized individual. The Role Delineation responsibilities show that this aspect of nutritional care is usually kitchen-based and assumed by other foodservice personnel. For these reasons, it may be concluded that these

management practices are not components of the job responsibilities of clinical dietitians.

Knowledge Statement 21 - Knows fundamentals of the political and legislative process. This area is identified and verified in the ADA Standards, Role Delineation and FJA. Clinical dietitians recognize the need for awareness of extraneous influences including political and legislative activities on the practice of clinical dietetics as evidenced by the FJA.

Knowledge Statement 22 - Knows laws, regulations, and standards affecting dietetic practice. This statement is both identified and verified in the ADA Standards, Role Delineation and FJA respectively. Although part of the job tasks for clinical dietitians, this activity was noted to be performed less frequently than other tasks. Laws and regulations governing nutritional care of clients was reported by directors of dietetics to be the responsibility of supervisory personnel who informed entry level practitioners of the role to assure compliance.

Knowledge Statement 23 - Knows fundamentals of merchandising and promoting food and nutrition services. This is an area of knowledge not identified in either the role delineation study nor verified by the FJA. The Role Delineation for Entry Level Clinical Dietetics (Baird and Armstrong) was completed and published in 1981 and the data collection period for this study was during the last quarter of 1981 and may be one of the reasons this area could

not be identified nor verified. From 1985 to present, the ADA has placed a greater emphasis on merchandising and marketing nutrition services to the public. With the advent of these activities, the role and responsibilities of the clinical dietitian have included marketing and promoting services.

Knowledge Statement 24 - Knows nutrient needs for various stages of the life cycle. This area is identified and verified in both the ADA Standards and FJA respectively. Utilization of this knowledge is demonstrated in the job task statements as well as from observation records of clinical dietitians in their practice settings. Through frequency of performance of tasks, time required for performance and percent of clinical dietitians performing the tasks, it may be concluded that knowledge of nutrient needs throughout the life cycle is an integral part of dietetic practice.

Cognitive Areas Requiring More Emphasis

Since the purpose of this study was to determine if current dietetic practice is in accord with the ADA Role Delineation and if the present ADA Standards of Education requirements are adequate to prepare graduates for entry level clinical practice, the identification and verification process used for ADA Role Delineation, ADA Standards of Education and FJA is the basis for ascertaining completeness as well as areas/cognitive skills requiring more

emphasis in the Standards of Education. Based upon actual knowledge and performance requirements, areas noted are as follows:

1. Knowledge statements 1 and 2 state that dietitians require knowledge of anatomy, physiology, microbiology and biochemistry in addition to scientific principles of human nutrition in health and disease. The clinical dietitian according to FJA, is continuously involved in nutrition assessment of clients and pathophysiology and genetics, therefore, these knowledge areas appear to need greater emphasis. Mastery of these areas could enhance problem-solving and decision-making skills in the care of clients.

2. Principles of menu planning for the clinical dietitian were not observed as part of the actual job activities. There is a tendency in the health care setting for master menus to be prepared by management level staff without assistance from clinical dietitians. A different process may occur in smaller health care facilities.

3. The influence of socio-economic, cultural, and psychological factors on food and nutrition behavior in knowledge statement 7 is identified in job task statement IA1-2, IC2 and IC5. Review of the Observation Worksheets from the FJA identified that the entry level clinical dietitian spends approximately 80 percent of the work day using these knowledge areas. However, performance statements identify utilization of food, nutrition and social services only in community programs that require knowledge

of this area. Inherent in many aspects of nutrition care and counseling socio-economic and cultural factors are used. This may reflect a limitation in the performance statements rather than in the knowledge area. Further, documentation for need of these knowledge areas is found in the LTA performance objectives and learning outcomes for Task IA1-2, IC2 and IC5.

4. The nutritional care process described in the ADA Standards of Education and FJA document that the entry level practitioner has need for oral and written communication skills to communicate with peers, employees, other health professionals and clients. The LTA learning outcomes and performance objectives for all task statements support the emphasis on communication knowledge and skills.

5. Although knowledge statement 10 states that graduates require knowledge of use of computers, many departments of dietetics have only management systems for purchasing and inventory control but not systems for clinical assessment for nutritional care. A deficiency may not be identified but entry level practitioners could experience limited computer access. Actual use of computers by clinical dietitians was not observed during data collection in this study.

6. Use of mathematic skills were identified during the observation period of the study in the nutrition care process. Emphasis in the use of fundamental principles of mathematics is not present in the knowledge and

performance statements of the Standards of Education.

7. Organization and management principles in the knowledge and performance statements allude to the fact that entry-level clinical practitioners use these principles. The Role Delineation provides very limited verification for this in that professional level responsibilities state these are traditionally performed as "kitched based" activities. The FJA did not disclose organization and management duties being observed. Since practitioners determine priorities and manage time, greater emphasis in these cognitive areas is suggested.

CHAPTER V

SUMMARY AND RECOMMENDATIONS

The purpose of this research was to conduct a functional job analysis and educational or learning task analysis of job activities of clinical dietitians to determine if current practice is in accord with the ADA Role Delineation and if the present standards of education requirements are adequate to prepare the graduate for entry level clinical practice. Specific objectives included:

1. Perform a functional job analysis of entry-level practice of clinical dietetics which includes actual tasks performed, time required to perform task, perceived level of difficulty of task and number of times task is performed.

2. Verify if the functional job analysis is in accord with The American Dietetic Association (ADA) Role Delinea- for Entry Level Clinical Dietetics (Baird and Armstrong, 1981) and Accreditation/Approval Manual for Dietetic Education Programs (ADA, 1987).

3. From the functional job analysis, infer the necessary knowledge and skills (Learning Task Analysis) required to practice clinical dietetics.

4. Make recommendations to enhance the application of the Standards of Education and the Role Delineation in

dietetic practice.

A review of the literature revealed that, although functional job analysis has been used in business and industry for many years, research concerning actual observation of clinical dietitians in the clinical setting to develop job task statements has not been reported. Learning task analysis for curriculum development in the military and technical training schools has been reported, but its use in dietetic education appears to be limited or nonexistent. There does, however, seem to be a trend in allied health education programs, occupational therapy, radiologic technology and dietetic technology, to use both functional job analysis and role delineation to define job tasks. In recent years, The American Dietetic Association has placed greater emphasis upon education standards and actual roles of practitioner in the work arena. Research was not available to describe observation of actual job activities of clinical dietitians and use results to infer necessary knowledge and skills to practice clinical dietetics and hence, the impetus for this study.

The research design utilized in this study was survey. The invited sample of 24 clinical dietitians were observed in 16 non-teaching hospitals in Minneapolis/St. Paul, Minnesota; Kansas City, Missouri; Dallas/Fort Worth, Texas; and Houston, Texas.

The clinical dietitians were all female and represented all available routes to ADA membership. Six or 25

percent graduated from coordinated undergraduate programs in dietetics. Fourteen or 58 percent completed dietetic internships. Three or 12 percent completed dietetic traineeships and one or less than 1 percent completed a master's degree and six months clinical experience. They represented the midwest and southwest regions of the United States.

Years of experience in dietetics, but still employed in an entry level position were variable. The range of experience was from 3 months to 8 years with a mean of 1.22 years.

Functional Job Analysis

Sixteen clinical dietitian positions comprised the sample. Observations were conducted for an eight-hour work day to collect data (time required and frequency of performance) for development of specific job task statements. These statements were reviewed by the survey population for accuracy, clarity and actual description of work performed.

The job task performed by the greatest percent of clinical dietitians is Task I where 60 percent of the clinical dietitians performed 14 of 23 elements. The nutrition care process of applying principles of diet modification, implementation and evaluation is emphasized in this task. Task II, III and IV were performed by a smaller percent of clinical dietitians.

Sixty-five percent of the elements of Task I were performed more frequently than all other elements of the FJA. The perceived importance by clinical dietitians seemed to reflect the belief that applying principles of diet modification, implementation of nutrition care plans and evaluation of nutrition status are considered the major responsibility of entry level dietitians in clinical practice. Regional comparison indicates that southwest region dietitian's frequency of performance of job tasks is greater than the midwest. The range is 5 to 58 times in the midwest whereas in the southwest the range is 5 to 85 times per task.

The perceived level of difficulty ranged from 1.3 to 5.0 for all elements of all tasks. These data, however, were insufficient to show significance.

Time in minutes for performing tasks ranged from 6.8 to 49.3 minutes. Tasks requiring a greater amount of time are identified as those involving nutrition education of professionals and patient education.

Learning Task Analysis

Four major job task statements resulted from the FJA with job tasks grouped into five categories of clinical dietetic practice: nutrition care, education, research, intra-organizational and social sciences. Thirty-eight specific job tasks were delineated within the five categories. Job performance standards were identified through

use of an expert panel with consensus agreement. Using the Gagné and Briggs model for learning task analysis (LTA), the LTA required statement of performance objective by learning task and learning categories by type was developed. Based upon performance objective the type of learning category was identified. These categories were intellectual skill requiring discrimination, concept and rule, cognitive strategy, information, attitude and motor skill. The missing type of learning category for each task then identified limited knowledge areas in academic preparation of the clinical dietitian.

Identification and Verification of FJA and ADA Standards

The ADA Standards were identified and verified with the FJA job task statements. Knowledge and performance statements from the ADA Standards included information not observed in the job performance by entry level clinical dietitians. It is expected that roles of some clinical dietitians have changed in clinical positions since both the data collection for this study and the ADA Role Delineation document were published in 1981. Management principles including human and financial were not identified in this research. Quality Assurance Programs appear to be another dimension of nutritional care or the same as standards of practice from past years.

Practice for entry level clinical dietitians appears

to involve continuous use of skills for systematic assessment, planning, intervention and evaluation for individuals and groups. Strategies for marketing services and identification of target groups were less evident in the FJA.

Recommendations

An expanded study of the actual job activities of clinical dietitians in health care facilities is needed nationwide. If conducted on a national basis, it might be necessary to randomly sample facilities by number of clinical dietitians and technical support personnel. On-site observation appears necessary to delineate all activities. It may be necessary to expand the time from one day to three days for continuity of activities and improved job task statements. Development of an instrument to measure significance for frequency of performance and time required for each task is recommended. The level of difficulty may not be a viable measure of job performance.

A review of knowledge statements in the Accreditation/Approval Manual for Dietetic Education Programs (ADA, 1987) for content is recommended. It appears that knowledge statements could be grouped in such a way as to enhance program planning rather than as in the present format, i.e.: some of the biological sciences presented and then as the final statement "knows nutrient needs for various stages of the life cycle."

Another recommendation is that a comparison be made

between the Learning Task Analysis and Role Delineation to provide a way of observing and assuring academic preparation is adequate for entry-level practice.

A comparison between Role Delineation and Standards of Education be commissioned by The American Dietetic Association is further recommended. Valuable information could be gained to extend such a study to include a comparison and pre-validation of the registration (R.D.) examination.

Implications

The American Dietetic Association has conducted Role Delineation Studies for an indication of adequacy of practitioners to practice and has traditionally set education standards for dietitians through the "Standards of Education." The majority of dietitians further take a registration exam and become registered which denotes high quality preparation for practice by being based on both education and applied experience. Continuous studies to assess the adequacy of this preparation are of importance to both educators and employers.

From findings in this study, several questions are raised for which further answered are needed. It is not apparent, for instance, as to whether the performance statements do include all the actual job activities of the entry level clinical dietitian or whether some of the knowledge statements are more realistically based on advanced levels of dietetic practice. This information is

of importance since the ADA is moving strongly toward specialization in practice as a further level of performance.

It further appears that clinical dietitians do not participate in activities designated as organization and management. The dietitians may not perceive that they do perform some of these functions by the nature of the position itself or that these are not only activities labelled as food preparation and food service related activities but also refer to management of time and activities. The perception of clinical dietitians regarding this area should be emphasized and strengthened.

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APPENDICES

APPENDIX A

OBSERVATION WORKSHEETS

OBSERVATION WORKSHEET

Dietitian_____Job Title_____Date Observed_____

Hospital_____City_____Time Observed_____to_____

Job Description Attached Yes_____No_____ Bed Capacity_____

Performs What Actions	Time Required	With What Materials or Work Aids	Prior Instructions	Accomplished Outcome or Result

OBSERVATION WORKSHEET

Performs What Actions	Time Required	With What Materials or Work Aids	Prior Instructions	Accomplished Outcome or Result

OBSERVATION WORKSHEET

Dietitian _____ Job Title Clinical Dietitian Date Observed 3/18/81

Hospital _____ City _____ Time Observed 9 a.m. to 11 a.m.

Job Description Attached Yes X No ____ Bed Capacity 600+

Performs What Actions	Time Required	With What Materials or Work Aids	Prior Instructions	Accomplished Outcome or Result
1. Checked chart of nutritional assessment pt's and recorded pertinent information on nutr. assess. form	9:00-9:05	Nutritional assessment protocol form used by hospital	Orientation to hospital procedures at time of employment	1. Assess progress of pt's own nutrition support regimen
2. Discussed problem with feeding tube used by a pt with attending M.D.-R.D. and M.D. discuss alternatives to tube feedings and other options	9:05-9:10			2. Determine possible alternatives for pt. requiring some type of tube feeding or supplemental feeding
3. Resumed charting of calorie count and nitrogen balance	9:10-9:30			3. Document calorie count information and nitrogen balance in patient record for future use

APPENDIX B

SAMPLE LETTER TO DIRECTORS OF DIETETICS

7006 E. Reno, #131
Midwest City, OK 73110
May 21, 1981

Dear

Since the 1960's membership in the American Dietetic Association has been contingent upon successful completion of either Plan III or Plan IV Minimum Academic Requirements and the appropriate experience component. Although these served as guidelines for the future professional, studies are limited or nonexistent to demonstrate their adequacy in actual education of the dietitian and preparation for entry-level positions.

During the 1970's dietetic educational programs began to identify expected competencies for graduates, plus role delineation studies were funded to identify the role of the dietitian in specific areas of practice. According to the literature and discussion with dietetic professionals, Functional Job Analysis (FJA) resulting in job task analysis and task statements using observation techniques of actual job performance are lacking. I am currently involved in a research study that is designed to include observation of the clinical dietitian in actual job performance to determine if the ADA Plan IV Minimum Academic Requirements, clinical emphasis, provides the necessary subject matter area to prepare the graduate to practice as an entry-level clinical (Therapeutic) dietitian.

By this letter I am requesting permission to observe one clinical dietitian for one day or part thereof during the performance of her job. This observation is not to interrupt schedules but to learn what are the actual activities of the dietitian (see attached form). Additionally, the study is not designed to monitor how dietitians function or their level of practice, but to determine the relationship of job activities to required academic subject matter areas. Once the observation is completed, a set of task statements will be written and returned to you and the dietitian for review to

determine accuracy and clarity. The next step will not involve you or your staff, but subject matter areas will be identified and a comparison made with Plan IV.

Hospitals in Minneapolis, Kansas City, Houston, Tulsa and Dallas have been selected for this study. I will be in Houston beginning June 2, 1981 and if it is decided that you wish to participate in this study I would complete the observation during that week. The day and time would be determined by you and your staff. The clinical dietitian would also be selected by you. Further, the data gathered is much the same as that obtained for time and motion studies in determining food production schedules and work load. I have enclosed a sample from data gathered during the observation of a clinical dietitian at a Tulsa, Oklahoma hospital. Observations have been completed in four Tulsa hospitals.

Thank you for your participation and cooperation in this study. If you have additional questions, do not hesitate to call me at 405-271-2113 (work) or 405-732-5756 (home).

Sincerely,

Florene Chancey, M.S., R.D.

APPENDIX C

TASK FREQUENCY AND DIFFICULTY SCALE

TASK FREQUENCY AND DIFFICULTY SCALE

The following task statements are based upon the variety of actions performed by you at the time of on-the-job observations. The frequency and time to be completed by the researcher indicates the number of times the actions were performed during one day. Circle the number indicating the difficulty of performance, using 1 as the least difficult and 5 as the most difficult. Consider the background knowledge required when determining the level of difficulty (i.e., advanced nutrition, biochemistry, physiology, etc.).

	Task Statement	Difficulty Scale	Frequency of Performance	Time Required
IA	Following specified procedures, applies principles of diet modification to plan and implement nutrition care for clients.			
IA1	Obtains client food preferences	1 2 3 4 5		
IA2	Obtains client nutrition history	1 2 3 4 5		
IA3	Reads client chart to:			
IA3a	Verify diet order	1 2 3 4 5		
IA3b	Obtain essential laboratory data	1 2 3 4 5		
IA3c	Obtain diagnosis and underlying symptoms	1 2 3 4 5		
IA3d	To determine rationale for diet order and nutritional care	1 2 3 4 5		
IA4	Develops meal plan compatible with RDA requirements, diagnosis and diet order	1 2 3 4 5		

	Task Statement	Difficulty Scale	Frequency of Performance	Time Required
IA5	Implements meal plan through appropriate channels	1 2 3 4 5		
IB	Following specified procedures, applies principles of nutrition, physiology and biochemistry to plan and implement a nutritional assessment program for clients			
IB1	Develops criteria for nutrition screening	1 2 3 4 5		
IB2	Identifies clients at nutritional risk	1 2 3 4 5		
IB3	Collects appropriate data, history, anthropometry, clinical, laboratory, medications, other	1 2 3 4 5		
IB4	Disseminates findings through appropriate channels	1 2 3 4 5		
IC	Utilizes principles of education to instruct, counsel and/or provide information to allow clients to manage their nutritional care			
IC1	Develops educational materials for client use	1 2 3 4 5		

	Task Statement	Difficulty Scale	Frequency of Performance	Time Required
IC2	Assists client in development of goals	1 2 3 4 5		
IC3	Testifies crucial factors which may affect clients' management of nutritional care	1 2 3 4 5		
IC4	Uses several learning styles to present information to client	1 2 3 4 5		
IC5	Involves client through use of crucial factors in planning his care	1 2 3 4 5		
IC6	Provides educational materials to client	1 2 3 4 5		
ID	Utilizes established procedures to document nutrition care plan			
ID1	Communicates plan to appropriate health team member	1 2 3 4 5		
ID2	Documents plan in client medical record	1 2 3 4 5		
IE	Following previously determined procedures evaluates the identified intervention strategy as it applies to the specitic disease entity and the nutrition status of the client			

	Task Statement	Difficulty Scale	Frequency of Performance	Time Required
IE1	Assesses client acceptance of food	1 2 3 4 5		
IE2	Assures that each client problem has been addressed in the nutrition care plan	1 2 3 4 5		
IE3	Checks client progress and documents in his record	1 2 3 4 5		
IIA	Utilizes knowledge of the principles of education and the nutritional sciences to provide instruction to medical and other allied health personnel			
IIA1	Provides classes and other educational opportunities to physicians and medical and dental students	1 2 3 4 5		
IIA2	Disseminates new information to nursing practitioners and other allied health personnel through conferences, seminars, committees and other modes of communication	1 2 3 4 5		
IIB	Applies principles of research design and analysis to participate in new and ongoing studies related to the nutritional care process			

	Task Statement	Difficulty Scale	Frequency of Performance	Time Required
IIB1	Develops appropriate protocol	1 2 3 4 5		
IIB2	Collects data	1 2 3 4 5		
IIB3	Disseminates to other health professionals	1 2 3 4 5		
IIB4	Analyzes findings	1 2 3 4 5		
IIB5	Implements changes in client care as needed	1 2 3 4 5		
IIIA	Following specified policies and procedures participates actively as a member of intraorganizational committees			
IIIA1	Team member for planning and conducting dietetic audits	1 2 3 4 5		
IIIA2	Team member for menu planning committee for total facility	1 2 3 4 5		
IIIA3	Other permanent and ad hoc committees	1 2 3 4 5		
IIIB	Following previously determined procedures recommends procurement of products needed for nutritional care of clients	1 2 3 4 5		

	Task Statement	Difficulty Scale	Frequency of Performance	Time Required
IIIB1	Develops standards for enteral and parenteral feedings	1 2 3 4 5		
IIIB2	Recommends products to meet standards	1 2 3 4 5		
IVA	Utilizes knowledge of the social sciences to determine constraints and influences on the total nutritional care process			
IVA1	Identifies individuals and groups who may choose to influence the process	1 2 3 4 5		
IVA2	Disseminates information regarding legislation that needs consideration	1 2 3 4 5		
IVA3	Develops policies using regulations and laws influencing nutritional care	1 2 3 4 5		

APPENDIX D

LEARNING TASK ANALYSIS AND JOB TASK STATEMENTS WITH JOB PERFORMANCE STANDARDS

Dear Colleague:

I am currently conducting a research study of the clinical dietitian using Functional Job Analysis and educational task analysis. In Step 1 of the study clinical dietitians were observed performing routine job activities in their actual job setting. The attached form includes job task statements formulated as a result of the observations.

In the system of Functional Job Analysis used for this study, performance standards must be developed. These standards are defined as the criteria by which the clinical dietitian knows that the task has been performed successfully. They may be written either quantitatively or qualitatively. Qualitative standards, which will be used for this study, are more general and reflect a subjective judgment on the part of the worker or his supervisor.

Your assignment is to assist in the development of performance standards for each task statement. Working independently and then as a group, please complete the following:

1. Using the attached sample as a guide, write a qualitative standard for each task statement.

2. As a group, determine by consensus an appropriate performance standard for each task statement.

Your participation in this study is most gratefully appreciated.

Florene Chancey, M.S.,R.D.

Enclosure

(NAME)	PRODUCTION COORDINATOR (JOB TITLE)
AV CENTER (INSTITUTION)	(LOCATION)

TASK STATEMENT	PERFORMANCE STANDARD
1.0 Interviews client to clarify details in producing slide presentation. --asks questions to help him to define such things as approximate number of frames he wants, number of sets of slides, time available for production, the kind of production system he prefers, what kind of mounting he would prefer, the objectives for the presentation, the intended audience.	1.0 All aspects of slide presentation are specified in meeting. The client is encouraged and confident about the presentation.
2.0 Based on information derived from client, writes standard production order to coordinate production of slide presentation.	2.0 All parts of the form are filled out. The information is precisely and clearly stated.
3.0 Using information on production order and knowledge of media production techniques, writes time schedule to assign completion dates to personnel to produce slide presentation.	3.0 The time schedule is realistic and on completion of project is close to actual time needed.
4.0 Using written script provided by client, reads material to separate into major ideas. --reads through and underlines major ideas.	4.0 All major ideas are identified, and client when he sees presentation agrees that it illustrates main points.
5.0 Using major ideas analyzed from written script, rough sketches visuals on story board cards to product slide presentation.	5.0 Rough sketches communicate visually the intent of the script.
6.0 When illustrations needed are too complicated to sketch, operates polaroid camera to make pictures to produce slide presentation. --locates complicated machinery needed for illustration and takes picture.	6.0 Locates appropriate material for illustration. Picture is of good quality photographically.

Source: Sample Job Performance Standard (From Jobs In Instructional Media by C. J. Wallington, A. L Hyer, F. D. Bernotzvicz, P. Hale and K. Silber, 1970).

	Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
1A	Following specified procedures, applies principles of diet modification to plan and implement nutrition care for clients			
	Obtains client food preferences	Food preferences obtained are realistic and conclusions are noted on the appropriate form	Given a client conducts an interview to elicit his food likes and dislikes	Intellectual skill (discrimination)
			Given information from a client identifies specific food preferences that are prohibited in his nutritional care	Intellectual skill (concrete concept)
			Given a list of specific food preferences classifies each according to nutrient content	Intellectual skill (defined concept)
			Given the nutrient content of foods eaten by a client demonstrates substitutions required to provide optimal nutrient intake for improved health status	Intellectual skill (rule)

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given a list of substitutions for inclusion in a client's diet to provide optimal nutrient intake generates the measures to assure positive nutritional care	Intellectual skill (higher-order rule)
		Given a list of client preferences originates a nutrition care plan to assure optimal nutrient intake	Cognitive strategy
		Given a form states in writing the client preferences in the nutrition care plan	Information
		Given a client chooses to talk to him as a means of establishing a working relationship	Attitude
		Given a list of client food preferences executes a menu to provide optimal nutrient intake	Motor skills

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
Obtains client nutrition history	The client's eating patterns are explored and recorded accurately	Given the specific eating patterns of a client discriminates actual daily food intake	Intellectual skill (discrimination)
		Given the specific eating patterns of a client identifies specific nutrients consumed	Intellectual skill (concrete concept)
		Given the specific eating patterns of a client classifies each food according to food groups	Intellectual skill (defined concept)
		Given a list of foods eaten by food groups demonstrates specific additional foods needed to meet recommended daily allowances for each nutrient	Intellectual skill (rule)
		Given the specific eating patterns of a client generates appropriate strategies to insure optimal nutrition care	Intellectual skill (higher-order rule)

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given the specific eating patterns of a client originates a menu to assure adequate nutrient intake	Cognitive strategy
		Given a menu states in writing the foods to assure adequate nutrient intake to meet recommended daily allowances	Information
		Given a client chooses to communicate verbally to him his required daily nutrient intake	Attitude
		Given the specific eating patterns of a client executes a plan for optimal nutritional care	Motor skill
Reads client chart to:			
Verify diet order	Diet order is located in client's chart and is stated as transmitted	Given a client chart discriminates diet order from other treatment orders	Intellectual skill (discrimination)

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given a client chart identifies the diet order written as transmitted	Intellectual skill (concrete concept)
		Given a diet order classifies it based on feasibility and availability of products	Intellectual skill (defined concept)
		Given a diet order demonstrates by verbal exchange with co-worker that diet is available as ordered	Intellectual skill (rule)
		Given a diet order generates through defined channels the necessary communication and calculation to assure that diet is served as ordered	Intellectual skill (higher-order rule)
		Given a diet order originates the necessary solution for applying nutritional care principles	Cognitive strategy
		Given a diet order states on a menu the foods to improve nutritional status of an individual	Information

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given a diet order implements the development of a nutritional care plan	Motor skill
		Given a diet order chooses the activity appropriate to interact with the client and health professional	Attitude
Obtain essential laboratory data	All pertinent laboratory data is identified and recorded on appropriate form	Given a client chart discriminates pertinent laboratory data from other data	Intellectual skill (discrimination)
		Given a client chart identifies pertinent laboratory data to record	Intellectual skill (concrete concept)
		Given a client chart classifies all laboratory data by writing a list according to increased or decreased values	Intellectual skill (defined concept)

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given a list of pertinent laboratory data demonstrates by recording on the appropriate form those critical to the nutritional care of an individual	Intellectual skill (rule)
		Given a list of pertinent laboratory data generates a rationale for inclusion of data critical to the nutritional care of an individual	Intellectual skill (higher-order rule)
		Given a list of pertinent laboratory data originates that portion of the nutrition care plan that requires consideration of laboratory data	Cognitive strategy
		Given a list of pertinent laboratory data states in writing on the appropriate form data important for nutritional care	Information

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given a list of pertinent laboratory data executes the development of the nutritional care plan	Motor skill
		Given the pertinent laboratory data choose the activity appropriate for communication of the care plan	Attitude
Obtain diagnosis and underlying symptoms	The client's diagnosis and symptoms are located in the medical history and recorded on appropriate form	Given a client's medical history discriminates diagnosis and symptoms from other information	Intellectual skill (discrimination)
		Given a client's medical history identifies the diagnosis and symptoms to record	Intellectual skill (concrete concept)
		Given a client's medical history classifies the diagnosis and symptoms according to nutritional implications	Intellectual skill (defined concept)

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given a client's medical history demonstrates by writing on the appropriate form the diagnosis and symptoms critical to nutritional care	Intellectual skill (rule)
		Given a client's medical history generates a rationale for nutritional care based on diagnosis and symptoms	Intellectual skill (higher-order rule)
		Given the client's diagnosis and symptoms originates that portion of nutritional care plan pertaining to this information	Cognitive strategy
		Given the client's diag- and symptoms states in writing on the appropriate form those important to nutritional care	Information

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given the client's diagnosis and symptoms implements the development of the nutritional care plan	Motor skill
		Given the client's diagnosis and symptoms choose the activity for recording information on the appropriate form	Attitude
To determine rationale for diet order and nutritional care	Rationale for diet order and nutritional care are related to appropriate criteria	Given a client chart, discriminates defined rationale based on appropriate criteria from other chart information	Intellectual skill (discrimination)
		Given a client chart identifies the rationale by naming the criteria related to nutritional care	Intellectual skill (concrete concept)
		Given a client chart classifies the diet order according to the defined criteria	Intellectual skill (defined concept)

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given a client chart demonstrates by writing on the appropriate form the rationale based on defined criteria	Intellectual skill) (rule)
		Given a client chart generates a rationale based on defined criteria	Intellectual skill (higher-order rule)
		Given a rationale for the diet order and nutritional care originates that part of the care plan related to this information	Cognitive strategy
		Given rationale states in writing on the appropriate form the rationale for the diet order and nutritional care based on defined criteria	Information
		Given the rationale for the diet order and nutritional care executes the writing of the care plan	Motor skill

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given the rationale for the diet order and nutritional care chooses the plan of action appropriate for care of the client	Attitude
Develops meal plan compatible with RDA requirements, diagnosis and diet order	Meal plan meets client's nutritional needs, as well as being appropriate for diagnosis, diet order and individual preferences	Given a meal plan for a client discriminates adequacy of plan from inadequate plan	Intellectual skill (discrimination)
		Given a meal plan for a client identifies the adequacy of the plan based on client's nutritional needs	Intellectual skill (concrete concept)
		Given a meal plan for a client classifies the components of the plan according to the client's nutritional needs	Intellectual skill (defined concept)

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given a meal plan for a client demonstates by writing those components required to meet the client's nutritional needs	Intellectual skill (rule)
		Given a meal plan for a client generates in writing the nutrients required to meet the client nutritional needs	Intellectual skill (higher-order rule)
		Given the meal plan for a client originates that part of the care plan related to nutritional needs by applying the principles of normal and abnormal nutrition for the diagnosis and symptoms	Cognitive strategy
		Given a meal plan for a client states in writing on the appropriate plan the nutrients requiring attention in the nutritional care plan	Information

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given a meal plan for a client executes service of the plan to the client	Motor skill
		Given a meal plan for a client chooses the activity that ensures communication to client and health professionals	Attitude
Implements meal plan through appropriate channels	Meal plan is implemented using appropriate forms, following established policies and procedures of the facility	Given a meal plan for a client discriminates the appropriate forms for implementation of the plan from other available forms	Intellectual skill (discrimination)
		Given a meal plan for a client identifies appropriate forms to implement the meal plan	Intellectual skill (concrete concept)
		Given a meal plan for a client classifies appropriate forms to implement the meal plan based on policies and procedures	Intellectual skill (defined concept)

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given a meal plan for a client demonstrates by writing the process compatible with available process for implementation of the plan	Intellectual skill (rule)
		Given a meal plan for a client generates by writing a list of policies required to implement the plan	Intellectual skill (higher-order rule)
		Given a meal plan for a client begins that part of the process necessary to implement the meal plan to assure optimal nutrition care to the client	Cognitive strategy
		Given a meal plan for a client states verbally how the implementation will occur	Information

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category
		Given a meal plan for a client performs noted physical tasks to implement the plan	Motor skill
		Given a meal plan for a client selects the appropriate information to communicate to co-workers	Attitude
IB Following specified procedures, applies principles of nutrition, physiology and biochemistry to plan and implement a nutritional assessment program for clients			
Develops criteria for nutrition screening	Criteria is listed and appropriate to achieve intended results	Given a list of criteria for nutrition screening of clients distinguishes criteria appropriate to gain intended results from inappropriate	Intellectual skill (discrimination)

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category
		Given a list of criteria for nutrition screening identifies the appropriate form for record keeping	Intellectual skill (concrete concept)
		Given a list of criteria for nutrition screening classifies criteria according to needs for intended results	Intellectual skill (defined concept)
		Given a list of criteria for nutrition screening demonstrates by writing which criteria is important for achieving intended results based on disease being treated	Intellectual skill (rule)
		Given a list of criteria for nutrition screening generates in writing a list of clients with diagnosis and treatment data meeting the criteria for achieving intended results	Intellectual skill (higher-order rule)

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given a list of criteria for nutrition screening originates a written plan for the nutritional assessment on a continuous basis for selected clients	Cognitive strategy
		Given a list of criteria for nutrition screening states orally to co-workers what is considered important to the nutrition screening and assessment process for selected clients	Information
		Given the criteria for nutrition screening of selected clients performs those assessment techniques (skinfold and tricep measurements) requiring physical activity	Motor skill

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given the criteria for nutrition screening selects that criteria which will change client behavior and communicate to client and other health professionals	Attitude
Identifies clients at nutritional risk	Lists correctly all clients at nutritional risk based on the identified criteria	Given a list of clients correctly discriminates between those at nutritional risk and those not at nutritional risk	Intellectual skill (discrimination)
		Given a list of clients correctly identifies those at nutritional risk by writing a separate list with only those clients meeting the applicable criteria	Intellectual skill (concrete concept)
		Given a list of identified clients correctly classifies each client according to written criteria	Intellectual skill (defined concept)

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category
		Given a list of clients demonstrates by writing the name of the client with accompanying criteria for individual nutrition screening	Intellectual skill (rule)
		Given a list of clients and criteria for each generates the plan for nutrition screening	Intellectual skill (higher-order rule)
		Given a list of clients at nutritional risk originates measures to implement the plan for screening	Cognitive strategy
		Given a list of clients at nutritional risk states the plan to co-workers for the actual screening process	Information
		Given a list of clients at nutritional risk executes verbally the plan to co-workers	Motor skill

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given a list of clients at nutritional risk chooses those clients requiring immediate change in behavior of eating habits	Attitude
Collects appropriate data, history, anthropometry, clinical laboratory, medications, other	All necessary data is obtained and accurately recorded on appropriate form	Given a list of clients for nutritional assessment discriminates which data is to be obtained and recorded from inappropriate data	Intellectual skill (discrimination)
		Given a client chart identifies data and records on appropriate form	Intellectual skill (concrete concept)
		Given a client chart classifies data according to established categories and criteria	Intellectual skill (defined concept)
		Given the data as classified according to categories and criteria demonstrates by writing the maximum and minimum values to consider in assessment	Intellectual skill (rule)

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given the data generates by writing a paragraph describing the implications for increased or decreased values based on normal values	Intellectual skill (higher-order rule)
		Given the data originates a plan of action to assure improved nutritional status based on available data by applying principles of nutritional care	Cognitive strategy
		Given the data orally states the implications of existing nutritional status of client to coworkers	Information
		Given the data develops a written care plan using principles of nutrition care	Motor skill
		Given the data selects verbal communication to apprise others of care plan	Attitude

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
Disseminates findings through appropriate channels	All channels are listed through which pertinent data is shared	Given the findings of the nutritional assessment data discriminates which professionals require the findings from those not participating in the nutritional care of patients	Intellectual skill (discrimination)
		Given the findings of the nutritional assessment data identifies those professionals by naming their role in patient care	Intellectual skill (concrete concept)
		Given the findings of the nutritional assessment data classifies by naming those channels required to list how findings will be shared	Intellectual skill (defined concept)
		Given the findings of the nutritional assessment data demonstrates their use by explaining the role of communication in sharing results with co-workers	Intellectual skill (rule)

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given the findings of the nutritional assessment data generates how the data is to be used by writing the channels for dissemination and guidelines for implementation of care based on findings	Intellectual skill (higher-order rule)
		Given the findings of the nutritional assessment data originates a plan for improving nutritional status by applying principles of nutritional care and involving use of the appropriate co-workers which received findings	Cognitive strategy
		Given the findings of the nutritional assessment data states in writing the major findings having implication in nutrition care to bring about improved nutrition status	Information

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given the findings of the nutritional assessment data begins the dissemination of findings by writing directions for support personnel to participate in care	Motor skill
		Given the findings of the nutritional assessment data chooses the appropriate activity to assist co-workers in utilizing the data to improve nutritional status of client	Attitude
IC Utilizes principles of education to instruct, counsel and/or provide information to allow clients to manage their nutritional care			

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
Develops educational materials for client use	Designs educational materials on different learning levels appropriate for a variety of clients based on individual needs	Given the principles of education discriminates between learning levels of clients by applying previously determined screening techniques	Intellectual skill (discrimination)
		Given the principles of education identifies learning levels by naming levels appropriate to a given client and his diagnosis	Intellectual skill (concrete concept)
		Given the principles of education classifies clients according to the identified learning levels by writing each client's name with the appropriate learning level	Intellectual skill (defined concept)

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category
		Given the principles of education demonstrates type of materials suitable for each learning level by preparing a chart to show level of learning and appropriate material	Intellectual skill (rule)
		Given the principles of education generates by synthesizing the rules for use of materials in education a procedure for development of materials for client use	Intellectual skill (higher-order rule)
		Given the principles of education originates a plan to develop appropriate materials by applying a model for planning	Cognitive Strategy
		Given the principles of education states in writing the plan for development of materials	Information

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given the principles of education executes the actual preparation of materials for client use	Motor skills
		Given the principles of education chooses the strategy appropriate for communication to client	Attitude
Assists client in development of goals	Develops realistic goals jointly with client having greatest responsibility for decisions	Given the principles of counseling and goal-setting discriminates between goals and standards by explaining the difference to client	Intellectual skill (discrimination)
		Given the principles of counseling and goal-setting identifies the process of goal development by naming the steps to be considered by the client	Intellectual skill (concrete concept)

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category
		Given the principles of counseling and goal-setting classifies each step by applying the definition of goals	Intellectual skill (defined concept)
		Given the principles of counseling and goal-setting demonstrates how client assumes responsibility for decisions by listing procedures for client to follow	Intellectual skill (rule)
		Given the principles of counseling and goal-setting generates by applying developed procedures a list of goals for the client to follow	Intellectual skill (higher-order rule)
		Given the principles of counseling and goal-setting originates a plan which directs the client to develop in writing his own goals	Cognitive strategy

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given the principles of counseling and goal-setting states orally to the client those goals that were developed	Information
		Given the principles of counseling and goal-setting executes the client goals by writing on a blackboard	Motor skills
		Given the principles of counseling and goal-setting chooses the goals intended to change client behavior	Attitude
Identifies crucial factors which may affect client's management of nutritional care	All positive and negative factors related to success of nutritional care are listed and client is counseled accordingly	Given the diagnosis discriminates between relevant and non-relevant information crucial to nutritional care by matching success and failure factors appropriate to diagnosis	Intellectual skill (discrimination)

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given the diagnosis identifies success factors by naming all positive and negative treatment models involving management of nutritional care	Intellectual skill (concrete concept)
		Given the diagnosis classifies success factors by defining positive and negative treatment modes involving management of nutritional care for individual clients	Intellectual skill (defined concept)
		Given the diagnosis demonstrates success factors by applying positive strategies in management of nutritional care for individual client	Intellectual skill (rule)
		Given the diagnosis generates appropriate positive and negative factors for management of nutritional care by synthesizing previously learned factors	Intellectual skill (higher-order rule)

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given the diagnosis originates a plan for management of nutritional care by applying the model for listing positive and negative factors to be used in client counseling	Cognitive strategy
		Given the diagnosis states by writing positive and negative factors to be used in client counseling	Information
		Given the diagnosis executes the writing of the positive and negative factors to be used in client counseling	Motor skill
		Given the diagnosis chooses the appropriate tools to convey positive and negative factors to client during counseling session	Attitude

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
Uses several learning styles to present information to client	All learning styles are identified and based on the learning level of each client	Given a list of learning styles discriminates by matching learning styles to learning level of client	Intellectual skill (discrimination)
		Given a list of learning styles identifies by naming learning styles appropriate to present information to a given client	Intellectual skill (concrete concept)
		Given a list of learning styles classifies each by defining the learning style appropriate to present information to a given client	Intellectual skill (defined concept)
		Given a list of learning styles demonstrates by using verbal explanation why learning style is appropriate to present information to a given client	Intellectual skill (rule)

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given a list of learning styles generates the plan for presenting information to a client by grouping materials based on the learning level of the client	Intellectual skill (higher-order rule)
		Given a list of learning styles originates a solution for explaining materials to a given client by applying appropriate teaching modes	Cognitive strategy
		Given a list of learning styles states orally to client how information will be presented	Information
		Given a list of learning styles executes the teaching of information by verbal exchange with client	Motor skill

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given a list of learning styles chooses activity to assure best response from client to teach material	Attitude
Involves client through use of crucial factors in planning his care	Assures that client has opportunity to express preferences as various options for managing nutritional care are discussed	Given a list of crucial factors for managing nutritional care discriminates by matching each factor with available options	Intellectual skill (discrimination)
		Given a list of crucial factors for managing nutritional care identifies by naming disease conditions for which crucial factors are important	Intellectual skill (concrete concept)
		Given a list of crucial factors for managing nutritional care classifies by defining options for use of factors in managing nutritional care	Intellectual skill (defined concept)

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given a list of crucial factors for managing nutritional care demonstrates by interpreting the use of crucial factors and their options in nutrition care	Intellectual skill (rule)
		Given a list of crucial factors for managing nutritional care generates a plan for discussion with client by writing an outline	Intellectual skill (higher-order rule)
		Given a list of crucial factors for managing nutritional care originates a plan to discuss with client the factors and available options	Cognitive strategy
		Given a list of crucial factors for managing nutritional care states in writing a plan to allow client to express preferences for available options in managing his care	Information

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given a list of crucial factors for managing nutritional care executes by discussing with client their use in managing his care	Motor Skill
		Given a list of crucial factors for managing nutritional care chooses positive and negative outcomes for planning client compliance with nutritional care	Attitude
Provides educational materials to client	Gives educational material to clients on an individual basis, considering level of learning and identification of specific needs	Given the educational materials for clients states orally to client the purpose of the material	Information
		Given the educational material for clients executes by walking to client and giving him the material	Motor skill

	Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
			Given the educational materials for clients chooses to talk with client regarding how to use material	Attitude
ID	Utilizes established procedures to document nutrition care plan			
	Communicates plan to appropriate health team member	All communication modes are accurately selected to communicate information clear, concise, and accurate	Given a list of communication modes discriminates by grouping together those that communicate clear, concise, and accurate	Intellectual skill (discrimination)
			Given a list of communication modes identifies by naming those appropriate to communicate to health team member	Intellectual skill (concrete concept)

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given a list of communication modes classifies by using a definition to determine if communicates clear, concise, and accurate	Intellectual skill (defined concept)
		Given a list of communication modes demonstrates their use by writing how they will communicate information clear, concise, and accurate	Intellectual skill (rule)
		Given a list of communication modes generates by grouping together the information appropriate for designated health team member	Intellectual skill (higher-order rule)
		Given a list of communication modes originates the plan of communication by applying management procedures	Cognitive strategy

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given a list of communication modes states in writing the process to communicate information	Information
		Given a list of communication modes executes by talking to co-worker the communication process	Motor skill
		Given a list of communication modes chooses by showing co-workers effectiveness communication process	Attitude
Documents plan in client medical record	Plan is concisely recorded in appropriate format in medical record	Given a plan for nutrition care of client states in writing the plan in the appropriate format	Information
		Given a plan for nutrition care of client executes writing of the plan in the client medical record	Motor skill

	Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
			Given a plan for nutrition care chooses the appropriate format for disseminating care plan	Attitude
IE	Following previously determined procedures evaluates the identified intervention strategy as it applies to the specific disease entity and the nutritional status of the client			
	Assesses client acceptance of food	Elicits client acceptance of food choices and observes for changes or new approaches to ensure success	Given a client states orally his food choices	Information
			Given a client executes writing his food choices and changes observed in his nutritional status	Motor skill

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
Assures that each client problem has been addressed in the nutrition care plan	All client problems or potential problems are listed on care plan with corresponding action to be taken to resolve them	Given a list of problems discriminates by matching each problem with client diagnosis and nutritional status	Intellectual skill (discrimination)
		Given a list of problems identifies by naming those specific to the nutritional care of the client	Intellectual skill (concrete concept)
		Given a list of problems classifies each by defining their relationship to nutritional care of the client	Intellectual skill (defined concept)
		Given a list of problems demonstrates by verbally stating how the problems will be addressed in the nutritional care of the client	Intellectual skill (rule)

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Gives a list of problems generates by synthesizing the rules for developing corresponding action plans for nutritional care of client	Intellectual skill (higher-order rule)
		Given a list of problems originates the care plan by applying principle of nutrition care to action plan	Cognitive strategy
		Given a list of problems states in writing the care plan	Information
		Given a list of problems executes implementing the writing of the care plan	Motor skills
Checks client progress and documents in his record	Compares client progress with goals established in care plan and documents appropriate changes in record	Given a care plan states in writing the goals established for the client	Information
		Given a client record states in writing the client progress and plans for continued nutritional care	Information

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given a client record executes the writing to document changes in nutritional care	Motor skills
IIA Utilizes knowledge of the principles of education and the nutritional sciences to provide instruction to medical and other allied health personnel			
Provide classes and other educational opportunities to physicians and medical and dental students	Lists all classes, seminars and teaching programs available and selects information appropriate to the needs of the individuals or groups to be addressed applies learning strategies appropriate to the learning level	Given a set of goals for a facility originates a solution to improving knowledge of personnel by applying principles of nutrition and learning strategies	Cognitive strategy
		Given a set of goals for a facility states by writing a list of educational opportunities for personnel to improve knowledge of nutrition	Information

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given a set of goals for a facility executes the teaching of designated classes	Motor skills
Disseminates new information to nursing practitioners and other allied health personnel through conferences, seminars, committees and other modes of communication	All new information is identified and communicated using the appropriate mode and technique for the specific personnel	Given a set of information discriminates by matching new sources and information with what is on file	Intellectual skill (discrimination)
		Given a set of information identifies by naming the group and sharing mode for communication	Intellectual skill (concrete concept)
		Given a set of information classifies by defining the difference between old and new information	Intellectual skill (defined concept)
		Given a set of information originates a plan for presenting information to designated personnel	Cognitive strategy

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given a set of information states orally that which is appropriate for the practitioners and allied health personnel	Information
IIB Applies principles of research design and analysis to participate in new and on-going studies related to the nutritional care process			
Develops appropriate protocol	All major protocol concerns are written using correct research methods	Given a list of new and proposed studies discriminates by matching types of research design with appropriate study	Intellectual skill (discrimination)
		Given a list of new and proposed studies identifies by naming the study and the research design	Intellectual skill (concrete concept)

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given a list of new and proposed studies classifies by defining the types of research to be conducted	Intellectual skill (defined concept)
		Given a list of new and proposed studies demonstrates by orally answering questions related to types of research	Intellectual skill (rule)
		Given a list of new and proposed studies generates the major protocol by synthesizing applicable rules to research design	Intellectual skill (higher-order rule)
		Given a list of new and proposed studies originates a research design by applying the appropriate model for the designated study	Cognitive strategy
		Given a list of new and proposed studies states orally to colleagues the major points of the study selected for implementation	Information

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
Collects data	Collects all necessary data on appropriate form	Given a list of data to be collected states in writing the results on the appropriate form	Information
Disseminates to other health professionals	Locates all appropriate channels to communicate to other health professionals the research findings	Given a list of research findings states in writing the channels available for communication of findings to health professionals	Information
Analyzes findings	All appropriate methods are utilized to analyze findings for significance and practical application	Given methods for analyzing research findings discriminates by matching findings according to significance	Intellectual skill (discrimination)
		Given methods for analyzing research findings identifies by naming the methods appropriate for practical application in nutritional care	Intellectual skill (concrete concept)
		Given methods for analyzing research findings classifies by defining each method appropriate for use in nutritional care	Intellectual skill (defined concept)

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given methods for analyzing research findings demonstrates by stating how the findings are applicable to improve nutritional care of client	Intellectual Skill (rule)
		Given methods for analyzing research findings generates by synthesizing the rule applicable to appropriate defining methods and their significance in nutritional care	Intellectual Skill (Higher-order rule)
		Given methods for analyzing research findings originates a plan to utilize appropriate methods for analyzing findings	Cognitive strategy
		Given methods for analyzing research findings states in writing which methods are applicable for identified conditions	Information

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
Implements change in client care as needed	Uses findings as a basis for upgrading and improving nutritional care provided to clients	Given a set of findings states in writing how findings are to be used for improving nutritional care to clients	Information
IIIA Following specified policies and procedures participates actively as a member of intra-organizational committees			
Team member for planning and conducting dietetic audits	Actively seeks membership on dietetic audit committee to formulate audit criteria basic to every disease. Participates in implementation and evaluation of criteria	Given a set of policies and procedures states in writing his intent to seek membership on and participate in committee activities	Information

	Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
	Team member of menu planning committee for total facility	Organizes or acts as team member in menu planning to meet goals and needs of facility	Given plans for a menu committee states in writing his role and plans for participating as a team member	Information
	Other permanent and ad hoc committees	Actively seeks membership on permanemt and ad hoc committees to meet the goals and needs of any group activity of the facility	Given a list of permanent and ad hoc committees states in writing which committees he chooses to participate on as a member	Information
IIIB	Following previously determined procedures recommends procurement of products needed for nutritional care of clients			

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Types of Learning Category)
Develops standards for enteral and parenteral feedings	Utilizes all available literature to identify protocol standards considering policies and procedures of the facility	Given available literature identifies by naming the product and its contribution in meeting nutritional needs of stated diseases	Intellectual skill (concrete concept)
		Given available literature classifies the product by using the definition of nutritional needs of stated disease	Intellectual skill (defined concept)
		Given available literature generates a set of protocol standards by synthesizing information in a paragraph giving rationale	Intellectual skill (higher-order rule)
		Given available literature originates a plan for using protocol by applying principles of normal nutrition	Cognitive strategy

	Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
			Given available literature states by writing the plan and methods for implementation	Information
	Recommends products to meet standards	Identifies and lists all available products that meet or exceed standards of protocol	Given a list of available products states by writing a list naming those that meet or exceed established standards of protocol	Information
IVA	Utilizes knowledge of the social sciences to determine constraints and influences on the total nutritional care process			
	Identifies individuals and groups who may choose to influence the process	Identifies and evaluates motives, knowledge and experience base of groups and individuals who may influence and promote optimal nutritional care of specific client population	Given individuals and groups identifies by naming those who may influence care of client population	Intellectual skill (concrete concept)
			Given individuals and groups classifies by defining motives, knowledge and experience which may influence client population	Intellectual skill (defined concept)

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given individuals and groups originates a plan for evaluation of motives, knowledge and experience by applying the principles of nutrition and group process	Cognitive strategy
		Given individuals and groups states in writing those who may influence and promote optimal nutritional care of client population	Information
Disseminates information regarding legislation that needs consideration	Uses all accessible resources and the media to present nutritional legislation in a positive professional manner	Given nutritional legislation states by writing a list of resources to disseminate information	Information
		Given nutritional legislation states by writing the types of media appropriate to disseminate information	Information

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
Develops policies using regulations and laws influencing nutrition care	All policies are developed to accurately reflect current regulations and laws pertaining to the provision of nutritional care	Given regulations and laws influencing nutritional care identifies by naming the regulations and laws	Intellectual skill (concrete concept)
		Given regulations and laws influencing nutritional care classifies by using definitions that show association with provision of nutritional care	Intellectual skill (defined concept)
		Given regulations and laws influencing nutritional care demonstrates how each pertains to providing nutritional care by verbally stated examples of need for nutrition care	Intellectual skill (rule)
		Given regulations and laws influencing nutritional care generates a set of written policies by synthesizing regulations and laws	Intellectual skill (higher-order rule)

Job Task Statement	Job Performance Standard	Performance Objective (Statement of Learning Task)	Learning Categories (By Type of Learning Category)
		Given regulations and laws influencing nutritional care originates a plan to implement policies by applying principles of nutritional care	Cognitive strategy
		Given regulations and laws influencing nutritional care states in writing the plan to implement use of policies	Information

TABLE II

IDENTIFICATION AND VERIFICATION OF FJA JOB TASK STATEMENTS AND ADA STANDARDS

Knowledge Statement	Performance Statement	Role Delineation	FJA Job Task Statement
1. Knows principles of human anatomy and physiology, microbiology and biochemistry.	Provides nutrition care through systematic assessment, planning, intervention, and evaluation for individuals.	Nutrition Assessment: Assesses the nutrition status of individual clients/patients in health and disease throughout the life cycle.	Following specified procedures applies principles of diet modification to plan and implement nutrition care for clients. Following specified procedures applies principles of nutrition, physiology and biochemistry to implement a nutritional assessment program for clients. Utilizes established procedures to document nutrition care plan. Following previously determined procedures evaluates the identified intervention strategy as it applies to the specific disease entity and the nutrition status of the client.
2. Knows scientific principles of human nutrition in health and disease.	Assures that foodservice operations meet the food and nutrition needs of clients served and target markets.	Nutrition Care Planning: Constructs and coordinates all aspects of nutrition care plan, including identification of short- and long-term goals, delineation of treatment modalities and education plans, establishment of procedures for implementation of the nutrition care plan, on-going information gathering, and evaluation.	Following previously determined procedures evaluates the identified intervention strategy as it applies to the specific disease entity and the nutrition status of the client.

TABLE II (Continued)

Knowledge Statement	Performance Statement	Role Delineation	FJA Job Task Statement
3. Knows nutrient composition of food and appropriate source of data.	Provides nutrition care through systematic assessment, planning, intervention, and evaluation for individuals.	Nutrition Care Planning: Constructs and coordinates all aspects of nutrition care plan, including identification of short- and long-term goals, delineation of treatment modalities and education plans, establishment of procedures for implementation of the nutrition care plan, on-going information gathering, and evaluation.	Following specified procedures applies principles of diet modification to plan and implement nutrition care for clients. Following specified procedures applies principles of nutrition, physiology and biochemistry to implement a nutritional assessment program for clients. Following previously determined procedures evaluates the identified intervention strategy as it applies to the specific disease entity and the nutrition status of the client. Utilizes established procedures to document nutrition care plan.
4. Knows principles of food science and techniques of food preparation.	Utilizes menu as the focal point for control of foodservice system. Participates in the management of foodservice systems, including procurement, food production, distribution, and service.	Food Procurement, Production, and Service: Plans, reviews, provides consultation for the implementation of nutrition care on the systems level.	Following previously determined procedures recommends procurement of products needed for nutritional care of clients.

TABLE II (Continued)

Knowledge Statement	Performance Statement	Role Delineation	FJA Job Task Statement
5. Knows principles of menu planning for optimal nutrition of individuals and groups in health and disease.	Utilizes food, nutrition, and social services in community programs. Provides nutrition care through systematic assessment, planning, intervention, and evaluation for individuals and groups.	Food Procurement, Production, and Service: Plans, reviews, provides consultation for the implementation of nutrition care on the systems level. Foodservice Systems Maintenance: Traditionally, clinical dietetic personnel have assumed responsibilities in this area, but the expanding responsibilities of these personnel in client/patient-centered services require stationing clinical dietetic personnel in client/patient care areas, leaving kitchen-based duties to foodservice personnel.	
6. Knows principles of behavioral and social sciences.	Provides nutrition counseling and education to individuals and groups for health promotion, health maintenance, and rehabilitation. Provides nutrition care through systematic assessment, planning, intervention, and evaluation for individuals and groups.	Nutrition Education and Referral: Plans, organizes, implements, and evaluates nutrition education for clients/patients; arranges for individual client/patient follow-up as needed.	Utilizes principles of education to instruct, counsel and/or provide information to allow clients to manage their nutritional care. Utilizes knowledge of the social sciences to determine constraints and influences on the total nutritional care process.

TABLE II (Continued)

Knowledge Statement	Performance Statement	Role Delineation	FJA Job Task Statement
7. Knows the influence of socio-economic, cultural, and psychological factors on food and nutrition behavior.	Utilizes food, nutrition, and social services in community programs.	Nutrition Education and Referral: Plans, organizes, implements, and evaluates nutrition education for clients/patients; arranges for individual client/patient follow up as needed.	Utilizes principles of education to instruct, counsel and/or provide information to allow clients to manage their nutritional care.
8. Knows fundamentals of nutrition care delivery in community programs.	Utilizes food, nutrition, and social services in community programs.		
9. Knows principles of effective communication and documentation.	Provides nutrition care through systematic assessment, planning, intervention, and evaluation for individuals and groups. Provides nutrition counseling and education to individuals and groups for health promotion, health maintenance, and rehabilitation. Utilizes computer and other technology in the practice of dietetics. Utilizes effective communication skills in the practice of dietetics.	Nutrition Care Implementation: Communicates and monitors implementation of nutrition care plan; documents all aspects of nutrition care; verifies implementation of care plan. Nutrition Care Evaluation: Evaluates effects of intervention on individual client/patient nutrition status. Nutrition Education and Referral: Plans, organizes, implements, and evaluates nutrition education for clients/patients; arranges for individual client/patient follow-up as needed.	Utilizes established procedures to document nutrition care plan. Following previously determined procedures evaluates the identified intervention strategy as it applies to the specific disease entity and the nutrition status of the client.

TABLE II (Continued)

Knowledge Statement	Performance Statement	Role Delineation	FJA Job Task Statement
10. Knows use of computers for data processing and information management in dietetics.	Utilizes computer and other technology in the practice of dietetics.		
11. Knows basic concepts of research methodology and statistical analysis.	Applies current research information and methods of dietetic practice.	Professional/Educational Activity and Development: Participates in applied research and related dietetic professional activities; uses research findings and current knowledge in nutrition care.	Applies principles of research design and analysis to participate in new and on-going studies related to the nutritional care process.
12. Knows principles of education and effective methods of teaching.	Provides nutrition care through systematic assessment, planning, intervention, and evaluation for individuals and groups. Provides nutrition counseling and education to individuals and groups for health promotion, health maintenance, and rehabilitation. Provides education and training to other professionals and supportive personnel. Utilizes effective communication skills in the practice of dietetics.	Nutrition Education and Referral: Plans, organizes, implements, and evaluates nutrition education for clients/patients; arranges for individual client/patient follow-up as needed. Health Team Functions: Communicates pertinent information to other health care professionals; discusses individual client/patient nutrition care needs with health team members; educates health team on nutrition-related topics. Strategic Direction and Personnel Management: Develops short- and long-range plans for delivering quality nutrition care services while containing costs; maintains personnel and training functions for clinical dietetic section.	Utilizes principles of education to instruct, counsel and/or provide information to allow clients to manage their nutritional care. Utilizes knowledge of the principles of education and the nutritional sciences to provide instruction to medical and other allied health personnel.

TABLE II (Continued)

Knowledge Statement	Performance Statement	Role Delineation	FJA Job Task Statement
13. Knows techniques o interviewing and counseling.	Provides nutrition care through systematic assessment, planning, intervention, and evaluation for individuals and groups. Provides nutrition counseling and education to individuals and groups for health promotion, health maintenance, and rehabilitation.	Nutrition Education and Referral: Plans, organizes, implements, and evaluates nutrition education for clients/patients; arranges for individual client/patient follow-up as needed.	Utilizes principles of education to instruct, counsel and/or provide information to allow clients to manage their nutritional care.
14. Knows principles of organization and management.	Integrates food and nutrition services in the health care delivery system. Promotes positive relationships with others who impact on dietetic service. Coordinates nutrition care with foodservice system. Participates in the management of foodservice systems, including procurement, food production, distribution, and service. Participates in the management of human, financial, material, physical, and operational resources.	Foodservice Systems Maintenance: Traditionally, clinical dietetic personnel have assumed responsibilities in this area, but the expanding responsibilities of these personnel in client/patient-centered services require stationing clinical dietetic personnel in client/patient care areas, leaving kitchen-based duties to foodservice personnel. Strategic Direction and Personnel Management: Develops short- and long-range plans for delivering quality nutrition care services while containing costs; maintains personnel and training functions for clinical dietetics section.	Following specified policies and procedures, participates actively as a member of intraorganizational committees.

TABLE II (Continued)

Knowledge Statement	Performance Statement	Role Delineation	FJA Job Task Statement
15. Know fundamentals of human relations and group dynamics.	Provides nutrition counseling and education to individuals and groups for health promotion, health maintenance, and rehabilitation. Promotes positive relationships with others who impact on dietetic service. Engages in activities that promote improved nutritional status of the public and advance the profession of dietetics. Utilizes effective communication skills in the practice of dietetics. Recognizes the impact of political, legislative, and economic factors on dietetic practice.	Nutrition Care Implementation: Communicates and monitors implementation of nutrition care plan; documents all aspects of nutrition care; verifies implementation of care plan. Nutrition Education and Referral: Plans, organizes, implements, and evaluates nutrition education for clients/patients; arranges for individual client/patient follow up as needed. Health Team Functions: Communicates pertinent information to other health care professionals; discusses individual client/patient nutrition care needs with health team members; educates health team on nutrition-related topics. Identification and Management of Extraneous Influences Upon Nutrition Care: Identifies political, fiscal, and social factors into system for delivering nutrition care.	Utilizes principles of education to instruct, counsel and/or provide information to allow clients to manage their nutritional care. Utilizes knowledge of the principles of education and the nutritional sciences to provide instruction to medical and other allied health personnel. Following specified policies and procedures, participates actively as a member of intra-organizational committees. Utilizes knowledge of the social sciences to determine constraints and influences on the total nutritional care process.

TABLE II (Continued)

Knowledge Statement	Performance Statement	Role Delineation	FJA Job Task Statement
16. Knows fundamentals and techniques of financial management.	Utilizes computer and other technology in the practice of dietetics. Participates in the management of cost effective nutrition care systems. Utilizes menu as the focal point for control of foodservice system. Participates in the management of human, financial, material, physical, and operational resources. Participates in the management of a Quality Assurance (QA) Program.	Strategic Direction and Personnel Management: Develops short- and long-range plans for delivering quality nutrition care services while containing costs; maintains personnel and training functions for clinical dietetics section.	
17. Knows principles and techques of human resource management.	Participates in the management of human, financial, material, physical, and operational resources.	Strategic Direction and Personnel Management: Develops short- and long-range plans for delivering quality nutrition care services while containing costs; maintains personnel and training functions for clinical dietetics section.	

TABLE II (Continued)

Knowledge Statement	Performance Statement	Role Delineation	FJA Job Task Statement
18. Knows fundamentals of quality assurance.	Participates in the management of a Quality Assurance (QA) Program.	Strategic Direction and Personnel Management: Develops short- and long-range plans for delivering quality nutrition care services while containing costs; maintains personnel and training functions for clinical dietetics section.	
19. Knows principles of nutrition assessment, planning, intervention, and evaluation.	Provides nutrition care through systematic assessment, planning, intervention, and evaluation for individuals and groups. Provides nutrition counseling and education to individuals and groups for health promotion, health maintenance, and rehabilitation. Applies current research information and methods to dietetic practice. Utilizes computer and other technology in the practice of dietetics. Participates in the management of a Quality Assurance (QA) Program. Utilizes effective communication skills in the practice of dietetics.	Nutrition Assessment: Assess the nutrition status of individual clients/patients in health and disease throughout the life cycle. Nutrition Care Planning: Constructs and coordinates all aspects of nutrition care plan, including identification of short- and long-term goals, delineation of treatment modalities and education plans, establishment of procedures for implementation of the nutrition care plan, ongoing information gathering, and evaluation. Nutrition Care Implementation: Communicates and monitors implementation of nutrition care plan; documents all aspects of nutritional care; verifies implementation of care plan. Nutrition Care Evaluation: Evaluates effects of intervention on individual client/patient nutrition status.	Following specified procedures applies principles of diet modification to plan and implement nutrition care of clients. Following specified procedures applies principles of nutrition, physiology and biochemistry to plan and implement a nutritional assessment program for clients. Following previously determined procedures evaluates the identified intervention strategy as it applies to the specific disease entity and the nutrition status of the client. Applies principles of research design and analysis to participate in new and on-going studies related to the nutritional care process.

TABLE II (Continued)

Knowledge Statement	Performance Statement	Role Delineation	FJA Job Task Statement
20. Knows the principles of procurement, food production, distribution, and service.	Integrates food and nutrition services in the health care delivery system. Promotes positive relationships with others who impact on dietetic service. Coordinates nutrition care with foodservice system. Utilizes menu as the focal point for control of foodservice system. Participates in the management of foodservice systems, including procurement, food production, distribution, and service. Participates in the management of a Quality Assurance (QA) Program. Utilizes effective communication skills in the practice of dietetics.	Food Procurement, Production, and Service: Plans, reviews, provides consultation for the implementation of nutrition care on the systems level. Foodservice systems maintenance: Traditionally, clinical dietetic personnel have assumed responsibilities in this area, but the expanding responsibilities of these personnel in client/patient-centered services require stationing clinical dietetic personnel in client/patient care areas, leaving kitchen-based duties to foodservice personnel.	Following previously determined procedures recommends procurement of products needed for nutritional care of clients.
21. Knows fundamentals of the political and legislative process.	Recognizes the impact of political, legislative, and economic factors on dietetic practice.	Identification and Management of Extraneous Influences Upon Nutritional Care: Identifies political, fiscal, and social factors influencing nutrition care and integrates these factors into system for delivering nutrition care.	Utilizes knowledge of the social sciences to determine constraints and influences on the total nutritional care process.

TABLE II (Continued)

Knowledge Statement	Performance Statement	Role Delineation	FJA Job Task Statement
22. Knows laws, regulations, and standards affecting dietetic practice.	Utilizes food, nutrition, and social services in community programs. Engages in activities that promote improved nutrition status of the public and advance the profession of dietetics. Recognizes the impact of political, legislative, and economics factors on dietetic practice. Complies with the Standards of Professional Responsibility and Standards of Practice for the Profession of Dietetics.	Identification and Management of Extraneous Influences Upon Nutrition Care: Identifies political, fiscal, and social factors influencing nutrition care and integrates these factors into system for delivering nutrition care.	Utilizes knowledge of the social sciences to determine constraints and influences on the total nutrition care process.
23. Knows fundamentals of merchandising and promoting food and nutrition services.	Assures that foodservice operations meet the food and nutrition needs of clients served and target markets.		
24. Knows nutrient needs for various stages of the life cycle.	Provides nutrition care through systematic assessment, planning intervention, and evaluation for individuals and groups. Provides nutrition counseling and education to individuals and groups for health promotion, health maintenance, and rehabilitation.	Nutrition Assessment: Assesses the nutrition status of individual clients/patients in health and disease throughout the life cycle.	Following specified procedures applies principles of nutrition, physiology and biochemistry to plan and implement a nutritional assessment program for clients.

VITA

Florene Chancey

Candidate for the Degree of

Doctor of Philosophy

Thesis: ENTRY-LEVEL CLINICAL DIETETICS: JOB PERFORMANCE VERSUS STANDARDS OF PRACTICE

Major Field: Home Economics

Biographical:

Personal Data: Born in Bryant, Oklahoma, November 27, 1928, the daughter of Homer and Vera Chancey.

Education: Graduated from Henryetta High School, Henryetta, Oklahoma; received Bachelor of Science degree in Home Economics from Oklahoma State University, Stillwater, Oklahoma, May, 1950; completed dietetic internship at Vanderbilt University Hospital, Nashville, Tennessee, September, 1951; received Master of Science degree in Food-service Systems Management from University of Missouri-Columbia in December, 1971; completed requirements for the Doctor of Philosophy degree in Home Economics from Oklahoma State University in December, 1987.

Professional Experience: Administrative and Therapeutic Dietitian, Scott and White Memorial Hospital, Temple, Texas, 1951-1954; Therapeutic Dietitian, Bethany Medical Center, Kansas City, Kansas, June, 1954-June, 1956; Therapeutic Dietitian, Trinity Lutheran Hospital, Kansas City, Missouri, June, 1956-May, 1968; Dietitian, Mid-Missouri Mental Health Center and Assistant Instructor, College of Home Economics, University of Missouri-Columbia, Columbia, Missouri, June, 1968-August, 1971; Director, Dietetic Technology, Rose State College, Midwest City, Oklahoma, October, 1971-August, 1973; Chairman, Department of Clinical Dietetics and Associate Professor, College of Health, University of Oklahoma Health Sciences Center,

Oklahoma City, Oklahoma, August, 1973-July, 1982; Clinical and Teaching Dietitian, St. John Medical Center, Tulsa, Oklahoma, January, 1983 to present.

Professional Organizations: American Dietetic Association, Oklahoma Dietetic Association (registered and licensed member), Phi Delta Kappa, American Association of Diabetes Educators.