Personnel management skills: measurement of achievement of dietetic students

Lynne Ellen Baltzer
Iowa State University

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Personnel management skills: Measurement of achievement of dietetic students

by

Lynne Ellen Baltzer

A Dissertation Submitted to the Graduate Faculty in Partial Fulfillment of the Requirements for the Degree of DOCTOR OF PHILOSOPHY

Major: Home Economics Education

Approved:

Signature was redacted for privacy.

In Charge of Major Work

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For the Major Department

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For the Graduate College

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Ames, Iowa
1983
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A goal of The American Dietetic Association (ADA) is to insure the preparation of competent entry-level dietitians. To accomplish this purpose, ADA has developed guidelines for the Coordinated Undergraduate Program in Dietetics (CUP-D). CUP-D integrates clinical and didactic education in the study of food and nutrition; administration; and behavioral, social, professional, and communication sciences. A coordinated program is one in which the didactic and clinical phases of a course are coordinated or combined to reinforce each other. Generally, learning starts in the didactic and is reinforced in the clinical setting. The four-year curriculum provides study in and exposure to the professional environment at the undergraduate level. The CUP-D provides an academic setting where the theoretical base and practical application can function together.

Each CUP-D is classified as a program possessing one of these emphases: general, management, clinical, or community. Most programs (58%) are in the general emphasis category. Twenty-eight percent of CUP-D have clinical emphasis, 9% community emphasis, and 5% management (American Dietetic Association, 1982).

Management and administrative dietetics have become synonymous in the literature. Both involve planning, organizing, directing, controlling, and evaluating the human and material resources in order to achieve the goals of the foodservice organization. Similarly, either clinical dietetics or patient nutritional care is used to denote the delivery of nutritional expertise to patients or clients. Community dietetics involves the delivery of patient nutritional care in a community or out-patient setting.
Education in general dietetics includes attainment of competency at a specified level in each of the three areas. Administration and patient nutritional care are given approximately equal emphasis and community dietetics is given lesser emphasis.

In CUP-D, as in all educational programs, evaluation of the process, as well as the product, is desired. Through its Requirements for ADA Membership Minimum Competencies -- Plan IV (American Dietetic Association, 1973), the ADA has prescribed the level of competence expected for program graduates. In its Essentials for Coordinated Undergraduate Programs in Dietetics (1976), evaluation is required for accreditation.

Evaluation of CUP-D has been reported in three studies (Hart, 1975; Rinke, 1979; Roach, 1978). Hart asked graduates about perceptions of the quality of education in their CUP-D. Administrative competence was identified as the weaker area of general dietetics programs in comparison with patient nutritional care. Roach evaluated CUP-D graduates from one program and found that the dietitians again rated competence in administrative tasks lower than clinical competence. Employers of these graduates also rated administrative competence as lower than preparation in patient nutritional care.

Because administrative competence had previously been identified as an area of weak preparation, Rinke (1979) investigated employers' perception of administrative competence of dietitians. The four types of dietetic programs were investigated. They were internship, traineeship, advanced degree, and CUP-D. All received low ratings for adequacy in preparation of administrative competence. CUP-D received the lowest rating of these four educational routes.
Personnel management education, which is within the area of administrative dietetics, has been identified as a significant problem to CUP-D. In a program evaluation by Rhoades et al. (1981), 50 faculty and students identified problem areas of one CUP-D. Two of the five problems rated as most significant were the technical and practical knowledge of personnel management. Participants in a study by Hart (1975) rated their education in twelve of the minimum competencies for ADA membership (American Dietetic Association, 1973) as less than adequate. Management of personnel was involved in five of these twelve competencies.

Evaluation of CUP-D involves not only identifying areas of weakness in the program, but also evaluating student progress. Three studies have been reported involving the development and/or use of observational evaluation in CUP-D. Each study reported an application of observational evaluation in administrative courses in CUP-D.

The critical incident technique was employed by Ingalsbe and Spears (1979) and Cochran and Spears (1980) in the evaluation of students enrolled in a foodservice systems course. The technique evaluated the effectiveness of student behavior in an administrative setting. A checklist was developed by Fiedler et al. (1981) to evaluate the competence demonstrated by the student in an employee counseling session. Both evaluation methods were considered content valid and reliable by the researchers.

Problems involved in observation as an evaluation method have been discussed by Rinke (1980), Broudy (1974), and Pottinger (1979). The problems include:

- Cost in relation to educational contribution;
- Time required to observe behavior;
Opportunity for observation of specific critical behavior; 
Difficulty with delegating professional responsibility to students.

Because of limitations associated with observational methods, other evaluation methods for CUP-D students are needed. Achievement tests can be one viable alternative. Achievement tests can evaluate both lower and higher levels of the cognitive domain. Evaluation of lower levels (simple achievement) makes an important contribution to performance, as students need to comprehend what it is they are trying to do before they can be expected to apply it to complex work situations (Bloom et al., 1971).

Achievement tests can measure higher levels of the cognitive domain (complex achievement) effectively through evaluation of the students' logical thinking process, critical evaluation of conclusions, and problem-solving techniques. Ahmann (1981) states that complex achievement involves attaching meaning, implication, and significance to knowledge. Students who have reached this level of competence are able to meet the challenge of new and changing situations. Attainment of this level of achievement is considered essential for CUP-D graduates.

Examination of the literature shows that education for administrative competence in CUP-D is an area of concern. Within administrative dietetics, achievement of personnel management skills had been identified as a problem. Further, the research in the field does not show the use of achievement tests in CUP-D. Therefore, the purpose of this study is to develop an achievement test that assesses both the simple and complex levels of cognitive achievement of CUP-D students in the attainment of personnel management skills. The device will be based on the competencies required of CUP-D students enrolled in programs with a general emphasis.
For this study, the following definitions were used:

Competency: the minimum knowledge, skills, affective behavior, and judgment that an individual is certified to possess on a set of criteria and level of expectation (Cochran and Spears, 1980).

Personnel management skills: the ability to utilize human resources to accomplish designated goals involving administration, planning, and supervision of people (Beach, 1980).
REVIEW OF LITERATURE

The purpose of this study was to develop an achievement test that assesses the personnel management skills of Coordinated Undergraduate Program in Dietetics (CUP-D) students. The content areas and cognitive levels were based on the personnel management competencies from Requirements for ADA Membership Minimum Competencies -- Plan IV (American Dietetic Association, 1973). Because the research focuses on the achievement of CUP-D students, the review of literature centers around evaluation methods employed by CUP-D. The literature reviewed has been grouped into the following three categories: evaluation of studies of CUP-D; use of observational evaluation devices; and achievement tests in competency measurement.

Evaluation Studies of Coordinated Undergraduate Programs in Dietetics

Evaluation of CUP-D has centered around identifying areas in need of improvement in the programs. Four studies were identified that evaluated the quality of CUP-D. These studies ranked the problems in one CUP-D, studied the perception of graduates about their education, and investigated employers' perceptions of the adequacy of administrative skill of entry-level dietitians.

Problems in CUP-D were identified using the Nominal Group Technique (Rhoades et al., 1981). Faculty, clinical instructors, and students participated in generating statements which reflected the problems in one CUP-D. The 50 participants were able to identify 150 separate problem areas. The groups discussed each idea, and each member ranked the
statements in order of importance. The entire group then selected the most significant problems and ranked these in order of importance.

The following problems were identified as most significant. The students need to:

- Know how to handle personnel problems;
- Have more technical knowledge of personnel management;
- Practice professional behavior;
- Be able to use resources to solve problems; and
- Practice dietetic-related management earlier in the curriculum.

All of these problems directly relate to competence in administrative dietetics. Two of these directly relate to the technical knowledge and practical application of the skills needed for effective personnel management.

The results of the study indicate a concern about the quality of CUP-D education in administration, including personnel management.

One CUP-D was evaluated by surveying the program graduates from five recent years and their current employers. Respondents were asked about the importance of specific competencies and the quality of education the graduates received for each competency (Roach et al., 1978).

The survey showed overall satisfaction with the education by the CUP-D graduates and their employers. Among general dietitians whose jobs require administrative and clinical competence, education in administration received a lower rating than education in clinical competencies. Graduates were somewhat more dissatisfied than employers with the administrative education (mean ratings 3.80 and 3.91 on a 5-point scale). Graduates rated their education in clinical competencies 4.31, while employers gave this area a mean rating of 3.93.
Need for additional preparation in personnel management also was identified as a significant problem when CUP-D graduates from several programs were surveyed (Hart, 1975). Graduates of 11 CUP-D and 10 dietetic internship programs were asked about the quality of their preparation to practice dietetics.

The graduates were asked to rate the quality of their preparation in 25 competencies each in administration and patient nutritional care. Data from 385 questionnaires or 75% of the population were usable. The results of the survey indicated that the graduates believed their education in the administrative competencies was less than adequate. Five of the twelve competencies consistently receiving the lowest ratings directly related to the practice of personnel management. These competencies were:

- Interviewing and selection of personnel;
- Identifying state, local, and federal labor laws;
- Evaluating and redesigning systems and procedures;
- Conducting task analyses and work sampling procedures; and
- Planning a master schedule for personnel.

The only administrative competency receiving a rating above adequate was planning nutritional menus. The total sample of dietitians and those in the subsamples of administrative and clinical specialists believed their education prepared them more adequately to practice patient nutritional care than administrative dietetics.

Similar recommendations resulted from a survey of employers of graduates of dietetic programs (Rinke, 1979). Employers were asked to compare the adequacy of administrative preparation of registry eligible dietitians prepared by the four educational routes. The four routes compared were: CUP-D, dietetic internship, traineeship, and advanced degree. The
population for the study was foodservice directors of all short-term hospitals in the United States with at least 450 beds. Usable data were received from 350 (73.7%) of the directors.

The directors were asked to rate the importance of specified competencies to the practice of dietetics by entry-level dietitians. The 38 competencies were adopted from an earlier study by Cagguila (1974).

On a 4-point scale, the mean scores for internship, traineeship, advanced degree, and CUP-D were 2.56, 2.48, 2.39, and 2.26, respectively. T-test comparisons indicated that the differences between the specific routes were significant beyond the 0.001 level.

The employers rated practical preparation as more important than theoretical preparation for successful completion of administrative tasks, such as supervising personnel. They perceived CUP-D as a program especially weak in practical preparation in comparison to the other programs. CUP-D graduates received the lowest ratings for adequacy of preparation to perform administrative tasks, including personnel management.

The ratings for preparation in all administrative competencies were low for all four educational routes. The study concluded that the dietetic education programs did not appear to provide for attainment of high levels of competence in the area of administration.

These studies identified preparation to practice administrative competencies as an area of great concern for CUP-D. Within the administrative area, personnel management was identified as one specific problem. To assure the achievement of these competencies, evaluation techniques are needed to assess level of competence. The use of observational devices as evaluation instruments has been the only method reported in the literature.
Use of Observational Devices in CUP-D

Three studies reported the development of observational evaluation in CUP-D. Two have used the critical incident technique, and the third employed a checklist.

The critical incident technique was one procedure adopted for the program (Ingalsbe and Spears, 1979). A critical incident is a situation in which the behavior is critical, either by being effective or ineffective in comparison with the expected behavior. Critical incidents were identified through observation and recording of all student behaviors in one semester. Faculty then selected the critical behaviors to be used in the draft of the evaluation instrument.

Observation of critical behaviors of 26 students throughout one semester in the course Foodservice Systems were compiled (Ingalsbe and Spears, 1979). The foodservice system course included the management of human and material resources in a foodservice organization. Categories established for the Critical Performance Record for Nursing Students by Flanagan (1963) were used to group the observations. The ten categories were:

- Planning and organizing;
- Observing, reporting, and documenting;
- Applying scientific principles to foodservice management;
- Checking;
- Relating to instructors, managers, employees, peers, and clientele;
- Adapting to new or stressful situations;
- Using learning opportunities;
- Using creativity;
- Accepting professional responsibility; and
- Judging professional values.
A group of 17 instructors and practitioners classified a set of behaviors into the established categories. Agreement was obtained on 54 of the 55 sample incidents. In each category, the behaviors were divided into two groups: effective and ineffective behavior. Those behaviors to be encouraged were identified as effective, and ineffective behaviors were those needing improvement. The researchers concluded that the observational device was valid and had potential for evaluation of CUP-D students.

In a second study, the students' and instructors' ratings on the critical incident evaluation instrument were compared (Cochran and Spears, 1980). The study was conducted to evaluate the effects of using this device on the development of self-evaluation skills in the students. At three time intervals in each of three classes, instructor and student ratings were compared.

At the end of the first interval, the students received lower self-ratings than instructor ratings on the categories of acceptance of professional responsibility and judgement regarding professional values. At the end of the semester, student and instructor ratings were in essential agreement on all categories except the gathering and evaluation of data. Students' self-ratings were higher than instructors' ratings in this category.

The agreement between self-ratings and instructor ratings improved from 75.6% to 90.9% during the semester. The researchers concluded that the critical incident technique enhanced students' self-assessment skills.

A checklist for the evaluation of an observational device for evaluation of CUP-D students was developed by Fiedler, Beach, and Hayman (1981). First, the competencies to be demonstrated by the student during an
employee counseling session were identified. The criteria describing the range of performance were selected and the format for the instrument identified. A Likert-type scale was used that included four gradations of performance for each competency.

Content validity was established through inspection of the instrument by the CUP-D faculty. Interrater reliability was measured through evaluation by faculty of a videotaped performance of a student. The formula for interclass correlation was applied to determine the degree of interrater reliability. The researchers determined that an acceptable instrument possessed an interclass correlation of .70 or greater. Individual items with a variance of .30 or less were desired, as they contributed to greater interclass correlations. Following the third and final trial with professionals, the interclass correlation for the instrument was .72. In the instrument, 10 of the 29 items had a variance of greater than .30.

Although the researchers found this checklist acceptable for evaluation devices for CUP-D, it is apparent that the team of faculty, practitioners, and students required may exceed the resources of a CUP-D. Further, the necessity of repeating the procedure for every activity would be a time-consuming and costly process.

Because of the time commitment required to develop and use observational devices, more expedient methods are desired. An alternative that will contribute to the evaluation of administrative competencies and is feasible for the programs is required. The use of achievement tests as part of the evaluation strategy is one alternative.
Achievement Tests in Competency Measurement

There are several issues in evaluation of level of competence in CUP-D students that have not been specifically addressed in the literature. When observational devices are utilized, the following constraints need to be resolved:

- Cost of developing devices;
- Reliability of observational measurement;
- Time required to observe behavior;
- Opportunity to observe behavior;
- Transferrability of observation; and
- Ability to delegate tasks to students.

The cost of faculty time to develop observational devices may be prohibitive for many CUP-D. In the studies reported, researchers consulted with several faculty to develop each device. Rating scales are needed for each individual student activity. Establishment of interrater and intrarater reliability usually requires a standardized situation for observation with several observations to assemble sufficient data to establish reliability (Fiedler et al., 1981). The cost and reliability of these devices must be weighed with the value of the contribution to the educational process (Rinke, 1980).

Time and opportunity to observe behavior are required for observational evaluation. The critical incident technique requires faculty to observe each behavior. Assumptions and conclusions cannot be made in inference from other performance (Cochran and Spears, 1980). Observational evaluation may not enable the evaluator to distinguish between a student who is only able to perform in the observed situation from the student who
had sufficient knowledge and understanding to perform competently in other similar situations (Broudy, 1974).

Further issues in observational evaluation involve the feasibility of students actually performing tasks that enable observation of their competence. Remer (1978) suggested that risk to clients prevented delegation of professional responsibility to psychology students. This issue is especially pertinent to personnel management, where the authority and responsibility of personnel actions should not and often cannot be delegated to students.

The worksample procedure is discussed by Boyd and Shimberg (1971) as a possible solution to these problems in observational evaluation. The worksampling technique is observation of the performance of tasks in the work environment (Cronbach, 1970). However, they advocate observation of the student actually performing in the role of the professional. Again, the risk to the employee and student must be weighed with the educational value.

The assessment center approach to evaluation of management competence was reviewed by Pottinger (1979). In an assessment center, the manager is presented with situations that simulate actual situations encountered by professionals. The attempt to predict complex behavior through procedures that are directly performance-related is the major strength of this technique. Face validity is extremely high for this approach. Pottinger feels that the assessment center approach is a goal for evaluation. Problems with the assessment center approach include low rater reliability and quantity of labor required.
Use of alternative evaluation methods with CUP-D to overcome some of these issues has not been reported in the literature. Achievement tests can be considered as an alternative for evaluation of personnel management skills. Achievement tests can evaluate both simple and complex behaviors. The taxonomy of the cognitive domain is organized from simple to complex classes of behavior. Simple behavior is classified as the knowledge and comprehension levels of the cognitive domain. Complex behaviors are those classified in the upper levels of the cognitive domain (Bloom, 1956).

The evaluation of lower levels of the cognitive domain is desired because students need to comprehend what it is they are trying to do before they can be expected to apply it in complex work situations (Bloom, 1971). Complex behavior can be evaluated by achievement tests through evaluation of the student's logical thinking process, critical evaluation of conclusions, and problem-solving techniques. Ahmann (1981) states that complex achievement involves attaching meaning, implication, and significance to knowledge. Students who can perform at this level of achievement can then apply the knowledge to new and changing situations.

The competencies in personnel management for CUP-D require performance at both low and high levels of the cognitive domain. Evaluation of both the simple and complex levels are required for effective measurement.

Summary

The literature reviewed supported the need for further development of evaluation devices for CUP-D. Achieving competence in administration, including personnel management, was identified as a problem of CUP-D students. Observational devices have received major emphasis as the
evaluation methods used in CUP-D. Although several issues have been raised regarding observational evaluation, the literature has not specifically addressed solutions to these problems.

Use of other evaluation methods is sought for CUP-D. A possible solution is use of achievement tests as one of the evaluation methods. Therefore, the purpose of this study was to develop an achievement test to assess personnel management skill of CUP-D students.
PROCEDURE

Personnel management skills of Coordinated Undergraduate Program in Dietetics (CUP-D) students has been identified in the literature as an area of concern to educators of dietetic students. Evaluation methods are needed that measure the level of attainment of competence in personnel management. The present study was designed to develop an achievement test that would assess the personnel management skills of CUP-D students. The following procedure was used to construct the test: 1) development of the test; 2) pilot test; 3) field test; and 4) data analysis.

Development of the Test

The table of specifications was developed based on the Requirements for ADA Membership Minimum Competencies -- Plan IV (American Dietetic Association, 1973). The competencies involving achievement in personnel management were identified from the list of ADA minimum competencies. These statements were reviewed and content areas identified. The identified areas were: managerial process; human behavior; and labor economics, as shown in Table 1.

Managerial process is activities in personnel management involving decision-making, directing, and controlling personnel (Luthans, 1977). The content area of human behavior includes the relationships of individuals' needs, motivations, attitudes, and habits with their actions (Luthans, 1977). Labor economics is the administration of wages and salary, compensation, and labor relations and legislation (American Dietetic Association, 1973).
Table 1. Personnel management related competencies and associated content areas

<table>
<thead>
<tr>
<th>Competency</th>
<th>Content areas</th>
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<tbody>
<tr>
<td>Recognizes that the application of knowledge in the professional sciences requires an understanding of human behavior.</td>
<td>Human behavior</td>
</tr>
<tr>
<td>Understands the following managerial processes of planning, organizing, leading, evaluating, and controlling and their interrelatedness in the management of human, material and financial resources.</td>
<td>Managerial process, Labor economics, Human behavior</td>
</tr>
<tr>
<td>Applies the processes of planning, organizing, directing, evaluating, and controlling to the management of the functions and operations of foodservice systems.</td>
<td>Managerial process, Labor economics</td>
</tr>
<tr>
<td>Comprehends management's responsibility for leadership and the importance of leadership in the achievement of the objectives in foodservice systems.</td>
<td>Managerial process</td>
</tr>
<tr>
<td>Understands basic economic principles fundamental to the American economic system.</td>
<td>Labor economics</td>
</tr>
</tbody>
</table>

Cognitive levels were selected for the table of specifications. A range of levels was desired to reflect the emphases of the competency statements. All content areas were divided into the cognitive levels of knowledge, comprehension, and application and analysis. Evaluation level was included for managerial process, as this area receives emphasis in personnel management education in CUP-D.

Test items at the knowledge level involve the recall of previously learned material, including specific facts and broad theories. Comprehension is the ability to grasp and interpret the material. Application and
analysis refers to the ability to use material in new and concrete situations and to divide it into its constituent parts. Evaluation, the highest level of the cognitive domain, refers to the ability to judge the value of material for a specific purpose (Gronlund, 1981).

The course outlines of personnel management courses in the CUP-D curricula at two midwestern universities were reviewed to confirm the emphasis placed on each content area. The percent of items for each content-cognitive category were established to coincide with the emphases found in the competency statements and course outlines, as shown in Table 2.

Table 2. Table of specifications

<table>
<thead>
<tr>
<th>Content area</th>
<th>Knowledge</th>
<th>Comprehension</th>
<th>Application &amp; analysis</th>
<th>Evaluation</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managerial process</td>
<td>16</td>
<td>17</td>
<td>17</td>
<td>9</td>
<td>59</td>
</tr>
<tr>
<td>Labor economics</td>
<td>7</td>
<td>10</td>
<td>2</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td>Human behavior</td>
<td>8</td>
<td>11</td>
<td>3</td>
<td>-</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td>31</td>
<td>38</td>
<td>22</td>
<td>9</td>
<td>100</td>
</tr>
</tbody>
</table>
The multiple choice format was selected for the items to obtain a usable, easily-scored instrument. The total number of test items desired was identified to allow students to respond to all items within a two-hour time period. The total number of items, 115, was divided among the content-cognitive categories based on the percentages established in the table of specifications.

Test items were developed for each category. Two item formats were selected for use in the test. Multiple-choice items with a stem and four alternative responses were developed to measure lower cognitive levels. Situational items that presented factual material and associated multiple-choice items were used with the higher cognitive levels.

Personnel management textbooks most frequently used in CUP-D were employed as references in developing the items. Directors of general CUP-D identified the textbooks used in teaching personnel management to dietetic students. The three books most frequently used are:


Four dietitians who teach personnel management skills to dietetic students participated in the content validation of the instrument. Each dietitian verified the content area identification, the accuracy of the items, and the correct answer. A majority of the dietitians agreed on the
accuracy and area identification of all the test items. Three evaluation specialists reviewed each item for adherence to item-writing principles and for validation of the cognitive level.

Suggestions for improvement received from the dietitians and the evaluation specialists were adopted. The language of the stem in some items was changed to improve readability. Some items were changed to improve the quality of the distracters. The distracters were altered to create more plausible choices, to make them more grammatically parallel, and to eliminate negative statements.

The test was assembled from the developed items. The items were arranged randomly with the situational multiple-choice items grouped together. The correct responses were arranged in random order. Test directions were written.

Questions were developed to obtain demographic information from the respondents. The questions requested information about the respondents' knowledge of personnel management, grade point average, and work experience. Directions and demographic questions were reviewed by evaluation specialists for readability. The format of the test was finalized for the pilot test with dietetic students.

Pilot Test

The achievement test was pilot tested to evaluate the usability and clarity of the items. Subjects who had completed both clinical and didactic experience in personnel management and who were as similar as possible to the final sample were selected. Dietetic interns were identified as meeting these criteria.
Two directors from dietetic internship programs were contacted to obtain the participation of their students in the pilot test. A total of 27 students from the 2 programs participated.

The test booklets and machine-scorable answer sheets were sent via registered mail to the program directors. The directors read the informed consent statement to the students before administering the test in a classroom situation (see Appendix B).

An item analysis was completed for the pilot test. The raw scores on the 115-item test ranged from 58 through 87. The mean raw test score was 72.3, the standard deviation was 8.6, and the standard error of measurement was 4.5.

Effective distracters in multiple-choice items should be selected by at least two percent of the respondents (Summary of Services, 1981). The distracters in 81 items in the pilot test met this standard. The distracters in 27 items were improved by making them more grammatically parallel and using less technical language. The remaining seven items were eliminated due to poor distracter effectiveness in combination with a high percentage (over 90) of correct responses, which indicated that the items were too easy.

Mean time to complete the test was 85 minutes, within the desired 2-hour time frame. The demographic questions were judged usable. Written comments from the program directors indicated that none of the students had any difficulty interpreting the test directions or using the machine-scorable answer sheets.
The test items were assembled into the field-test device based on the table of specifications. The correct responses were arranged in random order and the test booklets were prepared. The test, shown in Appendix C, contained 108 items and 5 demographic questions.

Field Test

All General CUP-D were identified from the Directory of Dietetic Programs (American Dietetic Association, 1982). Letters explaining the purpose of the study and asking for the participation of senior CUP-D students were sent to the directors of 38 general programs. (A copy of the letter is found in Appendix A.) The directors were asked to indicate their willingness to have their students participate, the number of senior students, and to select one of the three specified months to administer the test. Follow-up phone calls were made to directors who indicated questions about the study in their response and to those not responding to the initial request for information.

Of the 38 programs with students enrolled, 26 agreed to participate in the study. These 26 programs had an enrollment of 297 senior CUP-D students in Fall, 1982. Those programs electing not to participate indicated several reasons for their decision: senior students would not have completed any coursework in personnel management at the time of the study (n=4); the program did not allow sufficient time to administer the test (n=4); and the students did not want to participate in the study (n=1). Three programs were unwilling to participate, but did not indicate a reason.
The packets of test booklets, machine-scorable answer sheets, informed consent statements, and directions to the test administrators were sent via registered mail to the program directors two weeks prior to the date they selected to administer the test. A copy of these materials is shown in Appendix B.

The test administrator read the informed consent statement to the students and administered the test in a classroom situation. All tests were administered in a two-hour time period. The test booklets and answer sheets were returned to the researcher in a pre-paid envelope for scoring.

Several individual students were not able to participate in the study. Absence or illness on the day of the test or withdrawal from the program prevented 17 students from completing the test.

Follow-up phone calls to the program directors were made when the packets were not returned within one week following the scheduled test date. Delays were caused by rescheduling of the test date and mailing delays. All packets were received within three weeks of the scheduled test administration.

A total of 26 programs with 280 students participated in the study. All 280 tests produced usable data. Of these, 252 produced usable demographic data.

Data Analysis

Prior to data analysis, the demographic data were coded for transfer to computer cards. The respondents' work experience was coded on a 1 to 4 scale according to type of experience. The work experience was coded into the following groups:
1) Foodservice related experience;
2) Nonfoodservice related experience;
3) Foodservice related supervisory experience;
4) Nonfoodservice related supervisory experience.

Supervisory work experience was defined as the respondent supervising one or more paid employees. Foodservice related experience included work for any department or organization providing foodservices. Length of experience was grouped and coded 1 to 4 based on length of employment. The divisions used were:

1) 1 month through 1 year;
2) 13 months through 2 years;
3) 25 months through 3 years;
4) More than 36 months.

Cumulative grade point average (GPA) was reported by the students. Where necessary, the GPA was converted to the 4.0 = A scale for comparison. Means and standard deviations were computed for the coded and grouped data.

The students were asked about their knowledge of personnel management. A number from 1 to 9 was selected to represent their familiarity with each personnel management topic presented. A 1 represented that the student had not studied the topic and 9 represented that the student could readily apply principles to actual situations in food service. Means and standard deviations were calculated for each topic.

The 280 tests were scored and subjected to item analysis. Item 75 was omitted from scoring due to a typographical error that made three of the responses identical. Item statistics for each item were examined for
discrimination, difficulty, and distracter effectiveness. The test reliability, error of measurement, and item statistics were compared to the standards recommended by the Iowa State University Test and Evaluation Service (Summary of Services, 1981).

Items were selected for the final device based on item statistic data. The final device was organized first into two equivalent forms and then into a single device. The best format was selected for the final device based on examination of test statistics.

Pearson correlation coefficients were calculated between test score and grade point average, work experience, and personnel management knowledge. The correlations were examined for significance relationships.
FINDINGS AND DISCUSSION

The objective of the study was to develop a valid and reliable achievement test to assess the personnel management skills of Coordinated Undergraduate Program in Dietetics (CUP-D) students. The data-producing sample of 280 senior CUP-D students responded to the 107-item multiple-choice achievement test. The findings and discussion are reported in three parts: first, demographic characteristics of CUP-D students; second, item statistics and selection of test items; and third, the correlation of test scores with demographic data.

Demographic Characteristics of CUP-D Students

The demographic information reported by students enrolled in CUP-D were cumulative grade point average (GPA), paid work experience, and knowledge of personnel management. The mean GPA was 3.3 with a range of 2.0-4.0 and a standard deviation of 0.42. The high mean GPA reflected the CUP-D selection criteria of GPA. Most programs require a GPA of at least 2.5 of CUP-D students.

Most respondents (221 students, 79%) reported some paid work experience. The experiences were reported in two categories -- foodservice experience and nonfoodservice experience. Foodservice experience was reported by 163 students (56%). Mean foodservice related experience was 1.2 years, with a range of 0.08 (1 month) to 4 years with a standard deviation of 1.1 years.

Nonfoodservice related experience was reported by 134 respondents (48%). The mean years of experience was also 1.2 years, with a range of 0.08 to 7 years and a standard deviation of 1.4 years. The number of
respondents in both categories do not sum to 100%. Some students reported both types of experience and are counted in both categories.

The work experience was identified as supervisory or nonsupervisory experience. Supervisory experience was reported by 104 respondents (37%). The supervisory experience ranged from 0.08 to 6 years, with a mean value of 0.7 (approximately 8 months) and a standard deviation of 1.0 years. Seventy-nine students (28% of the sample) reported supervisory experience in a foodservice related operation. Their foodservice supervisory experience ranged from 0.08 to 5.5 years, with a mean value of 0.5 years and standard deviation of 0.9 years.

Students' work experience enables them to become familiar with the actual work environment. Experience in foodservice related occupations would enable them to see the application of administrative dietetic principles in actual practice. Experience as a supervisor, especially in foodservice, allows the student to apply the principles of personnel management in a setting at least similar to the practice of dietetics.

Respondents' knowledge of personnel management is summarized in Table 3. The students rated themselves as most knowledgeable in the human behavior content area (mean rank of 6.1), followed closely by managerial process (mean 5.7). The labor economics content area received a mean value of 3.6, indicating that the area was least familiar to the students.
**Table 3. Students' rating of personnel management knowledge**

<table>
<thead>
<tr>
<th>Personnel management topic</th>
<th>Mean response&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Standard deviation</th>
<th>Range</th>
<th>Content area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychology of human behavior</td>
<td>6.1</td>
<td>1.7</td>
<td>1-9</td>
<td>Human behavior</td>
</tr>
<tr>
<td>Supervision of employees</td>
<td>6.0</td>
<td>1.7</td>
<td>1-9</td>
<td>Management process</td>
</tr>
<tr>
<td>Decision-making principles</td>
<td>5.9</td>
<td>1.7</td>
<td>1-9</td>
<td>Management process</td>
</tr>
<tr>
<td>Management styles</td>
<td>5.8</td>
<td>1.8</td>
<td>1-9</td>
<td>Management process</td>
</tr>
<tr>
<td>Control of personnel functions</td>
<td>5.1</td>
<td>1.8</td>
<td>1-9</td>
<td>Management process</td>
</tr>
<tr>
<td>Direction of personnel functions</td>
<td>5.1</td>
<td>1.8</td>
<td>1-9</td>
<td>Management process</td>
</tr>
<tr>
<td>Wage and salary administration</td>
<td>3.9</td>
<td>1.9</td>
<td>1-9</td>
<td>Labor economics</td>
</tr>
<tr>
<td>Personnel management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Related legislation</td>
<td>3.6</td>
<td>1.7</td>
<td>1-9</td>
<td>Labor economics</td>
</tr>
<tr>
<td>Labor relations and unions</td>
<td>3.5</td>
<td>1.8</td>
<td>1-9</td>
<td>Labor economics</td>
</tr>
</tbody>
</table>

<sup>a</sup>Response pattern:

9 = I can readily apply principles to actual situations in foodservice.
7 = I am knowledgeable about general principles.
5 = I am somewhat familiar with the general principles.
3 = I am vaguely familiar with the topic but have areas of limited knowledge.
1 = I have not studied the topic.
Item Statistics and Selection of Test Items

The 107-item achievement test was administered with the intention of using the items to create two equivalent forms of the test. (See Appendix C for item and test statistics.) To develop two equivalent forms, items from identical content-cognitive categories with similar item statistics were matched into pairs. The outcome was two 45-item tests, each with a reliability of 0.48, using the Kuder-Richardson 20 formula. The limited number of items and the use of items with discrimination indices below 0.10 resulted in a low reliability. A reliability of 0.80 was considered acceptable for the evaluation device. Therefore, a single device was developed using the best items in each content-cognitive category. This procedure insured preservation of the table of specifications and content validity.

After items were grouped by content area, item statistics were inspected. Criteria for assessing the quality of the test items were a discrimination index of 0.20 or above in conjunction with a difficulty index between 30 and 70% with each distracter selected by at least 2% of the respondents. The discrimination index indicates the extent to which the item is discriminating between students with a high total score and those with a low total score. The difficulty index shows the percent of students who answered each item correctly. Below 30% indicates that the item contains material unfamiliar to the students. A difficulty index above 70% indicates that the item is easier than desired. A distracter is considered
effective when it is selected at least twice in a group of 100 students, or at least six times in a group of 300 students.

Items in each content area were categorized into three categories. The categories were: meets all criteria, marginally meets criteria, and fails to meet criteria. The items marginally meeting the criteria were defined as having a discrimination index between 0.05 and 0.19 and/or difficulty index above 20%. Items that failed to meet the criteria had discrimination indices below 0.05 and/or difficulty indices below 20%.

Table 4 summarizes the number of items in each content area and item statistic category. The greatest percentage of items (11 items, 48%) meeting all criteria was in the human behavior content area. Managerial process area had 22 items (35%) in this category. Labor economics had the lowest percentage of items (33%) in this category with 7 items.

<table>
<thead>
<tr>
<th>Content area</th>
<th>Meets all criteria</th>
<th>Marginally meets criteria</th>
<th>Fails to meet criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Managerial process</td>
<td>22</td>
<td>35</td>
<td>37</td>
</tr>
<tr>
<td>Human behavior</td>
<td>11</td>
<td>48</td>
<td>11</td>
</tr>
<tr>
<td>Labor economics</td>
<td>7</td>
<td>33</td>
<td>13</td>
</tr>
<tr>
<td>Total no.</td>
<td>40</td>
<td>37</td>
<td>61</td>
</tr>
</tbody>
</table>

\(^{a}\)Percentage is the number of items in each category in relation to the total number of items in the content area.
Six percent of the managerial process items (4 items) failed to meet the criteria. In the human behavior and labor economics areas, one item failed to meet the criteria (4 and 5%, respectively).

Selection of test items

Seventy test items were selected for the final test. The number 70 was selected because it was desirable to have a test that could be completed in approximately 60 minutes. Given that it took 82 minutes to complete the 107 items, 70 items would take approximately 60 minutes. The 70 items were divided among the content-cognitive categories to satisfy the table of specifications requirements and, therefore, insure that the final test had content validity. Table 5 shows the table of specifications for the 70-item test.

Items were selected in each category based on item statistic criteria. All items that met item statistic criteria were selected for the final device. Marginal items were selected in the following order.

Items with discrimination index above 0.20 and difficulty index above 70%;

Items with discrimination index of 0.05 - 0.19 and difficulty index between 30 and 70%;

Items with discrimination index of 0.05 - 0.19 and difficulty index above 70%;

Items with discrimination index of 0.05 - 0.19 and difficulty index below 30%.

Item statistics for the items are listed in Table 6. The final 70-item device contains 40 test items (57%) that meet all item statistic criteria. The remaining 30 items (43%) were in the marginal category. To
Table 5. Table of specifications for 70-item test

<table>
<thead>
<tr>
<th>Content area</th>
<th>Knowledge</th>
<th>Comprehension</th>
<th>Application &amp; analysis</th>
<th>Evaluation</th>
<th>Total items</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Managerial process</td>
<td>11</td>
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<td>5</td>
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<td>7</td>
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<td>1</td>
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<tr>
<td>Human behavior</td>
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<tr>
<td>Total percent</td>
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</tr>
<tr>
<td>Total number</td>
<td>22</td>
<td></td>
<td>27</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>
Table 6. Difficulty and discrimination indices for 70-item test

<table>
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<tr>
<th>New item no.</th>
<th>Field-test item no.</th>
<th>Difficulty index (%)</th>
<th>Discrimination index</th>
<th>Item quality category&lt;sup&gt;a&lt;/sup&gt;</th>
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</table>

<sup>a</sup>: 1 = Meets criteria. 
2 = Discrimination .05-.19. 
3 = Difficulty exceeds 70%. 
4 = Difficulty exceeds 70%, Discrimination .05-.19. 
5 = Difficulty below 30%, Discrimination .05-.19.
Table 6. Continued

<table>
<thead>
<tr>
<th>New item no.</th>
<th>Field test item no.</th>
<th>Difficulty index (%)</th>
<th>Discrimination index</th>
<th>Item quality category</th>
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<td>.34</td>
<td>3</td>
</tr>
<tr>
<td>60</td>
<td>69</td>
<td>76</td>
<td>.22</td>
<td>3</td>
</tr>
</tbody>
</table>
Table 6. Continued

<table>
<thead>
<tr>
<th>New item no.</th>
<th>Field test item no.</th>
<th>Difficulty index (%)</th>
<th>Discrimination index</th>
<th>Item quality category</th>
</tr>
</thead>
<tbody>
<tr>
<td>61</td>
<td>82</td>
<td>57</td>
<td>.21</td>
<td>1</td>
</tr>
<tr>
<td>62</td>
<td>59</td>
<td>72</td>
<td>.29</td>
<td>3</td>
</tr>
<tr>
<td>63</td>
<td>60</td>
<td>76</td>
<td>.23</td>
<td>3</td>
</tr>
<tr>
<td>64</td>
<td>70</td>
<td>84</td>
<td>.22</td>
<td>3</td>
</tr>
<tr>
<td>65</td>
<td>72</td>
<td>64</td>
<td>.23</td>
<td>1</td>
</tr>
<tr>
<td>66</td>
<td>74</td>
<td>79</td>
<td>.36</td>
<td>3</td>
</tr>
<tr>
<td>67</td>
<td>76</td>
<td>44</td>
<td>.26</td>
<td>1</td>
</tr>
<tr>
<td>68</td>
<td>78</td>
<td>49</td>
<td>.36</td>
<td>1</td>
</tr>
<tr>
<td>69</td>
<td>79</td>
<td>55</td>
<td>.26</td>
<td>1</td>
</tr>
<tr>
<td>70</td>
<td>80</td>
<td>62</td>
<td>.35</td>
<td>1</td>
</tr>
</tbody>
</table>

meet the table of specification requirements, items of poorer quality were included. Table 7 lists the number of items from each area in each item statistic category.

The human behavior content area had the greatest percentage (69%) of items that met all criteria for item selection. The remaining items (31%) discriminated adequately, but were too easy. The students' self-reported knowledge of personnel management indicated greatest familiarity with this content area compared to the other content areas. Their self-reported knowledge accurately reflects their knowledge, as 31% of the items were too easy.

In the managerial process content area, 54% of the items met all item selection criteria. Thirty-nine percent of the items discriminated between high and low test scores, but were easier than desired (difficulty index
Table 7. Content area and number of items in each quality category in final test

<table>
<thead>
<tr>
<th>Content area</th>
<th>Meets all criteria</th>
<th>Difficulty &gt;70 Discrim. &gt;.20</th>
<th>Difficulty 30-70 Discrim. .05-.19</th>
<th>Difficulty &gt;70 Discrim. .05-.19</th>
<th>Difficulty &lt;30 Discrim. .05-.19</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
</tr>
<tr>
<td>Managerial process</td>
<td>22 54</td>
<td>16 39</td>
<td>2 5</td>
<td>1 2</td>
<td></td>
</tr>
<tr>
<td>Human behavior</td>
<td>11 69</td>
<td>5 31</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor economics</td>
<td>7 54</td>
<td>1 8</td>
<td>2 15</td>
<td>2 15</td>
<td>1 8</td>
</tr>
<tr>
<td>Total</td>
<td>40 57</td>
<td>22 31</td>
<td>4 6</td>
<td>3 4</td>
<td>1 1</td>
</tr>
</tbody>
</table>

aPercent of items within the content area.
>70%). Three items (7%) did not adequately discriminate among high and low scores. The students' self-reported knowledge of managerial process indicated only slightly less familiarity with this topic than human behavior. However, from the frequency of high difficulty indices, students found these items to be easier than those in the other two areas.

As a group, the labor economics items were the least satisfactory in the test. To provide an adequate number of questions in this content area, 40% of the items from all four levels of the marginal category were used. Topics in the labor economics content area include salary administration, laws and regulations, and legislation. Items tended to be more theoretically based and less frequently involved practical applications than in the other content areas, which could have made the items more difficult for students. The students' self-reported knowledge in this area resulted in a mean score of 3.6, which was more than 2 points below managerial process (mean score of 5.7). Students' lack of familiarity in labor economics seemed to result in the low difficulty indices, which indicated that students found the questions to be very difficult.

The test items in the final device were arranged by type of question. Multiple-choice items first, followed by the situational multiple-choice items. Inspection of the final device, found in Appendix D, shows that selection of the best items resulted in three of the seven situations having only one associated question. The length of time required for the student to read and analyze the situation must be justified by the measurement attained through the associated test items. One associated item does not justify use of the situational multiple-choice format.
The responses to the 70 items were scored, resulting in a mean score of 43 (61%) and a range of 11 to 63 (16-90%). The standard error of measurement was 3.8 and standard deviation 8.4. The reliability was 0.80, using the Kuder-Richardson 20 formula. The reliability level of 0.80 is acceptable for an evaluation device that is used with other evaluation methods as part of the overall evaluation strategy (Summary of Services, 1981).

The average difficulty of 61% is within 1.5 points of the ideal average difficulty of 62.5 for a multiple choice device with four options. Ideal average difficulty is calculated as the midpoint between the chance score and maximum score.

Summary

The item statistics for the 107-item field test device were examined to select items for a final device that would be reliable and content valid. The items most closely meeting the criteria for discrimination and difficulty were selected from each content area to create a 70-item device. The device met the table of specification requirements and, therefore, was considered content-valid. The Kuder-Richardson 20 reliability of 0.80 was sufficient to enable the device to be used with other methods to evaluate personnel management skills of CUP-D students.
Correlations of Demographic Data and Test Scores

Correlation coefficients between score with GPA, work experience, and personnel management knowledge are reported in Table 8. Examination of the coefficients indicated that 10 of the 13 correlations were statistically significant. Twelve accounted for less than 3% of the common variance ($R^2$) and, therefore, should not be interpreted.

Table 8. Correlation between test scores and selected demographic characteristics

<table>
<thead>
<tr>
<th>Demographic characteristic</th>
<th>Correlation coefficient</th>
<th>$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPA</td>
<td>.48***</td>
<td>.23</td>
</tr>
<tr>
<td>Foodservice work experience</td>
<td>.14**</td>
<td>.02</td>
</tr>
<tr>
<td>Nonfoodservice work experience</td>
<td>.12**</td>
<td>.02</td>
</tr>
<tr>
<td>Supervisory work experience</td>
<td>.17**</td>
<td>.03</td>
</tr>
<tr>
<td>Knowledge of personnel management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control of personnel functions</td>
<td>.08</td>
<td>.01</td>
</tr>
<tr>
<td>Decision-making principles</td>
<td>.14*</td>
<td>.02</td>
</tr>
<tr>
<td>Direction of personnel functions</td>
<td>.07</td>
<td>.01</td>
</tr>
<tr>
<td>Labor relations and unions</td>
<td>.11*</td>
<td>.01</td>
</tr>
<tr>
<td>Management styles</td>
<td>.16**</td>
<td>.02</td>
</tr>
<tr>
<td>Personnel management related legislation</td>
<td>.04</td>
<td>.01</td>
</tr>
<tr>
<td>Psychology of human behavior</td>
<td>.10*</td>
<td>.01</td>
</tr>
<tr>
<td>Supervision of employees</td>
<td>.12*</td>
<td>.02</td>
</tr>
<tr>
<td>Wage and salary administration</td>
<td>.13*</td>
<td>.02</td>
</tr>
</tbody>
</table>

*P < .05.
**P < .01.
***P < .001.
The correlation coefficient of 0.48 between GPA and test score was significant beyond the 0.001 level. Because GPA is often based on ability to respond to written tests, it can be expected that those with the highest GPA will perform well on the personnel management achievement test.

Summary

Demographic characteristics of CUP-D students were described. The students reported a mean cumulative grade point average of 3.3. Most students (79%) reported some paid work experience. Mean years of foodservice related and nonfoodservice related experience were 1.2 years. Thirty-seven percent of the students reported supervisory work experience; 28% had supervisory work experience in a foodservice related organization.

Students reported their knowledge of personnel management related topics. Of the three content areas of the topics, students reported most knowledge of human behavior and managerial process, followed by labor economics.

A 70-item test was developed from the selected items. The developed test was content valid, had a reliability of 0.80, mean score of 43 and a difficulty of 61%.
SUMMARY

The purpose of this study was to develop an achievement test that assessed both the simple and complex cognitive achievement in personnel management of Coordinated Undergraduate Program in Dietetics (CUP-D) students. The personnel management competencies required of CUP-D with a general emphasis were used as the basis for the test. The competencies were identified from the Requirements for ADA Membership Minimum Competencies -- Plan IV (American Dietetic Association, 1973).

A table of specifications for the personnel management achievement test was established. The content areas included in the personnel management competencies were identified for the table of specifications. They were managerial process, human behavior, and labor economics. Cognitive levels for each content area were established by inspection of the competencies and personnel management course outlines.

Items were developed in two formats. Multiple-choice items with a stem and four alternative responses were used for the lower cognitive levels. Situational items, including a factual situation with several associated multiple-choice items were developed for the upper cognitive levels.

The test items were reviewed by four educators of dietetic students for content and accuracy. Three evaluation specialists evaluated the items for adherence to item writing principles and cognitive level. As a result of the comments from these judges, certain items were revised.

Demographic questions were written to obtain student cumulative grade point average (GPA), work experience, and knowledge of personnel management. The device was pilot tested with 27 dietetic interns for usability.
and readability. As a result of the inspection of the item statistics, seven items were eliminated.

Program directors of CUP-D with a general emphasis listed in the 1982 Directory of Dietetic Programs (American Dietetic Association, 1982) were written to obtain the participation of their senior CUP-D students. Of the 38 programs, 26 program directors agreed to their students' (297) responding to the test.

The data producing sample consisted of 280 senior CUP-D students. Data were analyzed in the following ways. An item analysis was computed for the 107 test items along with reliability, standard error of measurement, standard deviation, and mean test score. Item statistics were examined.

The optimum test was developed from the 107 items based on item statistic criteria. The best items in each content-cognitive category of the table of specifications were selected to insure a content valid device. The reliability, mean score, average difficulty, standard error of measurement, and standard deviation were determined for the final device.

Means and standard deviations were calculated for the demographic data. Correlation coefficients between test score and GPA, work experience, and personnel management knowledge were calculated.

Examination of the item statistics indicated that 40 items met item statistic criteria of a discrimination index 0.20 or above, and a difficulty index between 30 and 70%. Sixty-one items marginally met these criteria.
The 70-item test was created by selecting the best items in each content-cognitive category using item statistic criteria. The human behavior content area had the greatest percentage of test items meeting both criteria (69%), followed by managerial process (54%) and labor economics (54%).

The final device had a mean score of 43, and a range of 11 to 67. The standard error of measurement was 3.8 and standard deviation was 8.4. The reliability was 0.80, using the Kuder-Richardson 20 formula; the average difficulty was 61%. A reliability of 0.80 is acceptable for an evaluation device that is used with other evaluation devices as part of the evaluation plan.

Demographic data was obtained from 252 respondents. The students reported a mean GPA of 3.3 on the 4.0 = A scale. Many students (79%) reported some paid work experience. Mean years of experience in both food-service and nonfoodservice occupations were 1.2 years. Thirty-seven percent of the sample reported some supervisory experience. Seventy-nine students reported supervisory experience in a foodservice organization.

The students reported most knowledge in the human behavior content area (mean score 6.1, out of a possible total score of 9). Managerial process received a mean score of 5.7 and labor economics a mean score of 3.6, indicating that the area was least familiar to the students.

The limited knowledge of labor economics reported by students coincided with the difficulty the students had with test items in that content area. The most successful items were in the human behavior area, where the students reported the most knowledge.
A correlation coefficient of 0.48 was found between GPA and test score. It can be expected that those with the highest GPA will perform well on the personnel management test, as GPA is often based on ability to respond to written tests. Examination of the coefficients between work experience, personnel management knowledge, and test score showed that they accounted for less than 3% of the common variance.

Recommendations

The 70-item personnel management achievement test can be used as one of the methods to evaluate personnel management skills of CUP-D students. The following recommendations are made:

1) Revise the test to increase the reliability to 0.90 by modifying test items that did not meet the criteria of a discrimination index of 0.20 or above in conjunction with a difficulty index between 30 and 70%.

2) Develop additional test items for the situational sets to assure a balance of time required to read and analyze the situations with the measurement obtained from the associated items.

3) Design a second test with content validity and reliability to serve as an equivalent form for the test developed in this study.
REFERENCES


ACKNOWLEDGEMENTS

A sincere appreciation is expressed to Dr. Alyce Fanslow for the opportunity to complete this research and her guidance and patience throughout my graduate work, and the development of the test items and the dissertation. Appreciation is extended to Dr. Nancy Brown for serving as advisor of my minor and for reviewing the test; and to Dr. Ruth Hughes for evaluating the test, serving as a committee member, and professional guidance. Dr. Rex Thomas and Dr. Clifford Smith, committee members, are thanked for their professional assistance and encouragement. Appreciation is given to Mrs. Margaret Tait for assistance in recruiting subjects and serving on the committee.

Dr. Cheryl Hausafus, Dr. Barbara Bobeng, Dr. Sheila Ward, and Mrs. Linda Johnson are thanked for their valuable suggestions in reviewing the test. The program directors and CUP-D students who participated in the study are acknowledged.

Recognition is given to the Home Economics Research Institute for support of this project.

A special thanks is given to my friends and family for their continuing encouragement and support.

The Iowa State University Committee on Use of Human Subjects in Research reviewed this project and concluded that the rights and welfare of the human subjects were adequately protected, that confidentiality of data was assured, and that informed consent was obtained by appropriate procedures.
APPENDIX A.

LETTER TO PROGRAM DIRECTORS
Providing adequate evaluation strategies for students is a continuing challenge for educators in Coordinated Undergraduate Programs (CUPs) in dietetics. Some studies investigating evaluation methods for CUPs have been reported; further research is needed in the continuing effort to develop adequate and efficient evaluation strategies.

The objective of a study we are currently conducting is to develop two equivalent forms of an achievement test that will reflect the competencies related to personnel management required for students enrolled in a CUP with a general emphasis. The use of achievement tests as part of the evaluation strategy can make an important contribution to performance as a dietitian. Students need to comprehend what it is they are trying to do before they can be expected to apply the concepts to complex work situations.

To develop the achievement test, responses to the test items by senior students enrolled in a CUP with a general emphasis are needed. We are asking for your participation in two ways.

1. Agreement now to ask your students to participate in fall 1982.

2. Administration of the test to your senior CUP students during August, September or October 1982.

Your students will be asked to respond to the 150 test items at a time you select during the three month period. The students will also be asked to provide background information about their academic preparation and work experience. The confidentiality of the students will be protected as their names will not be requested. While each student has the option of not responding in the study, we hope that you will encourage each student to participate. The study will be approved by the Iowa State University Committee on the Use of Human Subjects before the test is administered.
The test booklets and answer sheets would be sent to you for distribution to your students. We would prefer to have the test administered in a two-hour block of time, or in two one-hour blocks of time. If neither is possible within the schedule of your program, completion of the test as a "take home" assignment for the students would be acceptable. After completion of the test, all test booklets and answer sheets would be returned to us in a prepaid mailing envelope.

Because the test that will be administered to the students is in a developmental stage, scores by individual students or individual programs will not be reported. If you desire, a summary of the performance of your students as a group, and of the entire sample will be sent to you following analysis of the data.

Please indicate your response to our request on the enclosed questionnaire; return it in the enclosed envelope. There is space on the questionnaire for you to indicate questions you need to have answered regarding the study. Further correspondence concerning your participation will come directly from Lynne Baltzer.

We hope you will agree to ask your students to participate in this study. The participation of CUP students is essential to the continuing development of effective evaluation devices for Coordinated Undergraduate Programs.

Sincerely yours,

Margaret B. Tait, R.D. Lynne E. Baltzer, R.D.
Director Graduate Student
Coordinated Undergraduate Home Economics Education
Program in Dietetics
PLEASE COMPLETE THE FOLLOWING QUESTIONS AND RETURN BY MAY 3, 1982.

____ We will be able to participate in the study. The test will be administered in ______ (month).
____ We need the following information concerning the study before a participation decision can be made.

____________________________________________________________________________________

____________________________________________________________________________________

____ We may be able to participate in the study, a final decision will be made before ______ (date).
____ We will not be able to participate in the study.

Which systems apply to your program? semesters _____ quarters _____

In grade point averages, grade of A equivalent to _____ points.

Projected number of senior CUP students fall 1982.

____ general emphasis _____ other emphases, please specify __________

Title and author of textbook(s) used in the personnel management courses taken by the above students in the general emphasis program.

Author ______________ Title ______________

____________________________________________________________________________________

University ____________________________

Address ______________________________

Program Director ______________________ Title ______________________

Phone Number ______ Area Code ________ Number ______

To whom should further correspondence be addressed?

____ Program Director

____ Other, please specify ____________________________

____________________________________________________________________________________

Signature and Title ____________________ Date ________
APPENDIX B.

LETTER OF TRANSMITTAL AND INFORMED CONSENT STATEMENT
Thank you for having your Senior Coordinated Undergraduate Program students participate in this research project. As you remember, the purpose of the study is to develop an achievement test that evaluates the personnel management skills of dietetic students.

The following materials are enclosed:

1. Informed consent statement
2. Personnel Management Tests
3. Answer sheets
4. Return mailing envelope

In administering the test, please read the informed consent statement to the students before the test begins. Most students should be able to finish the exam within the two hours. Students not finished after two hours should be allowed to continue until they have completed all items, if at all possible. It is especially important that the background questions on the final two pages of the test be completed by every student.

The directions for the test are self-explanatory.

The answer sheets are to be marked with number 2 pencils.

Ask the students to check that the identification number of the test and answer sheet match. If they do not, the number of the answer sheet should be changed to match the number on the test.

The students may use a calculator during the exam; however, one is not necessary to complete the exam within the time limits.

Scores for the test will be based on the total number of correct responses.

If you have questions, please contact Lynne at 515-294-5912 or 515-294-8461. If I am not available, leave a message, and I will return your call. Please return ALL of the tests and answer sheets in the return envelope by September 30, 1982. I also would welcome any comments you have about the test or testing.
procedures. The return envelope is prepaid certified mail; please take it to the post office to register the certification when it is mailed. Thank you for your support of this project.

Sincerely,

Lynne E. Baltzer, R.D.
Assistant Professor, Department of Institution Management
Graduate Student, Department of Home Economics Education

Alyce M. Fanslow, Ph.D.
Distinguished Professor in Home Economics
Professor, Home Economics Education

LEB/AMF:da
Enclosures
INFORMED CONSENT STATEMENT

Directors of CUP: Please read this statement to the students before administering the test. You may paraphrase the statement in your own words if you prefer.

As a dietetic student you are aware of the importance of knowing how well prepared you are to meet the needs of your profession. You are being asked to respond to a test in personnel management and to provide some information about your work experience and educational background. The information you provide will help us develop an evaluation method to be used with dietetic students. This is your opportunity to make a contribution to research that can improve the management education in dietetic programs.

Your responses along with those of 300 other students will be analyzed to determine which questions are best suited for an evaluation of personnel management skills in dietetics. Because your name is not requested, your confidentiality will be protected. While you have the right to not respond to any question, we hope that you will respond to every item.

The instructions on the test are self-explanatory. Response time averages 1 hour and 45 minutes.

PLEASE BEGIN WHEN YOU HAVE READ THE INSTRUCTIONS.
APPENDIX C.
FIELD TEST DEVICE AND ITEM AND TEST STATISTICS
OF 107-ITEM FIELD TEST DEVICE
PERSONNEL MANAGEMENT IN DIETETICS
ACHIEVEMENT TEST

Lynne E. Baltzer, R.D.
Alyce M. Fanslow, Ph.D.

Department of Institution Management
Department of Home Economics Education
Iowa State University
Ames, Iowa

1982
DIRECTIONS: Select the ONE BEST response to each item. Mark your response on the answer sheet by darkening the corresponding circle with a number 2 pencil. Your score will be based on your total number of correct responses.

Match the identification number on answer sheet with the number on the test. If necessary, change the number on the answer sheet to match the one on the test.

1. Which of the following acts protects the employee against racial discrimination in hiring?
   A. Civil Rights Act
   B. Fair Employment Standards Act
   C. Fair Labor Standards Act
   D. Equal Employment Act

2. A major contribution of scientific management theory is
   A. assigning positions based on results of valid achievement tests.
   B. fitting the right person to the right job.
   C. selecting the right training program for each employee.
   D. using established interviewing procedures in screening applicants.

3. The Theory Y manager assumes employees
   A. exercise self-direction.
   B. have little ambition.
   C. need coercion.
   D. seek security.

4. Physiological needs are most frequently met through
   A. choosing a job you like.
   B. obtaining a job with adequate salary.
   C. receiving praise for work done well.
   D. working with people you prefer.

5. Which of the following methods is the least costly method of conducting a time and motion study?
   A. completing operation and process charts
   B. conducting micromotion studies
   C. developing flow diagrams
   D. performing work sampling

6. Which act outlawed discrimination in wages on the basis of sex?
   A. Civil Rights Act
   B. Equal Pay Act
   C. Equal Rights Act
   D. Fair Labor Standards Act
7. With which resource is PERT most effectively used?
   A. Food
   B. Money
   C. Supplies
   D. Time

8. Which of the following would be the most effective incentive to increase productivity of the employee?
   A. Posting the level of productivity expected of each employee.
   B. Emphasizing the need for cost reduction to the employees.
   C. Developing a feeling of importance in the employee.
   D. Raising the employee's salary periodically.

9. What is the most appropriate action for a manager to take with regard to the "grapevine"?
   A. Try to destroy its reputation.
   B. Pretend it does not exist.
   C. Suspend any employee participating in it.
   D. Use it to management's advantage.

10. Wages are considered to be a satisfier but not a motivator. Which statement supports this principle?
    A. Adequate wages cause no change in productivity.
    B. Changes in wages do not affect employee satisfaction.
    C. Inadequate wages are an incentive to increase output.
    D. Increases in wages improve moral and productivity.

11. The number of relief employees needed to cover off-days for 5 full-time food service employees in a 7-day a week operation with constant demand is
    A. 1
    B. 1.5
    C. 2
    D. 2.5

12. Oral rather than written communication is preferred when
    A. policy change is involved.
    B. immediate feedback is desired.
    C. compliance is necessary.
    D. accuracy is important.

13. An important characteristic of the systems approach to management is
    A. adopting decision-making techniques.
    B. considering social interactions at work.
    C. looking at the whole situation.
    D. utilizing standardized procedures.
14. Which human relations method uses positive reinforcement techniques?
   A. Assertiveness Training
   B. Behavior Modification
   C. Job Enrichment
   D. Transactional Analysis

15. If an applicant obtains a high score on a pre-employment screening test it is an indication that the employee will probably be
   A. inferior.
   B. outstanding.
   C. successful.
   D. mediocre.

16. A National Labor Relations Board supervised election is held to determine
   A. how many union stewards will be appointed.
   B. which union will represent the employee group.
   C. which employees will be included in the bargaining unit.
   D. who will be the union president.

17. Turnover rate is calculated as
   A. \( \frac{\text{number of replaced separations}}{\text{average number of employees}} \times 100 \)
   B. \( \frac{\text{average number of employees}}{\text{number of replaced separations}} \times 100 \)
   C. \( \frac{\text{number of separations}}{\text{number of employees hired}} \times 100 \)
   D. \( \frac{\text{average number of employees}}{\text{number of employees terminated}} \times 100 \)

18. A manager demonstrating McGregor's Theory X would
   A. allow employees to exercise self-direction in setting goals.
   B. encourage participative management among employees.
   C. establish explicit guidelines for employees.
   D. permit employees to establish priorities for meeting goals.

19. To obtain a positive response to a proposed job redesign project a supervisor should
   A. consult employees for suggestions regarding parts of their jobs needing changes.
   B. discuss with employees the tasks that will be eliminated by the project.
   C. talk with employees about transferring jobs if they do NOT like their new responsibilities.
   D. give employees advance notice of when the observations will be scheduled.
20. A definition of functional job analysis is a

A. way developed by the Department of Labor to standardize jobs.
B. survey used to classify tasks into job categories.
C. format used to classify jobs into specified job titles.
D. system for collecting and classifying data concerning work performed in jobs.

21. What source should a manager use to find current reliable information on the federal minimum wage?

A. The Bureau of Labor Standards
B. The Code of Federal Regulations
C. The Federal Register
D. The Occupational Handbook

22. A definition of the tip credit is

A. a credit given to the employees for taxes withheld on tips collected.
B. the credit given to the employer for the difference between the minimum wage and wages paid.
C. a credit to Social Security for tips collected.
D. the tip collected on a sale paid by a credit card.

23. The most effective way to orient a new worker is to

A. give the employee detailed instructions for each task.
B. use the buddy system of employee training.
C. schedule observation of a good employee.
D. provide a planned training program.

24. What assumption about people is made by the Human Relations approach to leadership?

A. People wish to avoid responsibility.
B. People effectively exercise self-direction.
C. People inherently dislike work.
D. People can be motivated by monetary rewards.

25. An explanation of an individual's self-protective reaction to unexpected change is

A. aggressive behavior.
B. abusive behavior.
C. defensive behavior.
D. socializing behavior.

26. How might a labor union benefit supervisory personnel?

A. By providing some training programs for employees.
B. By establishing desirable contracts for supervisors.
C. By representing the supervisors in wage negotiations.
D. By setting priorities for the employer.
27. A definition of span of control is the
   A. complexity of functions directed.
   B. number of subordinates directly supervised.
   C. frequency of interaction with employees.
   D. number of employees in a department.

28. Which of the following management styles is most appropriate to
   use when supervising people who have high needs for independence?
   A. Autocratic style.
   B. Task-oriented style.
   C. Theory X style.
   D. Theory Y style.

29. The formula for calculating meals per manhour is
   A. number of meals ÷ number of manhours.
   B. manhours utilized ÷ manhours available.
   C. number of manhours ÷ number of meals.
   D. manhours available ÷ manhours utilized.

30. A primary consideration by the employer in setting a wage scale
    would be the
   A. current unemployment rate in the community.
   B. federal minimum wage scale regulations.
   C. percent of profit desired by the employer.
   D. wage scales of similar employers in the area.

31. The order of Maslow's Hierarchy of needs from lowest to highest is
   A. safety, physiological, esteem, social, self-actualization.
   B. physiological, safety, social, esteem, self-actualization.
   C. physiological, social, safety, esteem, self-actualization.
   D. safety, physiological, social, esteem, self-actualization.

32. A good basis for departmentalizing activities in food service is
   A. creating departments in which the duties of the employees are
      identical.
   B. having managers' areas of interest be the determining factor.
   C. dividing departments based on dollar volume of sales.
   D. using function of employees' activities as the guide.

33. In a campaign to obtain employee endorsement for union representa-
    tion, the employer legally may
   A. stress disadvantages of belonging to unions including dues
      and strikes.
   B. get employees to tell their peers of their feelings about
      the union.
   C. solicit opinions from employees about the proposed union.
   D. ask employees to tell the manager why they want a union.
34. A main force that should influence employers to increase employee benefits is the need to
   A. meet requirements to secure government contracts.
   B. recruit and retain better personnel.
   C. receive deductions on corporate income taxes.
   D. prove that employers are concerned about employee welfare.

35. Traditional management theory is characterized by emphasis on the
   A. behavior of groups in the organization.
   B. motivation of employees.
   C. motivation of employees through fringe benefits.
   D. formal organizational structure.

36. How many meals per labor hour were produced in this situation?
   A total of 7,000 meals were produced by 35 full-time employees in a 5-day 40-hour work week.
   A. 0.05
   B. 0.50
   C. 5.00
   D. 5.50

37. Select a concept established with acceptance of Maslow's Hierarchy of Needs theory.
   A. Higher levels of need do NOT dominate until the lower need levels are reasonably fulfilled.
   B. Motivation can be achieved by maintaining fulfillment of the met needs.
   C. No one will feel satisfied until needs at 3 or more of the levels are fulfilled.
   D. People seek to fulfill the levels of needs in similar ways.

38. In a food service the meals per day sold decreased from 1500 to 1300 per day while labor hours worked did not change. Calculate the new labor cost percentage of gross income using the following information.

<table>
<thead>
<tr>
<th>OLD FIGURES</th>
<th>NEW FIGURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1500 meals per day</td>
<td>1300 meals per day</td>
</tr>
<tr>
<td>Sales average $2.50 each</td>
<td>Sales average $2.50 each</td>
</tr>
<tr>
<td>Gross income $3750.00</td>
<td></td>
</tr>
<tr>
<td>Labor cost $1000.00</td>
<td></td>
</tr>
</tbody>
</table>

   A. Labor cost percentage: 26%
   B. Labor cost percentage: 31%
   C. Labor cost percentage: 36%
   D. Labor cost percentage: 41%
39. Calculate the percentage of worker efficiency in this situation.
   employee is paid for 8 hours per day
   employee is on paid breaks for 30 minutes per day
   employee performs necessary work for 5 hours per day

   The percentage of worker efficiency is
   A. 61.0%
   B. 62.5%
   C. 66.7%
   D. 68.7%

40. Which formula would most accurately predict the probable time required to perform a task?

   \[ a = \text{the least amount of time to do the task} \]
   \[ b = \text{the most amount of time to do the task} \]
   \[ d = \text{the time available to do the task} \]
   \[ m = \text{the most likely time to do the task} \]

   A. \( m + b - a \)
   B. \( \frac{a + 4m + b}{6} \)
   C. \( a + b - d \)
   D. \( \frac{2a + 2m + 2b}{6} \)

41. What information can legally be used in selecting job applicants?

   A. Reasons for terminations from previous jobs.
   B. Number of dependents at home.
   C. Arrests for felonies in the last 5 years.
   D. Options for child care.

42. Why should a food service manager be wary of hiring relatives of employees?

   A. Relatives are less likely to get along at work than non-relatives.
   B. A generalized negative reaction to a justified disciplinary action may result among relatives.
   C. Applicants from internal sources are less likely to succeed than those from external sources.
   D. Hiring relatives of employees may look like "featherbedding."

43. What is an exit interview?

   A. An interview with a dismissed employee before he leaves.
   B. An interview with customers as they are leaving the food service.
   C. An interview with an applicant before a final selection for an opening is made.
   D. An interview with the supervisor of an employee being dismissed.
44. What reduction in food cost per week would be needed to compensate for the labor cost of these 2 employees? The full-time employee is paid $4.35 per hour, the part-time employee receives $3.75 per hour and works 20 hours per week. Fringe benefits for both employees equal 17% of wages paid.

A. $249.00
B. $253.24
C. $282.57
D. $291.33

45. What is a significant feature of the management by objectives technique?

A. Top management sets the objectives.
B. Small groups of employees independently propose objectives.
C. Subordinates and supervisors set objectives together.
D. Middle management sets the objectives for their own areas.

46. Which information would most correctly indicate the full-time equivalents needed for a food service?

A. Manhours worked by each full-time employee.
B. Manhours worked by all employees in a typical week.
C. Manhour requirements determined from the actual demands.
D. Manhours required to replace full-time employees on their days off.

47. The number of employees one person can directly supervise should be based on the

A. complexity of the subordinates' work and overall responsibilities of the supervisor.
B. span of control of supervisors in other departments in the organization.
C. recommendation that seven subordinates is the maximum number anyone should supervise.
D. educational level and complexity of subordinates' work.

48. How are strikes in health care facilities regulated?

A. The federal No Strike Law prohibits strikes in health care facilities.
B. State laws govern strikes in health care facilities since there is NO federal regulation applicable.
C. The National Labor Relations Act and its amendments prohibit strikes in health care facilities.
D. The National Labor Relations Act and its amendments list procedures to be followed before a legal strike can occur.
49. Which question would be the best way to obtain information from a job applicant regarding the availability of transportation to work an 11:00 a.m. to 7:00 p.m. shift?

A. "Do you live within walking distance of the food service?"
B. "Is there a car you can use to get to work?"
C. "Do you see any difficulty with getting to work?"
D. "Do you drive?"

50. Which supervisory action would most likely result in increased productivity?

A. Providing challenging goals for the employees.
B. Establishing production goals slightly beyond the capabilities of the employees.
C. Showing understanding of employees.
D. Displaying confidence in the employees' abilities to meet the demands of their jobs.

51. Which conclusions about the effectiveness of supervisory style are consistent with research studies?

A. Authoritarian style of leadership is usually a good choice.
B. Supportive leadership style is most effective with subordinates who perform ambiguous tasks.
C. Participative style is most effective when subordinates desire independence.
D. Autocratic style is effective when subordinates' tasks and goals are clearly defined.

52. What effect does the 1974 amendment to the Taft-Hartley Act have on the management of food service?

A. Unionized hospital food service departments can grant cost-of-living adjustments.
B. Nonmanagement food service employees in nonprofit hospitals are allowed to unionize.
C. Nonmanagement dietitians cannot belong to unions.
D. Unionized hospital food service departments are required to appoint stewards for every 50 employees.

53. The function of arbitration is to

A. forbid workers from striking.
B. force management to reassess its personnel policies.
C. hear disputes between labor and management.
D. resolve employee grievances.
54. Why should information collected about those applicants NOT selected for a position be saved after the position is filled?

A. To document why some applicants were not selected for the open position.
B. To maintain a file of applicants to be considered in case another employee is needed quickly.
C. To suggest these applicants for consideration by other departments.
D. To help the manager provide feedback to the source of the applicants.

55. An organization demonstrating the autocratic model of behavior would have managers

A. solely responsible for organizational performance.
B. emphasize meeting the social needs of employees.
C. maintain support for employee's requests.
D. exhibit a pattern of cooperation among their peers.

56. A realistic goal in making decisions is to expect that

A. decisions will be made on a strictly rational basis.
B. personal bias will be overcome through use of a decision model.
C. all facts would be gathered before a decision is made.
D. effectiveness of decisions are a function of their quality and acceptance.

57. Which set of functions are most important to be performed successfully by effective food service supervisors?

A. Acceptance of management policies and insistence of compliance by subordinates.
B. Superiority in training subordinates and skill in selecting applicants for positions.
C. Interpretation of organizational objectives and encouraging subordinates to work up to their potential.
D. Understanding of subordinates' jobs and unconditional acceptance of management philosophy.

58. A career-development system is defined as a

A. policy recommending promotion from within an organization.
B. program requiring a training and development department.
C. sequence of jobs within an organization with requirements for promotions identified.
D. method of collecting labor statistics to predict future employee vacancies.
A dietitian who is a consultant in a 100-bed nursing home observes the following situations in her first visit to the production kitchen:

The food service supervisor is checking-in the weekly produce delivery.

The head cook has completed her food production assignment early and is taking a break during the slack time before the food is served.

The second cook is asking the dishwasher to assist him by heating the vegetables while he finishes preparing the gravy.

The salad employees are tasting the salad and seasoning it "to taste."

59. In approaching the situation, the consulting dietitian should initially

A. identify the most significant problems clearly and suggest possible solutions to the supervisor.
B. make a list of all problems observed and leave it for the supervisor to review and respond.
C. present a list of the problems to the nursing home administrator.
D. emphasize the positive situations observed and wait and see if the problems will correct themselves.

60. The head cook has slack time between completing production and the meal service time; this is an indication that the

A. head cook is a valuable and efficient employee.
B. production is being completed earlier than appropriate.
C. production schedule is too easy.
D. head cook is not following the length of cooking times listed on the recipes.

61. In asking the dishwasher to assist in production, the second cook is probably

A. being lazy.
B. violating safety laws.
C. ignoring lines of authority.
D. demonstrating inefficiency.

62. Which problem in this situation could be solved by improvements in planning?

A. Scheduling production for better employee utilization.
B. Having employees take breaks during slack times.
C. Training other employees to check-in deliveries.
D. Producing menu items requiring less seasoning adjustments.
63. The best plan for the dietitian to use to correct problems in this food service might be to first

A. plan training sessions on food production techniques and food safety and sanitation.
B. initiate incentive plans to encourage better productivity among the employees.
C. train the supervisor in techniques to use in gaining cooperation of employees.
D. discuss the performance appraisals and training records with the supervisor to learn more about the situation.

64. In checking the weekly delivery, the supervisor is demonstrating the function of

A. controlling.
B. supervising.
C. administering.
D. planning.

65. In discussing the salad employees' behavior, it should be emphasized that

A. following standardized recipes eliminates the need for tasting.
B. tasting is encouraged to check the quality of products in comparison to the expected standards.
C. seasoning for menu items is best determined by each individual employee.
D. sampling is an important step in food production.

USE THE FOLLOWING SITUATION IN ANSWERING QUESTIONS 66-69.

The department head of a hospital food service department has assigned one of the administrative dietitians to be directly responsible for 16 food production supervisors in a 1,000-bed hospital. Problems between the administrative dietitian and the 16 production supervisors frequently occur.

66. What is the best plan for the department head to implement to reduce the number of problems with the supervisor?

A. Conduct monthly meetings between the department head and the 16 supervisors.
B. Plan training sessions for the supervisors on following procedures.
C. Provide more training for the administrative dietitian.
D. Reorganize the work load to reduce the number of employees directly supervised by the dietitian.
67. Which of these would be the best task to select in beginning to delegate to the supervisors?

A. Authority for termination of employees.
B. Planning of the cycle menu.
C. Assigning employees to the production schedule.
D. Responsibility for purchases.

68. To reduce the dietitian's span of control, which would be the best plan?

A. Assign 8 supervisors to the early shift and 8 to the late shift.
B. Appoint a production manager for each shift who is directly responsible for 8 of the production supervisors.
C. Combine the duties of 4 production supervisors.
D. Appoint a production director to supervise this dietitian's work.

69. The dietitian can best improve communication with the supervisors by

A. routinely informing the supervisors of any changes.
B. conducting monthly meetings with the group of supervisors.
C. establishing effective channels of two-way communication.
D. maintaining an open door policy with the supervisors.

USE THE FOLLOWING SITUATION TO ANSWER QUESTIONS 70-71.

A production supervisor tells the administrative dietitian about a baker who has recently transferred from the late to the early shift. Since the transfer, the baker has been late clocking in several times. The supervisor believes "drinking" may be part of the problem.

70. If the administrative dietitian wants more information about the situation, which of the following would be the most appropriate action?

A. Ask the shop union steward about the problem.
B. Listen to the "grapevine" to find out more about the employee.
C. Review the employee's attendance record and the personnel file.
D. Talk with the other bakers about the employee's performance.
71. In the dietitian's first conversation about the problem with the baker involved, the best opening remark would be

A. "Good morning, your supervisor tells me you are working out quite well as our early baker."
B. "Hello, I want to discuss a problem with you. Your attendance has deteriorated since you transferred to the early shift."
C. "I can't understand why you are causing me all these problems."
D. "Since you have come in late several times recently, I'm going to put a written warning in your personnel file."

USE THE FOLLOWING SITUATION IN ANSWERING QUESTIONS 72-74.

In screening applications for an opening for a kitchen helper, the dietitian decides to eliminate those applicants with less than a high school diploma or equivalent and those who have restricted mobility. The kitchen helper position requires the employee to calculate recipe adjustments and to take full-size steamtable pans from the kitchen to the cafeteria.

72. How could the dietitian best modify the job situation to enable a person who must use a cane to walk to perform the tasks?

A. Arrange the work station to limit the amount of walking necessary.
B. Change the job so that someone else takes the steamtable pans to the cafeteria.
C. Allow the employee to sit on a stool to work.
D. Provide a cart to transport the steamtable pans.

73. Which statement might adequately justify the dietitian's decision to eliminate applicants with mobility handicaps?

A. An employee in the position must carry pans of food from the kitchen to the cafeteria.
B. Past successful employees in the positions have had no mobility handicaps.
C. The position requires stirring food in a 20-gallon steam jacketed kettle.
D. The job requires moving from one location to another on the same floor.
74. Which of these statements most adequately supports the decision to require a high school diploma or equivalent?

A. The dietitian has had past experience with several employees who graduated from high school but had difficulty reading recipes.
B. The dietitian believes people working full-time may NOT have time to finish school.
C. The dietitian believes dropping out of school is an indication of lack of commitment to follow tasks through to completion.
D. The dietitian has assigned tasks of adjusting recipes to this position, and such skills are usually gained in high school.

USE THE FOLLOWING WANT AD IN ANSWERING QUESTIONS 75-76.

Line No.
1. HELP WANTED
2. WAITERS
3. If you are a recent high school graduate, an attractive able-bodied young man 18-26 years old, we may have a job for you. No experience needed. Earn while you train. 3 references required.
4. French Cuisine Restaurant 400 Main St.
5. Inquire in person only, weekdays 2-4 p.m.

75. Which of these lines are considered legally discriminatory?

A. Lines 2, 4, and 9
B. Lines 2, 4, and 9
C. Lines 2, 5, and 7
D. Lines 2, 4, and 9

76. Why might line 3 be considered discriminatory?

A. It is discriminatory to require a high school education for a waiter position.
B. Indicating a recent diploma in the ad may discriminate on the basis of age.
C. To require a high school education the employer must prove that literacy is required for the job.
D. If a high school education is required, the ad must state "or equivalent."
USE THE FOLLOWING SITUATION TO ANSWER QUESTIONS 77-80.

The food service director has received numerous complaints regarding the quality and variety of items included in the menu cycle. The food service presently uses a majority of convenience foods, although the facility has sufficient equipment to use traditional preparation methods. The suppliers available cannot offer an increased variety of convenience foods for the director to purchase. Budgetary constraints do not allow the director to increase the total dollar amount of the budget, although the director can move funds from the food allocation to wages and employee benefits.

To solve the immediate problem of complaints about the food, the food service director decides to begin using traditional food preparation methods and to significantly reduce the number of convenience items purchased. These changes will involve adjustments in the work schedules and job descriptions of the food service employees.

77. The director can best obtain support for the changes by
   A. creating motivation for cooperation.
   B. providing reinforcement for cooperation.
   C. allowing employees to help assign new duties to each position.
   D. rewarding cooperative employees with promotions.

78. A traditional management approach would be to introduce the changes to employees by
   A. discussing the change at the next staff meeting.
   B. announcing the date the changes will take effect.
   C. posting a notice indicating the advantages of traditional preparation methods.
   D. establishing a contest to obtain new menu suggestions.

79. Which of these statements explains why adding employees to the production staff is a logical decision in implementing the change?
   A. Job analyses indicate the present service employees are under-utilized.
   B. Labor statistics show that adding employees increases the acceptability of changes in duties.
   C. Production schedules indicate more employees are needed to meet the minimum labor requirements.
   D. Productivity can be increased by adding employees to the department.
80. Which change would decrease labor costs?

A. Requiring more experience for entry-level employees.
B. Reducing the percentage of convenience foods used.
C. Replacing a full-time employee with 2 half-time employees receiving equivalent wages.
D. Increasing utilization of automated equipment.

USE THE FOLLOWING SITUATION IN ANSWERING QUESTIONS 81-82.

A supervisor evaluated her subordinates accurately at mid-year; she gave lenient evaluations at the end of the year when merit raises were being determined.

81. Which evaluation problem is having an effect on the supervisor's year-end rating of the employees?

A. Central tendency.
B. Halo effect.
C. Organizational influences.
D. Vague generalities.

82. Which method could improve the supervisor's evaluation skills?

A. Instructing the supervisor on the use of a checklist system.
B. Requiring documentation to support all employee evaluations.
C. Requiring post-appraisal conferences with each employee.
D. Utilizing behavioral management techniques.

83. Which contribution was made by the Managerial Grid of Robert Blake and Jane Mouton?

A. Forecasted the demand for managers who are people or product centered.
B. Illustrated the interrelationship of satisfiers and motivators in increasing productivity.
C. Established a priority for creating managers with a more humanistic philosophy.
D. Clarified the relationship between the management styles that are production and people centered.

84. Which of the following messages would receive the most resistance from employees?

A. Messages that are incongruent with rational logic or knowledge.
B. Messages that facilitate need fulfillment.
C. Messages that follow changes in the environment.
D. Messages that are incongruent with values.
85. Which problem might be solved through using queing models?

A. A cafeteria line that has a 'bottle-neck' at the hot food counter.
B. A personnel application form that obtains too little information.
C. A decision of which dietitian to hire for a management position.
D. A production schedule that does NOT adequately predict labor demands.

86. How best can resource allocation models be applied to food service personnel management?

A. Resource allocation can be used to select approximate numbers of employees required.
B. Resource allocation can determine the labor hours required for maximizing output under conditions of uncertainty.
C. Resource allocation can be used to assign labor hours to tasks on the basis of optimum outcome.
D. Resource allocation can determine skill levels of employees needed.

87. A definition of job specification is

A. a description of work performed on a job.
B. a list of skills and traits required for a job.
C. a scale of the salaries paid for a job.
D. a procedure used to analyze a job.

88. Which statement reflects the role an organizational chart should have?

A. The chart rarely reflects the real relationship among employees in an organization.
B. The chart reflects actual lines of authority and communication although other channels may also exist.
C. The charts are selected from industry standards and organizations are made to fit the standards.
D. The charts indicate line, staff, and informal relationships.

89. The success of a food service training program should be measured by

A. evaluating scores on quizzes following a series of classes.
B. measuring willingness of employees to attend training.
C. observing changes in actual employee behavior.
D. comparing the cost of training with industry standards.
90. An application of time and motion principles would be to have
   A. both hands begin motions simultaneously.
   B. employees standing for better reach.
   C. straight line movements instead of curved line.
   D. arms move in the same direction.

91. Human resource accounting is primarily the procedure that
   A. involves setting and paying employees' salaries.
   B. allocates resources for employees' salaries and fringe benefits.
   C. keeps an inventory of and places a dollar value on employees.
   D. calculates the cost of employee training and turnover.

92. The main goal of job enrichment is to cause
   A. employee growth and recognition.
   B. changes in job responsibilities.
   C. employees to like their jobs more.
   D. decreasing turnover among employees.

93. Which statement about the socialization skills of service
   employees is supported by research findings?
   A. Employees with social skills must be found as these skills
      can be improved only slightly.
   B. Social skills can be improved through intermittent training.
   C. Many employees' social skills can be improved through
      training and motivation.
   D. The social skills of service employees can be improved but
      it is rarely cost effective.

94. Three key factors in a growth-developing environment for employees
   are
   A. autonomy, freedom from rules, and adequate compensation.
   B. good role models, reasonable limits, and freedom to discover
      limitations.
   C. good skill training, rapid advancement and promotions, and
      few limits.
   D. quality educational programs, equitable supervision, and
      little competition.

95. A flow process chart is used to identify
   A. the rate of tray assembly on a tray line.
   B. a situation where delays are a problem.
   C. each step in a procedure.
   D. waiting time at each station in a cafeteria line.
96. In which organization would profit sharing be to the greatest advantage for employees?
   A. A fast-growing unique food service operation.
   B. A stable food service contractor.
   C. A restaurant with declining profit.
   D. A food service with intense competition.

97. A key factor in the success of a wage incentive program is that the program should
   A. be simple enough for employees to calculate what they will be paid each week.
   B. increase wages in comparison to previous salaries.
   C. be complex enough to allow for fluctuation in demand.
   D. establish base salaries below previous average salary levels.

98. How does the law of diminishing returns relate to the theory of organizational behavior?
   A. Organizational effectiveness is achieved by maximizing the use of behavioral techniques.
   B. Productivity decreases when the optimum amount of desirable behavior modification is surpassed.
   C. Management can calculate the exact point at which behavioral techniques will cause decreasing results.
   D. The point of decreasing effectiveness is rarely ever reached when appropriate behavior techniques are selected.

99. What should a manager do regarding the stress level of employees?
   A. A manager can train employees to eliminate stress from their jobs.
   B. A manager can tell employees of the impact of stress on their health.
   C. A manager can attend seminars explaining the impact of stress on performance.
   D. A manager can reduce employee's stress levels by scheduling regular breaks.

100. In planning work schedules for optimum efficiency, work should be
   A. batched into units of similar activities.
   B. diversified to maintain interest.
   C. specialized, assigning one activity to each employee.
   D. divided based upon employee preference.

101. Annual performance appraisals may provide
   A. an influence in improving employee performance.
   B. an excellent opportunity to discuss employee progress.
   C. a situation that impresses the employee with the significance of their contribution.
   D. an effective evaluation method when mutual goal planning and problem solving is included.
102. A definition of organizational development is
A. a short, intense program to improve managers' effectiveness.
B. the teaching of company values and philosophy to management.
C. a program to increase the effectiveness of the organization that begins with upper management personnel.
D. a training package that increases the managers' abilities to plan daily and long-term goals.

103. Which time frame is successful for most on-site food service training programs?
A. weekly 1-hour sessions.
B. two 2-hour sessions per month.
C. monthly half-day meetings.
D. week-long classes twice a year.

104. Traditional job design emphasized
A. separation of tasks into small specialized units.
B. motivation of employees to reach maximum productivity.
C. training employees to assume varied responsibilities.
D. involving the employee in production of the whole product.

105. Which statement about training older adults is supported by research findings?
A. The average older adult is as intellectually able as the average younger adult.
B. Average older adults respond best to structured learning situations.
C. Average older adults are more receptive to learning if they have been away from educational activity a long time.
D. The average older adult learns best by the lecture and discussion teaching method.

106. How would forecasted demand for food service influence personnel management in hospital dietetics departments?
A. The number of employees scheduled will be in direct proportion to the forecasted demand.
B. Hospital food service operations must maintain a base staffing level that cannot reflect forecasted demand.
C. The number of employee hours scheduled should reflect the forecasted demand.
D. Forecasted demand is an inappropriate tool to use in employee scheduling in hospital food service.

107. Which statement accurately reflects the role tension plays in job performance?
A. Tension reduces productivity and should always be avoided.
B. Moderate tension encourages better job performance.
C. Interest in work rises as the level of tension increases.
D. Optimum job performance occurs in the absence of tension.
108. Which of these statements about women managers is supported by research?

A. Women's absentee rate due to illness is one-third greater than for men.
B. The turnover rate for women is significantly higher than for men.
C. The average years of work life for married women is 15 years.
D. More than one-half of the women who quit work to raise a family return to the work force.

PLEASE CHECK AND MAKE SURE THAT YOU HAVE ANSWERED EACH OF THE QUESTIONS WITH ONE RESPONSE.

CONTINUE WITH THE QUESTIONNAIRE ON THE FOLLOWING PAGES.
Educational Background and Experience Questionnaire

DIRECTIONS: Please answer these questions by placing the response in the space provided on the right.

1. Select the number on the scale below that represents the amount of your preparation in each topic area.

9 - I can readily apply principles to actual situations in food service.
8 - I am knowledgeable about general principles.
7 - I am somewhat familiar with the general principles.
6 - I am vaguely familiar with the topic but have areas of limited knowledge.
5 - I have not studied the topic.

a. Control of personnel functions
b. Decision-making principles
c. Direction of personnel function
d. Labor relations and unions
e. Management styles
f. Personnel management related legislation
g. Psychology of human behavior
h. Supervision of employees
i. Wage and salary administration

2. a. Current cumulative grade point average (Please list to two decimal places).

b. In the system used, how many grade points does "A" equal?
3. Current classification (Please place appropriate number in the blank).
   1. Junior
   2. Senior
   3. ___

4. How long did it take you to answer all of the test questions?
   4. ___ minutes

5. Briefly describe all of your paid work experience. For any positions where you had supervisory responsibility indicate the number of people supervised.

Supervisory responsibility includes situations where you were directly responsible for and/or directed the work of other paid employees.

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<th>Approximate hours/week</th>
<th>No. of employees supervised</th>
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PLEASE CHECK AND MAKE SURE YOU HAVE ANSWERED ALL OF THE QUESTIONS.
Table 1C. Item statistics of 107-item field test device

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<th>Item No.</th>
<th>Distracter selection</th>
<th>Difficulty index</th>
<th>Discrimination index</th>
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<tbody>
<tr>
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<td>A</td>
<td>B</td>
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*Indicates correct response.

***Discrimination index < .05.
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Table 2C. Test statistics of 107-item field test device

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APPENDIX D.

FINAL DEVICE AND

TABLE OF ITEMS IN FINAL DEVICE ASSOCIATED WITH
CONTENT-COGNITIVE CATEGORIES
PERSONNEL MANAGEMENT IN DIETETICS

ACHIEVEMENT TEST

Lynne E. Baltzer, R.D.
Alyce M. Fanslow, Ph.D.

Department of Hotel, Restaurant and Institution Management
Department of Home Economics Education

Iowa State University
Ames, Iowa

1983
DIRECTIONS: Select the ONE BEST response to each item. Mark your response on the answer sheet by darkening the corresponding circle with a number 2 pencil. Your score will be based on your total number of correct responses.

1. Physiological needs are most frequently met through
   A. choosing a job you like.
   B. obtaining a job with adequate salary.
   C. receiving praise for work done well.
   D. working with people you prefer.

2. Which of the following methods is the least costly method of conducting a time and motion study?
   A. completing operation and process charts.
   B. conducting micromotion studies.
   C. developing flow diagrams.
   D. performing work sampling.

3. Which human relations method uses positive reinforcement techniques?
   A. Assertiveness Training
   B. Behavior Modification
   C. Job Enrichment
   D. Transactional Analysis

4. Which of the following acts protects the employee against racial discrimination in hiring?
   A. Civil Rights Act
   B. Fair Employment Standards Act
   C. Fair Labor Standards Act
   D. Equal Employment Act

5. Oral rather than written communication is preferred when
   A. policy change is involved.
   B. immediate feedback is desired.
   C. compliance is necessary.
   D. accuracy is important.
6. What is the most appropriate action for a manager to take with regard to the "grapevine?"
   A. Try to destroy its reputation.
   B. Pretend it does not exist.
   C. Suspend any employee participating in it.
   D. Use it to management's advantage.

7. Wages are considered to be a satisfier but not a motivator. Which statement supports this principle?
   A. Adequate wages cause no change in productivity.
   B. Changes in wages do not affect employee satisfaction.
   C. Inadequate wages are an incentive to increase output.
   D. Increases in wages improve morale and productivity.

8. Which question would be the best way to obtain information from a job applicant regarding the availability of transportation to work an 11:00 a.m. to 7:00 p.m. shift?
   A. "Do you live within walking distance of the food service?"
   B. "Is there a car you can use to get to work?"
   C. "Do you see any difficulty with getting to work?"
   D. "Do you drive?"

9. What is an exit interview?
   A. An interview with a dismissed employee before he leaves.
   B. An interview with customers as they are leaving the food service.
   C. An interview with an applicant before a final selection for an opening is made.
   D. An interview with the supervisor of an employee being dismissed.

10. Calculate the percentage of worker efficiency in this situation.
    Employee is paid for 8 hours per day.
    Employee is on paid breaks for 30 minutes per day.
    Employee performs necessary work for 5 hours per day.
    The percentage of worker efficiency is
    A. 61.0%.
    B. 62.5%.
    C. 66.7%.
    D. 68.7%. 
11. A main force that should influence employers to increase employee benefits is the need to
   A. meet requirements to secure government contracts.
   B. recruit and retain better personnel.
   C. receive deductions on corporate income taxes.
   D. prove that employers are concerned about employee welfare.

12. Traditional management theory is characterized by emphasis on the
   A. behavior of groups in the organization.
   B. motivation of employees.
   C. motivation of employees through fringe benefits.
   D. formal organizational structure.

13. Which of the following management styles is most appropriate to use when supervising people who have high needs for independence?
   A. Autocratic style.
   B. Task-oriented style.
   C. Theory X style.
   D. Theory Y style.

14. The formula for calculating meals per manhour is
   A. number of meals $\div$ number of manhours.
   B. manhours utilized $\div$ manhours available.
   C. number of manhours $\div$ number of meals.
   D. manhours available $\div$ manhours utilized.

15. A primary consideration by the employer in setting a wage scale would be the
   A. current unemployment rate in the community.
   B. federal minimum wage scale regulations.
   C. percent of profit desired by the employer.
   D. wage scales of similar employers in the area.

16. The order of Maslow's Hierarchy of needs from lowest to highest is
   A. safety, physiological, esteem, social, self-actualization.
   B. physiological, safety, social, esteem, self-actualization.
   C. physiological, social, safety, esteem, self-actualization.
   D. safety, physiological, social, esteem, self-actualization.
17. A good basis for departmentalizing activities in food service is
   A. creating departments in which the duties of the employees are identical.
   B. having managers' areas of interest be the determining factor.
   C. dividing departments based on dollar volume of sales.
   D. using function of employees' activities as the guide.

18. In a food service, the meals per day sold decreased from 1500 to 1300 per day while labor hours worked did not change. Calculate the new labor cost percentage of gross income using the following information.

   OLD FIGURES                          NEW FIGURES
   1500 meals per day                  1300 meals per day
   Sales average $2.50 each            Sales average $2.50 each
   Gross income $3750.00               Gross income $3750.00
   Labor cost $1000.00

   A. Labor cost percentage: 26%.
   B. Labor cost percentage: 31%.
   C. Labor cost percentage: 36%.
   D. Labor cost percentage: 41%.

19. A definition of functional job analysis is a
   A. way developed by the Department of Labor to standardize jobs.
   B. survey used to classify tasks into job categories.
   C. format used to classify jobs into specified job titles.
   D. system for collecting and classifying data concerning work performed in jobs.

20. Three key factors in a growth-developing environment for employees are
   A. autonomy, freedom from rules, and adequate compensation.
   B. good role models, reasonable limits, and freedom to discover limitations.
   C. good skill training, rapid advancement and promotions, and few limits.
   D. quality educational programs, equitable supervision, and little competition.

21. What source should a manager use to find current reliable information on the federal minimum wage?
   A. The Bureau of Labor Standards
   B. The Code of Federal Regulations
   C. The Federal Register
   D. The Occupational Handbook
22. The most effective way to orient a new worker is to
   A. give the employee detailed instructions for each task.
   B. use the buddy system of employee training.
   C. schedule observation of a good employee.
   D. provide a planned training program.

23. What assumption about people is made by the Human Relations approach to leadership?
   A. People wish to avoid responsibility.
   B. People effectively exercise self-direction.
   C. People inherently dislike work.
   D. People can be motivated by monetary rewards.

24. How does the law of diminishing returns relate to the theory of organizational behavior?
   A. Organizational effectiveness is achieved by maximizing the use of behavioral techniques.
   B. Productivity decreases when the optimum amount of desirable behavior modification is surpassed.
   C. Management can calculate the exact point at which behavioral techniques will cause decreasing results.
   D. The point of decreasing effectiveness is rarely ever reached when appropriate behavior techniques are selected.

25. The number of employees one person can directly supervise should be based on the
   A. complexity of the subordinates' work and overall responsibilities of the supervisor.
   B. span of control of supervisors in other departments in the organization.
   C. recommendation that seven subordinates is the maximum number anyone should supervise.
   D. educational level and complexity of subordinates' work.

26. How are strikes in health care facilities regulated?
   A. The federal No Strike Law prohibits strikes in health care facilities.
   B. State laws govern strikes in health care facilities since there is NO federal regulation applicable.
   C. The National Labor Relations Act and its amendments prohibit strikes in health care facilities.
   D. The National Labor Relations Act and its amendments list procedures to be followed before a legal strike can occur.
27. What reduction in food cost per week would be needed to compensate for the labor cost of these 2 employees? The full-time employee is paid $4.35 per hour, the part-time employee receives $3.75 per hour and works 20 hours per week. Fringe benefits for both employees equal 17% of wages paid.

A. $249.00  
B. $253.24  
C. $282.57  
D. $291.33

28. What is a significant feature of the management by objectives technique?

A. Top management sets the objectives.  
B. Small groups of employees independently propose objectives.  
C. Subordinates and supervisors set objectives together.  
D. Middle management sets the objectives for their own areas.

29. Which statement accurately reflects the role tension plays in job performance?

A. Tension reduces productivity and should always be avoided.  
B. Moderate tension encourages better job performance.  
C. Interest in work rises as the level of tension increases.  
D. Optimum job performance occurs in the absence of tension.

30. A definition of organizational development is

A. a short, intense program to improve managers' effectiveness.  
B. the teaching of company values and philosophy to management.  
C. a program to increase the effectiveness of the organization that begins with upper management personnel.  
D. a training package that increases the managers' abilities to plan daily and long-term goals.

31. Which time frame is successful for most on-site food service training programs?

A. weekly 1-hour sessions  
B. two 2-hour sessions per month  
C. monthly half-day meetings  
D. week-long classes twice a year
32. Which statement about training older adults is supported by research findings?

A. The average older adult is as intellectually able as the average younger adult.
B. Average older adults respond best to structured learning situations.
C. Average older adults are more receptive to learning if they have been away from educational activity a long time.
D. The average older adult learns best by the lecture and discussion teaching method.

33. A career-development system is defined as a

A. policy recommending promotion from within an organization.
B. program requiring a training and development department.
C. sequence of jobs within an organization with requirements for promotions identified.
D. method of collecting labor statistics to predict future employee vacancies.

34. In planning work schedules for optimum efficiency, work should be

A. batched into units of similar activities.
B. diversified to maintain interest.
C. specialized, assigning one activity to each employee.
D. divided based upon employee preference.

35. Annual performance appraisals may provide

A. an influence in improving employee performance.
B. an excellent opportunity to discuss employee progress.
C. a situation that impresses the employee with the significance of their contribution.
D. an effective evaluation method when mutual goal planning and problem solving is included.

36. An organization demonstrating the autocratic model of behavior would have managers

A. solely responsible for organizational performance.
B. emphasize meeting the social needs of employees.
C. maintain support for employee's requests.
D. exhibit a pattern of cooperation among their peers.
37. A realistic goal in making decisions is to expect that
   A. decisions will be made on a strictly rational basis.
   B. personal bias will be overcome through use of a decision model.
   C. all facts would be gathered before a decision is made.
   D. effectiveness of decisions are a function of their quality and acceptance.

38. Which set of functions are most important to be performed successfully by effective food service supervisors?
   A. Acceptance of management policies and insistence of compliance by subordinates.
   B. Superiority in training subordinates and skill in selecting applicants for positions.
   C. Interpretation of organizational objectives and encouraging subordinates to work up to their potential.
   D. Understanding of subordinates' jobs and unconditional acceptance of management philosophy.

39. Why should information collected about those applicants NOT selected for a position be saved after the position is filled?
   A. To document why some applicants were not selected for the open position.
   B. To maintain a file of applicants to be considered in case another employee is needed quickly.
   C. To suggest these applicants for consideration by other departments.
   D. To help the manager provide feedback to the source of the applicants.

40. Which problem might be solved through using queuing models?
   A. A cafeteria line that has a "bottle-neck" at the hot food counter.
   B. A personnel application form that obtains too little information.
   C. A decision of which dietitian to hire for a management position.
   D. A production schedule that does NOT adequately predict labor demands.

41. How best can resource allocation models be applied to food service personnel management?
   A. Resource allocation can be used to select approximate numbers of employees required.
   B. Resource allocation can determine the labor hours required for maximizing output under conditions of uncertainty.
   C. Resource allocation can be used to assign labor hours to tasks on the basis of optimum outcome.
   D. Resource allocation can determine skill levels of employees needed.
42. A definition of job specification is
   A. a description of work performed on a job.
   B. a list of skills and abilities required for a job.
   C. a scale of the salaries paid for a job.
   D. a procedure used to analyze a job.

43. Which statement reflects the role an organizational chart should have?
   A. The chart rarely reflects the real relationship among employees in an organization.
   B. The chart reflects actual lines of authority and communication although other channels may also exist.
   C. The charts are selected from industry standards and organizations are made to fit the standards.
   D. The charts indicate line, staff, and informal relationships.

44. Traditional job design emphasized
   A. separation of tasks into small specialized units.
   B. motivation of employees to reach maximum productivity.
   C. training employees to assume varied responsibilities.
   D. involving the employee in production of the whole product.

45. Which of these statements about women managers is supported by research?
   A. Women's absentee rate due to illness is one-third greater than for men.
   B. The turnover rate for women is significantly higher than for men.
   C. The average years of work life for married women is 15 years.
   D. More than one-half of the women who quit work to raise a family return to the work force.

46. In which organization would profit sharing be to the greatest advantage for employees?
   A. A fast-growing unique food service operation.
   B. A stable food service contractor.
   C. A restaurant with declining profit.
   D. A food service with intense competition.
47. Which conclusions about the effectiveness of supervisory style are consistent with research studies?
   A. Authoritarian style of leadership is usually a good choice.
   B. Supportive leadership style is most effective with subordinates who perform ambiguous tasks.
   C. Participative style is most effective when subordinates desire independence.
   D. Autocratic style is effective when subordinates' tasks and goals are clearly defined.

48. What effect does the 1974 amendment to the Taft-Hartley Act have on the management of food service?
   A. Unionized hospital food service departments can grant cost-of-living adjustments.
   B. Nonmanagement food service employees in nonprofit hospitals are allowed to unionize.
   C. Nonmanagement dietitians cannot belong to unions.
   D. Unionized hospital food service departments are required to appoint stewards for every 50 employees.

49. An application of time and motion principles would be to have
   A. both hands begin motions simultaneously.
   B. employees standing for better reach.
   C. straight line movements instead of curved line.
   D. arms move in the same direction.

50. Human resource accounting is primarily the procedure that
   A. involves setting and paying employees' salaries.
   B. allocates resources for employees' salaries and fringe benefits.
   C. keeps an inventory of and places a dollar value on employees.
   D. calculates the cost of employee training and turnover.

51. A National Labor Relations Board supervised election is held to determine
   A. how many union stewards will be appointed.
   B. which union will represent the employee group.
   C. which employees will be included in the bargaining unit.
   D. who will be the union president.
52. Turnover rate is calculated as

A. \( \frac{\text{number of replaced separations}}{\text{average number of employees}} \times 100 \).

B. \( \frac{\text{average number of employees}}{\text{number of replaced separations}} \times 100 \).

C. \( \frac{\text{number of separations}}{\text{number of employees hired}} \times 100 \).

D. \( \frac{\text{average number of employees}}{\text{number of employees terminated}} \times 100 \).

53. A manager demonstrating McGregor's Theory X would

A. allow employees to exercise self-direction in setting goals.
B. encourage participative management among employees.
C. establish explicit guidelines for employees.
D. permit employees to establish priorities for meeting goals.

54. To obtain a positive response to a proposed job redesign project, a supervisor should

A. consult employees for suggestions regarding parts of their jobs needing changes.
B. discuss with employees the tasks that will be eliminated by the project.
C. talk with employees about transferring jobs if they do NOT like their new responsibilities.
D. give employees advance notice of when the observations will be scheduled.

55. Which of the following messages would receive the most resistance from employees?

A. Messages that are incongruent with rational logic or knowledge.
B. Messages that facilitate need fulfillment.
C. Messages that follow changes in the environment.
D. Messages that are incongruent with values.

56. Which contribution was made by the Managerial Grid of Robert Blake and Jane Mouton?

A. Forecasted the demand for managers who are people or product centered.
B. Illustrated the interrelationship of satisfiers and motivators in increasing productivity.
C. Established a priority for creating managers with a more humanistic philosophy.
D. Clarified the relationship between the management styles that are production and people centered.
USE THE FOLLOWING SITUATION IN ANSWERING QUESTIONS 57-60.

The department head of a hospital food service department has assigned one of the administrative dietitians to be directly responsible for 16 food production supervisors in a 1,000-bed hospital. Problems between the administrative dietitian and the 16 production supervisors frequently occur.

57. What is the best plan for the department head to implement to reduce the number of problems with the supervisors?
   A. Conduct monthly meetings between the department head and the 16 supervisors.
   B. Plan training sessions for the supervisors on following procedures.
   C. Provide more training for the administrative dietitian.
   D. Reorganize the work load to reduce the number of employees directly supervised by the dietitian.

58. Which of these would be the best task to select in beginning to delegate to the supervisors?
   A. Authority for termination of employees.
   B. Planning of the cycle menu.
   C. Assigning employees to the production schedule.
   D. Responsibility for purchases.

59. To reduce the dietitian's span of control, which would be the best plan?
   A. Assign 8 supervisors to the early shift and 8 to the late shift.
   B. Appoint a production manager for each shift who is directly responsible for 8 of the production supervisors.
   C. Combine the duties of 4 production supervisors.
   D. Appoint a production director to supervise this dietitian's work.

60. The dietitian can best improve communication with the supervisors by
   A. routinely informing the supervisors of any changes.
   B. conducting monthly meetings with the group of supervisors.
   C. establishing effective channels of two-way communication.
   D. maintaining an open door policy with the supervisors.
USE THE FOLLOWING SITUATION IN ANSWERING QUESTION 61.

A supervisor evaluated her subordinates accurately at mid-year; she gave lenient evaluations at the end of the year when merit raises were being determined.

61. Which method could improve the supervisor's evaluation skills?

A. Instructing the supervisor on the use of a checklist system.
B. Requiring documentation to support all employee evaluations.
C. Requiring post-appraisal conferences with each employee.
D. Utilizing behavioral management techniques.

USE THE FOLLOWING SITUATION IN ANSWERING QUESTIONS 62-63.

A dietitian who is a consultant in a 100-bed nursing home observes the following situations in her first visit to the production kitchen:

-- The food service supervisor is checking-in the weekly produce delivery.
-- The head cook has completed her food production assignment early and is taking a break during the slack time before food is served.
-- The second cook is asking the dishwasher to assist him by heating the vegetables while he finishes preparing the gravy.
-- The salad employees are tasting the salad and seasoning it "to taste."

62. In approaching the situation, the consulting dietitian should initially

A. identify the most significant problems clearly and suggest possible solutions to the supervisor.
B. make a list of all problems observed and leave it for the supervisor to review and respond.
C. present a list of the problems to the nursing home administrator.
D. emphasize the positive situations observed and wait and see if the problems will correct themselves.

63. The head cook has slack time between completing production and the meal service time; this is an indication that the

A. head cook is a valuable and efficient employee.
B. production is being completed earlier than appropriate.
C. production schedule is too easy.
D. head cook is not following the length of cooking times listed on the recipes.
USE THE FOLLOWING SITUATION TO ANSWER QUESTION 64.

A production supervisor tells the administrative dietitian about a baker who has recently transferred from the late to the early shift. Since the transfer, the baker has been late clocking in several times. The supervisor believes "drinking" may be part of the problem.

64. If the administrative dietitian wants more information about the situation, which of the following would be the most appropriate action?

A. Ask the shop union steward about the problem.
B. Listen to the "grapevine" to find out more about the employee.
C. Review the employee's attendance record and the personnel file.
D. Talk with the other bakers about the employee's performance.

USE THE FOLLOWING SITUATION IN ANSWERING QUESTIONS 65-66.

In screening applications for an opening for a kitchen helper, the dietitian decides to eliminate those applicants with less than a high school diploma or equivalent and those who have restricted mobility. The kitchen helper position requires the employee to calculate recipe adjustments and to take full-size steamtable pans from the kitchen to the cafeteria.

65. How could the dietitian best modify the job situation to enable a person who must use a cane to walk to perform the tasks?

A. Arrange the work station to limit the amount of walking necessary.
B. Change the job so that someone else takes the steamtable pans to the cafeteria.
C. Allow the employee to sit on a stool to work.
D. Provide a cart to transport the steamtable pans.

66. Which of these statements most adequately supports the decision to require a high school diploma or equivalent?

A. The dietitian has had past experience with several employees who graduated from high school but had difficulty reading recipes.
B. The dietitian believes people working full-time may NOT have time to finish school.
C. The dietitian believes dropping out of school is an indication of lack of commitment to follow tasks through to completion.
D. The dietitian has assigned tasks of adjusting recipes to this position, and such skills are usually gained in high school.
USE THE FOLLOWING WANT AD IN ANSWERING QUESTION 67.

Line No.
1. HELP WANTED
2. WAITERS
3. If you are a recent high school graduate,
4. an attractive able-bodied young
5. man 18-26 years old, we may have a job
6. for you. No experience needed. Earn
7. while you train. 3 references required.
8. French Cuisine Restaurant 400 Main St.
9. Inquire in person only, weekdays 2-4 p.m.

67. Why might line 3 be considered discriminatory?

A. It is discriminatory to require a high school education for a waiter position.
B. Indicating a recent diploma in the ad may discriminate on the basis of age.
C. To require a high school education the employer must prove that literacy is required for the job.
D. If a high school education is required, the ad must state "or equivalent."
USE THE FOLLOWING SITUATION TO ANSWER QUESTIONS 68-70.

The food service director has received numerous complaints regarding the quality and variety of items included in the menu cycle. The food service presently uses a majority of convenience foods, although the facility has sufficient equipment to use traditional preparation methods. The suppliers available cannot offer an increased variety of convenience foods for the director to purchase. Budgetary constraints do not allow the director to increase the total dollar amount of the budget, although the director can move funds from the food allocation to wages and employee benefits.

To solve the immediate problem of complaints about the food, the food service director decides to begin using traditional food preparation methods and to significantly reduce the number of convenience items purchased. These changes will involve adjustments in the work schedules and job descriptions of the food service employees.

68. A traditional management approach would be to introduce the changes to employees by

A. discussing the change at the next staff meeting.
B. announcing the date the changes will take effect.
C. posting a notice indicating the advantages of traditional preparation methods.
D. establishing a contest to obtain new menu suggestions.

69. Which of these statements explains why adding employees to the production staff is a logical decision in implementing the change?

A. Job analyses indicate the present service employees are underutilized.
B. Labor statistics show that adding employees increases the acceptability of changes in duties.
C. Production schedules indicate more employees are needed to meet the minimum labor requirements.
D. Productivity can be increased by adding employees to the department.

70. Which change would decrease labor costs?

A. Requiring more experience for entry-level employees.
B. Reducing the percentage of convenience foods used.
C. Replacing a full-time employee with 2 half-time employees receiving equivalent wages.
D. Increasing utilization of automated equipment.
## ANSWER KEY

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APPENDIX E.
UNIVERSITY COMMITTEE ON THE USE OF HUMAN SUBJECTS IN RESEARCH APPROVAL
Title of project (please type): Personnel Management Skills: Measurement of Achievement of Dietetic Students

I agree to provide the proper surveillance of this project to insure that the rights and welfare of the human subjects are properly protected. Additions to or changes in procedures affecting the subjects after the project has been approved will be submitted to the committee for review.

Lynne E. Saltzer
Typed Name of Principal Investigator

Date Signature of Principal Investigator

Campus Address

Campus Telephone

Signatures of others (if any) Date Relationship to Principal Investigator

ATTACH an additional page(s) (A) describing your proposed research and (B) the subjects to be used, (C) indicating any risks or discomforts to the subjects, and (D) covering any topics checked below. CHECK all boxes applicable.

☐ Medical clearance necessary before subjects can participate
☐ Samples (blood, tissue, etc.) from subjects
☐ Administration of substances (foods, drugs, etc.) to subjects
☐ Physical exercise or conditioning for subjects
☐ Deception of subjects
☐ Subjects under 14 years of age and/or
☐ Subjects 14-17 years of age
☐ Subjects in institutions
☐ Research must be approved by another institution or agency

ATTACH an example of the material to be used to obtain informed consent and CHECK which type will be used.

☐ Signed informed consent will be obtained.
☐ Modified informed consent will be obtained.

Anticipated date on which subjects will be first contacted: Month Day Year

Anticipated date for last contact with subjects:

If Applicable: Anticipated date on which audio or visual tapes will be erased and/or identifiers will be removed from completed survey instruments:

Signature of Head or Chairperson Date Department or Administrative Unit

Decision of the University Committee on the Use of Human Subjects in Research:

☐ Project Approved ☐ Project not approved ☐ No action required

Name of Committee Chairperson Date Signature of Committee Chairperson