AN ABSTRACT OF THE THESIS OF

M. Teresa Cochran for the degree of Master of Science in Health Education presented on April 28, 1986.

Title: The Development and Application of an Evaluation Questionnaire Used To Compare Opinions Towards An Audiovisual Foodservice Training Program

Abstract approved: Dr. David C. Lawson

The primary purpose of this study was for three select groups to critically appraise the Personal Hygiene for Foodservice Workers sound/slide system. These three groups (Media Specialists, Content Experts and the Learners) were identified in a literature search as being those individuals most directly responsible for evaluating the worth of a program.

Three similar but divergent questionnaires were developed for use by the groups. Questionnaire validity was established by means of a DELPHI panel of Media Specialist experts. Reliability was ascertained for two of the questionnaires using the Spearman-Brown formula. The Media Specialist Questionnaire was not tested for reliability, due to the small sample size.
The Content Experts consisted of eleven dietitians from seven hospitals (and one nursing home) in the Mid-Willamette Valley, and thirteen Sanitarians from four Oregon counties that conduct Food Handler training programs for restaurant employees. The Food Handlers from the counties and the Food Service Workers from the hospitals comprised the 163 people in the "Learner" group. The Media Specialist group consisted of ten members, five who acted as the DELPHI panel and five who responded to the questionnaire.

Data gathered from the questionnaires were used to measure the differences in opinions among the three groups in their critique of the PHFW program. Data were analyzed on a percentage basis and using a Chi Square statistic to test for significant differences in opinions. Media Specialists were excluded from significance testing, due to their small sample size.

Significant associations were observed among the Content Experts and the Learners in four areas: 1) quality of photographs, 2) program organization for understanding of message, 3) program organization and retention, and 4) program length. Both of these groups significantly agreed that the entire program was not interesting and that the narrator's voice was not pleasant, yet stimulating. The Content Experts differed in their opinions in the areas of
the accuracy of the program's content, goals, adequate coverage of purpose, and appropriateness for the intended audience. Possible explanations for these results are discussed.

The exact role each of these groups should play in the materials selection process needs to be more clearly defined. The research especially conflicts in the area of the Learners and their ability to make wise learning choices. Suggestions for further research are outlined.
The Development and Application of an Evaluation Questionnaire Used to Compare Opinions Towards an Audiovisual Foodservice Training Program

by

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A THESIS

submitted to

Oregon State University

in partial fulfillment of the requirements for the degree of

Master of Science

Completed April 28, 1986

Commencement June 1986
APPROVED:

Redacted for Privacy

Professor of Health Education in charge of major

Redacted for Privacy

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Date thesis is presented: April 28, 1986

Typed by Judith Sessions for M. Teresa Cochran
ACKNOWLEDGEMENTS

Writing this thesis has been a very long process and my deepest gratitude for its completion goes to my family for their never-ending patience and support during the many years of its development.

Special gratitude is extended to Dr. Les Streit, who consistently gave me positive encouragement and always had time to offer his assistance. Dr. Pris Hardin deserves a medal for reviewing drafts and providing insightful perspectives.

Dr. Helen Berg was the strong guiding force with the statistical analysis, and her assistance was deeply appreciated.

Additional thanks is extended to all my Committee members and the various people in the Department for their time and support.
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I. INTRODUCTION

American food consumption trends within the past decade reveal an accelerated growth in restaurant patronage. Ironically, the Center for Disease Control in Atlanta, Georgia, reports an increase in the incidence of foodborne diseases. Incidence investigations correlate poor personal hygiene practices by Food Service Workers as directly contributing to outbreaks of foodborne illnesses (MMWR, Annual Edition 1981).

Evidence suggests that Food Service Workers need to be properly trained to handle food in a safe and sanitary manner. Such training procedures in some areas of Oregon often appear lax or non-existent.

In the Spring of 1983, a graduate student from Oregon State University's Institutional Foods Management Department, developed a staff training sound/slide series on Personal Hygiene for Foodservice Workers, (PHFW). It was designed to educate the foodservice employees on the types of bacteria that cause foodborne diseases and how the workers can help to minimize such occurrences through good personal hygiene.
In order to assure maximum learning potential, it is critical that educational training programs undergo a summative evaluation process to ascertain if quality standards have been met. Summative or learner verification data is difficult to locate. Learning materials are generally analyzed on the basis of criteria (i.e. Scope and Sequence, Content, Accuracy, Instructional Level, Learner Characteristics, Self-Instruction, Technical Quality, Methodology, etc.) with a view to collection development, rather than actual proof of learner verification (Sive, 1983).

Learning materials are often purchased by program supervisors or teachers. Seldom is the most critical segment—the learner—involved in material selection or the design process. The learner participation theory was originally introduced by Benne in the 1950s. The literature continues to note its popularity during the seventies: "Increased learner involvement...will improve selection practices, which should, in turn, cause the education industry to produce materials that will better meet the needs of individual Learners." During this time, an estimated 99 percent of the learning materials on the market had never been systematically and effectively shaped or reshaped by feedback from the Learners (Komoski, 1971). Another noted education specialist, Lawson (1974), maintained that in order for an instructional design program to be effective in
achieving its purpose, it had to first surpass critical appraisal by instructional design specialists, content experts and the learners.

The learner participation theory, as a component of measuring program effectiveness, continues to be echoed in the eighties. Saracho (1982) reiterates that an ideal evaluation incorporates the experts' best ideas, input from the people involved in the program, and the inclusion of the participants' perceptions of the program and their attitudes. She adds a new dimension by suggesting that an objective mediator should design the evaluation.

**Statement of the Problem**

The literature search indicates input from a variety of people (both professional and non-professional) as a critical component in evaluating the effectiveness of a curriculum program. Reliable evaluation instruments geared specifically to evaluating sound/slide training programs by diverse groups of people are sparse.

Few learning materials are actually field tested for learner verification before being placed on the market. Given the time demands that are placed upon program trainers, there exists a real need for an evaluation procedure that can help in the materials selection process. Trainers need a tool to help them evaluate if a particular sound/slide system is going to be effective for their audience before investing in a program.
Evaluative data should be compared to ascertain how Learners' opinions, their post-test scores, and the decision-maker/trainer's values differ before making the final training system selection.

**Purpose**

The purpose of this study is three-fold:

1. To design three similar but divergent questionnaires to be used by three of the key groups identified by Saracho (1982), (i.e. instructional design specialists, Content Experts and the Learners), as those individuals most directly responsible for critically evaluating the effectiveness of an instructional design program. Nelson's 1983 PHFW mediated sound/slide program will be the object of this review.

2. To compare/contrast similarities/differences in opinions regarding the measure of effectiveness of the PHFW's various component parts (i.e. design, graphics, audio, content and program guide), as outlined in the three evaluation questionnaires.

3. To design a criterion-referenced post-test for the Learners as an additional measure of the sound/slide system's effectiveness.
Limitations

1. This study is limited to the extent that it represents only those hospitals in the Mid-Willamette Valley that had not already seen the PHFW program.

2. This study is limited in that it only included the four Oregon counties who conduct Food Handler Training Programs.

3. The short time allowed to view the program may represent a limitation.

4. The degree to which respondents answered the questionnaires accurately and honestly could be a limiting factor.

5. Limitations exist due to the small sample size of Content Experts and Media Specialists.

6. Usual limitations applied to the development of questionnaires would be appropriate for this study.

7. Limitations exist due to the intended audience of the PHFW program. The developer of the program (Nelson, 1983) indicated a target audience of Food Service Workers with four or less years of experience in the food service industry. Sixty-two percent of the Food Service Worker respondents had
four or less years experience. The remaining 37.7 percent who had more than four years of experience were still included in the final reporting of results.

The Hypothesis

The null hypotheses to be tested are:

Ho: There is no significant difference in opinions among Content Experts (i.e. Dietitians and Sanitarians).

Ho: There is no significant difference in opinions between the Content Experts and the Learners (i.e. the Food Service Workers).

Ho: There is no significant difference in opinions between Content Experts and Media Specialists.

Ho: There is no significant difference in opinion between Media Specialists, Content Experts or Learners.

Need for the Study

The restaurant industry has witnessed a phenomenal growth in patronage over the past decade. Sales in the fast food business alone, increased 300% ... from $6.5 billion to $23 billion annually during 1970 -1980 (American Council on Science and Health Report, 1981). A 1985 "Tastes of America" consumer survey, conducted by the National Family Opinion Research Firm for the Restaurants and Institutions Journal, reports that 84% of all U.S. households have at least one member who dines out each week.
The survey concludes that an average of 22.5% of meals consumed in a week are eaten away from home. (This percentage is lower than the national average of 41.8% quoted by the United States Department of Agriculture, because food purchases in institutionalized settings were excluded from the survey.) Nevertheless, for the third year in a row, the average amount of money spent on food purchases away from home increased. The total for 1985 was $30.57, up from last year's $28.68 (Restaurants and Institutions, 1985).

Not surprisingly, the Center for Disease Control (CDC) in Atlanta, Georgia, reports a corresponding increase in the number of foodborne illness outbreaks caused by Salmonellosis. In 1981 there were a total of 39,990 reported cases in the United States. The most recent CDC report compiled from 1983 data, listed 44,250 cases of Salmonellosis in the United States (MMWR, December 1984). This continues a pattern of increases that began in 1977. Oregon reported 302 cases of Salmonellosis in 1981, and 411 cases in 1983 (MMWR Annual Summary Edition 1981; MMWR Annual Summary Edition 1983.)

Human Salmonellosis continues to be an important public health problem. The infectious bacterial agent, Salmonella-typhimurium, when ingested by humans, can cause acute gastro
enteritis with a sudden onset of abdominal pain, diarrhea, fever and sometimes vomiting. Dehydration, especially among infants, can be severe.

The most frequent mode of transmission is via the fecal-oral route and can be found in foods contaminated by an infected person or animal. Salmonella organisms can also be isolated in raw egg and egg products, unpasturized milk, and in meat and poultry products that are raised on contaminated animal feeds (Benenson, 1985).

There are a wide variety of other bacterial forms which act as agents for foodborne illnesses with symptoms similar to those caused by Salmonella. Two of the other most frequent offenders are the bacterium Staphlococcus and Clostridium perfringens. Between 1970-1974, the Center for Disease Control (CDC) reported 15,169 cases of Salmonella, 8,596 cases of Staphlococcus and 5,140 cases of C. perfringens (Bryan, 1978).

It must be remembered that the Center for Disease Control's data on incidence of Salmonellosis reflect only reported cases. Due to the short duration of the illness and the similarity of symptoms of other viral agents, many people assume they have the "flu" and fail to seek medical attention.

Despite all our current knowledge in the prevention of foodborne diseases, the level of concern about their hazards seems low. The greatest numbers of Salmonellosis
outbreaks have been traced to the mishandling of food in food service establishments and homes, with only a small percentage related to food industry failures. The 1972-76 CDC reports traced foodborne illness outbreaks to 41.3% in food service establishments, 16.7% to homes and 3.4% to food processing plants, with a remaining 38.6% unspecified (Silliker, 1982).

The primary responsibility for the prevention of foodborne illness outbreaks rests within the control of food service owners, managers and supervisors (Bryan, 1979). Silliker (1982) believes that the most effective means of foodborne illness prevention lies in educating the public. He notes, however, that such efforts in the past have been unsuccessful.

One would assume that Food Service Workers are properly trained in the safe and sanitary preparation and handling of food. Unfortunately, such is not always the case. Out of 36 Oregon Counties, only seven of them conduct food handling classes for restaurant employees. Of these, four of the counties require mandatory class attendance, and in three other counties they are voluntary. The classes are held in conjunction with the county's public health departments. Food handling permits are required by law, but often this licensure procedure is met by satisfactorily completing an unstandardized test. Checking for permit compliance is usually lax because of the economic restraints placed on the
hiring of personnel to do the enforcement (Kauffman, 1983). Out of five hospitals surveyed in the Portland area, 33 percent of the food service employees had never had any training in personal hygiene relating to the foodborne illnesses (Nelson, 1983).

The research exposes a dire need for the public to be more knowledgeable about the potential hazards of foodborne disease. Given the rise in restaurant patronage, the corresponding rise in the incidence of foodborne diseases, and the proven relationship of food service establishments to the point source incidence of outbreaks, it appears the need for such training should begin with the food service workers.

In an effort to address this task, Nelson, an Oregon State University graduate, designed a sound/slide program entitled PHFW, to be utilized in training staff in the role they play in foodborne illness prevention (Nelson, 1983). She developed this program through the Department of Institutional Foods Management in partial fulfillment of her Masters of Science thesis requirements.

Volumes of new educational materials appear on the market everyday. The majority of these materials are never field-tested to assess their effectiveness in achieving their learning outcomes, or are of such poor technical quality that they fail to motivate the learner. Considering the amount of money spent on producing and purchasing these
materials, one questions why so little attention had been paid to field-testing materials to determine their effectiveness (Eash, 1974).

The current status of the application of field-testing and evaluation still remains a problem. Arwady (1983) reports that he has "...been unable to locate an extensive, rigorous review of the subject (field-testing) in any publication that caters to instructional development and training professionals." He notes that field-testing is the "key" to formative evaluation, as it provides information that cannot be obtained by any other evaluative strategy. This is because it is conducted in the real world. In addition, Saracho (1982) states, "Evaluation has been inadequate because reliable instruments, techniques and resources have not existed---an exemplary model has not been developed."

**Definition of Terminology**

**CRITERION:** the measure used to judge the adequacy of an instructional program. Ordinarily, it would be a test, broadly conceived, of the program's objectives (Wiles, 1984).

**DESCRIPTIVE METHOD:** the general procedures employed in studies that have for their chief purpose the description of phenomena, in contrast to ascertaining what caused them or what their value and significance are (Good, 1978).

**EVALUATION INSTRUMENT:** any of the means by which one obtains information on the progress of the learner and the effectiveness of instruction; quantitative and qualitative data, objective measures, subjective impressions, tests, observations, anecdotal records, case studies, and sociometric
methods may all serve as instruments for deciding whether instructional objectives have been attained (Good, 1978).

FORMATIVE EVALUATION: refers to judgments as to the worth of educational programs (sic) or products that are capable of being changed... (Unwin, 1978).

INSTRUCTIONAL MATERIAL: any device with instructional content or function that is used for teaching purposes, including books, textbooks, supplementary reading materials, audiovisual and other sensory materials, scripts for radio or TV instruction, programs for computer-managed instruction, instruction sheets, and packaged set of materials for construction or manipulation (Good, 1978).

INSTRUCTIONAL MEDIA: devices and other materials which present a complete body of information and are largely self-supporting rather than supplementary in the teaching/learning process (Good, 1978).

INSTRUCTIONAL SYSTEM: (1) a plan or structure containing a collection of interrelated components that are designed to achieve a specific set of instructional objectives; (2) the use of all possible elements that may function to promote learning, such as textbooks, chalk-boards, still and motion pictures, radio, TV, audio tapes, programmed instructions, teaching machines, models, displays, square or round classrooms,...etc., (Good, 1978).

INSTRUCTIONAL TECHNOLOGY: the study of instruction and its techniques for the purpose of enhancing its systematic organization and dependability (Good, 1978).

MEASUREMENT, CRITERION: measurement of a psychological trait in a real-life situation such as a classroom; used to establish the validity of instruments (Good, 1978).

MEDIA SPECIALIST: a teacher who has had broad professional training in instructional media (Haney, 1980).

MEDIATED INSTRUCTION: in general, teaching that is conducted with communication media rather than the direct face-to-face interaction with the student, for example, by print, film, recording, telephone, radio, TV or computer terminal (Good, 1978).
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NONPARAMETRIC STATISTICS: any of several statistics, either descriptive or sampling, which may be applied to a set of data without any assumption as to the shape of the distributions involved; generally used only when assumptions for more efficient statistics cannot be made, for example, chi square, median, rank difference correlation coefficient, sign test (Good, 1978).

SUMMATIVE EVALUATION: judgments as to the worth of programs (sic) or products which are in their final form (Unwin, 1978).

SYSTEMS: an approach which molds instruction into a unitary process that intertwines hardware and software to maximize the intended educational purposes. "A discernible trend has been from kits to multimedia to systems." This process involves goals, functions, procedures, resources, guidance and evaluation (Kinder, 1973).
II. REVIEW OF LITERATURE

Section 1

The focus of this review is on the three groups Saracho (1982) identifies as key evaluators of an instructional system; the Media Specialists, the Content Experts and the Learners. This first section will examine the role field-testing plays in curricula evaluation. The second section will focus on the literature reviewed in the formulation of the questionnaires used to evaluate the PHFW program.

Oregon State University Kerr Library's "Library Information Retrieval Service" (LIRS), which is an on-line bibliographic computer search service, was used to initially identify related literature. The initial search was conducted in August 1983 and covered a seventeen year period from 1966 to 1983.

The LIRS search confirmed that there are no reported sound/slide system evaluation instruments similar to the model presented in this study. There was very little reference data on audiovisual program effectiveness evaluations that included technical appraisal feedback from the three groups addressed in this review. There is a magnitude of field-test results of curricula programs that assess the learner's knowledge or attitudinal changes. The only evaluative criteria used in these studies was pre- and
post-test criterion measurements. Seldom did any report the utilization of individuals from outside the institution to aid in the evaluative process.

Six of the twenty-two LIRS listings described media usage levels, media selection techniques or equipment availability. Following is a summation of the LIRS dissertation abstracts which most closely relate to the purpose of this study.

Cohen

Cohen (1982), from Pepperdine University, conducted a field investigation of instructional materials selection criteria preferences of professional educators and publishers. His purpose was to ascertain if there was a consensual agreement of the experts in the field, hoping to obtain some empirical data which could be of significant use for education practitioners.

Cohen's sample population consisted of 325 elementary school teachers in grades K - 8, eighteen elementary principals, thirty-four curriculum coordinators, eight elementary curriculum directors, and seventeen commercial instructional materials producers. All of the subjects were randomly selected from Los Angeles County, with the exception of the commercial producers. An extensively validated questionnaire instrument designed by the experimenter was used for the investigation.
Four hypotheses were tested comparing the commercial producers with the educator groups. No significant differences at the .05 level were noted between the groups.

Cohen did note eight criteria ranked by subject in order of importance by the aforementioned groups. The "availability of data to support claims of effectiveness" was ranked as seventh ...not a top priority.

Hartz

While Cohen's investigation enumerates instructional criterion preferences, it does not provide any detailed analytical evaluative criteria. Hartz (1982) was meanwhile testing the importance of program evaluation as perceived by Wisconsin District Media Directors. His hypotheses tested perceptions and importance of the capability to perform the various types of evaluation as suggested by D. L. Stufflebeam's CIPP (Context, Input, Process, Product) evaluation model. Hartz reports:

...context and product evaluation activities were considered to be the most important evaluation types with input evaluation the least important. Formative evaluation purpose was found to be more important than summative evaluation purpose...

Metro Media Evaluation Center

In 1980 the Metro Media Evaluation Center in West Hartford, Connecticut, published a Multi-Media Evaluation Report. Sponsored by the Department of Health Education and Welfare, this ERIC document report contains evaluative data for all types of media which are presented in the form of
composite sheets. Producers and distributors placed educational materials with METRO for one full year of unrestricted evaluation. Teachers who have a membership with METRO can borrow materials, where upon their return they are asked to complete two evaluation forms. Teachers are asked to rate, on a scale of one (poor) to four (excellent), the quality of the film, accuracy of the information, production quality, selection of content, physical condition of the film, and emotional impact (teacher's view of students reaction). Next they respond "Yes" or "No" as to whether or not the film has aesthetic value, style, and imagination. They were also asked to comment on the following: audience stimulation, appropriateness of the specified grade level, achievement of the teacher's purpose, and subjects in which the film can be used. Student's reactions were recorded on a scale of one to four for Interest, Response, Participation and Motivation (Nystrom, 1980).

While this report provides an excellent compilation of current media and materials selection guidelines for teachers: it does not provide a comprehensive analysis of the film's content, objectives, design, graphic, audio, or photographic qualities. Nor does this qualify as a truly valid field-test for learner verification standards.
Aviav

A comprehensive instrument for curriculum analysis was developed by Gibboney in 1980 in an initial effort to organize the field of curriculum analysis. Known as Towards Intellectual Excellence: Some things to look for in Classrooms and Schools (TIE), it provides a methodology for the assessment of schemes for curriculum analysis and applies it to 45 schemes. Tomar Aviav (1983) conducted a theoretical and practical examination of this model. It appears that in order for one to utilize this model, one first needs to attend a comprehensive workshop in order to learn how it is deciphered. Thus the need for a hands-on model that can easily be adapted to any setting and geared specifically for audiovisuals still needs to be developed.

In addition to the LIRS search, it was important to survey other background material as it relates to this study. Earlier it was noted that Lawson suggests that media design specialist, Content Experts and target audiences should critically appraise instructional materials to ascertain effectiveness. The learner participation theory was suggested by Benne in 1955, who reasoned that:

...by including students in the planning process: (1) decisions and actions are enriched by the knowledge, insight, and imagination of many different people; (2) the plans made are more likely to meet all the varied needs of the people involved and to fit the unique features of the situation; and (3) because each person plays a part in decision making, he is more concerned and interested (Benne, 1955).
Borich, in 1974 reiterated a similar theme:

Members of the target population are experts who are often overlooked in formative evaluation. Abedor (1972) suggested procedures for collecting judgmental data about objectives from this expert resource. His procedures could be adapted so that subjects are given an objective or a list of objectives and are asked to react to them as behaviors that the subjects could be asked to demonstrate after using the product. Subjects are one of the most critical and insightful audiences available to the evaluator. Since they will be suffering the consequences of bad development in the long run, they have something to lose by not providing feedback to the evaluator (Borich, 1974).

Chisholm and Ely summarized another dimension in the maze of audiovisual evaluative research:

The problem is that the audiovisual field is emerging so rapidly, that the tools for locating and evaluating these materials is in an amorphous developmental state. Even though there are ongoing attempts to publish tools to identify the entire range of audiovisual materials, the tools have not yet given complete nor retrospective coverage. To give retrospective medialogic coverage is an overwhelming problem. The most difficult area in which to make progress seems to be in the area of evaluation. Everyone appears to agree that audiovisual materials do pose complex problems related to evaluation, partly because they combine so many variables of sight, sound, color and also that they can be used with such a diverse range of listeners and viewers.” (Chisholm, 1976).

Pratt

Pratt (1980) argues "In its most basic form, the crucial question to gauge the effectiveness of a program is "Did the Learners achieve the objectives?" Pratt continues, that for objectives to be met, they must be realistic, measurable and be stated with explicit criteria. Learner
participation is important, but a wide variety testing and observation methods need to be implemented to determine a program's effectiveness based on the objectives.

Rosenblum and Darkenwald

The next decade found the theory of learner's participation in the evaluative procedure still surfacing...with a more probing twist. Rosenblum and Darkenwald (1983) attempted to test this reoccurring theory of learner-centered Experimental Model of adult learner participation for course planning of their (adult's) own learning activities. They note that benefits have not been documented in controlled experimental conditions. Their first hypothesis was, if adults participated in the planning of the course, that they would achieve more. Their second hypothesis was to see if these adults experienced a higher level of satisfaction with the course than those who had not participated in the planning of the course (control group).

Rosenblum reports that learner participation in course development had no effect on the participants achievement or satisfaction levels. Possible reasons mentioned were that this particular population was already highly motivated; since it was designed by co-workers, perhaps it was not as relevant as if designed by someone other than peers; and some subjects may have thought of the planning stage as inconsequential, therefore they had no feelings of pride or ownership involved.
Carrier

A later review of the literature by Carrier (1984) supports the conclusion that "Contrary to instinct, Learners are often poor judges of how much instruction they need, or in what order." However, most of the studies she gleaned her information from, dealt with the effects of learner control in computer-assisted instruction, where the Learners were able to select their own learning sequences.

Snow (1980), had earlier suggested that learner control had not produced optimal performance because no one had discovered what types of learner should be granted control or under what conditions. Snow postulates that certain learner abilities or personality dimensions are better learner performance predictors.

Rosenblum and Carrier's findings are somewhat reminiscent of an echo from the sixties, when a popular proponent of the technological revolution, Marshal McLuhan stated; "the effect of the movie form is not related to its program content." McLuhan theorized that the "medium is the massage" (McLuhan, 1964).

Simonson (1984) adds an additional perspective to the learner-participation theory; "Learners who participate in a discussion or critique after instruction are likely to develop favorable attitudes toward the delivery method and message content."
Daly-Lewis

Despite all the literature suggesting that the learner be involved in the course development and evaluation, it is interesting to note the media selection processes used by media professionals in the school systems in New York. Daly-Lewis (1983) from Columbia University Teachers College, conducted a survey of library media specialist practices in the selection and evaluation of nonprint media materials. She sent a mail survey to 530 randomly selected librarians in the state. She reports these findings:

...less adherence with regard to involving a wide variety of people in the selection process (55.8%) previewing most items (29.6%) using students to "audition" software (46.2%) and not relying solely on catalog information (50.3%) ...practices least likely to be followed: regular use of an evaluation form (23.1%) periodic evaluation and revision (27.1%) and participation in outside evaluation activities (19.2%). ...Their evaluations concentrate primarily on content, failing to consider potential instructional effectiveness (Daly-Lewis, 1983).

Williams

Williams' (1984) doctoral dissertation discusses the importance of monitoring the effectiveness of instructional training in an industrial setting. However, he notes the problems associated with using the systematic approach of formative evaluation in the literature as well as in practice. Thus, he developed a formative evaluation model gleaned from the literature and the practical domain as well. Williams states his model is applicable to both the educational and industrial settings. He also feels his
model will provide information for the advancement of knowledge about the instructional process. Information on Williams' instructional design model was not published in the Dissertation Abstracts Index until 1984, one year after the evaluative questionnaire discussed in this review was designed. (Williams' study shows the issue of formative evaluation in instructional design of continuing importance in current research literature.)
Section II - Sound/slide Program Evaluation

This section of the literature review will address the literary criteria used to develop the three evaluation questionnaire models presented in this study. (See Appendix C for sample questionnaire formats.) Statements from the questionnaires will appear in capital letters. Some statements will be analyzed in groups, based on topic, while others will be addressed individually.

Part I - Design

THE OVERALL PURPOSE OF THE PROGRAM WAS CLEARLY STATED IN THE SOUND/SLIDE PRESENTATION.

During the 1950s, Hoban and Van Ormer (1970) consolidated research experiments concerning the instructional values of motion pictures that had been conducted the previous 30 years. Most of their findings can also related to the production of slides and filmstrips. Their findings indicated that the learner should be given relevant information in the films introduction that informs him as to what he is expected to learn.

Witt (1981), a media psychologist in Austin, Texas, reaffirms that by telling viewers what is expected of them at the beginning of the film, they are better able to separate out relevant from irrelevant information. Advance
learning cues also help the viewer to zero in on the most important facts, rather than wasting time trying to separate out how facts and ideas relate to one another.

THE PROGRAM'S INFORMATION WAS ORGANIZED FOR CLEAR UNDERSTANDING BY THE AUDIENCE.

THE PROGRAM WAS ORGANIZED IN A WAY THAT WOULD HELP THE AUDIENCE REMEMBER THE INFORMATION PRESENTED.

Bower's (1969) experimental studies reveal that the learner can better understand the message of a program, if it is presented in an integrated, organized set of ideas which are unified by a common theme and in an hierarchial format. Using two groups of subjects, he showed them each 112 identical concrete nouns. The first group was shown the words in a random pattern arrangement, while the second group saw the words in a hierarchial framework. (For example: METALS were grouped into three separate categories; Rare, Common, and Alloys.)

After one exposure, the random group was able to recall 20 percent of the words, with the other group recalling 66 percent. Upon viewing the nouns three times, the random group remembered 47 percent, with the hierarchial group recalling all 112 words.

Pavio (1971) suggests that the most powerful factor affecting memory recall of information was based on its location on a continuum of concreteness-abstractness: the more concrete the message, the more easily it was
remembered, the more abstract, the more difficult to remember. Pavio observed earlier, (1970), that the relative concreteness or abstractness of the information can be substantially affected by the type of information portrayed.

THE BEGINNING OF FILMSTRIP CAPTURED INTEREST.
THE ENTIRE PROGRAM WAS INTERESTING.

Effective communication depends upon the learner being motivated. To motivate the learner, one needs to first capture his interest. Often when trying to relate technical data, it is very easy to ignore the benefits entertainment can lend to informational media. Loftus (1980), a noted psychologist states "Interesting information enters our memory more securely, is more resistant to distortion and is better able to fend off potential suggestions for future malleability."

THE PROGRAM LENGTH WAS APPROPRIATE FOR THE STATED PURPOSE.

There is no real formula for gauging the appropriate length for a sound/slide series. Such mediated programs should allow enough time to thoroughly develop the topic, as based on its purposes, yet not be so long that it loses its audience or its effectiveness (Kemp, 1980).

THE PROGRAM PACE WAS SLOW ENOUGH FOR THE AUDIENCE TO UNDERSTAND THE IMPORTANT INFORMATION.
THE PROGRAM PACE WAS QUICK ENOUGH TO HOLD INTEREST.

Kemp (1980) suggests keeping the narration to a minimum so that viewing time for each slide is no longer than 30 seconds. Briggs (1970) notes that our pace for encoding verbal material is six to seven bits of information per second, with the classification/storage process proceeding at only a slightly faster rate. The faster the informational pace, the greater the number of encoding and retrieval errors.

THE INFORMATION PRESENTED IN THE PROGRAM WAS APPROPRIATE FOR THE INTENDED AUDIENCE.

THE PROGRAM OBJECTIVES WERE APPROPRIATE FOR THE INTENDED AUDIENCE.

The objectives and information presented in a mediated learning system must take into account the learning characteristics of the target audience in order to be most effective in meeting their needs. Age, grade level, previous instructional knowledge of subject area, economic characteristics, and prior experiences all need to be assessed (Lawson, 1974). On the EMPLOYEE QUESTIONNAIRE a section for obtaining a personal profile on each respondent, will enable this study to compare the learning characteristic data to see if it best meets the respondents' needs.
THE OVERALL PURPOSE OF THE PROGRAM AS STATED IN THE PROGRAM GUIDE WAS ADEQUATELY COVERED IN THE PRESENTATION.

For slide program scenes to mesh into a simple, cohesive, easily comprehensible learning pattern; care must be taken to relate each scene to the program's overall purpose. Scenes which do not relate to the purpose should be omitted, as they only serve to confuse the viewer (Witt, 1981).

THE SOUND/SLIDE PROGRAM PROVIDED PRACTICE AND FEEDBACK.

THE SOUND/SLIDE PROGRAM PROVIDED OPTIMUM REPETITION OF THE MAIN IDEAS.

Hoban and Van Ormer (1970) reviewed the studies which were conducted on the instructional values of military training films during the World Wars. They noted that repetition of the films, or segments within the film, had one of the most positive effects of increasing learning. They also found the level of learning will increase if the learner is allowed to practice a skill while the information is being shown on the screen.

During the 1960s, Travers, a psychologist, reported that increased learning occurred during a film when the viewer was required to practice using the information via an overt (visible) response. In his studies, viewers had difficulty practicing a continuous demonstration, but showed an increased learning ability when the film was stopped and the viewers allowed to practice. Mental practice was proven as effective as overt participation (Travers, 1966).
Allen's more recent research experiments support the latter findings, adding that learning is enhanced if the instructional content is presented to the viewer, in an identical or varied format, at least two or more times (Allen, 1973).

Part II - Graphics

THE GRAPHICS (DIAGRAMS, GRAPHS AND TITLES) HELPED TO INCREASE UNDERSTANDING OF THE PROGRAMS'S MESSAGE.

Dwyer (1978), a professor at Pennsylvania State University, in the Learning Services Department, has pioneered research in the area of visual learning as it relates to artistic drawing styles and color treatments. He concludes that for sound/slide systems, a simple line drawing in a realistic color or the use of a detailed shaded drawing is most effective in increasing learning. For self-paced mediated instruction systems, the use of realistic photographs facilitated better learning criterion results. Dwyer postulates this could possibly be due to the fact that the self-paced programs allowed the viewers time to study the detail of the photos at their leisure. The PHWF program was not designed for use as a self-paced program.

Researchers are agreeing that there is a lot more going on "behind-the-scenes" of visual learning than they have been able to unlock from the mysteries of the mind. Yet most will agree that "A picture will improve instruction only if
the desired learning outcome is appropriate for the picture's capabilities and if the picture serves the necessary instructional functions," (Brody, 1973).

THE GRAPHICS WERE ALL VERY LEGIBLE.

For optimum legibility..."lines, letters, and symbols should contrast adequately with the background; there must be distinct separation of tones, and the colors selected should be bright and work well together." (Kodak Publication No. S-30, 1981).

THE COLORS USED IN THE GRAPHICS WERE APPEALING.

The five most legible color combinations for projected visuals are detailed by Heinrich, Molenda and Russell (1982):

1) Black letters on a yellow background.
2) Green, red, blue on white background.
3) White letters on blue background.
4) Black letters on white background.
5) Yellow letters on black background.

Colors selected for projected visuals should harmonize with one another, as dissonant colors (i.e., of equal intensity and complementary on the color wheel, like orange-blue, etc.) tend to create annoyance in the viewing audience, thus interfering with comprehension of the message (Kemp, 1980).

THE ARTISTIC STYLE USED IN THE GRAPHICS WAS CONSISTENT THROUGHOUT THE PROGRAM.
ILLUSTRATIONS, DIAGRAMS, GRAPHS AND TITLES LOOKED CLEAN AND PROFESSIONAL.

THE OVERALL VISUAL ATTRACTIVENESS OF THE PHOTOGRAPHS WERE OF VERY HIGH QUALITY.

The three preceding statements refer to the overall general professional quality of the sound/slide system's graphics. Good design is important to provide balance and harmony, to help organize and order the viewer's perceptions (CLIP BITS, 1981). Maintaining consistent styles of artwork avoids confusing the viewer, gives the program a better sequencing flow and prevents distractions from the message (Kemp, 1980).

Part III - Audio

THE MUSIC ENHANCED INTEREST IN THE PROGRAM MESSAGE.
THE MUSIC COMPLEMENTED THE MOOD OF THE PROGRAM.

Hoban, Van Ormer's (1970) and May's (1965) research all indicate that musical backgrounds did little or nothing to improve learning in audiovisual material. In some instances music could actually interfere with the message. For other programs, it could act to enhance the program by creating a desired mood or to aid in building continuity.

More recently, Connelly (1983) examined the effects of music and sound effects on mood and learning from a multi-image program. His findings were as follows:

1. The addition of music, sound effects, and music with sound effects did not produce increased recall.
2. All treatments were ineffective in influencing the viewer's mood state.

3. No correlation existed between achievement scores and mood states on the immediate post test.

4. There was a slight, but significant, negative correlation between achievement and mood state on the delayed post-test.

5. Strong feelings of depression, dejection, anger, hostility, confusion and bewilderment produced significantly lower delayed post-test scores.

6. Although not reaching the significance level, those subjects viewing the music treatment tended to score slightly higher on the delayed post test, thus suggesting a trend.

THE PACE OF THE NARRATION WAS COMFORTABLE AND EASY TO FOLLOW.

THE NARRATOR USED WORDS THAT WERE DIFFICULT TO UNDERSTAND.

The complexity and language used in the script should be tailored to suit the needs of the target audience. Care should be taken to pace the narration in a relaxed conversational manner to avoid overloading the viewer (Witt, 1981).

THE NARRATOR'S VOICE WAS PLEASANT YET STIMULATING.

THE NARRATOR'S PRONUNCIATION AND ARTICULATION WERE CLEAR.

The narrator should have the ability to read the script in a clear voice, use the proper grammar and expressions, and speak in a conversational tone. The best narration will
not call attention to itself, but will provide a smooth narrative flow that will assist in carrying the visual information (Kemp, 1980).

THE MUSIC/NARRATION VOLUME AND BALANCE WERE GOOD.

TRANSITIONS IN MUSIC WERE SMOOTH.

To maintain a good music/narration volume and balance, the music should be kept at a low level to avoid interfering with the commentary or competing with the picture for the viewer's interest. Transitions in music should flow smoothly, with the shifts from music to narration imperceptible (Kemp, 1980).

Part IV - Photography

ALL PHOTOGRAPHS APPEAR TO HAVE BEEN PREPLANNED AND SHOT SPECIFICALLY FOR THIS PROGRAM.

Advance planning on paper for films, sound/slide series, or photo prints, should save time, energy, and will help assure that all the critical planning aspects have been addressed. Failure to pre-plan photographs can result in critical scenes being omitted, causing the sequential flow of continuity to be disrupted. Slides that are "borrowed" from another program and not shot specifically for the given program can cause the entire series to appear fragmented due to subtle color shifts, lighting or composition technique differences (Brown, Lewis, Harcleroad, 1983).
THE FILM'S FRAMES FORM A SMOOTH AND CONTINUOUS VISUAL MESSAGE.

To form a smooth and continuous visual message, the film's frames need to be properly sequenced by advancing the contextual ideas in a logical order. Continuity will also be strengthened if the audio and the visuals are correctly synchronized. Failing to do so will only serve to confuse and madden the viewers. Careful scripting will help avoid this problem (Heinich, Molenda, Russell, 1982).

WHERE APPROPRIATE, PHOTO SEQUENCES HAVE BEEN USED TO SHOW AN IMAGE FROM SEVERAL PERSPECTIVES OR DISTANCES.

In order to maintain interest, add variety, provide continuity in the transitions, and focus attention; slides should be shot from various distances and perspectives (Kodak Publication No. S-30, 1981).

THE PHOTOGRAPHS IN THE PROGRAM WERE CORRECTLY EXPOSED.

THE PHOTOGRAPHS WERE WELL COMPOSED.

Accurate exposures "...produce satisfactory image and flesh tones consistently from one scene to the next, to maintain optimum quality..." (Kodak Publication No. S-30, 1981). Proper composition helps to direct the viewer's attention to the exact details which the program's message is attempting to convey. Research indicates that 41 percent of viewers have a tendency to begin 'reading' a
picture from the upper left quadrant. This suggests that the most important focal point be directed to this particular quadrant (Heinich, Molenda, Russell, 1982).

**CAMERA TO SUBJECT DISTANCES WERE APPROPRIATE AND VISUALLY APPEALING.**

Depending upon the detail of activity one wishes to portray, camera angles can be shot objectively or subjectively. Objectively, provides the viewer with a wide angle view of the subject matter; while subjectivity allows the viewer to observe the activity as he/she would perform it close up (Kodak Publication No. S-30, 1981).

**LIGHTING TECHNIQUES WERE UTILIZED EFFECTIVELY.**

Use of proper lighting techniques serve two purposes: (1) to view the subject appropriately. (2) to create a distinct mood (Kodak Publication No. S-30, 1981).

**Part V - Content**

Lawson (1974) and later Saracho (1982) stressed the need for mediated learning systems to be critically appraised by media specialists, the content experts and the learners. Therefore the sanitarians and dietitians (content experts) in this study were asked to evaluate the accuracy of the PHFW content, and to rate its consistency with the stated objectives.
Part VI - Program Guide

As outlined in Kemp's *Planning & Producing Audiovisual Materials*, (1980), a program guide was designed to aid in preparing the media specialists and content experts for proper use of the sound/slide system. The guide contained the PHFW goal statement, program objectives and target audience information as written by the sound/slide system's producer. A section was added to inform the users as to the length of the program, equipment needed for viewing and an outline of the PHFW content. (See Appendix C.) Using the program guide as a reference source, the content experts and media specialists were asked to analyze the program's objectives, the audience, entry level skills, and program goals.

Part VII - Profile

This profile section attempted to collect background data on the audience (food service employees) in order to better address their learning characteristic needs, as described by Saracho (1982). The profile questions related to job title, years employed in food service work, previous training, schooling, age, and sex. The questions utilized were designed by the PHFW's producer.

Part VIII - Comments

Additional blank space was allowed at the end of each questionnarie to allow the evaluators to note any further
recommendations, comments, additions or deletions they would like to see in a future revision of the PHFW program (Berdie and Anderson, 1974).

Part IX - How Much Do You Remember?

This criterion test (for employees only) was an attempt to ascertain if the stated program objectives as outlined were met. (See Appendix C, Employee Form.) Since the purpose of this thesis is only to compare and contrast the opinions of the three aforementioned groups; the results of the criterion test will be reported. The test will not be tested for reliability/validity or standardization.
III. METHODS AND PROCEDURES

This study was designed to gather descriptive information from the three groups stipulated by the literature search to be the key appraisers for evaluating the worth of a learning system. This chapter details information related to Oregon Mid-Willamette Valley demographics, the population sample, development of the instrument, expert contribution, selection of site participants, and collection and treatment of the data.

Mid-Willamette Valley Demographics

The Oregon State Water Resources Board (1967) describes the Willamette River Basin as being bounded on "...the west by the Coast Range, on the east by the Cascade Range, on the south by the Calapooya Mountains, and on the north by the Columbia River." The Willamette Valley is that portion of the basin which is below an elevation of 500 feet above sea level. The irregular valley shape averages about 117 miles in length and 30 miles in width.

For the purpose of this study, a geographic cluster known as the Mid-Willamette Valley was chosen for the hospital participation sites. This included the river valley areas south of Portland to Eugene. The city of Salem was excluded from the sample, since all of the hospitals there had previously participated in Nelson's testing of the PHFW program.
Population Sample

The Content Experts consisted of Registered Dietitians from seven hospitals and one nursing home in the Oregon Mid-Willamette Valley. A total of eleven dietitians comprised the final sample size.

The other Content Experts, consisting of thirteen Sanitarians, came from three counties with Food Handler programs that were willing to participate. Two counties had lost their funding for their Food handler programs, and one county chose not to participate. Another questionnaire solicitation was returned marked "Undeliverable".

The Food Handlers and the Food Service Workers (the Learners), were grouped together to make one sample size total of 163 participants. A limitation may be noted here as 37.7 percent of the 163 participants had had four or more years of training in the food service industry. Nelson's program was developed for workers with four or less years of food service experience.

The Media Specialists consisted of ten members, five of whom acted as the DELPHI panel of judges and five who responded to the PHFW questionnaire. (Refer to Appendix A for an enumeration of the population sample.) Figure 1. depicts a graphic representation of the population sample:
Figure 1.
Population Sample Size
Classifications by Occupations

- **FOOD SER. WORKER**: 163
- **DIETITIAN**: 11
- **SANITARIANS**: 13
- **MEDIA**: 5

# IN SAMPLE
Development of the Instrument

The original copy of the sound/slide program evaluation instrument (which later became the basis of the three questionnaire forms utilized in this study), was presented to the investigator by Dr. Ruth Stiehl, who had been using the original evaluation instrument in her Education 437 Multi-Media Production classes at Oregon State University.

Dr. Stiehl's format was revised based on the findings of the literature search. Many of questions on the original version contained questions with more than one adverb or adjective, which according to Berdie and Anderson, is really a double question or too wordy. They stress asking only one piece of information per question. For example, "Is the text informative and interesting?" is really two questions. A program can be informative, but not necessarily interesting, which indicates the need for two answers to this one question. If the question were broken into two separate questions, the respondee could provide a more accurate and honest answer (Berdie and Anderson, 1974).

Expert Contribution

The experts consisted of ten selected (Instructional) Media Specialists from the Oregon State University staff in Corvallis, Western Oregon State College in Monmouth, and the University of Oregon in Eugene. Five of these specialists
juried the questionnaires on a DELPHI panel and five of them viewed the PHFW program and answered the Media Specialist questionnaires.

A generated list of evaluation criteria, drawn from the literature search, was submitted to the five members on the DELPHI jury in order to assure content validity. Each juror was asked to eliminate extraneous criteria, isolate or add any useful or necessary criteria. A compiled list of criteria from the DELPHI results was placed in a questionnaire format and resubmitted to the panel. Revisions were made as indicated. Questionnaire formats were once again submitted to the jury for criteria consensus. (A list of participating experts and a synopsis of their qualifications can be found in Appendix A.)

Experts were selected on the basis of whether they met one or more of the following criteria:

(1) The individual is involved at the university level with the development of mediated learning systems and curriculum.

(2) The individual teaches some aspect of instructional design technology, media or broadcast journalism at the high school or college level.

(3) The individual holds a master's or doctorate degree from an accredited university/college, in the area of instructional design technology, media education or broadcast media.
Field-testing the Questionnaire

The usefulness of the Employee Questionnaire was confirmed by pilot testing it among a class of Restaurant Management students at Linn-Benton Community College. The OSU Survey Research Center reviewed the questionnaires for any bias. Modifications were made in format only.

Content validity of the questionnaires was established by use of the DELPHI panel. Internal consistency-reliability was ascertained using the Spearman-Brown formula.

Reliability

Reliability of internal consistency was affirmed for two of the questionnaires, the Content Experts' (Dietitians and Sanitarians'), and for the Learners (the Food Service Workers). It was not calculated for the Media Specialists as their sample size was too small. Using the Spearman-Brown formula and the coefficient of internal consistency for reliability of the whole test; an "r" of +.90 was obtained for the content expert's questionnaire. An "r" value of +1.00 was computed for the Food Service Worker questionnaire. These results reflect a positive correlation which verifies the reliability of both questionnaires. The two groups tended to rank the PHFW's program similarly in their evaluation of its important characteristics.
Spearman-Brown Formula

\[ r + \frac{6(d)}{n(n-1)} \]

Reliability of whole test = \[ \frac{2 \times r \text{ of } 1/2 \text{ test}}{1 + r \text{ of } 1/2 \text{ test}} \]

Site Selection

The population sample was limited to a geographic cluster of all hospitals located in the Mid-Willamette Valley. As there were only seven county food handler programs statewide, they were all included among the sites selected.

Eight hospitals were identified as being located in the Mid-Willamette Valley. Seven of the eight hospitals agreed to participate. The Albany hospital was unable to participate due to personnel changes. However, their relief dietitian requested that the nursing home where she also worked be allowed to substitute for the hospital. Since it was located in the chosen geographic region and met similar criteria for Food Service Workers, the substitution was made.

Data Collection

Directors of the hospitals' Food Service Departments were sent an introductory cover letter and a copy of the PHFW program guide to acquaint them with the study. (See
Cover Letter and Program Guide sample in Appendix C). Within a week, each director was contacted via phone to confirm interest in voluntary participation in the study.

Viewing dates were arranged, equipment specifications discussed, with media format (slides or filmstrip) selections being decided by the participating facility. All of the hospital dietitians initially expressed a great deal of enthusiasm towards evaluating the PHFW program. The investigator personally administered the PHFW treatment to three of the hospitals, the other four hospitals chose to administer the program themselves. These four hospitals were sent a list of Treatment Specifications to follow to assure all treatments were presented in the same manner. (See Appendix C for Treatment Specification sample.) Eleven Dietitians responded to the Content Experts' Questionnaire after viewing the PHFW program.

In order to avoid instilling any bias in the Food Service Employees' opinions, each PHFW program treatment was introduced in the following manner:

"The filmstrip/slides you are about to see depicts the role good personal hygiene plays in providing safe and sanitary foods, attractively served in a food service department. At the end of the program you will be asked to take a few moments to evaluate the program. Your responses will be used to rate the overall effectiveness of the program."

The Sanitarians in the counties with Food Handler Programs were also contacted in the same manner. Three counties agreed to participate. The Sanitarians admin-
istered the treatments. Approximately 51.5 percent of the Employees in the total 163 sample size were from the Food Handler Classes, the remaining 48.5 percent comprised the Hospital employees. Thirteen Sanitarians responded to the Content Experts' Questionnaire.

Five Media Specialists from the selected ten-member jury panel responded to the Media Specialist Evaluation Questionnaire. (The remaining five had previously juried the questionnaires as described in the previous Expert Contribution section of this chapter.)

**Treatment of the Data**

The OSU Survey Research Center suggested combining the answers on the five point Likert scale into three ratings by combining the "Strongly Agree" and "Agree" into an "Agree" column; and the "Strongly Disagree" and "Disagree" into one "Disagree" column. Because of the vast quantity of data involved, this was suggested to make the result reporting less cumbersome (Berg, 1984). "Another factor to take into account in fixing the number of categories is that respondents generally avoid the two extreme positions, thus effectively reducing the number they choose between--error of central tendency" (Moser and Kalton, 1972).

**Statistical Tests**

As data from this study were nominal in nature, the questionnaire results were reported on a percentage basis and a percentage basis also was used in the non-parametric
Chi square. Chi square tests were chosen to determine if significant differences existed between the Content Experts and the Food Service Workers opinions of the PHFW program. Chi square tests were also run to observe if significant differences existed among the Content Experts themselves. Media Specialists were excluded from the chi square testing due to their small sample size. The statistical analysis was computed by the OSU Survey Research Center.

Materials

The PHFW, contained fifty 35mm slide/filmstrip frames, with a 25-minute narration on an audio cassette tape with audible cues. Equipment needed to view the program was a 35mm slide machine or a filmstrip projector with a manual advance, a cassette tape player and a single screen. Programs Guides were given to each Media Specialist and Content Expert to aid them in assessing the program's goals and objectives, which were listed inside. After viewing the PHFW program, each group (the Media Specialists, the Content Experts, and the Learners) was given evaluation forms which took from five to ten minutes to complete, depending on the individual.
IV. ANALYSIS AND INTERPRETATION OF DATA

The results of this study are reported in four sections. Following a description of the audience profile, the second section describes a percentage breakdown of each group's responses to the PHFW evaluation questionnaire. The third section reports on the post test results, and the fourth section presents results of the statistical tests which compare the responses of the learners with those of the content expert's evaluations.

Audience Profile

The target audience for this study consisted of 163 food service workers, 51.5 percent were employees from four Oregon counties' Food Handlers Classes. The remaining 48.5% were food service workers from seven Oregon hospital (one nursing home was included in lieu of the Albany Hospital). (Appendix A identifies each site participant.)

Nelson (1983), developer of the PHFW program, had identified the program's target audience as food service workers with four or less years of experience in food service operations. The participating sites chose to have all of their food service workers view the program, contending it would be a good review for those who already had previous training in this area.
Years in Food Service

Figure 2 depicts the percentage of Food Service Workers, classified by number of years in the food service industry. A total of 62.3 percent of the workers had four or less years of experience in a food service setting. Of these, 45.7 percent were identified as having 0 - 2 years of food service work experience, while 16.6 percent indicated having had 2 - 4 years experience. Those with four or more years of food service work experience comprised 37.7 percent of the sample.

Figure 2.
FSW: Years in Food Service
**Previous Training**

A percentage classification of the Food Service Worker's previous training in personal hygiene, as it relates to food service, can be found in Figure 3. Over seventy-three percent of the workers acknowledged having had previous personal hygiene training. Only 21.3 percent of the workers indicated they had no previous personal hygiene training, with 5.2 percent responding that they "did not know".

![Figure 3. FSW: Previous Training](image-url)
Schooling

When asked to state how many years of schooling they had completed, 6.6 percent of the workers indicated they had only finished the eighth and ninth grades. A majority (59.2 percent) had finished the tenth through twelfth grades, almost 33 percent had completed between 13 to 16 years of schooling, and 1.3 percent indicated they had completed 17 or more years of schooling. The "No Answer" category comprised 12.2 percent of the sample. An illustration is shown in Figure 4.
Age

Figure 5 categorizes age distribution of the workers. Most of the respondents (46.7 percent) fell into the 15-25 years age bracket, 27.7 percent comprised the 26-40 years category, 1.8 percent represented the 41-55 years group, and 7.2 percent indicated they were 56 years or older. A fairly high percentage (30.9 percent) chose not to respond to this question. A graphic summation is detailed in Figure 5.

Figure 5.
FSW: Age
Sex

The final component of the audience profile describes the sex classification of the food service workers. Women comprised the majority of the sample (81.5 percent), with men representing 18.5 percent.

Sound/slide Program Evaluation

In this second section, are the percentage tabulations of the four groups' responses to the sound/slide program evaluation statements. The Food Service Worker questionnaire format is utilized except where noted by an asterisk (*). The use of the asterisk indicates that particular question appeared only on the Content Expert's or the Media Specialist's form. "Strongly Agree" and "Agree" ranks were compressed to only an "Agree" ranking. "Strongly Disagree" and "Disagree" ranks were also compressed into one "Disagree ranking, based on the Error of Central Tendency (Berg, 1983). Due to the quantity of data to be reported, this was done to make the reporting less cumbersome. Names of the groups will be abbreviated as follows: Dietitians = DIET., Sanitarians = SANT., Food Service Worker = FSW, and the Media Specialists = MEDIA. Answers will be coded: A = Agree, U = Undecided, D = Disagree and NA = No Answer.
Part 1 - Design

Table 1. Overview of the PHFW's Purpose and Organization

<table>
<thead>
<tr>
<th>Question #</th>
<th>% DIET</th>
<th>% SANT</th>
<th>% FSW</th>
<th>% MEDIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The overall purpose of the program was clearly stated in the sound/filmstrip.</td>
<td>A 100</td>
<td>82.0</td>
<td>92.0</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>U  -</td>
<td>18.2</td>
<td>3.7</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>D  -</td>
<td>-</td>
<td>1.2</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>NA  -</td>
<td>-</td>
<td>3.1</td>
<td>-</td>
</tr>
<tr>
<td>2. The program's information was organized in a manner that was easy to understand.</td>
<td>A 92.3</td>
<td>54.5</td>
<td>93.2</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>U  7.7</td>
<td>9.1</td>
<td>2.4</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>D  36.1</td>
<td>1.8</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NA  -</td>
<td>2.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. The program was organized in a way that would help you remember the information presented.</td>
<td>A 53.9</td>
<td>45.4</td>
<td>81.6</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>U  38.5</td>
<td>18.2</td>
<td>10.4</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>D  7.7</td>
<td>36.4</td>
<td>6.1</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>NA  -</td>
<td>1.8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dietitians = DIET., Sanitarians = SANT., Food Service Worker = FSW, and the Media Specialists = MEDIA. Answers are coded: A = Agree, U = Undecided, D = Disagree and NA = No Answer.

Table 1 - Question 1. Data indicate the vast majority of all four groups agreed that the overall purpose of the PHFW program was clearly stated (as recommended by Witt, 1981).

Question 2. The Dietitians and Food Service Workers (FSW) concurred that the program's information was organized in a manner that was easy to understand. While a slim majority of the Sanitarians and Media Specialists agreed, there was disagreement within these two groups.
Question 3. Bower (1969) described how learner understanding of a program can be increased by presenting the material in an hierarchical format with a unified common theme. Later, Pavio (1971) found that the more concrete the message was, the easier it was for the learners to recall the information. Interestingly enough, while the FSW's were the only ones who reported that the program was organized in a way that would help them remember the information, the results of their tests, on the whole, showed the opposite to be true.

Table 2. Measure of PHFW's Interest Level

<table>
<thead>
<tr>
<th>Question #</th>
<th>% DIET</th>
<th>% SANT</th>
<th>% FSW</th>
<th>% MEDIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. The beginning of the filmstrip captured interest.</td>
<td>A 53.9</td>
<td>18.2</td>
<td>40.5</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>U 15.4</td>
<td>9.1</td>
<td>27.0</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>D 23.1</td>
<td>63.6</td>
<td>28.2</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>NA 7.7</td>
<td>9.1</td>
<td>4.3</td>
<td>-</td>
</tr>
<tr>
<td>5. The entire program was interesting.</td>
<td>A 53.9</td>
<td>-</td>
<td>46.0</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>U 30.8</td>
<td>27.3</td>
<td>17.8</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>D 15.4</td>
<td>72.7</td>
<td>33.7</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>NA -</td>
<td>-</td>
<td>2.4</td>
<td>-</td>
</tr>
</tbody>
</table>

Dietitians = DIET., Sanitarians = SANT., Food Service Worker = FSW, and the Media Specialists = MEDIA. Answers are coded: A = Agree, U = Undecided, D = Disagree and NA = No Answer.

Table 2 - Question 4. Only a slight majority of the Dietitians felt that the beginning of the sound slide/filmstrip captured interest.
Question 5. A majority of the Sanitarians disagreed that the entire program was interesting. Again, a slim majority of the Dietitians rated this as interesting, while less than 50 percent of the FSWs and the Media Specialists viewed the entire program as interesting.

Table 3. Overview of PHFW's Length and Pace

<table>
<thead>
<tr>
<th>Question #</th>
<th>%</th>
<th>%</th>
<th>%</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DIET</td>
<td>SANT</td>
<td>FSW</td>
<td>MEDIA</td>
</tr>
<tr>
<td>6. The program length was appropriate for the stated purpose.</td>
<td>A 61.6</td>
<td>54.5</td>
<td>70.6</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>U 7.7</td>
<td>-</td>
<td>17.8</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>D 30.8</td>
<td>45.5</td>
<td>9.2</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>NA -</td>
<td>-</td>
<td>2.4</td>
<td>-</td>
</tr>
<tr>
<td>7. The program pace was slow enough to fully understand all the information presented.</td>
<td>A 92.3</td>
<td>63.6</td>
<td>85.9</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>U -</td>
<td>18.2</td>
<td>6.7</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>D -</td>
<td>18.2</td>
<td>4.9</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>NA 7.7</td>
<td>-</td>
<td>2.4</td>
<td>-</td>
</tr>
<tr>
<td>8. The program pace was quick enough to hold interest.</td>
<td>A 69.2</td>
<td>45.4</td>
<td>54.6</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>U 15.4</td>
<td>9.1</td>
<td>19.0</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>D 15.4</td>
<td>45.5</td>
<td>22.1</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>NA -</td>
<td>-</td>
<td>3.7</td>
<td>-</td>
</tr>
</tbody>
</table>

Dietitians = DIET., Sanitarians = SANT., Food Service Worker = FSW, and the Media Specialists = MEDIA. Answers are coded: A = Agree, U = Undecided, D = Disagree and NA = No Answer.

Table 3 - Question 6. The data show a majority of Dietitians, Sanitarians, and FSW's agreed the length was appropriate, while the Media Specialists disagreed by a vote of 60 percent.

Question 7. Generally, all groups agreed that the program pace was slow enough to fully understand all the information presented.
Question 8. A disparity existed among the groups, however, as to whether or not the pace was quick enough to hold interest. A majority of the Dietitians and FSWs agreed the pace was quick enough to hold interest, with a higher percentage of the Dietitians (69.2%) agreeing than the other three groups. The Sanitarians were equal in votes to agree and to disagree with the statement, while no Media Specialists agreed and a majority (60.%) disagreed.

Table 4. Relationship of PHFW to Personal Experience

<table>
<thead>
<tr>
<th>Question #</th>
<th>%</th>
<th>%</th>
<th>%</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. The ideas presented in the program related to your personal experience.</td>
<td>A</td>
<td>-</td>
<td>-</td>
<td>62.0</td>
</tr>
<tr>
<td></td>
<td>U</td>
<td>-</td>
<td>-</td>
<td>17.8</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>-</td>
<td>-</td>
<td>15.3</td>
</tr>
<tr>
<td></td>
<td>NA</td>
<td>-</td>
<td>-</td>
<td>4.9</td>
</tr>
<tr>
<td>10. The ideas presented in the program were meaningful to your job.</td>
<td>A</td>
<td>-</td>
<td>-</td>
<td>72.4</td>
</tr>
<tr>
<td></td>
<td>U</td>
<td>-</td>
<td>-</td>
<td>16.0</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>-</td>
<td>-</td>
<td>8.0</td>
</tr>
<tr>
<td></td>
<td>NA</td>
<td>-</td>
<td>-</td>
<td>3.7</td>
</tr>
</tbody>
</table>

Dietitians = DIET., Sanitarians = SANT., Food Service Worker = FSW, and the Media Specialists = MEDIA. Answers are coded: A = Agree, U = Undecided, D = Disagree and NA = No Answer.

Table 4 - Question 9 & Question 10. Results indicate there was a high degree of consensus among the FSWs that the ideas presented in the program related to their personal experience and were meaningful to their job. Lawson (1974)
stresses the importance of the learner's present degree of interest (or attitude) toward the product content. If the FSW's did not feel that the program was relevant or meaningful to them, Lawson stated that the program would not motivate them.
Table 5. Overview of Graphic Format

<table>
<thead>
<tr>
<th>Question #</th>
<th>% DIET</th>
<th>% SANT</th>
<th>% FSW</th>
<th>% MEDIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The graphics (diagrams, graphs, and title slides) were all very legible.</td>
<td>A 76.9</td>
<td>81.8</td>
<td>78.5</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>U 7.7</td>
<td>-</td>
<td>8.0</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>D 15.4</td>
<td>9.1</td>
<td>9.2</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>NA -</td>
<td>9.1</td>
<td>4.3</td>
<td>-</td>
</tr>
<tr>
<td>2. The graphics helped to increase understanding of the program's message.</td>
<td>A 92.3</td>
<td>90.9</td>
<td>70.6</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>U 7.7</td>
<td>9.1</td>
<td>17.2</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>D -</td>
<td>-</td>
<td>8.6</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>NA -</td>
<td>-</td>
<td>3.1</td>
<td>-</td>
</tr>
<tr>
<td>3. The colors used in the graphics were appealing.</td>
<td>A 53.9</td>
<td>45.5</td>
<td>44.2</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>U 15.4</td>
<td>36.4</td>
<td>32.0</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>D 30.8</td>
<td>18.2</td>
<td>21.4</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>NA -</td>
<td>-</td>
<td>2.4</td>
<td>-</td>
</tr>
</tbody>
</table>

Dietitians = DIET., Sanitarians = SANT., Food Service Worker = FSW, and the Media Specialists = MEDIA. Answers are coded: A = Agree, U = Undecided, D = Disagree and NA = No Answer.

Table 5 - Question 1. In this first segment of the graphics component, all groups reported that the graphics in the program were all very legible.

Question 2. The Sanitarians and Dietitians concurred by a higher majority than the others that the graphics helped to increase the understanding of the program's message.

Question 3. Less than 50 percent of all the groups, except the Dietitians, perceived the colors in the graphics as appealing. The Media Specialists disagreed.
Table 6. PHFW's Graphic Quality

<table>
<thead>
<tr>
<th>Question #</th>
<th>% DIET</th>
<th>% SANT</th>
<th>% FSW</th>
<th>% MEDIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Illustrations, diagrams, graphs and titles looked clean and professional.*</td>
<td>A 53.9</td>
<td>63.6</td>
<td>-</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>U 23.1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>D 15.4</td>
<td>36.4</td>
<td>-</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>NA 7.7</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5. The overall visual attractiveness of the photos were of very high quality.</td>
<td>A 61.5</td>
<td>63.6</td>
<td>33.7</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>U 15.4</td>
<td>-</td>
<td>34.4</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>D 23.1</td>
<td>36.4</td>
<td>26.4</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>NA -</td>
<td>-</td>
<td>5.5</td>
<td>-</td>
</tr>
<tr>
<td>6. The artistic style used in the graphics was consistent throughout the program.*</td>
<td>A -</td>
<td>-</td>
<td>-</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>U -</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>D -</td>
<td>-</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>NA -</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Dietitians = DIET., Sanitarians = SANT., Food Service Worker = FSW, and the Media Specialists = MEDIA. Answers are coded: A = Agree, U = Undecided, D = Disagree and NA = No Answer.

Table 6 - Question 4. Results show that slightly more than 50 percent of the Dietitians and Sanitarians perceived that the illustrations, diagrams, graphs and title slides looked clean and professional. The majority of the Media Specialists disagreed.

Question 5. A fairly high number of the Dietitians and Sanitarians agreed that the overall attractiveness was of very high quality. The FSW's were undecided and the Media Specialists disagreed.

Question 6. Nonetheless, the Media Specialists concurred that the artistic style used in the graphics was consistent throughout the program.
Part III - Audio

Table 7. Music's Effect on Interest and Mood

<table>
<thead>
<tr>
<th>Question #</th>
<th>% DIET</th>
<th>% SANT</th>
<th>% FSW</th>
<th>% MEDIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The music enhanced interest in the program</td>
<td>A 53.9</td>
<td>18.2</td>
<td>35.0</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>U 38.5</td>
<td>45.4</td>
<td>28.2</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>D 7.7</td>
<td>36.4</td>
<td>32.0</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>NA -</td>
<td>-</td>
<td>4.9</td>
<td>-</td>
</tr>
<tr>
<td>2. The music complimented the mood of the program.*</td>
<td>A 61.5</td>
<td>36.4</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>U 30.8</td>
<td>27.3</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>D 7.7</td>
<td>36.4</td>
<td>-</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>NA -</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Dietitians = DIET., Sanitarians = SANT., Food Service Worker = FSW, and the Media Specialists = MEDIA. Answers are coded: A = Agree, U = Undecided, D = Disagree and NA = No Answer.

Table 7 - Question 1. Results indicate less than 45 percent of the Media Specialists, Sanitarians and FSWs perceived the music as enhancing interest in the program. The Dietitians rated this statement the most positively, yet, barely more than half (53.9) voted in agreement.

Question 2. Sixty-one percent of the Dietitians reported the music complimented the mood of the program, with the Sanitarians split in their vote, and the Media group disagreeing. Past research has found no correlation to music or sound effects on increased learning in audiovisual materials (Hoban May 1965; and Van Ormer, 1970). However, Connelly's (1983) more recent findings suggest that while not reaching a level of significance, subjects who viewed a music treatment scored slightly higher on the delayed post test, suggesting a trend.
Table 8. Narrator's Voice Quality

<table>
<thead>
<tr>
<th>Question #</th>
<th>% DIET</th>
<th>% SANT</th>
<th>% FSW</th>
<th>% MEDIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. The pace of the narration was comfortable and easy to follow.</td>
<td>A 92.3</td>
<td>63.6</td>
<td>77.3</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>U 7.7</td>
<td>9.1</td>
<td>9.2</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>D -</td>
<td>27.3</td>
<td>9.8</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>NA -</td>
<td>-</td>
<td>3.7</td>
<td>-</td>
</tr>
<tr>
<td>4. The narrator's voice was pleasant yet stimulating.</td>
<td>A 76.9</td>
<td>36.4</td>
<td>57.8</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>U 15.4</td>
<td>-</td>
<td>17.8</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>D 7.7</td>
<td>63.6</td>
<td>21.5</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>NA -</td>
<td>-</td>
<td>3.1</td>
<td>-</td>
</tr>
<tr>
<td>5. The narrator's pronunciation and articulation were clear.</td>
<td>A 100</td>
<td>90.9</td>
<td>84.7</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>U -</td>
<td>-</td>
<td>6.8</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>D -</td>
<td>9.1</td>
<td>5.5</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>NA -</td>
<td>-</td>
<td>3.1</td>
<td>-</td>
</tr>
</tbody>
</table>

Dietitians = DIET., Sanitarians = SANT., Food Service Worker = FSW, and the Media Specialists = MEDIA. Answers are coded: A = Agree, U = Undecided, D = Disagree and NA = No Answer.

Table 8 - Question 3 and Question 4. The majority of all groups reported that the pace of the narration was comfortable and easy to follow. However, a large disparity existed as to whether or not the narrator's voice was pleasant yet stimulating. The Dietitians agreed, the Sanitarians disagreed, the FSW's only marginally agreed, yet 60 percent of the Media group agreed.

Question 5. Data shows all groups agreed that the narrator's pronunciation and articulation was clear.
Table 9. Audio Track Quality

<table>
<thead>
<tr>
<th>Question #</th>
<th>% DIET</th>
<th>% SANT</th>
<th>% FSW</th>
<th>% MEDIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. The music/narration volume and balance were good.*</td>
<td>A - - - 60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. The narrator used terminology the audience could fully understand.*</td>
<td>A 92.3 54.5 - -</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. The narrator used difficult words that were hard to understand.</td>
<td>A - - 8.0 -</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Transitions in music were smooth.*</td>
<td>A 100 100 72.4 40</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dietitians = DIET., Sanitarians = SANT., Food Service Worker = FSW, and the Media Specialists = MEDIA. Answers are coded: A = Agree, U = Undecided, D = Disagree and NA = No Answer.

Table 9 - Question 6. The Media Specialists noted that the music/narration volume balance was good.

Question 7. The results show Dietitians agreed that the narrator used terminology that the audience could fully understand. Only a slight majority of Sanitarians agreed with this statement.
Question 8. Meanwhile, a large majority of FSWs disagreed that the narrator used difficult words; and, in fact, in the "comments" section of the questionnaire (Appendix B), they indicated they felt that the wording of the program was a bit condescending to them.

Question 9. Dietitians and Sanitarians reported (100%) transitions were smooth, however 60 percent of Media Specialists disagreed.
Part IV Photography

Table 10. Media Specialists' Critique of Photo Quality

<table>
<thead>
<tr>
<th>Question #</th>
<th>DIET</th>
<th>SANT</th>
<th>FSW</th>
<th>MEDIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. All photographs appear to have been preplanned and shot specifically for this program.*</td>
<td>A 80</td>
<td>U 20</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>2. The film's frames form a smooth and continuous visual message.*</td>
<td>A 40</td>
<td>U 20</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>3. Where appropriate, photo sequences have been used to show an image from several perspectives or distances. *</td>
<td>A 40</td>
<td>U 20</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>4. The photographs in the program were correctly exposed.*</td>
<td>A 60</td>
<td>U</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>5. The photographs were well composed.*</td>
<td>A 60</td>
<td>U 20</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>6. Camera to subject distances were appropriate and visually appealing.*</td>
<td>A 60</td>
<td>U 20</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>7. Lighting techniques were utilized effectively.*</td>
<td>A 40</td>
<td>U</td>
<td>D</td>
<td></td>
</tr>
</tbody>
</table>

Dietitians = DIET., Sanitarians = SANT., Food Service Worker = FSW, and the Media Specialists = MEDIA. Answers are coded: A = Agree, U = Undecided, D = Disagree

Table 10 - Question 1. Results indicate that the Media group agreed by a wide majority that the photographs all appeared to have been preplanned and shot specifically for this program. Brown, Lewis and Harcleroad (1983) stress
that failure to pre-plan photographs can result in critical scenes being omitted, causing a disruption in the flow and continuity of the program.

**Question 2.** Data from the Media Specialists showed they could not decide whether or not the film's frames formed a smooth and continuous visual message. Heinich, Molenda and Russell (1982) maintained that a smooth and continuous visual message could be formed by properly sequencing and presenting the contextual ideas in a logical order.

**Question 3.** Data reveal the Media Specialists, again, could not come to an agreement as to whether or not the photo sequences showed an image from several perspectives or distances.

**Questions 4, 5 & 6.** Responses for these three statements show sixty percent of the Media Specialists did agree that the photographs were correctly exposed and well composed, with camera-to-subject distances appropriate and visually appealing.

**Question 7.** However, answers indicate the majority of Media Specialists did not perceive that the lighting techniques were utilized effectively. Poor lighting techniques could affect proper viewing of the subjects and the mood of the program (Kodak Publication No. S-30, 1981).
### Table 11. Content Experts' and Media Specialists' Responses to Content Quality

<table>
<thead>
<tr>
<th>Question #</th>
<th>DIET</th>
<th>SANT</th>
<th>FSW</th>
<th>MEDIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The program content was consistent with the stated objectives.*</td>
<td>A</td>
<td>92.3</td>
<td>45.5</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>U</td>
<td>7.7</td>
<td>18.2</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>-</td>
<td>18.2</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>NA</td>
<td>-</td>
<td>18.2</td>
<td>-</td>
</tr>
<tr>
<td>2. The program content outline clearly described the program. *</td>
<td>A</td>
<td>100.0</td>
<td>63.6</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>U</td>
<td>-</td>
<td>18.2</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>NA</td>
<td>-</td>
<td>18.2</td>
<td>-</td>
</tr>
<tr>
<td>3. All information presented in the program was correct.*</td>
<td>A</td>
<td>92.3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>U</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>7.7</td>
<td>90.9</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>NA</td>
<td>-</td>
<td>9.1</td>
<td>-</td>
</tr>
<tr>
<td>4. I would be interested in purchasing this program for future use in staff training.*</td>
<td>A</td>
<td>23.1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>U</td>
<td>30.8</td>
<td>9.1</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>38.5</td>
<td>72.7</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>NA</td>
<td>7.7</td>
<td>18.2</td>
<td>-</td>
</tr>
</tbody>
</table>

Dietitians = DIET., Sanitarians = SANT., Food Service Worker = FSW, and the Media Specialists = MEDIA. Answers are coded: A = Agree, U = Undecided, D = Disagree and NA = No Answer.

Table 11 - Question 1. As far as the program content was concerned, results indicate both the Dietitians and Media Specialists agreed that the content was consistent with the stated objectives. (Objectives are listed in the Program Guide. See Appendix C). Less than half the Sanitarians agreed, with the remaining Sanitarians evenly split among the other three choices.
**Question 2.** Responses show the Dietitians overwhelmingly agreed (100%) that the program content outline was clearly described in the program. The majority of the Sanitarians and Media groups agreed, but not as enthusiastically as the Dietitians.

**Question 3.** The Dietitians reported (92%) that all information presented in the PHFW program was correct. However, the Sanitarians overwhelmingly disagreed (91%) that the information was correct.

**Question 4.** Not surprisingly, none of the Sanitarians were interested in purchasing the program for future use in staff training. Only 23 percent of the Dietitians expressed interest in its purchase.
### Table 12. Program Guide Overview

<table>
<thead>
<tr>
<th>Question #</th>
<th>% DIET</th>
<th>% SANT</th>
<th>% FSW</th>
<th>% MEDIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The audience was clearly defined in the program guide.*</td>
<td>A 100</td>
<td>63.6</td>
<td>-</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>U -</td>
<td>9.1</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>D -</td>
<td>9.1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>NA -</td>
<td>18.2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2. Any assumed audience entry level skills were clearly stated.*</td>
<td>A 84.6</td>
<td>54.5</td>
<td>-</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>U 15.4</td>
<td>18.2</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>D -</td>
<td>9.1</td>
<td>-</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>NA -</td>
<td>18.2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3. The program guide contained a carefully stated summary of the program goal.*</td>
<td>A 92.3</td>
<td>36.4</td>
<td>-</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>U -</td>
<td>18.2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>D 7.7</td>
<td>27.3</td>
<td>-</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>NA -</td>
<td>18.2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4. The objectives were clearly stated in measurable terms.*</td>
<td>A 92.3</td>
<td>45.5</td>
<td>-</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>U -</td>
<td>27.3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>D 7.7</td>
<td>9.1</td>
<td>-</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>NA -</td>
<td>18.2</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Dietitians = DIET., Sanitarians = SANT., Food Service Worker = FSW, and the Media Specialists = MEDIA. Answers are coded: A = Agree, U = Undecided, D = Disagree and NA = No Answer.

The following table summations (Tables 12, 13, 14, and 15), refer to all groups except the FSWs.

Table 12 - Question 1. Data indicate all groups were in agreement that the audience was clearly defined in the program guide.
Question 2. A majority of Dietitians were really the only group that perceived any assumed audience entry level skills were clearly stated in the program guide. The Sanitarians only marginally agreed with this statement, and the Media Specialists votes were split.

Question 3. Dietitians also reported that the program guide contained a carefully stated summary of the program goal. The Sanitarians were split, while the majority of the Media group agreed.

Question 4. Responses reveal Dietitians agreed by a majority that the objectives of the program were clearly stated in measurable terms. Sanitarians' votes were split, with the Media group disagreeing. The Media Specialists should be the most highly qualified to determine this answer. The variety of responses indicated that the Dietitians may not have understood the educational use of the phrase "measurable terms". The Sanitarians came closer to the Media Specialists' assessment.
Table 13. Program Guide Audience and Purpose

<table>
<thead>
<tr>
<th>Question #</th>
<th>% DIET</th>
<th>% SANT</th>
<th>% FSW</th>
<th>% MEDIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. The information presented in the program was appropriate for the intended audience.*</td>
<td>A 77.0</td>
<td>27.3</td>
<td>-</td>
<td>80</td>
</tr>
<tr>
<td>6. The program objectives were appropriate for the audience.*</td>
<td>A 92.3</td>
<td>45.4</td>
<td>-</td>
<td>60</td>
</tr>
<tr>
<td>7. The overall purpose of the program as stated in the program guide was adequately covered in the presentation.*</td>
<td>A 100</td>
<td>45.5</td>
<td>-</td>
<td>100</td>
</tr>
</tbody>
</table>

Dietitians = DIET., Sanitarians = SANT., Food Service Worker = FSW, and the Media Specialists = MEDIA. Answers are coded: A = Agree, U = Undecided, D = Disagree and NA = No Answer.

Table 13 - Question 5. Results show the majority of Dietitians and Media Specialists agreed that the information presented in the program was appropriate for the intended audience. While the Sanitarians' responses were split, the tendency ran towards disagreement. This trend continues the pattern the Sanitarians began in their assessment of the accuracy of the program's content (Table 11). Their appraisal that the information was not appropriate for the audience (FSW's), parallels their opinion that the program contained incorrect information (Table 11- Question 3).
Question 6. A high majority of Dietitians agreed that the program objectives were appropriate for the audience. Media people also agreed. Sanitarians' responses were split, with the tendency towards agreement (45%).

Question 7. Data show Dietitians and Media Specialists agreed overwhelmingly (100%) that the overall purpose of the program as stated in the program guide was adequately covered in the presentation. Sanitarians again split their votes, with a tendency (45%) towards agreement.

Table 14. PHFW's Practice and Feedback

<table>
<thead>
<tr>
<th>Question #</th>
<th>%</th>
<th>%</th>
<th>%</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DIET</td>
<td>SANT</td>
<td>FSW</td>
<td>MEDIA</td>
</tr>
<tr>
<td>8. The sound/filmstrip provided practice and feedback.*</td>
<td>A 46.2</td>
<td>18.2</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>U 23.1</td>
<td>27.3</td>
<td>-</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>D 30.8</td>
<td>45.4</td>
<td>-</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>NA -</td>
<td>9.1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>9. The sound/filmstrip provided optimum repetition of the main ideas.*</td>
<td>A 76.9</td>
<td>63.6</td>
<td>-</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>U 15.4</td>
<td>27.3</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>D 7.7</td>
<td>9.1</td>
<td>-</td>
<td>20</td>
</tr>
</tbody>
</table>

Dietitians = DIET., Sanitarians = SANT., Food Service Worker = FSW, and the Media Specialists = MEDIA. Answers are coded: A = Agree, U = Undecided, D = Disagree and NA = No Answer.

Table 14 - Questions 8 and 9. Results indicate none of the groups really discerned the program provided practice and feedback, criteria noted by investigators as being essential for learning enhancement (Travers 1967; Hoban and
Van Ormer 1970; Allen 1973, & Kemp, 1980). Nevertheless, in Question 9, all groups agreed there was optimum repetition of the main ideas.

Table 15. PHFW's Program Bias

<table>
<thead>
<tr>
<th>Question #</th>
<th>% DIET</th>
<th>% SANT</th>
<th>% FSW</th>
<th>% MEDIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. The program was not biased toward women or other minority groups.*</td>
<td>A 100</td>
<td>81.8</td>
<td>-</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>U -</td>
<td>9.1</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>D -</td>
<td>9.1</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Dietitians = DIET., Sanitarians = SANT., Food Service Worker = FSW, and the Media Specialists = MEDIA. Answers are coded: A = Agree, U = Undecided, D = Disagree and NA = No Answer.

Table 15 - Question 10. Only a very few Sanitarians (9.1%) reported that the program was biased toward women or other minority groups. Only a few Sanitarians (9.1%) were undecided and only 20% of the Media Specialists were undecided.

Summary

On the whole, the data suggest Dietitians rated the program the most positively, followed by FSWs, Media Specialists and Sanitarians. The Sanitarians appeared most critical of the program's content.
Post Test Results

This fourth section contains the percentage results of the criterion-referenced post test. The goals and objectives as stated by Nelson (1983), the PHFW program's developer, are noted in the Program Guide in Appendix C. Nelson's four instructional objectives were used as the basis of the post test. The design of the test followed suggestions by Gropper (1979) for developing qualitative testing standards. A sample test can be found in the Employee (FSW) questionnaire, Appendix C. Tables 16 - 19 report the results of the post test on a basis of percent of answers correct.

How Much Do You Remember? The following answers were given by the Food Service Workers in response to the test questions:

Table 16. Question 1.

LIST FIVE REASONS WHY GOOD PERSONAL HYGIENE PRACTICES ARE SO IMPORTANT IN YOUR JOB AS A FOOD SERVICE EMPLOYEE.

<table>
<thead>
<tr>
<th>Correct Answer</th>
<th>% Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>High quality food attractively served.</td>
<td>5.2</td>
</tr>
<tr>
<td>Represents department image to the people.</td>
<td>26.5</td>
</tr>
<tr>
<td>Goal is to control bacteria.</td>
<td>11.8</td>
</tr>
<tr>
<td>Proper food preparation and storage.</td>
<td>8.7</td>
</tr>
<tr>
<td>Disease transmission.</td>
<td>27.5</td>
</tr>
<tr>
<td>Other</td>
<td>2.4</td>
</tr>
<tr>
<td>No Answer</td>
<td>17.8</td>
</tr>
</tbody>
</table>
Table 17. Question 2.

**DEFINE THE SIZE OF BACTERIA.**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevant Answer</td>
<td>61.4%</td>
</tr>
<tr>
<td>Irrelevant Answer</td>
<td>4.3%</td>
</tr>
<tr>
<td>No Answer</td>
<td>34.4%</td>
</tr>
</tbody>
</table>

Table 18. Question 3.

**LIST THE FIVE ENVIRONMENTAL CONDITIONS THAT CAUSED BACTERIA TO GROW.**

<table>
<thead>
<tr>
<th>Correct Answer</th>
<th>% Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>29</td>
</tr>
<tr>
<td>Moisture</td>
<td>62</td>
</tr>
<tr>
<td>Temperature</td>
<td>69</td>
</tr>
<tr>
<td>Oxygen</td>
<td>41</td>
</tr>
<tr>
<td>Darkness</td>
<td>70</td>
</tr>
</tbody>
</table>

Table 19. Question 4.

**BACTERIA MATCHING**

<table>
<thead>
<tr>
<th>Correct</th>
<th>% Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>All answers</td>
<td>22.1%</td>
</tr>
<tr>
<td>One bacteria</td>
<td>8.0%</td>
</tr>
<tr>
<td>Two bacteria</td>
<td>25.2%</td>
</tr>
<tr>
<td>Three bacteria</td>
<td>43.6%</td>
</tr>
<tr>
<td>One characteristic</td>
<td>23.3%</td>
</tr>
<tr>
<td>Two characteristics</td>
<td>11.0%</td>
</tr>
<tr>
<td>Three characteristics</td>
<td>22.1%</td>
</tr>
<tr>
<td>No Answer</td>
<td>23.9%</td>
</tr>
</tbody>
</table>
Chi Square Analysis

The chi square statistic was used to test the first two null hypotheses to determine if significant differences existed between the opinions of the Content Experts, the Dietitians, Sanitarians and the Learners (i.e. Food Service Workers).

Only the first two hypotheses were tested, as the sample size for the media specialists was too small. Helen Berg, Oregon State University Survey Research Center Statistician, recommended that the chi square cells be collapsed in order to obtain the most valid results. This is a safeguard against having an extreme value dominate the results. She suggested the Media Specialists be omitted due to their small number and that the NA (no answer) column be dropped as it provided no real information. The chi square formula used was:

$$X^2 = \frac{(O - E)}{E}$$

all cells

A 90% level of confidence (at the .05 level of significance) was used to test the following two hypotheses:

1. There is no significant difference in opinions among Content Experts (i.e. Dietitians and Sanitarians).

Ho: There is no difference in opinions shown (equally distributed).

Ha: There are different opinions (not equally distributed).
2. There is no significant difference in opinions between the Content Experts and the Learners (i.e. Food Service Workers).

Ho: There is no difference in opinions.
Ha: There are differences in opinions.

The following chi square results indicate that neither of the first two null hypotheses can be totally nullified.

Given the multitude of research questions involved in the testing of each hypothesis, it is realistic that some results should be retained and others rejected, based on what the literature refers to as individual learner characteristic variables (Carrier, 1984).

Part I - Design

Table 20. Chi Square Analysis of Responses From Content Experts and FSW Audience: Purpose of Program.

Question 1.

<table>
<thead>
<tr>
<th></th>
<th>D/S/FSW</th>
<th>D/S</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(N=187)</td>
<td>(N=24)</td>
</tr>
<tr>
<td>Clearly Stated</td>
<td>172 (91.9%)</td>
<td>22 (91.6%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>8 (4.3%)</td>
<td>2 (8.3%)</td>
</tr>
<tr>
<td>Not Clearly Stated</td>
<td>2 (1.1%)</td>
<td>0</td>
</tr>
</tbody>
</table>

At .05: df = 4 \[X^2 = 6.72\] not significant

df = 2 \[X^2 = 0.75\] not significant
Table 21. Chi Square Analysis of Responses From Content Experts and FSW Audience: Program's Information was Organized...

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy to Understand</td>
<td>170 (91%)</td>
<td>19 (79.2%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>6 (3.2%)</td>
<td>2 (8.3%)</td>
</tr>
<tr>
<td>Not Easy to Understand</td>
<td>7 (3.8%)</td>
<td>1 (4.2%)</td>
</tr>
</tbody>
</table>

\[ df = 4 \quad \chi^2 = 35.56 \] \[ df = 2 \quad \chi^2 = 5.87 \]
At .05: significant not significant

Table 22. Chi Square Analysis of Responses From Content Experts and FSW Audience: Program...to Help Remember Information

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Was Organized</td>
<td>145 (77.5%)</td>
<td>12 (50%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>17 (9.1%)</td>
<td>7 (29.2%)</td>
</tr>
<tr>
<td>Was Not Organized</td>
<td>15 (8.0%)</td>
<td>5 (20.8%)</td>
</tr>
</tbody>
</table>

\[ df = 4 \quad \chi^2 = 21.79 \] \[ df = 2 \quad \chi^2 = 3.28 \]
At .05: significant not significant

Tables 20 - 22 contain the Chi square analysis of the first three questions from Part I of the Design component of the questionnaires. A composite grouping of the responses from Dietitians, Sanitarians and Food Service Workers (D/S/FSW) was tested between those of just the Content Experts' (Dietitians and Sanitarians (D/S)). The null hypothesis assumed that no significant difference existed in
the PHFW program between the Content Experts and the audience (FSWs). The null hypothesis was accepted for data which are depicted in Table 20, that the overall purpose of the program was clearly stated in the presentation. Therefore, the program met the first criteria stressed by Witt (1981), that the audience be informed of the purpose of the program. This helps the audience zero in on important facts rather than spending time trying to separate out irrelevant facts.

Significant differences were noted in Tables 21 and 22, questions #2 and #3, respectively. The D/S/FSWs rejected the null hypotheses (Table 21) that the program was organized for clear understanding by the audience, and in Table 22, that it was organized in a way that would help them remember the information presented. Table 21 approached significance for the Content Experts, suggesting a trend.

Table 23. Chi Square Analysis of Responses From Content Experts and FSW: ...beginning of the program

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Captured Interest</td>
<td>75 (40.1%)</td>
<td>9 (37.5%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>47 (25.1%)</td>
<td>3 (12.5%)</td>
</tr>
<tr>
<td>Did Not Capture Interest</td>
<td>56 (29.9%)</td>
<td>10 (41.7%)</td>
</tr>
</tbody>
</table>

At .05: df = 4 $X^2 = 8.63$ not significant  
df = 2 $X^2 = 4.57$ not significant
Table 24. Chi Square Analysis of Responses From Content Experts and FSW Audience: The Entire Program...

Question 5.

<table>
<thead>
<tr>
<th></th>
<th>D/S/FSW (N=187)</th>
<th>D/S (N=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was Interesting</td>
<td>82 (43.8%)</td>
<td>7 (29.2%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>36 (19.2%)</td>
<td>7 (29.2%)</td>
</tr>
<tr>
<td>Was Not Interesting</td>
<td>65 (34.8%)</td>
<td>9 (37.5%)</td>
</tr>
</tbody>
</table>

$\text{df} = 4 \quad X^2 = 12.48 \quad \text{df} = 2 \quad X^2 = 10.65$

At .05: significant  significant

Effective communication depends on the learner being motivated. Capturing one's interest, is the first step to motivation. Loftus (1980) reports that interesting information enters our memory more securely. Table 23 shows results that lead to retaining the null hypothesis that the beginning of the PHFW program captured both groups interest. However, maintaining interest throughout the entire program was found to be another matter. Table 24 shows significant differences within both groups.

Table 25 shows Content Experts and the D/S/FSWs' responses to appropriate length statement. Significant differences were identified for the D/S/FSWs only. Originally, the groups had been asked if the program was too long or too short. Later, during the analysis phase, the OSU Survey Research Center concluded these questions were redundant, thus they were omitted.
Table 25. Chi Square Analysis of Responses From Content Experts and FSW Audience: Program Length...

**Question 6.**

<table>
<thead>
<tr>
<th></th>
<th>D/S/FSW (N=187)</th>
<th>D/S (N=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was Appropriate</td>
<td>129 (69.0%)</td>
<td>14 (58.3%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>30 (16.0%)</td>
<td>1 (4.2%)</td>
</tr>
<tr>
<td>Not Appropriate</td>
<td>24 (12.8%)</td>
<td>9 (37.5%)</td>
</tr>
</tbody>
</table>

\[ df = 4 \quad X^2 = 16.86 \]

At .05: significant

\[ df = 2 \quad X^2 = 1.24 \]

At .05: not significant

Table 26. Chi Square Analysis of Responses From Content Experts and FSW Audience: Program Pace was Slow Enough to...

**Question 7.**

<table>
<thead>
<tr>
<th></th>
<th>D/S/FSW (N=187)</th>
<th>D/S (N=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understand Info.</td>
<td>159 (85.0%)</td>
<td>19 (79.2%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>13 (7.0%)</td>
<td>2 (8.3%)</td>
</tr>
<tr>
<td>Not Understand Info.</td>
<td>10 (5.3%)</td>
<td>2 (8.3%)</td>
</tr>
</tbody>
</table>

\[ df = 4 \quad X^2 = 7.63 \]

At .05: not significant

\[ df = 2 \quad X^2 = 5.28 \]

At .05: not significant

No significant differences were found for either group regarding the program pace being slow enough to fully understand the information (Table 26) or for the pace being quick enough to hold interest (Table 27). It is interesting to note, that while no significant differences were found regarding the quickness of the program pace; previously, both groups either voted that the entire program was not
interesting, or they were undecided about it. Thus, interest levels were independent of the program's pace.

Table 27. Chi Square Analysis of Responses From Content Experts and FSW Audience: Program Pace...to Hold Interest

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Was Quick Enough</td>
<td>103 (55.1%)</td>
<td>14 (58.3%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>34 (18.2%)</td>
<td>3 (12.5%)</td>
</tr>
<tr>
<td>Was Not Quick Enough</td>
<td>43 (23.0%)</td>
<td>7 (29.2%)</td>
</tr>
</tbody>
</table>

\[ \text{df} = 4 \quad X^2 = 3.90 \]
\[ \text{df} = 2 \quad X^2 = 2.61 \]

At .05: not significant not significant

In order to sustain program interest, Kemp (1980) suggests keeping the viewing time for each slide to less than 30 seconds. Several of the slides in the program ran for 40 - 45 seconds each. This did not appear to have affected the viewers' perceptions enough to have raised the statement to a level of significance. Briggs (1970), concluded that the faster the informational pace, the greater the number of encoding and retrieval errors. Both groups perceived the pace as being slow enough to fully understand all of the information, thus encoding and retrieval errors should have been reduced.
Part II - Graphics

Table 28. Chi Square Analysis of Responses From Content Experts and FSW Audience: Graphics Helped...of PHFW Message

<table>
<thead>
<tr>
<th>Question 1.</th>
<th>D/S/FSW (N=187)</th>
<th>D/S (N=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase Understanding</td>
<td>137 (73.3%)</td>
<td>22 (92.0%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>30 (16.0%)</td>
<td>2 (8.3%)</td>
</tr>
<tr>
<td>Did Not Increase...</td>
<td>14 (7.5%)</td>
<td>0</td>
</tr>
</tbody>
</table>

\[ df = 4 \quad \chi^2 = 4.22 \quad \text{not significant} \]
\[ df = 1 \quad \chi^2 = 0.38 \quad \text{not significant} \]

Table 29. Chi Square Analysis of Responses From Content Experts and FSW Audience: Graphics...

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Were All Legible</td>
<td>147 (78.6%)</td>
<td>19 (72.2%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>14 (7.5%)</td>
<td>1 (4.2%)</td>
</tr>
<tr>
<td>Were Not All Legible</td>
<td>18 (9.6%)</td>
<td>3 (12.5%)</td>
</tr>
</tbody>
</table>

\[ df = 4 \quad \chi^2 = 1.35 \quad \text{not significant} \]
\[ df = 2 \quad \chi^2 = 1.01 \quad \text{not significant} \]
Results of the responses to the Graphics section show both groups retaining the null hypotheses for the graphics increasing understanding of the program message and that the graphics were all legible and the colors were appealing, Tables 28 - 30, respectively.

Table 30. Chi Square Analysis of Responses From Content Experts and FSW Audience: Colors of the Visuals...

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Were Appealing</td>
<td>84 (45%)</td>
<td>12 (50%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>58 (31%)</td>
<td>6 (25%)</td>
</tr>
<tr>
<td>Were Not Appealing</td>
<td>41 (22%)</td>
<td>6 (25%)</td>
</tr>
</tbody>
</table>

\[ df = 4 \quad X^2 = 1.91 \quad \text{df = 2} \quad X^2 = 1.51 \]

At .05: not significant

Table 31. Chi Square Analysis of Responses From Content Experts and FSW Audience: Photo Visual Attractiveness...

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Was High Quality</td>
<td>70 (37.4%)</td>
<td>15 (62.5%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>58 (31.0%)</td>
<td>2 (8.3%)</td>
</tr>
<tr>
<td>Not High Quality</td>
<td>50 (26.7%)</td>
<td>7 (29.2%)</td>
</tr>
</tbody>
</table>

\[ df = 4 \quad X^2 = 9.62 \quad df = 2 \quad X^2 = 2.06 \]

At .05: significant  not significant
However, the two groups disagreed as to whether or not the photographs were of high quality. Content Experts retained the null hypothesis, while the D/S/FSWs either perceived the photos as not being of high quality or were undecided. Table 31. Content Experts retained the null hypothesis: the graphics all looked clean and professional.

Table 32. Chi Square Analysis of Responses From Content Experts (D/S) Illustrations, Diagrams, Graphs and Title Slides

<table>
<thead>
<tr>
<th>Question 5. (D/S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>D/S (N = 24)</td>
</tr>
<tr>
<td>Looked Clean and Professional</td>
</tr>
<tr>
<td>Undecided</td>
</tr>
<tr>
<td>Did Not Look Clean and Professional</td>
</tr>
</tbody>
</table>

\[ df = 1 \quad X^2 = 3.63 \]
At .05: not significant

Part III - Audio

Table 33. Chi Square Analysis of Responses From Content Experts and FSW Audience: Music...in Program Message

<table>
<thead>
<tr>
<th>Question 1.</th>
</tr>
</thead>
<tbody>
<tr>
<td>D/S/FSW (N=187)</td>
</tr>
<tr>
<td>Enhanced Interest</td>
</tr>
<tr>
<td>Undecided</td>
</tr>
<tr>
<td>Did Not Enhance Interest</td>
</tr>
</tbody>
</table>

\[ df = 4 \quad X^2 = 5.70 \]
not significant
At .05: not significant

\[ df = 2 \quad X^2 = 4.44 \]
not significant
not significant
Results shown in Tables 33 and 34 reaffirm Kemp's (1980) suggestion that music could enhance a program and create a desired mood. These two research questions were retained as null by both groups.

Table 34. Chi Square Analysis of Responses From Content Experts (D/S) Music ... the Mood of the Program

Question 2.

<table>
<thead>
<tr>
<th></th>
<th>D/S (N=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complemented Mood</td>
<td>12 (50.0%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>7 (29.2%)</td>
</tr>
<tr>
<td>Did Not Complement Mood</td>
<td>5 (20.8%)</td>
</tr>
</tbody>
</table>

\[ df = 1 \quad X^2 = 3.13 \]
At .05: not significant

Table 35. Chi Square Analysis of Responses From Content Experts and FSW Audience: Pace of Narration Comfortable...

Question 3.

<table>
<thead>
<tr>
<th></th>
<th>D/S/FSW (N=187)</th>
<th>D/S (N=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy to Follow</td>
<td>145 (77.5%)</td>
<td>19 (72.2%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>17 (9.1%)</td>
<td>2 (8.3%)</td>
</tr>
<tr>
<td>Not Easy to Follow</td>
<td>19 (10.2%)</td>
<td>3 (12.5%)</td>
</tr>
</tbody>
</table>

\[ df = 4 \quad X^2 = 4.49 \]
At .05: not significant

\[ df = 2 \quad X^2 = 4.18 \]
At .05: not significant
Data from both groups retained the null hypotheses that the narration was comfortable/easy to follow (Table 35). Witt (1981) states that the narration should be spoken in a relaxed conversational manner in order to avoid over-loading the viewer.

Table 36. Chi Square Analysis of Responses From Content Experts and FSW Audience: Narrator's Voice was...

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pleasant/Stimulating</td>
<td>108 (57.8%)</td>
<td>14 (58.3%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>31 (16.6%)</td>
<td>2 (8.3%)</td>
</tr>
<tr>
<td>Not Pleasant/Stimulating</td>
<td>43 (23.0%)</td>
<td>8 (33.3%)</td>
</tr>
</tbody>
</table>

At .05: \( df = 4 \) \( X^2 = 12.71 \) significant \( df = 2 \) \( X^2 = 8.97 \) significant

Significant differences did occur (Table 36) among both groups. Neither group voted that they found the narrator's voice pleasant/stimulating; several were undecided. This trend supports Kemp's (1980) contention that the best narration will not call attention to itself. Obviously, by rejecting the null hypothesis, the narration did call attention to itself. Kemp notes that such an attraction could affect the narrative flow that assists in carrying the visual information.
### Table 37. Chi Square Analysis of Responses From Content Experts and FSW Audience: Pronunciation and Articulation.

**Question 5.**

<table>
<thead>
<tr>
<th></th>
<th>D/S/FSW (N=187)</th>
<th>D/S (N=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Were Clear</td>
<td>161 (86.1%)</td>
<td>23 (95.8%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>11 (5.9%)</td>
<td>0</td>
</tr>
<tr>
<td>Were Not Clear</td>
<td>10 (5.3%)</td>
<td>1 (4.2%)</td>
</tr>
</tbody>
</table>

\[
df = 4 \quad X^2 = 2.88 \quad df = 2 \quad X^2 = 0.01
\]

At .05: not significant not significant

As the null hypothesis was retained (Table 37) the narrator's pronunciation/articulation were voted as being clear.

### Table 38. Chi Square Analysis of Responses From Content Experts (D/S) Narrator Used Terminology Audience.

**Question 7.**

<table>
<thead>
<tr>
<th></th>
<th>D/S (N=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Could Fully Understand</td>
<td>18 (75.0%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>3 (12.5%)</td>
</tr>
<tr>
<td>Could Not Fully Understand</td>
<td>3 (12.5%)</td>
</tr>
</tbody>
</table>

\[
df = 2 \quad X^2 = 5.28
\]

At .05: not significant
Data from the Content Experts retained the null hypothesis that the narrator used terminology the audience could fully understand (Table 38). Due to the difference in wording on the FSW questionnaire, this question was not able to be tested for a chi square among the Food Service Workers.

Table 39 shows D/S/FSWs' data retained the null hypothesis for the smooth transitions in the music. Since 100 percent of the Content Experts agreed with this statement, there were no differences to compare, thus rendering a Chi square impossible to calculate.

Table 39. Chi Square Analysis of Responses From Content Experts and FSW Audience: Sound Synchronization.

<table>
<thead>
<tr>
<th>Question 3 (FSW) &amp; 7 (D/S).</th>
<th>D/S/FSW (N=187)</th>
<th>D/S (N=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was Smooth</td>
<td>142 (75.9%)</td>
<td>24 (100%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>27 (14.4%)</td>
<td>0</td>
</tr>
<tr>
<td>Was Not Smooth</td>
<td>12 (6.4%)</td>
<td>0</td>
</tr>
</tbody>
</table>

df = 4  \( X^2 = 7.60 \)  Unable to calculate
At .05:  not significant
Part IV - Content

Table 40. Chi Square Analysis of Responses From Content Experts (D/S) Program Content ... with Program Objectives

<table>
<thead>
<tr>
<th>Question 1.</th>
<th>D/S (N=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was Consistent</td>
<td>17 (70.8%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>3 (12.5%)</td>
</tr>
<tr>
<td>Was Not Consistent</td>
<td>2 (8.3%)</td>
</tr>
</tbody>
</table>

\[ df = 2 \quad X^2 = 4.64 \]
At .05: not significant

No significant difference in responses was noted (Table 40) regarding the Program content being consistent with the stated objectives. The null hypothesis was also retained (Table 41) that the Program Content Outline was clearly described in the program.

Table 41. Chi Square Analysis of Responses From Content Experts (D/S) Program Content Outline ...

<table>
<thead>
<tr>
<th>Question 2.</th>
<th>D/S (N=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clearly Described Program</td>
<td>20 (83.3%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>2 (8.3%)</td>
</tr>
<tr>
<td>Did Not Clearly Describe Program</td>
<td>0</td>
</tr>
</tbody>
</table>

\[ df = 1 \quad X^2 = 1.06 \]
At .05: not significant
Table 42. Chi Square Analysis of Responses From Content Experts (D/S) All Information Presented in the Program...

<table>
<thead>
<tr>
<th>Question 3.</th>
<th>D/S (N=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was Correct</td>
<td>12 (50%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>0</td>
</tr>
<tr>
<td>Was Not Correct</td>
<td>11 (45.8%)</td>
</tr>
</tbody>
</table>

\[ df = 1 \quad X^2 = 15.78 \]
At .05: significant

Table 43. Chi Square Analysis of Responses From Content Experts (D/S) Interest in Purchasing Program...

<table>
<thead>
<tr>
<th>Question 4.</th>
<th>D/S (N=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would like to purchase</td>
<td>3 (12.5%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>5 (20.8%)</td>
</tr>
<tr>
<td>Would Not Purchase</td>
<td>13 (54.2%)</td>
</tr>
</tbody>
</table>

\[ df = 2 \quad X^2 = 5.17 \]
At .05: not significant

Significant differences were noted among the Content Experts (D/S) (Table 42) as to whether or not they perceived all the information presented in the program as being correct. The null hypothesis in Table 43 was retained (...would like to purchase program); however, this statement did come very close to approaching a level of significance.
Table 44. Chi Square Analysis of Responses From Content Experts (D/S) Audience was ... in Program Guide

<table>
<thead>
<tr>
<th>Question 1.</th>
<th>D/S (N=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clearly Defined</td>
<td>20 (83.3%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>1 (4.2%)</td>
</tr>
<tr>
<td>Not Clearly Defined</td>
<td>1 (4.2%)</td>
</tr>
</tbody>
</table>

\[ df = 2 \quad \chi^2 = 3.18 \]

At .05:
not significant

Table 45. Chi Square Analysis of Responses From Content Experts (D/S) Audience Entry Level Skills...

<table>
<thead>
<tr>
<th>Question 2.</th>
<th>D/S (N=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Were Clearly Stated</td>
<td>17 (70.8%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>4 (16.7%)</td>
</tr>
<tr>
<td>Were Not Clearly Stated</td>
<td>1 (4.2%)</td>
</tr>
</tbody>
</table>

\[ df = 2 \quad \chi^2 = 1.80 \]

At .05: not significant
Table 46. Chi Square Analysis of Responses From Content Experts (D/S) Program Guide: Summary of Program Goal

<table>
<thead>
<tr>
<th>Question 3.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>D/S (N=24)</td>
</tr>
<tr>
<td>Carefully Stated Summary</td>
<td>16 (66.7%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>2 (8.3%)</td>
</tr>
<tr>
<td>Not Carefully Stated Summary</td>
<td>4 (16.7%)</td>
</tr>
</tbody>
</table>

\[ df = 2 \quad \chi^2 = 6.49 \]

At .05: significant

Table 47. Chi Square Analysis of Responses From Content Experts (D/S) Objectives ... Measurable Terms

<table>
<thead>
<tr>
<th>Question 4.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>D/S (N=24)</td>
</tr>
<tr>
<td>Were Clearly Stated</td>
<td>17 (70.8%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>3 (12.5%)</td>
</tr>
<tr>
<td>Were Not Clearly Stated</td>
<td>2 (8.3%)</td>
</tr>
</tbody>
</table>

\[ df = 2 \quad \chi^2 = 5.33 \]

At .05: not significant

Null hypotheses were retained (Tables 44 & 45) regarding the Audience being clearly defined and for Audience entry level skills being clearly stated. Achieving a level of significance (Table 46), the Content Experts (D/S) accepted the Ha: Summary of Program Goal was not carefully stated, or they were Undecided. While (Table 47)
a level of significance was approached, the null hypothesis was narrowly retained, which found the Objectives as being clearly stated and measurable.

Content Experts Only: Part 1 - Design

Table 48. Chi Square Analysis of Responses From Content Experts (D/S) Information Presented ... Intended Audience

<table>
<thead>
<tr>
<th>Question 11.</th>
<th>D/S (N=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was Appropriate</td>
<td>13 (54.2%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>4 (16.7%)</td>
</tr>
<tr>
<td>Was Not Appropriate</td>
<td>7 (29.2%)</td>
</tr>
</tbody>
</table>

At .05: \[ df = 2 \quad X^2 = 5.33 \]
not significant

Table 49. Chi Square Analysis of Responses From Content Experts (D/S) Program Objectives ... for the Audience

<table>
<thead>
<tr>
<th>Question 12.</th>
<th>D/S (N=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Were Appropriate</td>
<td>17 (70.8%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>4 (16.7%)</td>
</tr>
<tr>
<td>Were Not Appropriate</td>
<td>3 (12.5%)</td>
</tr>
</tbody>
</table>

At .05: \[ df = 2 \quad X^2 = 6.76 \]
significant
Content Experts (D/S) perceived the Information presented as being appropriate for the intended audience, retaining the null hypothesis (Table 48). However, this statement came very close to approaching significance, suggesting a trend. In a similar vein (Table 49), the null statement: "Program objectives were appropriate for the audience" was rejected.

Table 50. Chi Square Analysis of Responses From Content Experts (D/S) Program Purpose as Stated in Program Guide...in the Presentation

<table>
<thead>
<tr>
<th>Question 13.</th>
<th>D/S (N=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was Adequately Covered</td>
<td>18 (75%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>3 (12.5%)</td>
</tr>
<tr>
<td>Was Not Adequately Covered</td>
<td>2 (8.3%)</td>
</tr>
</tbody>
</table>

\[ X^2 = 8.31 \]

At .05: significant

A significant difference existed as to whether or not the Content Experts (D/S) perceived the Program purpose as being adequately covered in the Program Guide (Table 50).
### Table 51. Chi Square Analysis of Responses From Content Experts (D/S) Program Provides Practice and Feedback

**Question 14.**

<table>
<thead>
<tr>
<th>Provided Practice and Feedback</th>
<th>8 (33.3%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undecided</td>
<td>6 (25.0%)</td>
</tr>
<tr>
<td>Did Not Provide Practice and Feedback</td>
<td>9 (37.5%)</td>
</tr>
</tbody>
</table>

\[ df = 2 \quad X^2 = 1.75 \]

At .05: not significant

The null hypothesis was retained (Table 51) regarding the PHFW program providing practice and feedback.

### Table 52. Chi Square Analysis of Responses From Content Experts (D/S) Program Provided Optimum Repetition of Main Ideas

**Question 15.**

<table>
<thead>
<tr>
<th>Provided Repetition</th>
<th>16 (66.7%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undecided</td>
<td>5 (20.8%)</td>
</tr>
<tr>
<td>Did Not Provide Repetition</td>
<td>2 (8.3%)</td>
</tr>
</tbody>
</table>

\[ df = 2 \quad X^2 = 0.57 \]

At .05: not significant

No significant difference was found with regard to the program's repetition. This finding is consistent with the previous (Table 51) results regarding Practice and Feedback.
Table 53. Chi Square Analysis of Responses From Content Experts (D/S) Program Bias

Question 16.

<table>
<thead>
<tr>
<th></th>
<th>D/S (N=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was Not Biased</td>
<td>22 (91.6%)</td>
</tr>
<tr>
<td>Undecided</td>
<td>1 (4.2%)</td>
</tr>
<tr>
<td>Was Biased</td>
<td>1 (4.2%)</td>
</tr>
</tbody>
</table>

\[ df = 2 \quad X^2 = 2.58 \]

At .05: not significant

The null hypothesis was retained, determining the program was not biased toward women or other minority groups.

Summary

Data gathered from the respondents indicate significant associations were observed among the Content Experts and the Learners (D/S/FSW), four areas: (1) quality of photographs (2) program organization and understanding (3) program organization and retention, and (4) program length. Content Experts (D/S) differed significantly in their opinions as to the accuracy of PHFW's content, goals, adequate coverage of purpose, and audience appropriateness. Data from both groups (D/S and D/S/FSW) reveal significant agreement that the entire program was not interesting and that the narrator's voice was pleasant, yet stimulating.
V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

Data were obtained from three key groups identified by curriculum leaders in the field as being those individuals most responsible for determining the effectiveness of a program. The three groups were classified as Media Specialists, Content Experts and Learners. Results were reported in terms of individual group percentages and statistical chi square analysis. Findings were presented and interpreted.

The use of the DELPHI panel indicated the content validity of the three questionnaire forms that were developed. The reliability tests indicated a high degree of efficiency for the Content Experts (Sanitarians and Dietitians) + .90, and the Learners (Food Service Workers) +1.00. Nominal data were analyzed, both on a percentage basis and by using the nonparametric chi square ($X^2$) to determine if significant differences existed among two groups in regard to the hypotheses.

Conclusions

Patterns of hypotheses:

In Part I - Design of the questionnaire, responses show the combination of Content Experts and Learners together rejected the null hypothesis that the program's information was organized in a manner that was easy to understand. Even
though 93 percent of the FSWs had originally agreed with this statement, the 6.6 percent of them who disagreed, combined with the 52.9 percent of the Content Experts who were undecided or disagreed, caused the group as a whole, to reject the hypothesis. Results suggest they did not like the organization of the program. When noting the Content Experts' responses alone, it appears they retained the hypothesis. This is slightly misleading as their chi square of 5.87 was within .12 of retaining significance.

Data from the combined groups (D/S and D/S/FSW) indicated that the program was not organized in a way that would help them remember the information or they were undecided. Results of the FSW criterion referenced post-test appeared to confirm this. Test scores were below 70 percent on all questions except one (see pages 74-75). As there was no pretest administered, this study did not attempt to measure how much they knew prior to watching the PHFW program. Regardless of what they knew beforehand, their performance was less than average on all but one question (see pages 74-75).

Based on the research findings that a program's effectiveness is dependant upon whether or not the learners achieved the objectives, the criterion referenced post-test scores would indicate the PHFW program was ineffective in meeting its objectives. However, a qualification exists that for objectives to be met, they must be measurable with
explicit criteria stated, and they must be realistic. Even though the null hypothesis was retained by the Content Experts that the Objectives were stated in measurable terms, this statement was approaching the level of significance. The majority of the Media Specialists did not perceive the Objectives as being measurable. This suggests that perhaps the failure in the post-test scores could be traced, in part, to the lack of measurable or unrealistic objectives.

Results indicate both groups (D/S/FSW & D/S) agreed the beginning of the filmstrip captured interest, yet they all rejected the hypothesis that the entire program was interesting. With less than 50 percent of the FSWs rating the program as interesting, it was a bit surprising that their overall rating of the program was quite high. Literature reviewed for this study suggests the overall positive attitude toward the PHFW program may be due to the fact that they were allowed to participate in a critique of the program.

Of the seventeen research questions that were compared between the two groups, data indicated there were significant differences on four statements:

1) "The overall visual attractiveness of the photos" were rated as being of very high quality by the Content Experts (D/S), while the D/S/FSWs rejected the hypothesis.

2) "Program's information was organized in manner that was easy to understand" was rejected by the D/S/FSWs and accepted by the Content Experts.
3) "Program was organized in a way that would help remember information" was rejected by the D/S/FSWs and accepted by the Content Experts.

4) "Program length was appropriate for the stated purpose" was rejected by the D/S/FSWs and accepted by the Content Experts.

Both groups (D/S and D/S/FSW) agreed significantly on only two statements, thus rejecting the following hypotheses:

1) "The entire program was interesting"

2) "The narrator's voice was pleasant yet stimulating"

Data reveals the Content Experts themselves significantly disagreed on four hypotheses:

1) "That all of the information presented in the program was correct." The Sanitarians are the real experts in this area, as they regulate state health control ordinances over all food service establishments. The Sanitarians most accurately analyzed the program for its content validity, 90.9 percent disagreed with this statement.

2) "The Program Guide contained a carefully stated summary of the program goal"

3) "Program objectives were appropriate for the intended audience." Dietitians agreed with this statement 92.3 percent, while only 45.4 percent of the Sanitarians agreed.

4) "Program purpose as stated in the Program Guide was adequately covered in the presentation." Dietitians overwhelmingly agreed 100 percent. Only 45.5 percent of the Sanitarians disagreed.

Perhaps the Sanitarians did not view the program as highly because it really did not suit their needs. The program was geared to an Institutionalized setting, whereas the Sanitarians deal more with the public setting. (The
content information should be transferable, the graphic setting within the hospital may have distracted from the message.)

Converging evidence from the significance testing reveals that, on the whole, all groups thought the program was satisfactory. It appears their decisions were based on affectivity, on the medium rather than the content. The "massage" was acceptable to them, yet the results of the criterion referenced post-test indicate the PHFW program did not produce effective learning. The Sanitarians disagreed with the content validity, while giving the program fairly high marks overall. This coincides with findings from the literature, which suggests that the effect of the movie form is not related to the program's content.

Perhaps the results of this study suggest that the Evaluative questionnaire formulated by the Delphi panel of Media Specialists is a tool for assessing levels of affectivity only. If the 23 percent of the Dietitians who said they would be interested in purchasing the program based their decision on the results of the questionnaire alone, they would be making the wrong decision. It is possible that any slide program would have been rated favorably. If the Content Experts choose a program based on "affectivity"---or the medium---their Learners may be missing the "message". Not only is it important to know if the Learners liked the program, but whether or not any
effective learning actually took place. The post-test would then be one final indicator of selection, provided they are realistic and measurable. Of those Content Experts who stated they did not wish to purchase the program, follow-up questions are needed to ascertain if other factors precluded them from their decision (i.e. budget restraints, compatibility with program goals, etc.).

The results could also suggest the Media Specialists need to educate the Content Experts as to what is truly important in selecting instructional materials. Perhaps they rated the program as being satisfactory because they did not know how to accurately assess and analyze the program, based on the criteria set forth by the Media Specialists.

The Learners responses indicated they approved of the program, yet their post-test scores proved it was ineffective in teaching the program's objectives (pages 74-75). These findings could parallel the literature that proposes that Learners may be poor judges of how much instruction they need, or in what order. However, most of these studies dealt with computer-assisted instruction and may not be truly applicable to sound/slide systems.

Another literature study probably explains the results of this thesis more aptly: that Learner control has not produced optimal performance because no one has discovered what types of Learners should be granted control--or under
what conditions. The suggestion is that certain abilities or personality dimensions are better performance predictors.

**Recommendations for Further Research**

Further studies could examine exactly how much Content Experts really know about the instructional materials selection process. There is a great deal of information about how teachers in elementary and secondary school make their selections, and the type of tools which guide their selections. In the private sector and industrial settings, there is really nothing for the instructors to base their selections on other than the "massage".

Studies need to focus on what type of criteria materials selection procedures are currently used to assess knowledge of the selection process. Do the instructors really know what to look for in selecting a program for their intended audience?

Given that the Content Experts and the Learners all thought the program was generally satisfactory, and that the post-test scores proved otherwise; this leads one to ask, "Who should be making the instructional materials selection decisions?". Further studies in the area of personality dimensions as a predictor of performance need to be addressed.

Are Learners really key people in the materials selection process or are they really poor predictors of how
much and what instruction they truly need? How can program affectivity and effectivity mesh to provide for the best learning enhancement?

Further studies could be conducted using an expanded subject pool to broaden perspectives about how these questionnaires could be utilized to effectively rate any sound/slide system in a variety of disciplines. As converging evidence suggests, on the whole, all the groups rated the program fairly satisfactorily. It appears the "massage" affected the viewers more than the "message." (Post-test scores confirmed the "message" was not transferred to the Food Service Workers.) Perhaps this was due to the questionnaire format itself. Are all sound/slide system programs from a variety of disciplines treated in a like manner?

Field-testing of sound/slide programs is an expensive and time consuming endeavor. Few program coordinators have the time or the funding to undertake such a monumental task. Instructors, especially in the private sector and industrial settings, could utilize these questionnaires as an inexpensive tool to guide them in their selection of sound/slide materials. Further research on how the questionnaire format meets their needs in a variety of disciplines should be addressed.


APPENDIX A

LIST OF EXPERTS
SITE PARTICIPANTS
LIST OF EXPERTS

Members of the DELPHI committee

Dr. Les Streit, Assistant Professor, Educational Media Department, Oregon State University, Corvallis.

Dr. Priscilla Hardin, Pris Hardin, Instructional Services, Inc., Corvallis.

Dr. Dan Sands, Broadcast Media Department, Oregon State University, Corvallis.

Jackie McCrady, M.A. Education, Oregon State University, doctoral candidate, University of Oregon, Eugene.

Karen Piepmeier, M.A., Media Education, Oregon State University, Corvallis, doctoral candidate.

Tom Luba, Department of Forestry Media Services Division, Oregon State University, Corvallis.

Stacy Mellem, (Replaced Luba) M.A., Media Design Technology, University of Oregon, Eugene. Currently employed by Oregon State University's Department of Forestry Media Services Division, Corvallis.

Dr. Jon Root, Assistant Director, Communication Media Center, Oregon State University, Corvallis.

Dr. Ben Purvis, Director, Communication Media Center, Oregon State University, Corvallis.

Mary Kerns, Professor of Media Education, Western Oregon State College, Monmouth.

Dr. Dean Osterman, Director of Instructional Development Department, Oregon State University, Corvallis.
SITE PARTICIPANTS

The following Mid-Willamette Valley Hospitals participated in this study:

Eugene Hospital & Clinic
1162 Willamette Street
Eugene, OR. 97401

Sacred Heart Hospital
1255 Hilyard
Eugene, OR. 97440

Lebanon Community Hospital
525 N. Santiam Hwy.
Lebanon, OR.

Good Samaritain Hospital
3600 NW Samaritain Dr.
Corvallis, OR. 97330

Meridian Park Hospital
19300 SW 65th
Tualatin, OR. 97062

Newberg Hospital
501 Villa Avenue
Newberg, OR. 97132

Polk Community Hospital
550 S.E. Clay Street
Dallas, OR. 97338

Warren Nursing Home
Warren, OR.

The following counties health department's Food Handler Programs participated in the study:

Benton County (Sanitarians only)
Multnomah County
Washington County
Klamath County
APPENDIX B

MEDIA SPECIALISTS' COMMENTS
DIETITIANS' COMMENTS
SANITARIANS' COMMENTS
FOOD SERVICE WORKERS' COMMENTS
MEDIA SPECIALISTS' COMMENTS ON THE QUESTIONNAIRE

* "One very visible technical error: graphics too close to the frame, often running off the edge."

* "Graphics, to my eye, are dull in color and not particularly interesting."

* "Not clear on FS which frame to start tape on. Impossible to tell at beginning whether or not sound and visuals are synchronized. Pictures and words not clearly related."

* "Too much info for one program. Should split into two or more programs: 1. Reasons for sanitation/avoiding contamination. 2. Methods for preventing contamination. 3. Employee health, dress, diet. Program is too long. Fifteen minute max."

* "Really needs background music to vary pace and differentiate parts of the program."

* "Info on comfort and general health of food service workers (nutrition, clothing colors) is tangential to this program. Stick to the main theme—sanitation and prevention of food contamination."

* "Narrator's voice was too sing-song."

* "Beginning of film needs something more snappy or dramatic."

* "Not bad for a student production, but falls short of high professional quality."

* "Presentation seems inconsistent with an intended adult audience. Ex: Will it be helpful for employees to know the size and shape of bacteria to be clean?"

* "Production values may be insufficient to capture interest. Music mixed in minimally. Six separate shots of hand-cleaning. Very draggy narrator pace. Ultra-simplistic script."
MEDIA SPECIALISTS' COMMENTS

* "Colors need to be improved."

* "Message is too long, stop, discuss show."

* "Too many words for each slide.

* "Too many words for each slide. No more than 20 words per slide."

* "Long narratives could be assisted with multiple image/montages if kept simple."

* "Technical quality drastically needs improvement in all areas --- photo/graphic/sound."

* "Vocabulary and voice of narrative present archaic academic styles that will not meet the target audience on their own ground."

* "Use it anyway...it's typical of what your audience has already seen (and disliked.)"
DIETITIANS' COMMENTS

* "Graphics looked tilted and off center. Not always of high quality."

* "Program not interesting to those who have seen similar presentations before."

* "Program maybe too long. Fifteen minutes is 'pushing' it. Maybe divide into two programs?"

* "I like the "high standards"."

* "Narrator's voice faltered a few times."

* "I question the use of the brush. Could it be contaminated and pass on bacteria to the next user. Man with beard is not wearing beard cover."

* "The pictures and graphics didn't seem coordinated --- looked as though they came from different sources."

* "How do you turn the water faucets off without recontamination?"

* "Well done. Organized. Slides are clear. A different voice might be better --- slight monotone."

* "I wonder if a nail brush kept near handwashing sink for everyone to use is very sanitary?"
SANITARIANS' COMMENTS

* "Many Health Departments do not require examinations."

* "Hair restraints are required in Oregon not hair nets."

* "The danger zone for food products is 45 F - 140 F."

* "There seems to be an over emphasis of how to wash your hands."

* "Too boring. Poor Photography. Poor sound quality of narration and unpleasant narrators voice---boring voice also."

* "You need more humor and interest to appeal to your target population --- a spoon full of sugar helps the medicine go down!"

* "Is darkness that significant of a growth factor? I think it is not as significant, if at all, as the other factors listed."

* "Some of the information is inaccurate. Mold and mildew are not bacteria. I question the value of physical examinations. Bacteria cause a cold ???

* "Your section on hand washing is too detailed for such a simplistic action, just brief precautions should be mentioned."

* "The section on lockers for employees is very unrealistic in todays restaurants. (Precautions should be mentioned.)"

* "Some photos are fuzzy and have bad lighting, which makes picture unattractive and hard to see clearly."

* "The section on socks and pantyhose should be deleted, it is unnecessary."
SANITARIANS' COMMENTS

* "Foodborne illness include virus, parasites, bacteria toxin as causes also. Fungi are not bacteria. More emphasis on proper food temperatures. Slides showed perishables at room temp."

* "Too much emphasis on dress colors and styles. More emphasis on clean clothes. Physical exams only show today's level of health---not tomorrows. What good is a yearly physical?"

* "Information needed on approved food sources."

* "There are aerobic and anaerobic bacteria --- info on oxygen misleading."

* "Use of gloves is only good if gloves are not contaminated. Use of scoops and tongs should be talked about."

* "Info needed on dishwashing and sanitizing, equipment cleaning, etc."

* "Information needed on vectors."

* "Information needed on proper food storage chemical storage, etc.

* "Toxins are never mentioned in this filmstrip. It should be stated that reheating of foods will not kill toxins produced by bacteria. Good example is Staph."

* "When mentioning Salmonella, it is not mentioned that cross contamination of foods which commonly have Salmonella is often the source for food borne disease."

* "In your slide you make it sound that only injuries that are large contain Staph. It should be said that even small cuts and scrapes can contain Staph."

* "I think some employees may be offended by the cleanliness section."
SANITARIANS' COMMENTS

* "Reason why nail polish should be avoided is because frequently it hides dirty nails. I have never heard of a foodborne disease resulting from chipping fingernail polish."

* "C. Perfringens is very common in environment, especially in dirt and dust — need to mention thorough washing of fresh uncooked foods."

* "Oxygen is misleading as part of five factors affecting bacterial growth because many pathogenic bacteria won't grow in presence of air. It is true that air movement is mode of transmission of organisms but mostly organism of mold and viruses."

* "Salad bar slide show temperature violations w/readily perishable foods at room temperature."

* "Molds and mildews are not bacteria and should never be called bacteria, no matter what group you are addressing. Also should be noted that molds and mildews are predominantly spoilage organisms and are rarely responsible for food borne disease."
FOOD SERVICE WORKERS' COMMENTS

* "Well presented slide. Long enough to cover all necessary facts. Yet, short enough so that it wasn't boring."

* "This was boring. Very unimportant."

* "You did not get this message across very well! Got that!" (In reference to the Matching section on the post-test.)

* "The program lost me for a few moments towards the end. I guess it was too much information or maybe too repetitious. I felt that on handwashing techniques that you failed to mention that the water faucet should be shut off with a paper towel, not one's clean hands."

* "I don't feel the under clothes thing is needed. The time of day is very bad. We need to be at work."

* "The drying of the hands was poorly demonstrated. Part of the information and the most important information was left out. If it was going to be done, let's do it right."

* "The sound was very hard to understand. Could be the recorder."

* "The program's information was organized in a manner that was easy to understand even for a two year old."

* "Too long and repetitious. Too slow."

* "The narrator used difficult words that were hard for her to pronounce."

* "If you're going to show this show to college students and adults, I think you'd better make it more interesting. It was an insult to my intelligence!"

* Three supervisors later remarked that their FSW's were "irrate", "hopping mad" and "incensed" at having to view this program.
COVER LETTER

July 1983

Dear

I am a graduate student at Oregon State University in Environmental Health with a Media Minor. For my thesis research I am field testing a filmstrip program on Personal Hygiene for Food Service Workers that was recently developed by a Dietitian from OSU's Institutional Foods Management Department, as a graduate thesis. I am attempting to assess its usefulness for sanitarians in training individuals in your Food Handler's classes.

I would greatly appreciate it if you and your class participants could take a small amount of time to review and evaluate the program. The evaluation forms are short, concise and easy to complete. The class participants are also asked to answer a five question pre and post test.

Enclosed is a brief program guide describing Personal Hygiene's goals and objectives.

I will be contacting you by phone next week to see if you are interested in participating in this field evaluation. At that time we can arrange a date that will be most convenient for you to view the program. In the meantime, if you have any further questions, I can be reached at 757-8422. Thank you for your time and assistance.

Sincerely Yours,

M. Teresa Cochran, R.D.
Cover Letter

August 1983

Dear

Thank you so much for agreeing to participate in the field-testing of Jenny Nelson's PERSONAL HYGIENE FOR FOODSERVICE EMPLOYEES audiovisual program.

In order to assure consistancy and accuracy in collecting the field-testing results, please follow the guidelines outlined below. To insure an adequate sample size; the questionnaires need to be completed by as many dietitians and food service employees as possible. If you have any further questions, you can call me at 757-8422.

PERSONAL HYGIENE

Specifications:
* 50 - 35 mm filmstrip or slide frames
* 25 minute narration on an audio cassette tape with audible cues

Equipment needed:
* Filmstrip projector with the manual advance button selection (for filmstrip users).
* OR
* 35 mm slide projector (for slide users).
* Cassette tape player
* Single screen

1. Select someone to operate the audiovisual equipment. The slides or filmstrip will need to be advanced manually at the sound of the "beep" from the tape. Some of the slides at the very beginning contain a lot of narration between beeps. (Have patience and you'll soon hear them.)

2. In order to avoid instilling any bias in the employees' attitudes, please introduce the program in the following manner:
   "The filmstrip/slides you are about to see depicts the role good personal hygiene plays in providing safe and sanitary foods, attractively served in a food service department. At the end of the program you will be asked to take a few moments to evaluate the program. Your responses will be used to rate the overall effectiveness of the program."
Cover Letter

3. Advance the filmstrip to FOCUS. Start the cassette on the next filmstrip frame, which is a black slide.
   OR
   If you are using the slides instead, start the cassette on the first black slide.

4. Advance the filmstrip or slides manually at the sound of the "beep".

5. WHEN THE PROGRAM IS OVER distribute the enclosed yellow questionnaires to the employees and the green ones to the dietitians. Allow 10 - 15 minutes for completion. Do NOT write names on the questionnaires.

6. Collect the questionnaires.

7. Place filmstrip/slides and the completed questionnaires in the enclosed, self-addressed, stamped envelope.

8. Please return all materials as promptly as possible for use in other facilities.

9. Thank you once again for your time and assistance.

Sincerely Yours,

M. Teresa Cochran, R.D.
2825 NW Duchess Place
Corvallis, OR. 97330
(503) 757-8422
PROGRAM GUIDE

PERSONAL HYGIENE FOR FOODSERVICE EMPLOYEES

by

Janny S. Nelson, M.S., R.D.
PERSONAL HYGIENE

An introduction to the role
good personal hygiene plays in
providing safe and sanitary food
attractively served in a food
service department.

SPECIFICATIONS:

- 50 35 mm filmstrip frames
- 25 minute narration on an audio
cassette tape with audible cues.

EQUIPMENT NEEDED:

Filmstrip projector with a manual
advance
Cassette tape player
Single screen

AUDIENCE:

This program has been designed
for food service employees with
less than four years experience
in food handling and preparation.
It is especially suitable for
training new staff with no pre-
vious experience.

PROGRAM GOAL:

The major goal of food service
departments is to produce quality
food products using the most eco-
nomical methods possible. To
assure quality food production,
training food service employees
within the food service depart-
ment is a primary concern so that
the goals of the department can
be met.
INSTRUCTIONAL OBJECTIVES:

- To emphasize the importance of personal hygiene as it relates to food service.
- To define the size of bacteria.
- To identify three kinds of bacteria found in food service and their characteristics.
- To become familiar with the five major environmental conditions for bacterial growth.

PROGRAM OUTLINE:

I. Introduction
   A. Bacteria
      1. Kinds of Bacteria
      2. Conditions for growth
         a. Food
         b. Moisture
         c. Temperature
         d. Oxygen
         e. Darkness
   B. Disease

II. Body Cleanliness
   A. Hand washing techniques
   B. Hair covering
   C. Body
   D. Feet

III. Care of personal items
   A. Uniforms
   B. Jewelry
   C. Lockers

IV. Prevention of Infections
MEDIA SPECIALIST QUESTIONNAIRE

MEDIA TECHNOLOGIST FORM

FILMSTRIP PROGRAM EVALUATION

DIRECTIONS:
This evaluation tool is designed to measure your response to the PERSONAL HYGIENE program you just viewed. In the statements below circle the letters that best describe your assessment of each statement. Circle ONLY ONE letter per statement.

Key to Responses:
SA: Strongly Agree
A: Agree
U: Undecided
D: Disagree
SD: Strongly Disagree

EXAMPLE:
The directions for this evaluation are clear enough for you to continue.

PART I PROGRAM GUIDE: (The blue brochure)

1. The audience was clearly defined in the program guide.
2. Any assumed audience entry level skills were clearly stated.
3. The program guide contained a carefully stated summary of the program goal.
4. The objectives were clearly stated in measurable terms.

PART II DESIGN

1. The overall purpose of the program was clearly stated in the sound filmstrip presentation.
2. The program's information was organized for clear understanding by the audience.
3. The program was organized in a way that would help the audience remember the information presented.
4. The beginning of the filmstrip captured interest.  
     SA A U D SD

5. The entire program was interesting.  
     SA A U D SD

6. The program length was appropriate for the state purpose.  
     SA A U D SD

7. The program pace was slow enough for the audience to understand the important information.  
     SA A U D SD

8. The program pace was quick enough to hold interest.  
     SA A U D SD

9. The information presented in the program was appropriate for the intended audience.  
     SA A U D SD

10. The program objectives were appropriate for the audience.  
    SA A U D SD

11. The overall purpose of the program as stated in the program guide was adequately covered in the presentation.  
    SA A U D SD

12. The sound/filmstrip provided practice and feedback.  
    SA A U D SD

13. The sound/filmstrip provided optimum repetition of the main ideas.  
    SA A U D SD

14. The program was not biased toward women or other minority groups.  
    SA A U D SD

PART III. Graphics

1. The graphics helped to increase understanding of the program's message.  
   SA A U D SD

2. The graphics (diagrams, graphs and titles) were all very legible.  
   SA A U D SD

3. The colors used in the graphics were appealing.  
   SA A U D SD

4. The artistic style used in the graphics was consistent throughout the program.  
   SA A U D SD

5. Illustrations, diagrams, graphs and titles looked clean and professional.  
   SA A U D SD
6. The overall visual attractiveness of the photographs was of very high quality.

PART IV AUDIO

1. The music enhanced interest in the program message.
2. The music complemented the mood of the program.
3. The pace of the narration was comfortable and easy to follow.
4. The narrator's voice was pleasant yet stimulating.
5. The narrator's pronunciation and articulation was clear.
6. The music/narration volume and balance was good.
7. Transitions in music were smooth.

PART V PHOTOGRAPHY

1. All photographs appear to have been preplanned and shot specifically for this program.
2. The film's frames form a smooth and continuous visual message.
3. Where appropriate, photo sequences have been used to show an image from several perspectives or distances.
4. The photographs in the program were correctly exposed.
5. The photographs were well composed.
6. Camera to subject distances were appropriate and visually appealing.
7. Lighting techniques were utilized effectively.
PART VI CONTENT (See the blue brochure)

1. The program content is consistent with the stated objectives. SA A U D SD

2. The program content outline clearly described the program. SA A U D SD

Comments: (Please note here any additions or deletions you would like to see in this filmstrip on PERSONAL HYGIENE. Recommendations will be helpful for future revisions.)

THANK YOU FOR YOUR TIME AND ASSISTANCE!!!!
DIETITIAN/SANITARIAN QUESTIONNAIRE

DIETITIAN/SANITARIAN FORM

FILMSTRIP PROGRAM EVALUATION

DIRECTIONS:

This evaluation tool is designed to measure your response to the PERSONAL HYGIENE program you just viewed. In the statements below circle the letters that best describe your assessment of each statement. Circle ONLY ONE letter per statement. All of your answers will be held confidential, and will be used only in reference to this study.

Key to answers:
- **SA**: Strongly Agree
- **A**: Agree
- **U**: Undecided
- **D**: Disagree
- **SD**: Strongly Disagree

EXAMPLE:

The directions for this evaluation are clear enough for you to continue.

1. The audience was clearly defined in the program guide.
   - **SA**
   - **A**
   - **U**
   - **D**
   - **SD**

2. Any assumed audience entry level skills were clearly stated.
   - **SA**
   - **A**
   - **U**
   - **D**
   - **SD**

3. The program guide contained a carefully stated summary of the program goal.
   - **SA**
   - **A**
   - **U**
   - **D**
   - **SD**

4. The objectives were clearly stated in measurable terms.
   - **SA**
   - **A**
   - **U**
   - **D**
   - **SD**

PART I PROGRAM GUIDE (The blue brochure)

1. The overall purpose of the program was clearly stated in the sound filmstrip presentation.
   - **SA**
   - **A**
   - **U**
   - **D**
   - **SD**

2. The program's information was organized for clear understanding by the audience.
   - **SA**
   - **A**
   - **U**
   - **D**
   - **SD**
3. The program was organized in a way that would help the audience remember the information presented.

4. The beginning of the filmstrip captured interest.

5. The entire program was interesting.

6. The program length was appropriate for the stated purpose.

7. The program length was too short.

8. The program length was too long.

9. The program pace was slow enough for the audience to fully understand all of the information.

10. The program pace was quick enough to hold interest.

11. The information presented in the program was appropriate for the intended audience.

12. The program objectives were appropriate for the audience.

13. The overall purpose of the program as stated in the program guide was adequately covered in the presentation.

14. The sound/filmstrip provided practice and feedback.

15. The sound/filmstrip provided optimum repetition of the main ideas.

16. The program was not biased toward women or other minority groups.

PART III GRAPHICS:

1. The graphics helped to increase understanding of the program's message.

2. The graphics (diagrams, graphs and title slides) were all very legible.
3. The graphics were distracting.  
4. The colors used in the graphics were appealing.  
5. Illustrations, diagrams, graphs and title slides all looked clean and professional.  
6. There was an appropriate integration of the visual and audio components.  
7. The overall visual attractiveness of the slides was of very high photographic quality.  

PART IV AUDIO  
1. The music enhanced interest in the program message.  
2. The music complimented the mood of the program.  
3. The pace of the narration was comfortable and easy to follow.  
4. The narrator's voice was pleasant yet stimulating.  
5. The narrator's pronunciation and articulation was clear.  
6. The Narrator used terminology the audience could fully understand.  
7. The filmstrip and sound were properly synchronized to form a smooth transition in the message.  

PART V CONTENT (Refer to the blue brochure.)  
1. The program content was consistent with the stated objectives.  
2. The program content outline clearly described the program.  
3. All information presented in the program was correct.  

\[\text{over}\]
4. I would be interested in purchasing this program for future use in staff training.

Comments: (Please note here any additions or deletions you would like to see in this filmstrip on PERSONAL HYGIENE. Recommendations will be helpful for future revisions.)

THANK YOU FOR YOUR TIME AND ASSISTANCE !!!!!!
FOOD SERVICE WORKER QUESTIONNAIRE

EMPLOYEE FORM

FILMSTRIP/TAPE PROGRAM EVALUATION

DIRECTIONS:
This evaluation tool is designed to measure the effectiveness of the sound filmstrip program on PERSONAL HYGIENE that you just viewed. Your responses are important in helping us to see if any further revisions need to be made in this program.

In the statements below circle the letters that best describe your assessment of each statement. Circle ONLY ONE letter per statement.

All of your answers will be held in strict confidence and will be used only to evaluate the effectiveness of this program.

Key to answers:  SA: Strongly Agree  
                  A: Agree  
                  U: Undecided  
                  D: Disagree  
                  SD: Strongly Disagree

EXAMPLE:

The directions for this evaluation are clear enough for you to continue.  SA  A  U  D  SD

PART I DESIGN:

1. The overall purpose of the program was clearly stated in the sound/filmstrip presentation.  SA  A  U  D  SD

2. The program’s information was organized in a manner that was easy to understand.  SA  A  U  D  SD

3. The program was organized in a way that would help you remember the information presented.  SA  A  U  D  SD

4. The beginning of the filmstrip captured interest.  SA  A  U  D  SD

5. The entire program was interesting.  SA  A  U  D  SD

6. The program length was appropriate for the stated purpose.  SA  A  U  D  SD
7. The program length was too short.  
8. The program length was too long.  
9. The program pace was slow enough to fully understand all the information presented.  
10. The program pace was quick enough to hold interest.  
11. The ideas presented in the program related to your personal experiences.  
12. The ideas presented in the program were meaningful to your job.  

PART II: GRAPHICS:  
1. The graphic illustrations helped to increase your understanding of the program's message.  
2. The graphic illustrations, diagrams, graphs and title slides were all very legible.  
3. The graphic illustrations were distracting.  
4. The colors of the visual illustrations were appealing.  
5. The overall visual attractiveness of the slide was of very high photographic quality.  

PART III: AUDIO  
1. The music enhanced interest in the program message.  
2. The pace of the narration was comfortable and easy to follow.  
3. The filmstrip and sound were properly synchronized to form a smooth transition in the message.
4. The narrator's voice was pleasant, yet stimulating.  
   SA  A  U  D  SD

5. The narrator's pronunciation and articulation was clear.  
   SA  A  U  D  SD

6. The narrator used difficult words that were hard to understand.  
   SA  A  U  D  SD

PART IVPROFILE

1. The job title that best describes your job is:
   A. Food service worker  
   B. Cook, Assistant Cook  
   C. Dishwasher, Pot washer  
   D. Pantry worker  
   E. Diet Aide  
   F. Waiter/Waitress  
   G. Other  

2. How many years have you been employed in food service work?
   A. 0 - 1  
   B. 1 - 2  
   C. 2 - 3  
   D. 3 - 4  
   E. Over 4 years

3. Have you had any previous training in Personal Hygiene as it relates to food service?
   A. Yes  
   B. No  
   C. Don't Know

4. Please circle the last year of school that you have completed.
   6, 7, 8 (Junior High)  
   9, 10, 11, 12 (Senior High)  
   13, 14, 15, 16 (College/University)  
   17, 18, 19, 20 (Master's/Doctorate)

5. Your present age is: _______

6. Circle one:
   Male
   Female

   just a little more!! 😊
HOW MUCH DO YOU REMEMBER?

The following questions deal with specific information that was presented in the program. See how many answers you can recall. This will not be graded or shown to your supervisor. It is strictly to help us see if the program was effective in teaching this material. Your answers will remain completely anonymous. Feel free to write any further comments you may have regarding this program on the back of this sheet. Please be candid.

1. List five reasons why good personal hygiene practices are so important in your job as a food service employee.
   1. 
   2. 
   3. 
   4. 
   5. 

2. Define the size of bacteria:

3. List the FIVE Environmental Conditions that cause bacteria to grow.
   1. 
   2. 
   3. 
   4. 
   5. 

(over)
4. MATCHING  
There are three types of bacteria that food service workers need to be especially concerned about. Find the three types of bacteria in the Bacteria Column below and draw a line to its matching characteristic in the opposite column. Be sure to identify ONLY the three types of bacteria food service workers need to be especially aware of.

<table>
<thead>
<tr>
<th>BACTERIA</th>
<th>CHARACTERISTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Streptococcus</td>
<td>associated with unpasteurized milk and contaminated water.</td>
</tr>
<tr>
<td>Clostridium perfringens</td>
<td>improper handling or storage of egg, poultry, dairy and meat products.</td>
</tr>
<tr>
<td>Salmonella</td>
<td>infection is acquired from water that contains larval forms.</td>
</tr>
<tr>
<td>Campylobacter fetus</td>
<td>found in food contaminated by people with boils, infected sores and unwashed hands.</td>
</tr>
<tr>
<td>Schistosomiasis</td>
<td>found in food that has been precooked, inadequately cooled, then inadequately reheated.</td>
</tr>
<tr>
<td>Staphylococcus</td>
<td>results from fecal contamination.</td>
</tr>
</tbody>
</table>

THE END ...

THANK YOU FOR YOUR TIME.