PROGRAMMED INSTRUCTION IN INSTITUTIONAL PURCHASING
FOR DIETETIC STUDENTS

by

BARBARA JOANNE PIETRZYK, B.S.

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CHAPTER I

INTRODUCTION

In traditional education, the teacher usually relates information to the student in a lecture presentation. This is followed by class time for questions and discussion. In the last few years, educators have questioned the effectiveness of this traditional method of education (Miller and Spears, 1974).

The efforts of trying new methods at the college level have been limited until recently. In professional schools, students have a variety of needs and goals that are more apparent than at the lowest levels of education. A method of instruction that would meet the varied needs, goals, and capabilities of college students would be desirable (Miller and Spears, 1974).

One educational method proposed is self-instruction (Miller and Spears, 1974). Programmed instruction is self-instruction in which a subject is presented in small sequential steps that provide immediate results pertaining to the learning and allows the student to work at his own pace (Robertson, 1973).

Presently, there are three main modes to membership in the American Dietetic Association; namely, the Coordinated Undergraduate Programs, dietetic internships, and dietetic traineeships (The American Dietetic Association, 1976). The Report on the Study Commission on Dietetics (Millis, Chairman, 1972), state that team teaching and programmed instruction be implemented during the final two years of the Coordinated Undergraduate Program in dietetics.

In guidelines for general internships and traineeships (The American Dietetic Association, 1974A and 1974b), it has been recommended to include clinical and didactic learning experiences in food purchasing. The programmed instruction unit developed and implemented by this researcher was stimulated by the Study Commission and guidelines for internships and traineeships.

Problem of the Study

The problem of the study was: (1) to develop a programmed instruction unit in institutional purchasing; (2) to determine the effectiveness of the programmed instruction unit for dietetic students in Coordinated Undergraduate Programs, internships and traineeships; (3) to evaluate the dietetic students' attitudes toward programmed instruction; (4) to evaluate the relationship among students' university grade point average, the attitude toward programmed instruction, and the learning achieved; and (5) to assess the usefulness of the unit to instructors in the Coordinated Undergraduate Program, dietetic internships, and dietetic traineeships.

Purposes of the Study

The purposes of the study were as follows:

1. To develop a programmed instruction unit in institutional purchasing.
2. To develop a cognitive achievement test to measure learning before and after the programmed instruction unit.
3. To revise a Likert-type scale to measure student attitudes after the programmed instruction unit.

4. To develop a questionnaire to assess the usefulness of the programmed instruction unit to the instructors.

5. To determine the effectiveness of the programmed unit as an overview for dietetic students in the Coordinated Undergraduate Programs and as review for dietetic students in internships and dietetic traineeships by comparing cognitive achievement pretest to cognitive achievement posttest scores.

6. To compare the effectiveness of the unit among the three groups of dietetic students (Coordinated Undergraduate Program students, interns, and trainees) as indicated by the cognitive achievement gain test score.

7. To evaluate the dietetic students' attitudes toward programmed instruction at the end of the programmed unit by analyzing an attitude scale score.

8. To compare the attitudes of the three groups of dietetic students (Coordinated Undergraduate Program students, interns, and trainees) toward programmed instruction at the end of the unit by an attitude scale score.

9. To compare the cognitive achievement pretest scores among three groups of dietetic students (Coordinated Undergraduate Program students, interns, and trainees).

10. To compare the cognitive achievement posttest scores among three groups of dietetic students (Coordinated Undergraduate Program students, interns, and trainees).

11. To compare the university grade point averages among three groups of dietetic students (Coordinated Undergraduate Program

students, interns, and trainees).

12. To determine the amount of time spent on the programmed unit among three groups of dietetic students (Coordinated Undergraduate Program students, interns, and trainees).

13. To determine the relationships among cognitive achievement pretest scores, cognitive achievement posttest scores, cognitive achievement gain scores, attitude scale scores, university grade point averages, and the amount of time spent on the unit.

14. To evaluate the usefulness of the unit to instructors in Coordinated Undergraduate programs, internships, and traineeships by considering the responses on the questionnaire.

Definition of Terms

The definition of terms unique to this study are:

1. Programmed instruction - educational material that presents a subject in small sequential steps, requires participants to respond to the given stimulus, provides immediate results of the learning, and allows the students to work at their own pace (Robertson, 1973).

2. Attitude score - a number applied to the response for each Likert-type attitude statement totalling the numbers assigned to each response for each question and dividing by the total number of questions (Ahmann and Glock, 1975).

3. Coordinated Undergraduate Program (CUP) - a formal baccalaureate educational program at a college or university and accredited by the American Dietetic Association. This program includes clinical and didactic experiences (The American Dietetic Association, 1976).

4. Dietetic intern (DI) - a person who has a baccalaureate degree and has fulfilled academic requirements for membership to the American Dietetic Association, and is participating in a dietetic internship for the didactic and supervised clinical experiences to become a practicing dietitian (The American Dietetic Association, 1976).

5. Dietetic trainee (DT) - a person who has a baccalaureate degree and has fulfilled academic requirements for membership to the American Dietetic Association, and is participating in the didactic and supervised clinical experiences to become a practicing dietitian (The American Dietetic Association, 1976).

6. Clinical instructor - an individual who is teaching either the clinical or didactic aspect of a Coordinated Undergraduate Program (The American Dietetic Association, 1976).

7. Dietitian/Counselor - a registered dietitian who directs the didactic and clinical experiences of the dietetic trainee (The American Dietetic Association, 1974).

8. Dietetic internship director - a registered dietitian who directs the didactic and clinical experiences of the dietetic intern (The American Dietetic Association, 1974).

9. Dietetic students - the individuals in Coordinated Undergraduate Program and dietetic interns and dietetic trainees.

10. University grade point average (GPA) - a score obtained by dividing the total quality points obtained by the total hours undertaken. In the study all university grade point averages are calculated on a 4.00 point scale in which the following quality points

are assigned: A = 4.00, B = 3.00, C = 2.00, D = 1.00, and F = 0.00.

Scope and Limitations of the Study

The study was limited to the cognitive achievement pretest, cognitive achievement posttest, and cognitive achievement gain scores evaluating the programmed instruction in institutional purchasing by dietetic students; the dietetic students' attitude scale scores toward programmed instruction after the programmed instruction unit; the relationship of the cognitive achievement pretest scores, cognitive achievement posttest scores, cognitive achievement gain scores, university grade point average, and attitude toward programmed instruction at the end of the unit; and the relationship of the type of dietetic student and the time required to complete the programmed instruction unit. The study was limited to two institutions in each of the three types of dietetic programs (Coordinated Undergraduate Program, internship, and traineeship) in Texas.

CHAPTER II

REVIEW OF THE LITERATURE

This review of literature was divided into three parts. The first part dealt with the development of programmed instruction. The second part discussed the uses of programmed instruction, attitudes toward programmed instruction and scholastic aptitude of users of programmed learning. The third part discussed the use of programmed learning in dietetic education.

Development of Programmed Instruction

The development of programmed instruction can be attributed to B. F. Skinner. Skinner developed the learning theory emphasizing reinforcement (Skinner, 1954). He noted through his experimental work with pigeons that reinforcement of a controlled response resulted in a learning experience. Skinner applied his experiment in learning to the educational setting. According to Skinner:

Education is perhaps the most important branch of scientific technology. It deeply affects the lives of all of us. We can no longer allow the exigencies of a practical situation to suppress the tremendous improvements which are within reach. The practical situation must be changed. (Skinner, 1954, p.93)

Skinner noted that his observation in learning, later called programmed instruction, could change and accelerate the educational process. The important characteristics of programmed instruction include: (1) immediate reinforcement for the correct response; (2) individualization of learning so individuals can proceed at their

own rates; (3) each phase of learning is presented in a small step, termed a frame; and (4) teaching time can be better organized to allow the teacher more planned time with each student. Skinner cited the following disadvantages of programmed instruction: (1) dehumanization of the student because of lack of personal contact with the instructor, (2) technological unemployment could result because of a need for fewer teachers, and (3) greater expense of school mechanization. Skinner believed that the advantages of programmed instruction outweighed the disadvantages. His innovation opened a new door for education (Skinner, 1954).

Uses of Programmed Instruction

Programmed instruction became more widely used in the 1960's. Hughes and McNamara (1961) devised a programmed instruction for International Business Machines (IBM) Corporation employees. The programs covered a sixteen week course. Compared to the controlled-conventional group using the lecture-discussion method, the experimental programmed learning group covered the same material in less time and with more learning achievement. The findings from the study suggest a reduction of employee training days, more decentralization of training, and better trained employees. Student reaction to programmed instruction was positive. Of the group, 100 percent found it to be more effective, and 93 percent found programmed instruction to be less difficult than the conventional method of instruction. An open-ended Likert-type questionnaire given to participants revealed the following positive characteristics of

programmed instruction: the method itself, emphasis on main points, sequential presentation of material and flexibility to proceed at the student's pace.

Ripple (1963) compared programmed instruction to two other kinds of presentations in a study done in an introductory psychology course at Cornell University. The kinds of presentations were: (1) a programmed instruction with conditioning, (2) a conventional reading group, (3) a conventional lecture group, and (4) a programmed instruction minus reinforcement group. The four groups were rated for recognition and recall of the material presented. The groups receiving programmed instruction with reinforcement and receiving programmed instruction without reinforcement gained significantly more knowledge than the groups receiving textbook and lecture presentations. Ripple (1963) concluded that programmed instruction contributed to increased learning and that reinforcement did not add to the increased learning. Programmed instruction did not significantly improve retention.

Programmed materials have been used extensively by the U.S. Air Force. Wilson (1966) noted that the value of programmed instruction in the Air Force is measured in terms of time and money saved and an increase in the objectives accomplished. Benefits provided for the Air Force by programmed instruction were: (1) relief of the shortage of instructors, (2) more time for student guidance, (3) the individual proceeding at his own rate, (4) alleviation of retraining and cross-training problems, and (5) opportunity for self-improvement for the individual. Wilson (1966) concluded that programmed instruction

had been used extensively in the Air Force and would continue to be used.

Fiks (1964) studied the attitudes of the population toward programmed instruction at the Indiana State Fair. Variables considered included age, sex, education and occupation, residence and income. Subjects were treated with 0 percent, 50 percent, and 100 percent reinforcement. Response modes included thinking or writing the response and the subject matter. Three areas of subject matter were presented. Results indicated that the individual's liking for programmed instruction was not related to subject. However, the subject's belief in the subject matter did affect learning. The degree of reinforcement was not significant. The twenty to thirty-nine year old group learned the most and liked the programmed instruction method least. Attitudes toward the unit were most favorable with people of low educational levels. People with more education found the programmed instruction to be an insult to their intelligence.

Roth (1963) studied programmed instruction use with two classes at Newark State College. One class was an undergraduate general psychology course, and the other was a graduate level education course. In the undergraduate class of twenty-four, twenty-two of the students began liking programmed instruction and ended up disliking it. The other two consistently liked the mode of study throughout. In the graduate course of twenty-six, twenty-one students initially liked the program and then became bored with it. The other five students consistently liked the programmed method of instruction

throughout. Attitudes were assessed by means of an open-ended questionnaire at the end of the study. Roth (1963) concluded that initial motivation for programmed instruction is due to the Hawthorne effect. Once the novelty subsides, boredom occurs. He recommended that further research be done on student attitudes toward programmed instruction.

Marson (1972) had used programmed instruction extensively in the nurse training schools in the Sheffield region of the United Kingdom. Programmed instruction had been used for approximately ten years. Overall attitude evaluation of participants showed a favorable acceptance of programmed instruction, and there were requests for this mode of instruction.

Robertson (1973) researched the interrelateness of selected factors affecting achievement through programmed instruction for ninety-three ninth grade girls in Homemaking I class in Lubbock, Texas. She found a significant positive relationship between reading level and cognitive achievement test scores on material presented in a programmed instruction unit. She found a significant relationship between attitudes toward the programmed instruction and the cognitive achievement test scores on the programmed instruction unit.

Foree (1975), in a study on teaching consumers how to buy meat, found self-instruction an effective method of instruction. Educational level was not found to be a factor in evaluating the effectiveness of the unit. However, the educational level range was not wide; it ranged from twelve to seventeen years.

In recent years, programmed instruction units have been extensively used in nursing. In the Sheffield project in the United Kingdom (Marson, 1972), programmed instruction was used with nursing students. Marson stated that while programmed instruction was not used extensively, it was an effective teaching method. Programmed instruction could be made more effective by the following: (1) more information in larger frames, (2) variety in student responses, (3) program length averaging 30 minutes, (4) elimination tests before each sub-section to save time for students, and (5) a summary at the end of each section to serve as a record of material learned (Marson, 1972).

In the Sheffield project, it was found that the use of films and slides with programmed instruction improved presentations. Programmed instruction was integrated into teaching schedules. The nurse-tutors now devote more time to individual teaching, remedial work, and clinical instruction. Nurse-tutors expressed the opinion that detailed knowledge of anatomy and physiology had improved with programmed instruction (Marson, 1972).

Lumsden (1974) concurred with the findings of the Sheffield study regarding the value of programmed instruction in nursing schools. In a 1965 survey of nursing schools (Lumsden, 1974), only 28 percent were utilizing programmed instruction; of these 70 percent intended to increase the use of this method of teaching. Wittkopt (1972) noted that at North Dakota State University programmed instruction had been extensively used. At the Nursing School, students work at their own pace, and state this is a preferred way to learn

nursing skills because they are very involved in the learning.

Stein, Steele, Fuller, and Langhoff (1972) differed with the North Dakota study. Results of a study comparing an experimental group of nursing students who received multi-media self-instruction and a control group of conventionally trained students, showed the multi-media approach did not give instructor contact unless it was in small groups. Therefore, it would not be effective if used for a large number of students. Personal contact was thought necessary for students to derive maximum benefit from the educational process.

Kiang (1970) used programmed instruction in teaching nutrition for collegiate nursing students. She noted that students in a five-year nursing program showed significantly higher posttest and gain scores with the programmed instruction than the control group receiving conventional instruction. The programmed instruction was also given to students enrolled in a four-year baccalaureate nursing program and to non-nursing students in an introductory nutrition course. Significant posttest and gain scores were found with both groups using the programmed unit. Students preferred programmed instruction as a method of instruction. Students utilizing programmed instruction required less time to complete the course.

In recent years, programmed learning has gained wider approval. It is no longer of doubtful validity but a development process which is applicable to individual units and entire courses. Therefore, programmed instruction today should include: (1) a list of teaching objectives, (2) a designated student group, (3) a statement describing the entry knowledge to utilize the program, and (4) a criterion

test to measure the learning of the subject matter (Marson, 1975). Programmed instruction is used where factual knowledge in a logical order can be transmitted for teaching nursing skills and developing attitudes (Marson, 1975).

Fiel and Ways (1972) at the College of Human Medicine at Michigan State stated the need for the evaluation and development of self-instructional materials. These factors were stressed: (1) time length of medical education should be a variable based on individual needs, (2) self-instructional materials provide materials for review, and (3) some students' learning styles are more amenable to self-instruction.

Fiel and Ways (1972) developed self-instructional materials on venipuncture, hemoglobin determination, packed cell volume determination, blood film preparation and reticulocyte count. The effectiveness of the materials was measured by the medical technologist student's performance related to the concepts mentioned. The overall mean score for the students' tests was 93 percent which reached the level of expectations set by the teaching staff. This evidence suggests the usefulness of self-instructional methods in the medical fields.

Programmed Instruction in Dietetic Education

Programmed instruction had been developed for the administrative dietetic field. At Kansas State University Roach and Wakefield (1974) developed a self-instructional module consisting of six units on food purchasing. Thirty-eight students were involved in the study.

The experimental and control groups consisted of nineteen students. The control group was instructed through lecture. The experimental group received the same information through a programmed text with slides and sound. No significant differences were found in cognitive achievement or student enthusiasm toward the subject for the control and experimental groups. Student reactions toward the self-instruction module at the end of the study were significantly higher than for the lecture group. The self-instruction unit seemed feasible for college students.

Presently, there are three main modes to membership in the American Dietetic Association: the Coordinated Undergraduate programs, dietetic internships, and dietetic traineeships (The American Dietetic Association, 1976). The Report on the Study Commission on Dietetics (Millis, Chairman, 1972), stated that team teaching and programmed instruction had greatly benefited the medical and dental professions, and the integrated dietetic program at Ohio State University. The report stressed the importance of implementing these types of instruction to unify the final two years of the Coordinated Undergraduate Programs in dietetics. Haschke (1976) concurred with the report, and stressed the importance of the role model at Ohio State.

In guidelines for traineeships and general internships (The American Dietetic Association, 1974a and 1974b) it has been recommended that clinical and didactic learning experiences in food purchasing be included in the following: amounts needed, specifications, procedures, and ethics in purchasing. The programmed

instruction unit developed and implemented by this researcher was stimulated by the recommendations from the Study Commission (Millis, Chairman, 1972) and approved American Dietetic Association guidelines for internships and traineeships (The American Dietetic Association, 1974a and 1974b).

CHAPTER III

PROCEDURE

Procedures used were: (1) the development of a programmed instructional unit in institutional purchasing, (2) the development of a cognitive achievement pretest and cognitive achievement posttest to measure learning achievement, (3) the revision of an attitude scale toward programmed instruction developed by Robertson (1973), (4) the development of a questionnaire to determine the usefulness of programmed instruction, and (5) collection and analyses of data collected.

Description and Development of the Instruments

The programmed learning unit was developed during Spring, 1976. Content of the programmed unit was decided after consultations with various members of the Food and Nutrition faculty at Texas Tech University. Objectives were written for the students for each section of the programmed instruction unit (Chamberlain and Kelly, 1975, and Mager, 1962). Four topics were discussed in the programmed instruction unit: (1) ways to purchase, (2) purchasing ethics, (3) specifications and grades (Kotschevar, 1975a and 1975b), and (4) convenience foods (Bishop, 1971; Farevaag and Mathews, 1973; Livingston, 1972a and 1972b; Merrick and Sutton, 1972; and Schirmer, 1972). A linear program and format were used after consideration of the types and formats of programmed instruction available (Lippman, 1967; Margulies and Eigen, 1962; and American Heart Association, 1969).

The content was critiqued by Dr. Helen Brittin and by Mrs. Ann Spikes, members of the Food and Nutrition faculty at Texas Tech University. Mrs. Spikes is the instructor of institutional purchasing. Revisions and corrections were made on the unit during the summer of 1976. The completed unit consisted of a booklet of 120 frames (Appendix A).

A multiple choice test to be used as the cognitive achievement pretest and cognitive achievement posttest was developed. The pretest and posttest were identical except for the last six test questions which were equivalent questions in the cognitive domain at the application level. The test consisted of 50 test items.

Characteristics of a desirable test include: (1) validity, (2) reliability, (3) objectivity, and (4) usability (Ahmann and Glock, 1975). Validity is defined as the extent that an instrument measures the objectives for which it is designed. Validity was established through the use of a test grid (Appendix B) with an average of 2.4 frames covered per test question and a test question for each objective. The test content followed the conceptual framework of the programmed instruction units (Ahmann and Glock, 1975).

Reliability is defined as the consistency of test scores (Ahmann and Glock, 1975). The recommended reliability coefficient is from 0.50 to 0.80 (Garrett, 1962). Reliability of the cognitive achievement test was established at 0.74 using the internal-consistency method (Ahmann and Glock, 1975). The test scores from the pilot study were tallied with the odd scores making up one-half and the

even scores making up the other-half of the total test questions. A correlation coefficient was calculated (Steel and Torrie, 1960). The correlation coefficient was used in the formula:

$$r_{xx} = \frac{2ro}{1 + ro}$$

to give the reliability coefficient. In this formula,

ro = coefficient of correlation, and
 rxx = coefficient of reliability of the total test
 (Ahmann and Glock, 1975).

The reliability coefficients obtained on the Test Version IV-M8 computer were 0.88 and 0.59 for the pilot study groups of two and five respectively.

The test (Appendix C) was multiple choice making it objective. The test was administered with a separate computer answer sheet which made it easy to use and to score (Ahmann and Glock, 1975).

A five point Likert-type attitude scale to assess student attitude toward programmed instruction at the end of the unit was revised by the researcher (Appendix D). Validity was established by a panel of experts (Robertson, 1973).

A questionnaire was developed by the researcher to evaluate the usefulness of programmed instruction to dietetic instructions. Validity was established through a panel of three experts (Ahmann and Glock, 1975). The panel consisted of faculty at Texas Tech University with expertise in foods and nutrition, institutional purchasing and education. Revisions and corrections were made during the summer of 1976. The questionnaire consisted of nine objective questions and one open-ended questionnaire following objectives written by the researcher (Appendix E).

Pilot Study

According to Pipe (1966), the pilot study should first be done with a group of two and then with a group of five. The group of two was composed of Dr. Helen Brittin and the researcher. The group of five was composed of a dietetic trainee, two food and nutrition graduate students, and two food and nutrition undergraduate students. The programmed instruction unit, the cognitive achievement pretest, the cognitive achievement posttest, and attitude scale were given to both groups. Participants' time to complete the unit was recorded.

After completing the programmed instruction unit, each pilot study member was interviewed for feedback on the instruments. Minor corrections were made.

Description of the Sample

The sample was from the three dietetic programs: the Coordinated Undergraduate Program, dietetic internships and dietetic traineeships. Two institutions were used for each program. The sample consisted of eleven CUP students at Texas Tech University, Lubbock, Texas; and twelve CUP students at Texas Woman's University, Denton, Texas; eight dietetic interns at Baylor University Medical Center, Dallas, Texas; and nine dietetic interns at Presbyterian Hospital, Dallas, Texas; and two dietetic trainees at Wichita Falls General Hospital, Wichita Falls, Texas; and three dietetic trainees at Baptist Memorial Hospital, Harlingen, Texas. The total sample consisted of forty-five students. The CUP students were university juniors. The interns and trainees were university graduates.

Administration of the Instruments

The researcher administered the materials to all groups in August, September, and October, 1976. Because the unit was an overview for the CUP students, the unit was administered to these students during the first two weeks of the fall semester (August and September, 1976). The unit was administered to the intern classes in September and October, 1976. The unit was given to one trainee class in August, and to the other class in October. The time involved with each group was estimated to be three hours. The order for the administration of materials to the students was: (1) cognitive achievement pretest, (2) programmed instruction unit, (3) cognitive achievement posttest, and (4) attitude scale. Before the actual administration of materials, each student signed a form to release their GPA to the researcher for use in the study. Time was recorded for each student using the programmed instruction unit. The questionnaire for the instructors, and program directors was administered after the researcher had completed working with the students. The questionnaire was mailed back to the researcher.

Treatment of Data

Data was obtained for forty-five students. The pretest and posttest answer sheets were scored on the TEST SYSTEM VERSION IV-M8 program. The printout listed raw scores, percent scores, rank, items missed, means, standard deviations, and coefficients of reliability for each test.

A paired t-test was calculated for the cognitive achievement pretest and cognitive achievement posttest scores by the researcher (Steel and Torrie, 1960). The cognitive achievement gain scores were calculated and were the difference between posttest score and pretest scores. Attitude scale scores were calculated by totalling the numbers assigned to each response for each question, and dividing by the total number of questions (Ahmann and Glock, 1976). The first nine questions of the questionnaire for directors and instructors were tallied. Suggestions made on the last question were evaluated.

Cognitive achievement pretest score, cognitive achievement posttest score, attitude scale score, university grade point average and time used to complete the programmed instruction unit were punched onto cards and processed on a computer at the Texas Tech University Computer Center. The data were analyzed using analysis of variance. Because unequal numbers of subjects comprised the groups, least square analysis of variance for unequal subclass numbers was utilized (Harvey, 1960). The main factors were group and institution. The dependent variables were: cognitive achievement pretest score, cognitive achievement posttest score, cognitive achievement gain score, attitude scale score, university grade point average, and time. When a significant effect was shown for group, Newman and Keuls' method (Snedecor and Cochran, 1969) was used to test the differences between means. The relationships among the six dependent variables were analyzed by simple correlation coefficients.

CHAPTER IV

RESULTS AND DISCUSSION

The first four purposes were accomplished: (1) a programmed instruction unit in institutional purchasing was developed; (2) a cognitive achievement test was developed to measure learning before and after the programmed instruction unit; (3) a Likert-type attitude scale was revised to measure student attitudes after the programmed instruction unit; and (4) a questionnaire was developed to assess the usefulness of the programmed instruction unit to instructors. The cognitive achievement test was reliable because the reliability coefficient obtained for the posttest on the TEST SYSTEM VERSION IV M-8 program was 0.55. The recommended reliability coefficient is from 0.50 to 0.80 (Garrett, 1962).

Purposes five through thirteen generated numerical data that were statistically analyzed. Means for dependent variables are listed in Table 1. The overall means show the cognitive achievement pretest score was 65.51 percent, the cognitive achievement posttest score was 89.64 percent yielding a gain of 24.48 percent. The attitude score was 3.62 out of 5.00 possible. The GPA was 3.27. The time spent on the unit was 59.69 minutes.

The fifth purpose was to determine the effectiveness of the programmed unit as an overview for dietetic students in the Coordinate Undergraduate Program and as a review for dietetic interns and dietetic trainees by the cognitive achievement gain test score from pretest to posttest periods. A paired t-test indicated a significant

TABLE 1. MEANS FOR DEPENDENT VARIABLES BY GROUP AND INSTITUTION

Group and Institution	Number of Subjects	Pretest Score %	Posttest Score %	Gain Score %	Attitude Score	GPA	Time in Minutes
Institution 1	11	65.27	89.81	24.54	3.67	3.38	51.64
Institution 2	12	62.33	88.50	26.17	3.64	2.87	66.33
CUP Subtotal	23	63.73	89.13	25.40	3.66	3.12	59.27
Institution 1	8	69.75	91.50	21.75	3.64	3.68	59.13
Institution 2	9	65.77	89.11	23.34	3.44	3.32	50.44
DI Subtotal	17	67.64	90.23	22.59	3.54	3.50	54.48
Institution 1	3	72.00	90.00	18.00	3.76	3.33	88.33
Institution 2	2	58.00	90.00	32.00	3.66	3.18	65.00
DT Subtotal	5	66.40	90.00	23.60	3.71	3.23	79.18
Total	45	65.51	89.64	24.48	3.62	3.27	59.69

($P < .01$) difference between cognitive achievement pretest scores and cognitive achievement posttest scores for all dietetic students. The calculated t was 21.08 ($P < .01$) for the forty-five dietetic students using forty-four degrees of freedom. The conclusion was that the programmed unit was effective as an overview and review on institutional purchasing for the three types of dietetic students.

Table 2 lists the results of least square analysis of variance. Group significantly affected GPA ($P < .05$) and time ($P < .01$). Institution significantly affected cognitive achievement pretest scores and GPA ($P < .01$). Table 1 lists the means for institution one of the Coordinated Undergraduate students, dietetic interns, and dietetic trainees for cognitive achievement pretest scores as 65.27 percent, 69.75 percent, and 72.00 percent respectively. Table 1 lists the means for institution two of the Coordinated Undergraduate students, dietetic interns, and dietetic trainees for cognitive achievement pretest scores as 62.33 percent, 65.77 percent, and 58.00 percent respectively. Table 1 lists means for institution one of the Coordinated Undergraduate students, dietetic interns, and dietetic trainees for GPA as 3.38, 3.68, and 3.33 respectively. Table 1 lists means for institution two of the Coordinated Undergraduate students, dietetic interns, and dietetic trainees as 2.87, 3.32, and 3.18 respectively.

TABLE 2. LEAST SQUARES ANALYSIS OF VARIANCE FOR DEPENDENT VARIABLES

Source of Variation	df	Mean Squares				
		Pretest Score	Posttest Score	Gain Score	Attitude Score	GPA
Group	2	19.10	1.55	4.56	0.09	0.70*
Institution	1	57.04**	7.00	23.40	0.11	1.89**
Remainder	41	7.14	7.67	10.23	0.09	0.15
						1175.15**
						34.32
						103.19

*P<.05, **P<.01.

TABLE 3. LEAST SQUARES MEANS FOR GPA AND TIME BY GROUP

Group	<u>Least Square Mean</u>	
	GPA	TIME
CUP	3.12 ^a	59.27 ^a
DI	3.50 ^b	54.48 ^a
DT	3.23 ^{ab}	79.18 ^b

^{a,b} Means in a column with different superscripts differ significantly. GPA $P < .05$ and Time $P < .01$.

Thus tables 1, 2, and 3 indicate the following results in relation to purposes. There was no significant difference among gain scores of the three groups of dietetic students; therefore, the unit was equally effective with CUP students, interns, and trainees. There was no significant difference among attitude scale scores of the three groups of dietetic students; therefore, the unit resulted in similar positive attitudes toward programmed instruction (mean 3.61 out of 5.00 possible) by CUP students, interns and trainees. There was no significant difference among cognitive achievement posttest scores of the three groups of dietetic students; therefore, the unit resulted in the same amount of knowledge concerning institutional purchasing by CUP students, interns, and trainees. The amount of time spent on the unit was determined to be approximately 60 minutes (overall mean, see Table 1). Because group significantly

affected GPA and time, the differences between means were tested by Newman Keuls' method (Snedecor and Cockran, 1969). The results are shown in Table 3. Interns had significantly higher ($P < .05$) GPAs than CUP students. Trainees spent significantly ($P < .01$) more time on the programmed instruction unit.

One purpose was to determine the possible relationships among the six dependent variables. These relationships are indicated by the simple correlation coefficients, which are listed in Table 4. There was a significant ($P < .05$) positive relationship between cognitive achievement pretest score and cognitive achievement posttest score. Other significant ($P < .01$) positive relationships were: cognitive achievement posttest score and cognitive achievement gain score, cognitive achievement pretest score and GPA, and cognitive achievement posttest score and GPA. There was a significant ($P < .01$) negative relationship between cognitive achievement pretest score and cognitive achievement gain score.

The final purpose was to evaluate the usefulness of the unit to instructors in Coordinated Undergraduate Programs, internships, and traineeships by considering the responses on the questionnaire. Responses to the first nine questions on the questionnaire are shown in Table 5. Five of the six instructors returned the questionnaire. All respondents liked programmed instruction, the unit on institutional purchasing, and the format. A majority would use the unit again, found the cognitive achievement pretest and posttest useful, and thought the unit helped students learn basic purchasing

TABLE 4. SIMPLE CORRELATION COEFFICIENTS AMONG DEPENDENT VARIABLES

Variable	Pretest Score	Posttest Score	Gain Score	Attitude Score	GPA	Time
Pretest Score	1.00					
Posttest Score	0.32*	1.00				
Gain Score	-0.57**	0.57**	1.00			
Attitude Score	-0.03	0.13	0.13	1.00		
GPA	0.39**	0.56**	0.16	-0.04	1.00	
Time	-0.02	0.08	0.04	0.14	-0.09	1.00

* $P < .05$, ** $P < .01$.

TABLE 5. RESPONSES TO QUESTIONNAIRE ON PROGRAMMED
INSTRUCTION UNIT COMPLETED BY INSTRUCTORS^a

	YES	NO	UNDECIDED
1. Do you like programmed instruction?	<u>5</u>	<u> </u>	<u> </u>
2. Would you use this programmed instruction unit in your program in dietetics again?	<u>4</u>	<u> </u>	<u>1</u>
3. Did this programmed instruction unit save instructor's time at your institution?	<u>2</u>	<u>2</u>	<u>1</u>
4. Do you think programmed instruction is too time consuming for students to take?	<u> </u>	<u>5</u>	<u> </u>
5. Did programmed instruction provide sufficient learning for your students on this topic?	<u>2</u>	<u>1</u>	<u>2</u>
6. Did you like this particular programmed instruction unit?	<u>5</u>	<u> </u>	<u> </u>
7. Was the pre/post test useful to you?	<u>3^b</u>	<u> </u>	<u>1</u>
8. Was the format for the frames and then answers acceptable?	<u>5</u>	<u> </u>	<u> </u>
9. Did you think this unit of programmed instruction in institutional purchasing helped your students learn the basic concepts in institutional purchasing?	<u>4^b</u>	<u> </u>	<u> </u>

^aFive of six institutions responded.

^bFour instructors answered question.

concepts. Responses varied on questions under number three and number five referring to use of instructors' time and sufficient learning on the topic. Question number ten asked for suggestions for topics the instructors would like in programmed instruction. Topics named were: institutional purchasing, food service accounting, sanitation, courtesy, diet in special disease states, basic nutrition, and equipment purchasing. In conclusion, the responses of the instructors on the questionnaire were mostly favorable indicating the unit was useful.

Results of the study indicate that programmed instruction was an effective teaching method. This concurred with the works of Foree (1975), Marson (1972), Fiel and Ways (1972), Roach and Wakefield (1974), and Kiang (1970). Results of the study differed from the results of one study regarding the relationship of attitude scale score and cognitive achievement test score. Robertson (1973) found a significant relationship between attitude scale score and cognitive achievement test score. No relationship was found between attitude scale score and cognitive achievement posttest score in the present study. Differences in age and subject matter could account for this.

CHAPTER V

SUMMARY AND RECOMMENDATIONS

Summary

The purposes of the study were: (1) to develop a programmed instruction unit in institutional purchasing; (2) to determine the effectiveness of the programmed instruction unit for dietetic students; (3) to evaluate the dietetic students' attitudes toward programmed instruction; (4) to evaluate the relationship among students' university grade point averages, the attitudes toward programmed instruction, and the learning achieved; and (5) to assess the usefulness of the unit to instructors in the Coordinated Undergraduate Program, internships and traineeships.

A programmed instruction unit was developed covering these concepts: (1) ways to purchase, (2) purchasing ethics, (3) specifications and grades, and (4) convenience foods. A multiple choice cognitive achievement test of fifty items was developed following the conceptional framework of the programmed instruction unit. Validity was established through the use of a table of specifications with an average of 2.4 frames covered per test question and a test question for each objective. A Likert-type attitude scale was revised, and a questionnaire was developed. Validity for the attitude scale and questionnaire was established by a panel of experts. Data were obtained for forty-five dietetic students in Texas from three groups (Coordinated Undergraduate, internship, and traineeship). There were two institutions represented in each group.

Data included: cognitive achievement pretest scores, cognitive achievement posttest scores, cognitive achievement gain scores, attitude scale scores, GPAs, and time needed to complete the programmed instruction unit.

Students with higher GPAs tended to make significantly ($P < .01$) higher cognitive achievement pretest scores. The programmed unit was effective as an overview for dietetic students in the Coordinated Undergraduate Program and as a review for interns and trainees as evidenced by gains in cognitive achievement pretest to cognitive achievement posttest scores. Institution one of each group had significantly higher cognitive achievement pretest scores ($P < .01$) and GPAs ($P < .05$). There was no significant difference among the dietetic students in cognitive achievement posttest scores, cognitive achievement gain scores, or attitude toward programmed instruction scale scores at the end of the programmed unit. Interns had significantly higher ($P < .05$) GPAs than CUP students. Trainees spent significantly ($P < .01$) more time on the programmed instruction unit.

Simple correlation coefficients indicated relationships among the dependent variables. There was a significant ($P < .05$) positive relationship between cognitive achievement pretest score and cognitive achievement posttest score. Other significant ($P < .01$) positive relationships were: cognitive achievement posttest score and cognitive achievement gain score, cognitive achievement pretest score and GPA, and cognitive achievement posttest score and GPA. There was a significant ($P < .01$) negative relationship between cognitive achievement pretest score and cognitive achievement gain score.

Instructors in the Coordinated Undergraduate Program, internships, and traineeships liked programmed instruction, the unit on institutional purchasing, and the format of the unit. A majority would use the unit again, found the cognitive achievement pretest and cognitive achievement posttest useful, and thought the unit helped students learn basic purchasing concepts. Instructors suggested the following topics for programmed instruction: institutional purchasing, food service accounting, sanitation, courtesy, diet in special disease states, basic nutrition, and equipment purchasing.

Recommendations

Based on the results and conclusions of the study the following recommendations are made:

1. More research and study could be given to the development of programmed instruction units on food service accounting, sanitation, courtesy, diets in special disease states, basic nutrition, and equipment purchasing.
2. More research and study could be given to combination lecture-programmed instruction approaches to dietetic education.
3. More research and study could be given to presenting programmed instruction to students with low GPAs (2.00), compared to students with high GPAs (3.50 or higher).
4. More research and study could be given to comparing programmed instruction and other educational strategies for teaching selected concepts to dietetic students.

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APPENDIX

- A. Programmed Instruction Unit on Institutional Purchasing
- B. Table of Specifications for Criterion Test
- C. Quiz on Institutional Purchasing
- D. Attitude toward Programmed Instruction Scale
- E. Questionnaire on Programmed Instruction Unit to be
Completed by Instructors

A: PROGRAMMED INSTRUCTION UNIT ON INSTITUTIONAL PURCHASING

PROGRAMMED INSTRUCTION

ON

INSTITUTIONAL PURCHASING

DIRECTIONS FOR THE STUDENT

The following programmed unit booklet consists of a number of frames. Each frame states something about the subject, institutional purchasing, and then asks a question. All of the answers are listed below the frame. Use the program answer mask by writing or circling the answer for each frame one at a time. After answering a frame immediately check your answer with the correct answer written below, before proceeding to the next frame.

The programmed unit is designed so that you can work at your own pace. There are no time limits to follow. The unit is divided into four parts. After completely finishing one part, you may proceed to the next part.

This programmed unit has been designed as a review for dietetic interns and trainees and as a course overview for students in the Coordinated Undergraduate Program. On the next page are the objectives for each part of the programmed unit. When you have completed the unit, the objectives will have been met.

OBJECTIVES FOR THE STUDENT

Part I - The student --

1. names the considerations of institutional purchasing.
2. defines forecasting in institutional purchasing.
3. lists the considerations of forecasting.
4. defines the types of cost in institutional purchasing.
5. states the steps involved in institutional purchasing.
6. defines value analysis.
7. defines the four primary ways to purchase.
8. applies the ways to purchase to a case study.

Part II - The student --

1. lists the characteristics of the atmosphere of buyer-purveyor transactions.
2. states desirable food buyers' conduct.
3. lists government laws related to institutional purchasing.
4. relates ethical behavior in purchasing to a case study.

Part III - The student --

1. defines specifications in institutional purchasing.
2. names the components of a specification.
3. defines the grading and pricing of fresh produce in institutional purchasing.
4. lists the grades of canned fruits and vegetables.
5. defines the standards of identity law.

6. names the common institutional can size.
7. names the grades for eggs.
8. names the grades for beef and pork.
9. applies the concepts of specification to a case study.
10. applies the concepts of fresh produce grading and pricing to a case study.

Part IV - The student --

1. defines fresh, processed, and convenience foods.
2. names the market forms of food.
3. lists the advantages of convenience foods.
4. names the disadvantages of convenience foods.
5. lists the criteria for evaluating convenience foods.
6. lists the components of a specification for convenience foods.
7. lists the considerations in purchasing convenience foods.
8. defines raw to readiness scale to food service.
9. names examples of the market forms of foods.
10. applies purchasing considerations of convenience foods to a case study.
11. applies specifications of convenience foods to a case study.

PART I -- PURCHASING

1. One of the jobs in food service is purchasing. To purchase wisely, there are two main considerations. The first consideration is to purchase everything needed in order to produce what is specified by the menu. One of the considerations in purchasing is to purchase everything needed in order to produce what is specified by the

_____.

menu

2. Financial guidelines are important in purchasing. Cost in relation to budget limitations is an important consideration. Therefore, the second consideration in purchasing in relation to budget limitations is _____.

cost

3. The two major considerations in purchasing area are: (A) to produce what is needed on the planned _____ and (B) _____.

(A) menu

(B) cost

4. Forecasting, the calculation and prediction of the food items needed, helps the food buyers in purchasing what is required by the menu. Buyers must know the number of portions of food needed and the size of the portions needed. Portions needed and portion size are information needed by the buyers. The first consideration in forecasting is the determination of

(A) _____ (2 words) and

(B) _____ (2 words).

(A) portions needed

(B) portion size

-
5. Losses during preparation, cooking, and portioning are a consideration in forecasting. The next consideration in forecasting should be determining _____.

losses

-
6. Portion control can be defined as the correct measurement of bulk food when it is divided into individual servings. It is another consideration in forecasting. A third consideration in forecasting is _____ (2 words).

portion control

7. A food inventory can be defined as the amount of the food on hand.
 Inventory control is an accurate account of the food on hand.
 It is another consideration in forecasting. The next consideration
 of forecasting is _____
 (2 words).

inventory control

8. Summary I - Forecasting -- The four considerations of forecasting
 are:

- (A) _____ (2 words)
 _____ (2 words)
 (B) _____
 (C) _____ (2 words)
 (D) _____ (2 words)

-
- (A) portions needed
 portion size
 (B) losses
 (C) portion control
 (D) inventory control

9. Forecasting helps the food buyers in producing what is on the
 _____.

menu

10. The other main consideration in purchasing is _____.

cost

11. Cost in institutional buying includes dollars spend for the commodity. Cost AP means cost as purchased. AP means _____

(2 words).

as purchased

12. Cost AS is also important. Cost AS means cost as served. AS means _____ (2 words).

as served

13. EP is another term used in food service. EP means edible portion. EP means _____ (2 words).

edible portion

14. Some hidden costs in institutional foods include insurance, depreciation, deterioration and interest. Insurance, depreciation, deterioration and interest are examples of _____

(2 words).

hidden costs

15. Cost in institutional buying includes: (A) AP and AS costs; and (B) hidden costs. The two parts of cost in institutional buying are:

(A) _____ and _____ (2 kinds)
and (B) _____ (2 words).

(A) AP AS

(B) hidden costs

16. In purchasing there are five basic steps. The first step is to determine menu need and the cost factor. The first step in purchasing is to determine (A) _____

_____ (2 words) and (B) _____
_____ (2 words).

(A) menu need

(B) cost factor

17. Market awareness, or finding the item, is the second step of purchasing. The second step of purchasing is to find the

_____.

item

18. The next step of food purchasing is the negotiation between the buyers and sellers. The third step of food purchasing is

_____.

negotiation

19. In food purchasing, the receiving and inspection of the item is the fourth step. The fourth step of food purchasing is

(A) _____ and (B) _____.

(A) receiving

(B) inspection

20. The last step in purchasing is quality evaluation of the item.

The last step in purchasing is _____
_____ (2 words).

quality evaluation

21. Another name for quality evaluation is value analysis. Another name for quality evaluation is _____

_____ (2 words).

value analysis

22. A goal of value analysis is to improve the other purchasing tasks. The goal of value analysis is _____.

improvement

23. Summary II -- There are five steps in purchasing. These five steps are:

(A) determine _____ /
 _____ (4 words)

(B) to find the _____

(C) _____

(D) _____ and _____

(E) _____ (2 words)

(A) menu need/cost factor (D) receiving inspection

(B) item (E) quality evaluation

(C) negotiation

24. A simple definition of value analysis (V) is the quality (Q) of an item divided by the price (P). This can be written as $V=Q/P$ ¹. A formula for determining value analysis is _____.

$V=Q/P$

¹Lendal Kotschevar, Management by Menu (Chicago: National Institute for the Food Service Industry, 1975), p. 245.

25. A hospital is evaluating the purchase of wholesale cuts of meat, versus retail cuts of meat. These are listed as follows:

Wholesale	Retail
Q (quality) = 4	Q (quality) = 6
P (price) = 2	P (price) = 2
V (value) = $4/2$ or 2	V (value) = $6/2$ or 3

Therefore the retail cuts would have the higher value analysis.

This is an example of the use of the formula _____.

$$V = Q/P$$

26. There are four primary ways to purchase. The first of these is called sheet purchasing. This is a method of listing items needed and knowing the quality desired before calling the purveyors for cost. A decision is then reached on cost when the purveyors state their prices. A method of listing items needed and knowing the quality desired before contacting food salesmen or purveyors is called _____ (2 words).

sheet purchasing

27. Cost plus is a second method of purchasing. In this method the food buyers arrange with the purveyors to sell to the institution with an agreed price plus mark-up. A method of arranging with purveyors a billed price plus mark-up is called _____

_____ (2 words).

cost plus

28. Sometimes the purveyors obtain a desired item for a food purchaser at a reasonable but not agreed upon price. This is called the blank check method. A method of food purchasing in which purveyors obtain a desired item for a food buyer without having agreed upon price is called _____

_____ (2 words).

blank check

29. Formal bidding is a method in which formal specifications are written by the food buyers; the food purveyors will offer a price based on specifications. The buying procedure in which formal specifications are used is termed _____

_____ (2 words).

formal bidding

30. In many institutions the four primary purchasing methods can be used in combination, such as: using a procedure, using formal bidding for some food items, and sheet purchasing for other food items. The four primary purchasing methods can be used in _____.

combination

Case Study -- Purchasing. Miss Smith is a dietitian in a large hospital. This hospital has 500 beds and has regular and modified diet patients. She is responsible for purchasing all items used by dietary. She is considering which of the purchasing procedures would be the best for her to use. Therefore, she is evaluating sheet purchasing, cost plus purchasing, blank check purchasing and formal bidding. Her hospital has also planned for purchasing to become computerized at a later date. (Questions 31-34)

31. If she decides on formal bidding, she would write formal specifications. True/False

True

32. If she decides on sheet purchasing, she would have a compiled list of food items to relate to the purveyor. True/False

True

33. If she decides on the blank check method she would already have prices for the desired items. True/False

False

-
34. By deciding on cost plus purchasing, the purveyor would receive an agreed price plus mark-up. True/False

True

-
35. Summary III. Four methods of purchasing have been discussed.

List the four methods of purchasing.

- (A) _____ (2 words)
- (B) _____ (2 words)
- (C) _____ (2 words)
- (D) _____ (2 words)

(A) sheet purchasing

(B) cost plus

(C) blank check

(D) formal bidding

PART II. FOOD BUYER -- FOOD PURVEYOR TRANSACTIONS

36. Food buyers need to maintain a high code of ethics in working with the food purveyors. The atmosphere between the food buyers and food purveyors should be businesslike and pleasant. The atmosphere between the food buyers and food purveyors should be _____ and _____.

businesslike

pleasant

37. A food buyer in maintaining a pleasant atmosphere should try to be courteous. One rule for dealing with food purveyors is always be _____.

courteous

38. For efficiency and to maintain a businesslike atmosphere, established times should be set for food purveyor/buyer transactions. For transactions, the food purveyors and buyers should have established _____.

times

39. Consistent fairness is needed in the purveyor/buyer relationships.

One characteristic of food purveyor/buyer relationships is
consistent _____.

fairness

40. Purveyors often try to seek information about their competition
from the food buyer. The food buyer should not play competitors
against each other. Food buyers should not _____

_____. (2 words).

play competition

41. The food buyers should keep a sense of loyalty to the institution
by which the buyers are employed. The food buyers should use the
money of the institution thriftily and wisely. In purchasing, the
food buyers should use the money of the institution

(A) _____ and (B) _____.

(A) thriftily

(B) wisely

42. A public discussion of an institution's buying practice is unwise because it is not discreet. Therefore, food buyers should not discuss the institution's buying practice outside of work.

True/False

True

43. Accepting gifts can put food buyers at a compromised position. Therefore, it is wise not to accept gifts from purveyors.

True/False

True

44. However, food buyers can accept samples. Samples are sometimes brought to the food buyers so that they can see and try new products available. Samples differ from gifts. In a sample, the quantity is small enough to use only once or twice for the clientele of the institution; whereas, gifts are larger in quantity and/or for the personal use of the food buyers. Samples are acceptable.

True/False

True

45. Food buyers should have a working knowledge of legal considerations concerned with food procurement. The Law of Agency² states that both the food purveyors and the food buyers are acting as representatives of their respective companies. The Law that gives the buyers and purveyors the right to represent their companies is called _____

_____ (3 words).

Law of Agency

46. Another law that could affect the food buyers is the Law of Warranty.³ This law states that a product will perform in a designated way. If the food buyers receive a product under warranty that does not perform as designated, they would be protected by the _____

_____ (3 words).

Law of Warranty

²Lendal Kotschevar, Quantity Food Purchasing (New York: John Wiley and Sons, 1975), p. 25.

³Ibid., p. 25.

47. The Law of Fraud⁴ states that actions or verbal transactions made before the final agreement is reached that are intended to deceive the other party are fraudulent and illegal. A purveyor tells a food buyer that a product is 25% meat when it is only 10% meat. Since the purveyor's purpose is to deceive the buyer the law that has been broken is the _____
_____ (3 words).
-

Law of Fraud

48. If and when the food purveyors and food buyers agree to buy or sell an item for a designated price and sign an agreement stating this, it is said they have a contract. The contract is legal and binding, according to the Law of Contracts.⁵ A law of agreement between the food buyers and food purveyors that is legal and binding is the _____
_____ (3 words).
-

Law of Contracts

⁴Lendal Kotschevar, Quantity Food Purchasing (New York: John Wiley and Sons, 1975), p. 26.

⁵Ibid., p. 27.

49. The Law of Title of Goods⁶ states that when two parties exchange a commodity item for money, the purchaser becomes the rightful owner of the goods and in effect has "title of goods". The transactions between the food buyers and purveyors that exchange a commodity for money is legally covered under the

 _____ (5 words).

Law of Title Goods

Case Study -- Purchasing Ethics. Miss Jones, a dietitian, had a meeting with a food company representative from Company X. During this meeting, she was told some interesting information about Company Y. Miss Jones is to meet with a representative from Company Y later in the day. To her surprise, Miss Jones receives an Easter basket from Company Y before the meeting. (Questions 50-52)

50. Since it's Easter Miss Jones should keep the Easter basket as a sign of good will by Company Y. True/False

 _____ False

⁶Lendal Kotschevar, Quantity Food Purchasing (New York: John Wiley and Sons, 1975), p. 29.

51. Miss Jones should plan to discuss Company X with Company Y.

True/False

False

52. Company Y promises Miss Jones a discount after she gives Company Y the price list from Company X. Because food prices are high, Miss Jones should save money and give them the list. True/False

False

53. Summary -- Five laws pertinent to institutional purchasing are:

(A) _____

(3 words)

(B) _____

(3 words)

(C) _____

(3 words)

(D) _____

(3 words)

(E) _____

_____ (5 words)

(A) Law of Agency

(B) Law of Warranty

(C) Law of Fraud

(D) Law of Contracts

(E) Law of Title of Goods

PART III. SPECIFICATIONS AND GRADES

54. Specifications are important in the food industry. A specification could be defined as a word picture of the product desired. A word picture of a product is called a _____.

specification

55. The following is a word picture of a food item. U.S. Grade B Bluelake String Beans, #12 cans 6/case, 3 cases at \$18/case. This is an example of a _____ (2 words).

word picture

56. The five items which must be included in a complete specification are: (A) name of product; (B) quantity; (C) grade; (D) container size; and (E) unit price. These five items must be included in a _____.

specification

57. A specification should include five items. These are:

(A) _____

(3 words)

(B) _____

(C) _____

(D) _____ (2 words)

(E) _____ (2 words)

(A) name of product

(B) quantity

(C) grade

(D) container size

(E) unit price

58. A specification sheet might look like the following:

<u>Item</u>	<u>Supplies</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Amount</u>
1.	Turkey, fresh Tom, 12-15 lbs., ready to cook, U.S. Grade A	5	lb.	89¢	

Fill in the specification found in above example:

<u>Item</u>	<u>Supplies</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Amount</u>
_____	_____	_____	_____	_____	

1.	Turkey, fresh Tom 12-15 lbs., ready to cook, U.S. Grade A	5	lb.	89¢	
----	--	---	-----	-----	--

59. A specification might also state specific factors to better identify the item. In the example in frame 55 the word Bluelake would be a specific factor. A proper noun that more exactly identifies the product such as Bluelake is called a

_____ (2 words).

specific factor

60. A grade is a position on a scale of ranks or qualities. A term used to give a rank or quality is called a _____.

grade

61. Grades of fresh produce range from #1 to #4. However, the fresh produce reaching the food buyers is usually ungraded. The fresh produce reaching the food buyers is usually _____.

ungraded

62. If graded fresh produce, grades can be divided into either consumer or wholesale grades. Fresh produce grades are _____ and _____.

consumer

wholesale

63. The federal grades for canned fruits and vegetables are designated as US Grade A, B or C. US Grade A is the best and US Grade C is the poorest. For canned fruits and vegetables Grade A is the highest and the lowest is _____
_____ (2 words).

Grade C

64. Grade A, B, and C can also be termed Fancy, Choice, or Extra Standard, and Standard respectively for canned fruits and vegetables. Fancy green beans could also be termed

_____ (2 words).

Grade A

65. The term Choice or Grade B is used for canned fruit. The term Extra Standard or Grade B is used for vegetables. Therefore, another term for US Grade B pineapple is _____.

Choice

66. A number of sizes of fresh produce can be present at each grade. Therefore, grade does not indicate size. Grade does not indicate _____.

size

67. Prices for fresh produce should be quoted by the pound rather than by the container. Prices for fresh produce should be quoted by the _____.

pound

68. If however the food purveyors do not quote prices by the pound but by the container, which lists poundage, the food buyers can calculate the price per pound. Price per container can be calculated to price per _____.

pound

69. Canned foods must conform to the standards of identity law. This law states that foods given a specific name are a specific item and also states that terms used to describe foods mean exact properties. A law that states that foods given a specific name are a specific item and also that terms used to describe foods mean exact properties is called _____ (3 words).

standards of identity

70. The large can used in institutional food service is the Number Ten Can (written #10 can). In institutional food service, the can size frequently used is the _____ (2 words).

#10 can

71. The grades for eggs are AA, A, and B. AA is the highest grade and B is the lowest. In purchasing eggs, AA is the highest grade; the lowest grade is _____.

B

72. In addition to federal grades, the food buyers should recall that there are six official egg sizes. These are: Jumbo, Extra Large Large, Medium, Small and Peewee. The number of egg sizes available is _____.

six

73. The top USDA grades for beef are: Prime, Choice and Good. Prime is the highest quality. Choice is next. The highest grade of beef is called _____.

Prime

74. There are five US grades of pork from the highest to lowest respectively US #1, US #2, US #3, US #4 and Utility. The highest grade of pork is called _____.

#1

Case Study -- Specifications.

Mrs. Simmons is writing specifications for chickens for her hospital. She will need 250 chickens, whole fryers, with a weight per chicken of 3 pounds. (Questions 75-77)

75. 250 chickens, whole fryers, 3 pound/chicken is a complete specification. True/False

False

-
76. The term Hillcrest added to the term chickens in the above example would not be necessary. True/False

True

-
77. The example in frame 75 would be a necessary part of _____ (2 words).

formal bidding

Case Study -- Grades.

Miss Collette is ordering fresh oranges. She decides that she wants the best quality so she orders the largest oranges on the market. She is planning to use them in a mixed fruit cup. Therefore, the client will never see the oranges. The oranges she is purchasing cost 69¢ per pound and she will need 4 pounds. Miss Collette notices that medium size oranges cost 39¢/pound. If she purchased the medium oranges, she would need 3 pounds. She decides to purchase the larger oranges.

(Questions 78-80)

78. Miss Collette is getting the highest grade of oranges because they are the largest. True/False

False

-
79. Miss Collette would save money if she purchased the medium oranges. True/False

True

-
80. Since they will be used in the mixed fruit cup, the appearance of the orange is not as important. True/False

True

This Part begins with a discussion of food forms and then discusses convenience foods.

81. There are three market forms of food. These are fresh, processed, and convenience. The three market forms of food are: _____, _____, and _____ (3 words).

fresh

processed

convenience

82. A fresh food has one of these two characteristics: (A) it can be eaten raw, or (B) it is unprocessed and needs to be cooked or totally prepared. If a food can be eaten raw, or it needs to be cooked or totally prepared, the food item is termed as _____.

fresh

83. An example of a fresh food item is an apple. An apple is a food item that is _____.

fresh

84. A processed food can be defined as a food that cannot be eaten raw and that has been treated commercially to change the chemical and/or physical composition before the food has reached the institutional food buyers. A processed food has two qualities: it cannot be eaten raw; and it has been treated commercially to change the physical and/or chemical _____.

composition

85. An example of a processed food is bacon. Bacon is an example of a _____ (2 words).

processed food

86. A convenience food can be defined as any food that is (A) processed and ready to eat; or (B) precooked and needs warming or limited cooking; or (C) premeasured and requires minimum preparation. A convenience food is defined as a food in one of these three categories:

(A) _____ and _____
 _____ (4 words)

(B) _____ and _____

 _____ (6 words)

(C) _____ and _____
 _____ (4 words)

(A) processed	ready to eat
(B) precooked	needs warming or limited cooking
(C) premeasured	requires minimum preparation

87. An example of a processed ready to eat food is whole wheat bread. An example of a ready to eat food is _____

_____ (3 words).

whole wheat bread

88. List three other processed ready to eat foods.

(any processed ready to eat food is acceptable
such as cookies, crackers, cake, etc.)

89. Examples of precooked convenience food requiring warming or
limited cooking are T. V. dinners, pot pies or pizza. Name a
precooked convenience food requiring warming or limited cooking.

_____ (1 or 2 words)

T. V. dinner or pot pie or pizza

90. A frozen fruit pie is an example of a convenience food requiring
warming or limited cooking. True/False

True

91. A muffin mix is an example of a premeasured minimal prepara-
tion convenience food. A premeasured minimal preparation
convenience food is _____.
(2 words)

muffin mix

92. Other premeasured minimal preparation convenience foods are biscuit mix, cornbread mix, and cake mix. List three other pre-measured minimal preparation foods.

(A) _____ (2 words)

(B) _____ (2 words)

(C) _____ (2 words)

(A) cornbread mix

(B) biscuit mix

(C) cake mix

-
93. One of the advantages of convenience foods is a reduction in labor cost to the dietary department. If labor is managed properly, fewer employees are needed for food production. An advantage of convenience foods is reduction in _____

_____ (2 words).

labor cost

-
94. Convenience foods can be used to add variety of food items to the menu. Another advantage of using convenience foods is that they can add food items to the menu for _____.

variety

95. When using convenience foods fewer skilled cooks are required in a food service. Another advantage of using convenience foods is a reduced requirement for skilled _____.

cooks

-
96. Using convenience foods eliminates fresh food loss, eliminates ingredient loss, and can benefit portion control. Therefore, less food loss is an advantage of using convenience foods. An advantage of using convenience food is less _____
_____ (2 words).

food loss

-
97. In some food service operations managers have found fewer overall food costs by using convenience foods rather than preparing foods on the premise. Another advantage of convenience food is lower _____
_____ (3 words).

overall food costs

98. In establishing a new food service, less equipment investment is required in a convenience food system. An advantage of convenience food system. An advantage of convenience foods is

(3 words).

less equipment investment

-
99. There can be less food handling and better storage of convenience foods to insure better nutrition. An advantage of convenience food could be better _____.

nutrition

100. Summary -- Advantages of convenience foods.

There are seven primary advantages of using convenience foods.

These are:

(A) reduced labor costs	(D) less food loss
(B) more food variety	(E) reduced food cost
(C) less need for skilled cooks	(F) less equipment investment
	(G) better nutrition

List seven advantages of using convenience foods:

(A)	_____	_____	_____
	(3 words)		
(B)	_____	_____	_____
	(3 words)		
(C)	_____	_____	_____
			(5 words)
(D)	_____	_____	_____
	(3 words)		
(E)	_____	_____	_____
	(3 words)		
(F)	_____	_____	_____
	(3 words)		
(G)	_____	_____	(2 words)

(A) reduced labor cost	(D) less food loss
(B) more food variety	(E) reduced food cost
(C) less need for skilled cooks	(F) less equipment investment
	(G) better nutrition

101. Nevertheless, there are disadvantages of using convenience foods.

One of the disadvantages could be poor food quality. A lack of uniformity in preparation, improper transportation, handling, storage and service could result in poor _____

_____ (2 words).

food quality

102. In some geographical areas, convenience foods are not readily available. This can be a disadvantage if the item has been placed on the menu. One disadvantage in using convenience foods is that they aren't always _____.

available

103. Employees may resist convenience foods if they see them as job of talent threatening. Employee resistance could be a disadvantage of using convenience foods. A disadvantage of using convenience foods could be _____

(2 words).

employee resistance

104. Clientele may resist convenience foods if they see them as an expression of lack of concern by the institution. Clientele resistance could be a disadvantage of using convenience foods. A disadvantage of using convenience foods could be

_____ (2 words).

clientele resistance

105. Summary -- Disadvantages of convenience Foods.

The four primary disadvantages of using convenience foods are:

- (A) poor quality; (B) unavailability; (C) employee resistance;
(D) clientele resistance.

List the four primary disadvantages of convenience foods.

(A) _____ (2 words)

(B) _____

(C) _____ (2 words)

(D) _____ (2 words)

(A) poor quality

(B) unavailability

(C) employee resistance

(D) clientele resistance

106. Food form is one consideration of purchasing convenience foods.

There are five forms of convenience foods. These are:

(A) frozen; (B) freeze dried; (C) low moisture; (D) prepor-
tioned; (E) bulk. List the five forms of convenience foods.

(A) _____

(B) _____ (2 words)

(C) _____ (2 words)

(D) _____

(E) _____

(A) frozen

(B) freeze dried

(C) low moisture

(D) preportioned

(E) bulk

107. Package size needs to be considered in purchasing convenience
foods. In addition to food form another consideration in buying
convenience foods is _____

_____ (2 words).

package size

108. The order size of either a single institution or group of institutions should be considered. Another consideration in purchasing is _____

(2 words).

order size

109. The buying cycle should be considered. Either quarterly orders with monthly deliveries or yearly orders with monthly deliveries are advisable. A consideration in purchasing convenience foods is the _____ (2 words).

buying cycle

110. Delivery of convenience foods is also a consideration. All frozen items need to be transported at 0°F. or below and need to be immediately stored at that temperature. A consideration in purchasing convenience food is temperature during _____.

delivery

111. Specifications should be written for convenience foods. Since few specifications are presently written, it is especially important for the food purchasers to write their own. Food buyers should write _____.

specifications

112. The specification of the convenience product should include:
- (A) statement of ingredients, if applicable; (B) shipping and storing temperature; (C) method of packaging. The points to include in a specification of a convenience food product would be:

- (A) _____
- (3 words)
- (B) _____
- (3 words)
- (C) _____
- _____ (4 words)
-

- (A) statement of ingredients
- (B) method of packaging
- (C) shipping and storing temperature
- _____

This is an example of a specification for convenience food:

SPECIFICATION FOR FROZEN, BONELESS CHICKEN FRICASSEE

Composition

- A. Cooked chicken meat, 25% by weight
- B. Vegetables, 13.75% by weight
- C. Sauce, 61.25% by weight

Chicken

- A. Cooked chicken meat prepared from fresh or frozen Grade A or better carcasses shall be processed under and meet the inspection requirements of the USDA Poultry Inspection Service.
- B. Cooked meat, in natural light and dark meat ratios, shall be diced to size appropriate for the product.

Vegetables

Only frozen vegetables (small whole onions, cut carrots, and peas) shall be used in this product. Vegetables shall be Grade A. Fancy, essentially free from visible defects and physical damage that is detrimental to appearance and quality.

Sauce

Sauce shall be prepared from chicken broth, chicken fat, nonfat dry milk, cornstarch, rice flour, lemon juice, salt, monosodium glutamate, lecithin, flavorings, and tumeric.

Product Specifications

Produce shall be USDA Poultry Inspection Service inspected and shipped and stored at 0°F. or below.

Packaging

- A. Packed 6/5" clear plastic-type pouches
- B. Hermetically sealed
- C. Net weight per case - 30 pounds
- D. Storage space per case, 0.965 cubic feet ⁷

⁷ Cynthia Bishop, "Guidelines for Purchasing Convenience Foods", Hospitals (January, 1971), p. 89.

113. This example would include:

(A) _____

(3 words)

(B) _____

(3 words)

(C) _____

_____ (4 words)

(A) statement of ingredients

(B) method of packaging

(C) shipping and storing temperature

114. Food purchasers need to evaluate convenience foods. Considerations in evaluation would be (A) cost; (B) taste; (C) appearance; (D) container size; (E) state of readiness; (F) label information; (G) clientele acceptance. The considerations in evaluating convenience foods are:

(A) _____

(B) _____

(C) _____

(D) _____ (2 words)

(E) _____

(3 words)

(F) _____ (2 words)

(G) _____ (2 words)

(A) cost

(B) taste

(C) appearance

(D) container size

(E) state of readiness

(F) label information

(G) clientele acceptance

115. If food buyers decide to go to a percentage convenience, a Raw to Ready Scale may be developed. This can help them know the amount of convenience foods used. An instrument used to determine the percentage of convenience foods used is a

_____ (4 words).

Raw to Ready Scale

Raw 1 2 3 4 5 6 7 8 9 10 Ready

116. The lower numbers on the scale would represent foods requiring a large amount of labor and raw commodities. It would probably be found in a more exclusive restaurant. Lower numbers on the Raw to Ready Scale would probable be found in a _____

_____ (3 words).

more exclusive restaurant

117. On the Raw to Ready Scale, the number that would represent an equal amount of raw and ready foods would be _____.
(number range)

118. An established program for convenience foods would probably fall in the 6-8 range. Fast Food Facilities are convenience food establishments that would fall in this range. Fast Food Facilities are convenience food establishments in the range of

_____.

6-8

Case Study -- Convenience Food

Mrs. Ramirez is evaluating a convenience beef stew for the hospital in which she is the dietitian. The hospital has 500 beds and runs at 90% occupancy. Approximately 2/3 of the patients would be receiving beef stew for dinner once a week. Brown's beef stew would meet the specifications that Mrs. Ramirez has written. It can be delivered quarterly to Mrs. Ramirez's hospital in bulk containers. This purchase should save the cooks two hours of overtime per week and therefore reduce costs. (Questions 119-120)

119. The specifications for a convenience food must include:

(A) _____

(3 words)

(B) _____

(3 words)

(C) _____ (2 words)

(A) statement of ingredients

(B) method of packaging

(C) shipping temperature

120. On the information given, the cooks would not be pleased with this change. True/False/Cannot Answer

Cannot Answer

B: TABLE OF SPECIFICATIONS FOR CRITERION TEST

<u>OBJECTIVES</u>	<u>PI FRAMES</u>	<u>LEVEL</u>	<u>TEST QUESTIONS</u>
PART I - The student -			
1. names the considerations of institutional purchasing.	3	K*	1
2. defines forecasting in institutional purchasing.	1	K	1
3. lists the considerations of forecasting.	5	K	2
4. defines the types of cost in institutional purchasing.	6	K	3
5. states the steps involved in institutional purchasing.	6	K	3
6. defines value analysis.	4	K	1
7. defines the four primary ways to purchase.	6	K	3
8. applies the ways to purchase to a case study.	4	App.*	1
PART II - The student -			
1. lists the characteristics of the atmosphere of buyers-purveyor transactions.	3	K	2
2. states desirable food buyers' conduct.	6	K	2
3. lists government laws related to institutional purchasing.	6	K	2
4. relates ethical behavior in purchasing to a case study.	3	App.	1
PART III - The student -			
1. defines specifications in institutional purchasing.	2	K	1
2. names the components of a specification.	4	K	3
3. defines the grading and pricing of fresh produce in institutional purchasing.	6	K	1
4. lists the grades of canned fruits and vegetables.	3	K	1

B: TABLE OF SPECIFICATIONS FOR CRITERION TEST (Cont.)

<u>OBJECTIVES</u>	<u>PI FRAMES</u>	<u>LEVEL</u>	<u>TEST QUESTIONS</u>
PART III Cont.			
5. defines the standards of identity law.	1	K	1
6. names the common institutional can size.	1	K	1
7. names the grades for eggs.	2	K	1
8. names the grades for beef and pork.	2	K	1
9. applies the concepts of specification to a case study.	3	App.	1
10. applies the concepts of fresh produce grading and pricing to a case study.	3	App.	1
PART IV - The student -			
1. defines fresh, processed and convenience foods.	1	K	1
2. names the market forms of food.	8	K	2
3. lists the advantages of convenience foods.	8	K	2
4. names the disadvantages of convenience foods.	5	K	2
5. lists the criteria for evaluating convenience foods.	1	K	1
6. lists the components of a specification for convenience foods.	2	K	1
7. lists the considerations in purchasing convenience foods.	5	K	1
8. defines raw to readiness scale to food service.	4	K	1
9. names examples of the market forms of foods.	3	Comp.*	3
10. applies purchasing considerations of convenience foods to a case study.	2	App.	1
11. applies specifications of convenience foods to a case study.	1	App.	1

* K = knowledge, Comp. = Comprehension, App. - Application

C: QUIZ ON INSTITUTIONAL PURCHASING

Directions: All the questions in this quiz are concerned with factual information that a dietitian should know about institutional purchasing. Find the one item that best completes the statement and write the corresponding letter on the answer sheet. Each question is worth 2 points.

1. The main consideration in institutional purchasing is the:
 - A. clientele expected
 - B. number of kitchen staff
 - C. menu and its cost
 - D. floor plan of the kitchen
2. Portion control in institutional purchasing can be defined as:
 - A. having scales available
 - B. preparing a designated number of servings
 - C. dividing bulk food accurately into individual servings
 - D. following standardized recipes
3. The goal of inventory control is:
 - A. accounting supplies accurately
 - B. keeping little food on hand
 - C. keeping surplus food on hand
 - D. locking the storage area
4. To forecast means to determine:
 - A. food items needed
 - B. the daily staffing pattern
 - C. menu variety
 - D. the income for the fiscal year
5. Restaurant insurance is included in:
 - A. costs as purchased
 - B. costs as served
 - C. hidden costs
 - D. direct costs
6. Cost as served is synonymous with:
 - A. A.P.
 - B. C.A.S.
 - C. A.S.
 - D. S.A.C.
7. Cost A.P. means cost as:
 - A. prepared
 - B. purchased
 - C. produced
 - D. planned

8. The term used to identify the transaction between purveyors and buyers is:
 - A. alteration
 - B. confrontation
 - C. arbitration
 - D. negotiation
9. To purchase food correctly a sequence of steps is taken: The last step is:
 - A. inspection
 - B. item location
 - C. negotiation
 - D. evaluation
10. The first step in purchasing is to determine menu need and:
 - A. cost factor
 - B. total quantity
 - C. staffing
 - D. value analysis
11. Value analysis is a term used for:
 - A. quality evaluation
 - B. receiving and inspecting
 - C. purchasing
 - D. meeting menu needs
12. In cost plus purchasing the food buyers arrange with the purveyors to bill the institution at:
 - A. the cost to the purveyors
 - B. an agreed mark up price
 - C. a price below market price
 - D. a price that varies with the item
13. Formal bidding requires:
 - A. rapport between the buyers and the purveyors
 - B. more paperwork
 - C. blank checks
 - D. formal specifications
14. A method of purchasing in which the food buyers list the items needed and quality desired before calling the purveyors for cost is called:
 - A. blank check purchasing
 - B. sheet purchasing
 - C. credit purchasing
 - D. book purchasing

15. The atmosphere between the purveyors and food buyers should be:
 - A. businesslike but pleasant
 - B. strictly business
 - C. informal and quiet
 - D. very formal
16. In the food buyers/purveyors transaction, it is best to:
 - A. establish times for negotiations
 - B. insist on the dietitian's schedule
 - C. conform to the purveyor's schedule
 - D. adapt to the situation as it arises
17. Food buyers should receive gifts from a food purveyor:
 - A. daily
 - B. at no time
 - C. on a scheduled basis
 - D. for special occasions
18. Food buyers receive information from all food purveyors. This information should be:
 - A. used as needed
 - B. divulged selectively
 - C. kept confidential
 - D. told to all competitors
19. The regulation stating that food purveyors and food buyers have the right to represent their companies is called the Law of:
 - A. Agency
 - B. Representation
 - C. Fraud
 - D. Title of Goods
20. The regulation stating that illegal actions or verbal transactions occurring before a written agreement is made intended to deceive the other party is called the Law of:
 - A. Contracts
 - B. Fraud
 - C. Verbal Contest
 - D. Title of Goods
21. A specification in food purchasing is defined as a:
 - A. word picture of the product desired
 - B. list of products desired
 - C. legal agreement
 - D. business transaction between purveyors

22. The following is not included in a specification:
- A. unit size
 - B. price per unit
 - C. quantity
 - D. labeling
23. A proper noun such as Bluelake is considered a:
- A. special product
 - B. significant label
 - C. specification necessity
 - D. specific factor
24. A specification always lists:
- A. brand name
 - B. container size
 - C. delivery date
 - D. all ingredients in the product
25. Canned fruits and vegetables are graded the same except that:
- A. Grade B fruits are termed choice
 - B. Grade B vegetables are termed choice
 - C. Grade B vegetables are termed prime
 - D. Grade C fruits are termed choice
26. Food buyers want prices for fresh produce by the:
- A. container
 - B. pound
 - C. item
 - D. carton
27. A law that states that foods given a specific name are a specific item and that terms used to described foods mean exact properties is called:
- A. specific foods law
 - B. standards of identity
 - C. standards of license
 - D. special labeling law
28. The can size often used in institutional kitchens is:
- A. #10
 - B. #6
 - C. #8
 - D. #12
29. The highest grade for eggs is:
- A. A
 - B. C
 - C. AA
 - D. B

30. The highest grade for beef is:
A. prime
B. choice
C. utility
D. good
31. The market forms of food are:
A. canned, frozen, and processed
B. frozen, processed, and convenience
C. baked, fresh, and roasted
D. fresh, processed, and convenience
32. An example of a precooked and warmed or partially cooked convenience food is a:
A. frozen cherry pie
B. cake mix
C. green bell pepper
D. rib roast
33. An example of a fresh food is:
A. a cake mix
B. an orange
C. a T.V. dinner
D. a hamburger
34. A premeasured and minimal preparation convenience food is:
A. cornbread mix
B. rump roast
C. T.V. dinner
D. orange compote
35. The following is a processed ready-to-eat convenience food:
A. pretzels
B. Hamburger Helper
C. beef pot pie
D. baked potato
36. A fresh food is one which can be eaten:
A. as purchased or cooked completely
B. after minimum preparation
C. after 30 minutes of roasting
D. fried or grilled
37. An advantage of using a convenience food is that:
A. cooking skill is improved
B. fewer qualified cooks are needed
C. more people learn to cook
D. more equipment is needed

38. The following is not an advantage of convenience foods:
- A. labor savings
 - B. less skilled cooks needed
 - C. more equipment investment
 - D. more nutritional value
39. A problem in using convenience foods is:
- A. unavailability of products
 - B. need for a staffing increase
 - C. poor nutritional value
 - D. lack of variety
40. A disadvantage of using convenience food is:
- A. employee morale
 - B. more preparation time
 - C. less preparation time
 - D. less employee turnover
41. A purchasable form of convenience food is:
- A. low moisture
 - B. high moisture
 - C. dried and baked
 - D. baked and fried
42. A specification for a convenience food:
- A. varies with the product
 - B. lists the protein content only
 - C. lists the shipping and holding temperature
 - D. lists the factory location
43. In evaluating convenience foods a consideration is:
- A. location of product production
 - B. appearance of the served product
 - C. bacteria count of the product
 - D. suggestions for garnishing and serving
44. On a raw to readiness scale a figure of 3 indicates:
- A. more convenience foods used
 - B. fewer convenience foods used
 - C. an equal number of convenience and nonconvenience foods
 - D. a rating of seventy percent for convenience foods used in the food service

45. Mrs. Webber is the dietitian in a small nursing home. Her patient count is 35. She can have food deliveries daily. It would be easiest for her to prepare a list daily to relate to the purveyor. Therefore, the best purchasing procedure for her to use would be:
- A. sheet purchasing
 - B. blank check purchasing
 - C. formal bidding
 - D. cost and mark up purchasing
46. Miss Douglas, a dietitian, had a meeting with a food company representative from Company X. During the meeting, she was told some interesting information about Company Y. Miss Douglas is to meet with a representative from Company Y later in the day. Miss Douglas should:
- A. find out Company Y's attitude toward Company X
 - B. ignore Company X's comments
 - C. tell Company Y what Company X has said
 - D. keep information to herself in dealing with X and Y
47. Mrs. Boren is writing specifications for chickens. She will need 250 chickens, whole fryers, with a weight per chicken of three pounds. The statement "250 chickens, whole fryers, 3 pounds/chicken" would be considered complete except for:
- A. grade
 - B. specific factor
 - C. special ordering
 - D. container information
48. Mrs. Spikes is a dietitian in a small nursing home. She is ordering fresh produce. The purveyor gives her prices for fresh produce by the container. Mrs. Spikes could use this information if prices are:
- A. given for size
 - B. listed lower by the container
 - C. consistently given per container
 - D. converted to the pound
49. Mrs. Miller serves 500 servings of tuna casserole at her hospital. Her delivery for this convenience product was changed from four times a year to twice a year. This change could mean:
- A. preparing the product on the premise
 - B. purchasing a year's supply
 - C. terminating the cook
 - D. increasing service of tuna casserole

50. Mrs. McDonald is writing a specification for a convenience food-frozen chicken casserole. She lists the ingredients as chicken, noodles, white sauce, pepper, salt and preservatives. The shipping temperature is listed as 0 degrees F. The item missing from this specifications is:
- A. delivery cycle
 - B. ordering cycle
 - C. method of packaging
 - D. poundage/package

EQUIVALENT APPLICATION QUESTIONS OR POSTTEST

45. Mrs. Turner is purchasing caviar for a medical staff dinner. This is not a regularly purchased item at her hospital. Therefore, she is uncertain where to obtain the caviar and the cost involved. Since it is only one item, the best purchasing procedure in this case would be:
- A. sheet purchasing
 - B. blank check purchasing
 - C. formal bidding
 - D. cost and mark up purchasing
46. In dealing with food purveyors, Mrs. Williams does a great deal of business with Smith Company. She does this because Smith Company sends gifts to dietary on a regular basis. Food products from this company vary in quality. Mrs. Williams' behavior would best be described as:
- A. strictly business
 - B. highly commendable
 - C. socially acceptable
 - D. unethical
47. Mrs. Taylor is writing specifications for roast beef. She will need 250 pounds of beef. She wants to purchase choice beef. To write the specification, she must include one other item in the specification, which is:
- A. grade
 - B. amount desired
 - C. unit size
 - D. cuts desired

48. Mrs. Brown is purchasing bell peppers. She remembers that the established grades for fresh produce are 1-4. None of the purveyors state grades. Therefore Mrs. Brown should:
- A. not purchase peppers until grades are stated
 - B. always buy canned peppers
 - C. purchase the ungraded peppers
 - D. change the menu and not buy peppers
49. Mrs. Hart has changed the menu to include chicken casserole. She purchases this as a convenience food, thereby, freeing the chef to do other things. If his attitude is negative, it could be because:
- A. he has too much time
 - B. his job is threatened
 - C. his pace was definitely changed
 - D. his product was superior
50. Mrs. Lane is writing a specification for a convenience food - frozen tuna casserole supreme. She lists the ingredients as: tuna, noodles, white sauce, pepper, salt and preservatives. The package is listed as plastic-type pouches, hermetically sealed, 30#/case. The item missing from this specification is:
- A. shipping temperature
 - B. poundage
 - C. delivery cycle
 - D. ordering cycle

D: ATTITUDE TOWARD PROGRAMMED INSTRUCTION SCALE

Instructions: Below are a number of statements concerning Programmed Instruction (PI). Read each item carefully and circle quickly the phrase which best expresses your feeling about the statement. There are no right or wrong answers. If in doubt, circle the phrase which seems most nearly to express your feelings due to your own personal experience. Work rapidly. Be sure to answer every item.

1. A large amount of knowledge is gained by working on Programmed Instruction.

Strongly agree Agree Undecided
Disagree Strongly disagree

2. Programmed Instruction is best for advanced students.

Strongly agree Agree Undecided
Disagree Strongly disagree

3. By using Programmed Instruction, a student should make better grades on tests.

Strongly agree Agree It depends
Disagree Strongly disagree

4. Students like traditional methods of learning better than Programmed Instruction.

Strongly agree Agree It depends
Disagree Strongly disagree

5. By working at his own speed on Programmed Instruction, a student has a better understanding of areas in which he needs to work.

Strongly agree Agree Undecided
Disagree Strongly disagree

6. Time spent on Programmed Instruction is wisely invested.

Strong agree Agree Undecided
Disagree Strongly disagree

7. Programmed Instruction makes learning enjoyable.
Strongly agree	Agree	Undecided
Disagree	Strongly disagree	
8. Programmed Instruction encourages a student to think for himself.
Strongly agree	Agree	Undecided
Disagree	Strongly disagree	
9. Students who like to study along in class like working on Programmed Instruction.
Strongly agree	Agree	Undecided
Disagree	Strongly disagree	
10. A student can learn more about a subject by using Programmed Instruction than by the lecture method.
Strongly agree	Agree	It depends
Disagree	Strongly disagree	
11. Class periods seem longer when using Programmed Instruction.
Strongly agree	Agree	Undecided
Disagree	Strongly disagree	
12. Most classes could use Programmed Instruction.
Strongly agree	Agree	Undecided
Disagree	Strongly disagree	
13. There is not enough value in Programmed Instruction to justify the paper it takes.
Strongly agree	Agree	Undecided
Disagree	Strongly disagree	

14. Valuable knowledge is gained from Programmed Instruction that can assist in securing a job.
- Strongly agree Agree Undecided
- Disagree Strongly disagree
15. Programmed Instruction learning is good for a change of pace.
- Strongly agree Agree Undecided
- Disagree Strongly disagree
16. Programmed Instruction helps the teacher have a better learning atmosphere in the classroom.
- Strongly agree Agree Undecided
- Disagree Strongly disagree
17. Programmed Instruction should be helpful for students who are absent and miss regular class work.
- Strongly agree Agree Undecided
- Disagree Strongly disagree
18. Through the use of Programmed Instruction, a student should learn to make decisions.
- Strongly agree Agree Undecided
- Disagree Strongly disagree
19. The time and effort a teacher spends providing Programmed Instruction is wasted.
- Strongly agree Agree Undecided
- Disagree Strongly disagree
20. Programmed Instruction tends to build self-confidence in one's ability.
- Strongly agree Agree Undecided
- Disagree Strongly disagree

21. Programmed Instruction is used so teachers will not have to prepare for class.

Strongly agree	Agree	Undecided
Disagree	Strongly disagree	

22. Classes are more interesting when Programmed Instruction is used.

Strongly agree	Agree	It depends
Disagree	Strongly disagree	

23. Students who want to study a subject in depth should use Programmed Instruction.

Strongly agree	Agree	It depends
Disagree	Strongly disagree	

24. Programmed Instruction does more harm than good during a class period.

Strongly agree	Agree	Undecided
Disagree	Strongly disagree	

25. Most students are willing to spend energy working on Programmed Instruction.

Strongly agree	Agree	Undecided
Disagree	Strongly disagree	

**E: QUESTIONNAIRE ON PROGRAMMED INSTRUCTION UNIT
TO BE COMPLETED BY INSTRUCTORS**

Directions: Please either check or fill in the answers to the following questions.

	YES	NO	UNDECIDED
1. Do you like programmed instruction?	_____	_____	_____
2. Would you use this programmed instruction unit in your program in dietetics again?	_____	_____	_____
3. Did this programmed instruction unit save instructor's time at your institution?	_____	_____	_____
4. Do you think programmed instruction is too time consuming for students to take?	_____	_____	_____
5. Did programmed instruction provide sufficient learning for your students on this topic?	_____	_____	_____
6. Did you like this particular programmed instruction unit?	_____	_____	_____
7. Was the pre/post test useful to you?	_____	_____	_____
8. Was the format for the frames and then answers acceptable?	_____	_____	_____
9. Did you think this unit of programmed instruction in institutional purchasing helped your students learn the basic concepts in institutional purchasing?	_____	_____	_____
10. Please list three subjects that you would like to see as programmed instruction.	1. _____ 2. _____ 3. _____		

DATE _____

INSTRUCTOR'S NAME _____

INSTRUCTOR'S POSITION _____

INSTITUTION _____