

**Training Needs Reported by School Food Service Site
Managers and Recommendations for Meeting
Managers' Needs**

Results of a National Survey

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EXECUTIVE SUMMARY

Introduction

A needs assessment team used qualitative and quantitative methods to study school food service site managers' training needs. Based on information collected through this needs assessment, a plan was developed to guide NFSMI in delivering training designed to improve school-level food service management nationwide.

Methodology

A survey design was used to collect data on site managers' training needs. A preliminary survey instrument was developed by collecting qualitative data through a series of telephone interviews with school site managers and by reviewing instruments used earlier to collect information on managers' training needs. The draft instrument was refined as a result of an analysis of pilot test data and in response to suggestions from the Food and Nutrition Subcommittee of the Education Information Advisory Committee, Council of Chief State School Officers.

A sample of participants was drawn at random from a national database containing names and addresses of all elementary and secondary schools in the United States. This database is maintained by the National Center for Educational Statistics (NCES). The survey instrument was mailed to this sample, and results were analyzed to identify major training needs. Based on statistical analyses performed on the data, the needs assessment team concluded that the survey responses reported herein are sufficiently representative to warrant their use in analyzing and planning programs to meet food service site managers' training needs.

Data Analysis

The needs assessment team used SPSS (Version 8.0) and Microsoft Excel to compile and analyze results. Data analysis steps included 1) compilation of the number and percent of respondents selecting each response category, 2) chi-square analysis of contingency tables to determine key relationships between demographic characteristics (e.g., region) and level of interest in training topics, and 3) development of a need index, format preference index, and delivery mode preference index to summarize levels of interest in the various topics, formats, and delivery modes.

The need index was computed by weighting each response through a reverse scoring method. A response of "Much needed for my own training" was

assigned a weight of 3, a response of "Somewhat needed for my own training" was assigned a weight of 2, and a response of "Not a priority for my own training" was assigned a weight of 1. The need index value for a training topic is the average weight of all respondents' ratings of that item. A comparable method was used to compute the Format Preference and Delivery Mode Preference indices. On all three indices, a high rating indicates a strong preference for that item among survey respondents.

Survey Results--Characteristics of Respondents and Their Schools

A total of 339 of the 1,000 site managers' survey forms were completed and returned. Demographic information provided by respondents indicated the following notable findings:

Almost three-quarters (73%) of the respondents worked in schools with fewer than 1,000 students; a total of 88% worked in schools with 2,000 students or fewer. The largest proportion of respondents were employed in elementary schools (39%), and an additional 29% worked in settings with grades K-12. Another 15% worked in a setting that did not fall into the elementary/middle school/high school categories.

The number of employees supervised was fairly equally distributed, with 31% of the respondents supervising 0 to 3 employees, 33% supervising 4 to 8 employees, and 36% supervising 9 or more employees. Most (80%) of the respondents indicated that their staff positions were relatively stable, changing less than 5% each year. Only 9% of the respondents indicated they had a turnover rate exceeding 10%.

Almost all (96%) of the respondents' schools participated in the National School Lunch Program, and 74% participated in the School Breakfast Program. Only 1% of the respondents indicated that their schools did not participate in any federally funded school nutrition programs.

The overwhelming majority (89%) of respondents worked in self-operating food service environments. In addition, most respondents (83%) reported that their schools used on-site food preparation.

Overall, 68% of the respondents indicated that 50% or fewer of their students were eligible for free or reduced price lunches. More than half (61%) of the respondents' schools served fewer than 500 reimbursable lunches per day, while an additional 24% served 500 to 1,000 reimbursable lunches each school day. Half (50%) of the respondents' schools had student participation rates over 71%, and an additional 25% of the respondents' schools had 51%-70% student participation. Only 8% reported a rate less than 30%. Almost half (47%) of the respondents expected no change in student participation, while 45% expected an increase in the student participation rate in their food service program (excluding à la carte). Only 8% expected a decrease.

Only 46% of the responding site managers indicated they currently had Internet access, while another 17% indicated they would have Internet access at

their workplace within the next year. More than one out of three (37%) did not expect to have access to the Internet within the next year.

Almost half (46%) of the respondents had 11 or more years of experience as managers, but only 9% of those had more than 25 years experience. Overall, 39% of the respondents indicated that training was a high priority for them. Almost half (49%) assigned a medium priority to training, and only 12% assigned a low priority to training.

Survey Results—Site Managers' Perceived Training Needs

Results of the survey of school food service site managers yielded two distinct groups of topics for which respondents expressed a relatively strong need for training. These two areas were employee management and practical skills training.

Based on respondents' ratings, the topic with the highest need index was "Team-building and motivating food service workers." This item was rated as needed by 78% of the respondents. Two similar items, "Communicating effectively with food service workers to reduce conflict" and "Evaluating on-the-job performance and providing constructive feedback to workers," were the sixth and seventh highest rated items, being indicated as needed by 73% and 72% of the respondents respectively. Still another item related to dealing with employees, "Encouraging professional manner and dress by food service workers," had an overall need index below 2.0 but was rated as a needed training topic by 80% of respondents with experience levels of 16-20 years. These results, combined with anecdotal information received through telephone interviews with food service site managers prior to development of the survey instruments, suggest that learning to motivate and unite workers is a major topic of concern among food service site managers.

The need for practical skills training was highlighted by the fact that the second highest rated topic was "Using fire extinguishers correctly and training employees to use them." This topic was rated as needed by 76% of the respondents. Three topics related to food handling and preparation received the next highest ratings. These items, in order of need index, were as follows: "Handling food properly (cooling, heating, thawing)"; "Preparing food efficiently (using fewer steps)"; and "Training employees to use kitchen equipment and utensils safely." All three of these items were rated as "Much needed" or "Somewhat needed" by 71% to 74% of all respondents.

A total of 12 items, including those discussed above, had a need index above 2.01, indicating a relatively strong need for training. The remaining items dealt primarily with marketing and quality assurance, although one additional item dealt with employee training. In order of need, these items were as follows: "Enhancing the appearance, taste, and presentation of food"; "Marketing/promoting the food service program"; "Training employees to use correct sanitation practices (hand washing, using gloves)"; "Modifying recipes to reduce

fat, sugar, and salt"; and "Ensuring quality customer service." These five topics were rated as "Much needed" or "Somewhat needed" by 69% to 75% of the respondents.

Although the training topic "Using computers for ordering supplies, e-mailing forms, etc." had a need index of only 1.93, it deserves mention because 33% of the respondents rated it as "Much needed." The low need index for computer use is due to the fact that 41% of the respondents rated this topic as "Not a priority." Thus, there appears to be relatively little middle ground, with the need for training in this area being very high for some and very low for others. This disparity may be linked to the demographic data indicating that only 46% of the respondents reported having Internet access currently, while 37% reported not anticipating having it within the next year.

Survey Results—Site Managers' Training Format and Delivery Mode Preferences

Analysis of survey results indicated that most respondents preferred training formats that were interactive, hands-on, timely, practical, and demonstrative. More than 80% of the respondents rated the following formats as "Highly preferred" or "Preferred": 1) "Seminars that allow interaction with other managers"; 2) "Focus on timely topics (e.g., new temperatures for meats and poultry)"; 3) "Use of demonstrations ("how-to" sessions)"; and 4) "Inclusion of practical information in the session." The formats "Use of hands-on activities" and "Small classes; lots of involvement by participants" were preferred by 79% and 78% of the respondents respectively. The other preferred format was "Handing out printed materials during the session," which was a preference of 73% of the respondents.

Survey results indicated that most respondents preferred group-based training that allowed for networking with other site managers, such as through seminars, conferences, and workshops. At least 77% of the respondents preferred or highly preferred the following delivery modes (listed in order of preference index): 1) "Theme-based seminars allowing for discussions"; 2) "State agency sponsored conferences/workshops"; 3) "Sessions sponsored by the food service industry"; 4) "State school food service association conferences"; and 5) "District-wide in-services." All five of these delivery modes had preference indices of 2.13 or higher and were highly preferred by 36-40% of the respondents.

The least preferred training delivery modes were "Instruction delivered via the Internet/World Wide Web" and "Interactive teleconferences." More than 50% of the respondents did not prefer these delivery modes. Again, we must take into account that only 46% of the respondents currently have Internet access. Nevertheless, it does appear that these more isolating, "on-your-own" training modes are less popular than those that allow site managers to interact and learn together.

Training Plan Recommendations

Based on survey results, the research team makes the following general and specific recommendations for developing a training plan for school food service site managers.

General Recommendations

Because of the indicated preferences in training formats and delivery modes, it seems that NFSMI could play an important role by developing a set of relevant theme-based seminar programs that allow site managers to meet and network with each other. In addition, NFSMI could play a role in developing printed material and video-based instruction for use by site managers.

Specific Recommendations: Employee Management and Training

Because employee management and training represent 5 of the 12 highest ranking training topics, much emphasis should be placed on these areas. Team building, motivation, communication, employee evaluation, and training skills should be topics that are addressed at district and state conferences and seminars. There is much inherent correlation among these topics, and this interrelationship should be used to great advantage in training. A training session that focuses primarily on one of these topics should include elements that would be helpful in the other areas as well. For example, training in team building and motivating food service workers would ideally include training in using effective communication, performance evaluation, and constructive feedback. It is important that learning be carried over from one topic to another.

Three preferred topics involved training employees to perform specific tasks (e.g., use a fire extinguisher, use kitchen equipment and utensils) or to follow certain practices (e.g., wash hands, use gloves). In order to be able to train employees effectively, site managers must first learn effective teaching techniques. Demonstration sessions may be useful for helping site managers learn to break tasks down into simple steps, to model tasks, to reinforce incremental progress, and to re-teach as necessary.

It is recommended that sessions addressing employee management be more discussion oriented, possibly moderated by an individual with experience in employee relations, motivation, evaluation, and/or instruction. Small groups are recommended to allow for involvement by all participants. The preference for printed materials could be addressed by providing participants with outlines of the session and with printed checklists that could be used in employee evaluations.

Specific Recommendations: Practical Skills Training

The remaining preferred training topics dealt with practical skills that were needed on the job. Respondents wanted training in how to use fire extinguishers; how to handle food properly in terms of cooling, heating, and thawing; how to prepare food efficiently (using fewer steps); how to enhance the appearance, taste, and presentation of food; how to modify recipes to reduce fat, sugar, and salt; how to market/promote the food service program; and how to ensure quality customer service.

Demonstrations ("how-to" sessions) and hands-on activities are preferred formats that fit well with practical skills training. These strategies (learning by observing and learning by doing) should be used whenever possible. Further, it is important that training be practical. Session leaders should use settings, equipment, and products similar to those found at the managers' sites. In addition, it is recommended that session leaders be individuals who are familiar with a school environment.

Video-based instruction, supplemented by printed material, may be a training option in the areas of food handling, food preparation, food presentation, and recipe modification. Whatever the delivery mode, supplementation with printed material is recommended.

The topics dealing with marketing/promoting the food service program and ensuring quality customer service may be addressed effectively in seminars that allow interaction and networking with other site managers. This format permits the sharing of ideas and experiences that are helpful in determining what works best in certain situations.

Training in computer use may be worthy of consideration due to the relatively high percentage of respondents who rated it as "Much needed." However, such training should be targeted only toward those site managers who are prepared and equipped to benefit from it.

In summary, food service site managers are perceived to have very practical training needs that can best be met by very practical training sessions that carry over directly to their work environments.

Chapter 1: Introduction

A needs assessment team used qualitative and quantitative methods to study school food service site managers' training needs. Based on information collected through this needs assessment, a plan was developed to guide NFSMI in delivering training designed to improve school-level food service management nationwide.

This study, which was conducted concurrently with a survey of school food service directors' professional development needs, built on earlier research examining directors' and managers' training needs. From 1995 through 1997 NFSMI developed a series of training needs assessments for a consortium of state Nutrition Education and Training Programs. These studies, which assessed statewide training needs of directors and managers, were conducted by twelve states using survey instruments developed by NFSMI. These studies were intended to assess training needs within individual states and were conducted according to the state determined design. Although the studies provided valuable information to state planners, NFSMI could not validly infer that this information represented the broad range of directors' and managers' training needs nationwide.

The study described in this report updates and extends earlier research by providing a national perspective on site managers' training needs. To accomplish this, the study answers the following research questions:

- What knowledge and skills do school food service site managers need to perform their work more effectively over the next several years?
- What is the relative priority of each of these training needs?
- What is the relation between employee turnover and anticipated training needs?
- What are the optimum design components (or the most desirable options) for meeting site managers' training needs over the next several years?

Chapter 2: Methodology

A survey design was used to collect data on site managers' training needs. A preliminary survey instrument was developed by collecting qualitative data through a series of telephone interviews with school site managers and by reviewing instruments used earlier to collect information on managers' training needs. The draft instrument was refined as a result of an analysis of pilot test data and in response to suggestions from the Food and Nutrition Subcommittee of the Education Information Advisory Committee, Council of Chief State School Officers.

A sample of participants was drawn at random from a national database containing names and addresses of all elementary and secondary schools in the United States. This database is maintained by the National Center for Educational Statistics (NCES). The survey instrument was mailed to this sample and results were analyzed to identify major training needs. The following sections provide additional information on survey participants, including sampling methods, response rates, and information on development of the survey instrument and analysis of data.

Survey Participants

A sample of site managers was selected using the sampling method described below. This section also provides information on the response rate and an analysis of the representativeness of the survey response, as well as information on confidence levels associated with survey results.

Sampling Method Used in the Site Managers' Survey. The needs assessment team downloaded a data base of school names and addresses available on the World Wide Web at a site maintained by the National Center for Education Statistics. Researchers assigned a number at random to each school in the data base, sorted the data base by random number, and identified the 1,000 site managers with the lowest randomly assigned numbers. These 1,000 site managers comprised the sample for the site managers' study.

Response to the Site Managers' Survey. A total of 339 (34%) of the 1,000 site managers' survey forms were completed and returned. An additional 7 (0.7%) of the surveys that were mailed were considered undeliverable by the U. S. Postal Service. The 34% response rate, though relatively low, was anticipated based on two pilot surveys of food service site managers. The following sections discuss two matters, representativeness and precision of survey results, that were considered in assessing the extent to which survey results can be generalized with some confidence to the broader population of all site managers. As the following discussion suggests, the needs assessment team concluded that the site managers who responded to the survey were sufficiently representative of site managers nationally to warrant confidence in using survey

results as a basis for planning for the broader population of site managers. The following subsections explain the basis for this conclusion.

Extent to which respondents were representative of all U. S. school food service site managers. The needs assessment team first analyzed responses to determine whether respondents appeared to be representative of all U. S. school food service site managers. This analysis centered on representativeness by region, a major consideration in examining overall representation of site managers.

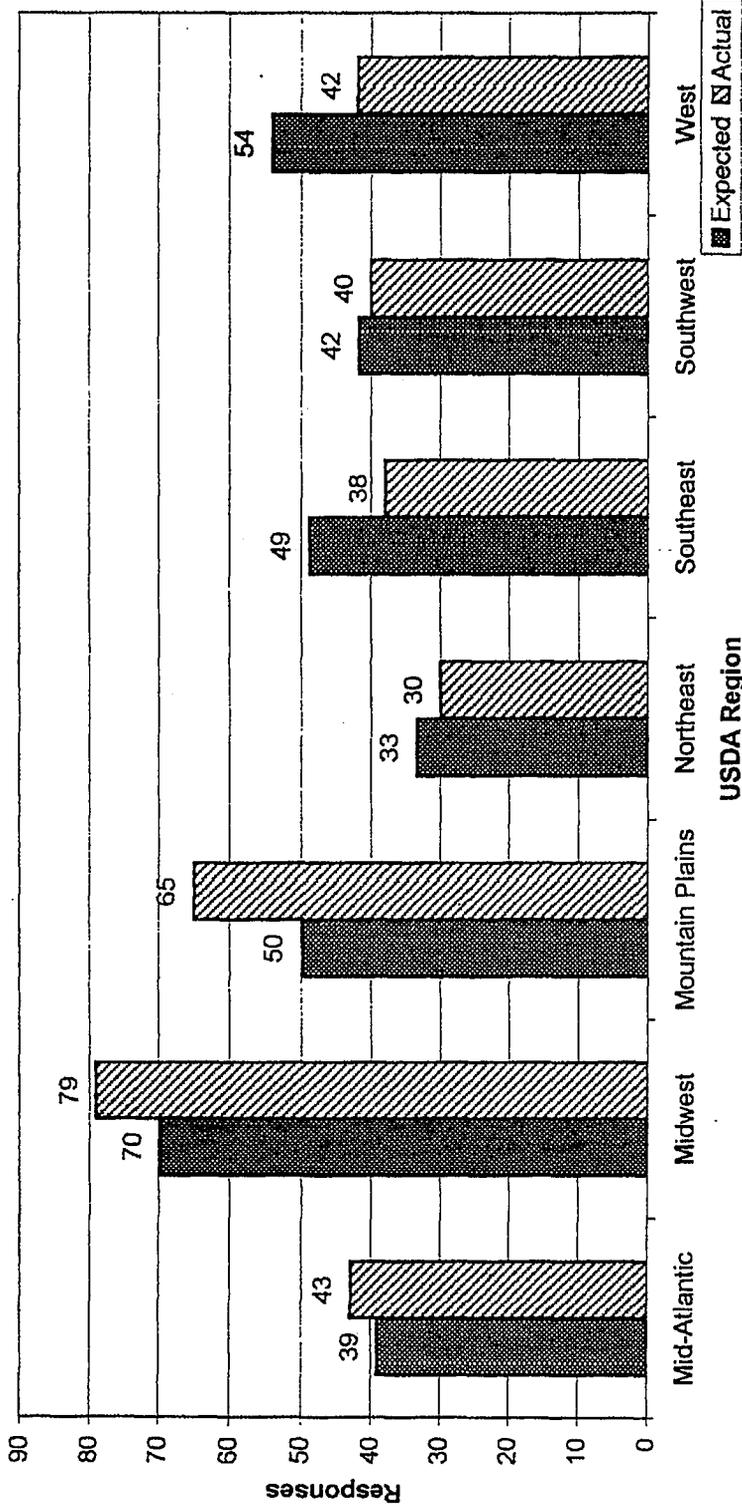
As Figure 1 (Number of Responses Expected and Number Received, by Region, p. 14a) shows, the regions that were somewhat underrepresented in the responses received were the Southeastern and Western regions. The Mountain Plains and Midwest were somewhat over-represented in the sample. Virtually no differences existed between the expected and actual values for the Mid-Atlantic, Northeast, and Southwest.

Results of a contingency table chi-square analysis ($\chi^2 = 11.571$, $df = 6$, $p = .072$) suggest that differences between the expected and actual regional distribution of responses were not significant at a .05 *alpha* level. With $p = .072$, researchers exercised caution in interpreting results. Nevertheless, as the following examples demonstrate, regional under- and over-representation was sufficiently minor to preclude inferences of substantial effects on item rankings.

Test 1: Regional differences that might have resulted in overstatement of the importance of certain topics. The needs assessment team tested responses on each training topic to identify significant regional differences, if any. Table 1 (Training Topics on Which Regional Patterns Emerged in Respondents' Preference Ratings, p. 14b) lists all such items. None of the four items listed in Table 1 was preferred by enough respondents to place it within the group of items that warrant the highest level of attention by training program planners. That is, there were not items on which 1) regional differences were statistically significant, and 2) the overall rating was sufficiently high to place it near the high-priority level. In fact, item 45 ("Training cashiers"), ranked in 27th place, is the highest-ranking item among those for which regional differences were statistically significant. The three remaining items for which regional differences in response patterns were found (items 21, 51, and 32) ranked 33rd, 36th, and 37th in priority, respectively, out of 38 items. These items might have ranked slightly higher or slightly lower if the sample's overall regional proportions had been identical to the pattern of proportions within the full population of school food service site managers. (See "Development of the Need Index, Format Preference Index, and Delivery Mode Preference Index" [below] for information on derivation of the need index. See Chapter 3 for item rankings based on this index.) However, regional differences are unlikely to have placed any items in the high-priority range (e.g., the top twelve items) because regional differences were not statistically significant for any item in or near the high-priority range.

Test 2: Regional differences that might have resulted in understatement of the importance of certain topics. To further explore disproportionate

Figure 1 . Number of Responses Expected* and Number Received, by Region (n = 337)



* Number expected was calculated by first determining the regional proportions associated with the 1,000-member random sample of all managers (which, because members were chosen at random, is assumed to represent the regional proportions of all managers then multiplying each region's expected proportion by 337, the number of responses for which regional information was available. Calculation of expected values was necessary to permit researchers to use a chi-square procedure to compare actual proportions, based on number of respondents, with expected proportions, based on the expected values shown above.

Table 1. Training Topics on Which Regional Patterns* Emerged in Respondents' Preference Ratings

Item	Training Topic	Chi-square and <i>p</i> values	Regions from which respondents expressed a relatively high level of interest in this topic ("Needed" %**)	Regions from which respondents expressed a relatively low level of interest in this topic ("Needed" %**)
21	Dealing with employee turnover	$\chi^2 = 21.506$ (df=12) <i>p</i> = .043	Northeast (59%)	All others (26-46%)
32	Managing summer feeding programs	$\chi^2 = 29.711$ (df=12) <i>p</i> = .003	None (range for all others: 30-38%)	Mountain Plains (10%); Midwest (15%)
45	Training cashiers	$\chi^2 = 21.778$ (df=12) <i>p</i> = .040	Southeast (35%)	Mountain Plains (13%)
51	Instituting an after school snack program	$\chi^2 = 23.953$ (df=12) <i>p</i> = .021)	Northeast (46%); West (47%)	All others (21-29%)

* Chi square values measured extent of differences in response frequencies based on respondents' regions. For the training topics listed in this table, the likelihood of finding by chance chi-square values of the magnitude observed would be less than 5% (i.e., *p* < .05) if no regional differences actually existed in the population. Chi square values for other training topics were not statistically significant.

** Percent of respondents in this region who indicated that training on this topic for their own professional development was "somewhat needed" or "much needed."

representation by region, the needs assessment team examined the effect of under-representation of the Southeastern and Western regions, the two regions with the highest levels of under-representation. The tests were conducted to determine whether any items were omitted from the "high priority" list as a result of under-representation of these regions. Noting that two items (45, "Training cashiers," and 51, "Instituting an after school snack program") were favored by one of the two under-represented regions, the needs assessment team estimated the rank that each of these items might have achieved if Southeastern and Western representation had been higher.

The need indices of items 45 ("Training cashiers") and 51 ("Instituting an after-school snack program") ranked 27th and 36th, respectively, among the 39 training topics in the survey. For these two items, the researchers compared the actual rank of the item's need index with the rank that the item might have received if the under-representation of the Southeastern and Western regions had been avoided. That is, the actual and potential ranks were compared by hypothetically adding 23 additional respondents and assuming that all of these respondents would have rated the item "Much Needed." Under these conditions, the need index of Item 45 ("Training cashiers") would have increased from 1.76 (27th rank) to 1.84 (25th rank) and the need index of Item 51 would have increased from 1.43 (36th rank) to 1.53 (33rd rank). These results demonstrate that the need index of neither item is likely to have reached the high-priority (2.0+) range if under-representation of the Southeastern and Western regions had been avoided through higher response rates from those regions.

After conducting the chi-square tests for significance and the series of sensitivity analyses described above, the needs assessment team concluded that the survey responses reported herein are sufficiently representative to warrant their use in analyzing and planning programs to meet food service site managers' training needs.

Precision. Representativeness of the sample (discussed above) is one of two issues that must be considered in determining the extent to which survey results can be used with confidence. The second issue is the extent to which item ratings measure the relative importance of each item, given the overall size of the sample and variability among respondents. Because sample size is important in ensuring precision, the researchers took measures to avoid precision problems when developing the sampling design.

The possibility of low response rates was anticipated prior to sample selection, based on response rates in the pilot studies. Recognizing the possibility of relatively low response rates, the researchers increased the sample size to ensure that a sufficient number of surveys would be returned to warrant confidence in the resulting estimates of need. With n (surveys received) = 339, the level of precision associated with survey items is 5% at 95 percent confidence. That is, at a 95 percent level of confidence, the actual extent of support for a given item among the population of school food service site managers would lie within 5% of the frequency obtained in this survey.

Survey Instrument

Appendix A (p. 28) contains the final version of the survey instrument sent to food service site managers, as well as a copy of the cover letter that accompanied the instrument. This section describes the method used in developing the survey instrument.

The needs assessment team developed a preliminary survey instrument after conducting telephone interviews with ten school food service site managers selected at random from lists of site managers in a variety of regions. In these interviews, team members asked site managers to comment on the knowledge and skills in which they were most interested, as well as the training formats they preferred. The analysts also reviewed instruments used previously to assess managers' training needs at the state level and included some of these topics in the pilot test version of the survey form.

To assess the instrument's content validity, the researchers conducted a focus group interview with a group of school food service site managers during the American School Food Service Association's annual meeting in Denver, Colorado, in July 1999. These site managers provided suggestions for improving the instrument, resulting in a minor revision of the survey form.

Two pilot tests of the revised draft instrument were conducted. No national database listing site managers by name and school address was available. Lacking names, the team explored methods for ensuring that survey forms would reach site managers at randomly selected schools. In the first pilot test, the researchers and NFSMI personnel sent the form to a random sample of 100 schools, addressing the pilot survey envelopes to "Food Service Site Manager, XXX School." This pilot test resulted in a relatively low rate of response (approximately 20%). Based on an assumption that school personnel who routed incoming mail might not have been familiar with the term "site manager," the researchers conducted a second pilot survey by sending the survey to a different set of 100 schools, with envelopes addressed to "Principal, XXX School." The cover letter for this survey asked the principal to direct the survey form to the "site manager or cafeteria manager." This pilot survey resulted in a slightly higher response rate (approximately 24%). In both pilot surveys, site managers were asked to complete the survey and to comment on the form as a whole and on individual items. The needs assessment team used information received from these site managers to make minor revisions in the content and format of the instrument.

As a final step in ensuring content validity, the Site manager of the National School Food Service Management Institute presented the instrument for review by the Food and Nutrition Subcommittee of the Education Information Advisory Committee (EIAC), Council of Chief State School Officers. Final refinements in the content and format of the survey instrument were made in response to EIAC's suggestions.

Procedure

The data collection procedure, which took place from November 1999 through February 2000, included an initial mailing of the survey instrument (Appendix A, p. 28) to a national sample of 1,000 schools. (See "Survey Participants" above.) A survey form was mailed to each site manager in the sample in an envelope addressed to the school principal. Of the two methods used during the piloting testing process, this method (addressing the envelope to the school principal) yielded the higher number of responses. Identification numbers stamped on the back page of the instrument were used to avoid sending reminders to site managers who already had responded, as well as to permit the researchers to sort and analyze responses by USDA region.

The first mail-out was followed by a reminder that was mailed several weeks later. With a response rate of less than 20% by late December, the researchers and NFSMI personnel sent a second reminder and a copy of the survey form to non-respondents in January 2000. Envelopes for this mail-out were addressed directly to the school's "Cafeteria Manager." Reminders were mailed to all non-respondents approximately three weeks following the first mail-out. Responses to the second full mailing increased the response rate to 34%.

Data Analysis

The needs assessment team used SPSS (Version 8.0) and Microsoft Excel to compile and analyze results. Data analysis steps included 1) compilation of the number and percent of respondents selecting each response category, 2) chi-square analysis of contingency tables to determine key relationships between demographic characteristics (e.g., region) and level of interest in training topics, and 3) development of a need index, format preference index, and delivery mode preference index to summarize levels of interest in the various topics, formats, and delivery modes.

The need index was computed by weighting each response through a reverse scoring method. A response of "Much needed for my own training" was assigned a weight of 3, a response of "Somewhat needed for my own training" was assigned a weight of 2, and a response of "Not a priority for my own training" was assigned a weight of 1. The need index value for a training topic is the average weight of all respondents' ratings of that item. A comparable method was used to compute the Format Preference and Delivery Mode Preference indices. On all three indices, a high rating indicates a strong preference for that item among survey respondents.

Chapter 3: Survey Results--Characteristics of Respondents and Their Schools

A total of 339 of the 1,000 site managers' survey forms were completed and returned. Demographic information is summarized in Figures 2 through 16.

Number of Students in Respondents' Schools

Student populations in the respondents' schools are reported in Figure 2 (p. 18a). Almost three-quarters (73%) of the respondents worked in schools with fewer than 1,000 students; a total of 88% worked in schools with 2,000 students or fewer.

Type of School

The type of school in which the responding site managers work is the focus of Figure 3 (p. 18b). The largest proportion of respondents are employed in elementary schools (39%), and an additional 29% of respondents indicated they worked with grades K-12. Another 15% indicated they worked in a setting that did not fall into the elementary/middle school/ high school categories.

Employees Supervised

Figure 4 (p. 18c) reports the number of employees supervised by the respondents. Almost one-third of all respondents (31%) supervised 0 to 3 employees, while another 33% supervised 4 to 8 employees. The remaining managers (36%) reported that they supervise 9 or more employees.

Participation in Federally Funded School Nutrition Programs

Figure 5 (p. 18d) provides information on the participation rates of the respondents' schools in federally funded school nutrition programs. Almost all (96%) of the respondents' schools participated in the National School Lunch Program, and 74% participated in the School Breakfast Program. Only 1% of the respondents indicated that their schools did not participate in federally funded school nutrition programs of any kind.

Students Eligible for Free and Reduced Price Lunches

The percentage of students eligible for free or reduced price lunches in the respondents' schools is reported in Figure 6 (p. 18e). Respondents were asked to estimate this in incremented percentage ranges of ten (e.g., 0 to 10%, 11 to 20%, and so on). Overall, 68% of the respondents indicated that 50% or fewer of their students were eligible for free or reduced price lunches.

Figure 2. Student Population in Respondents' Schools

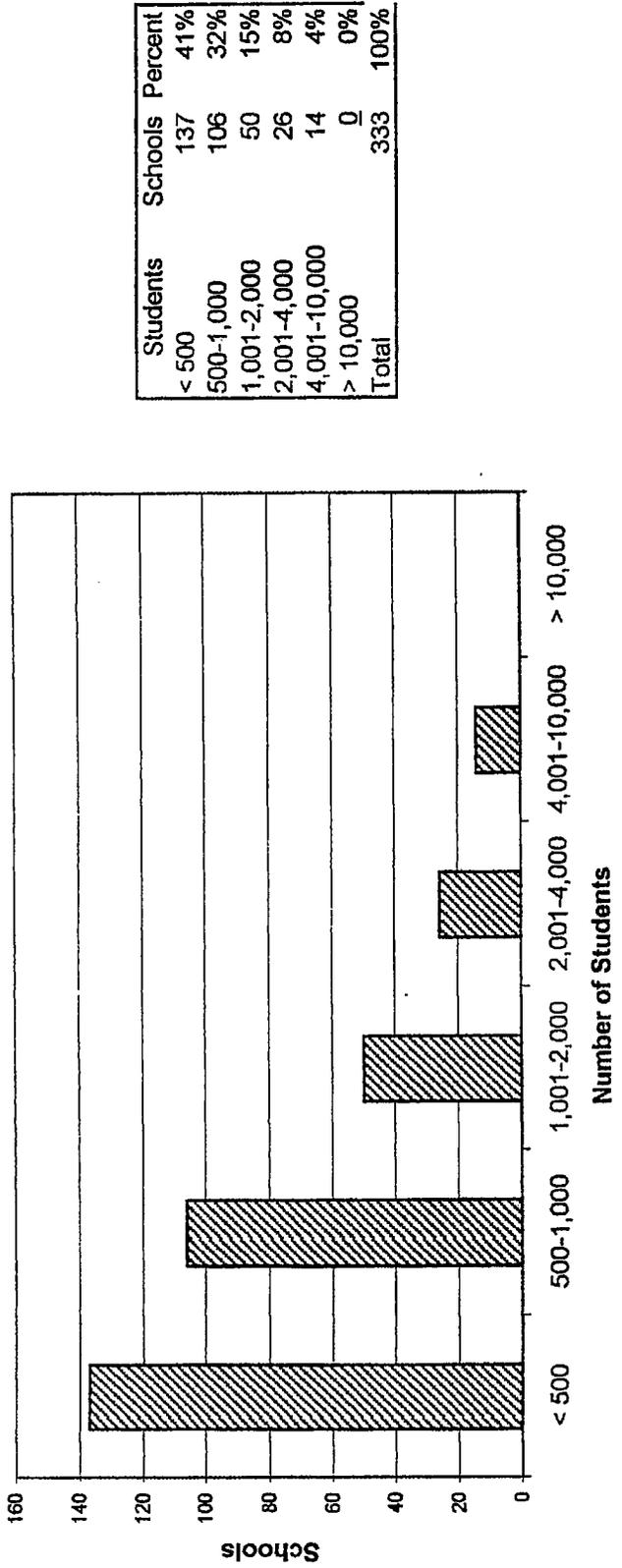
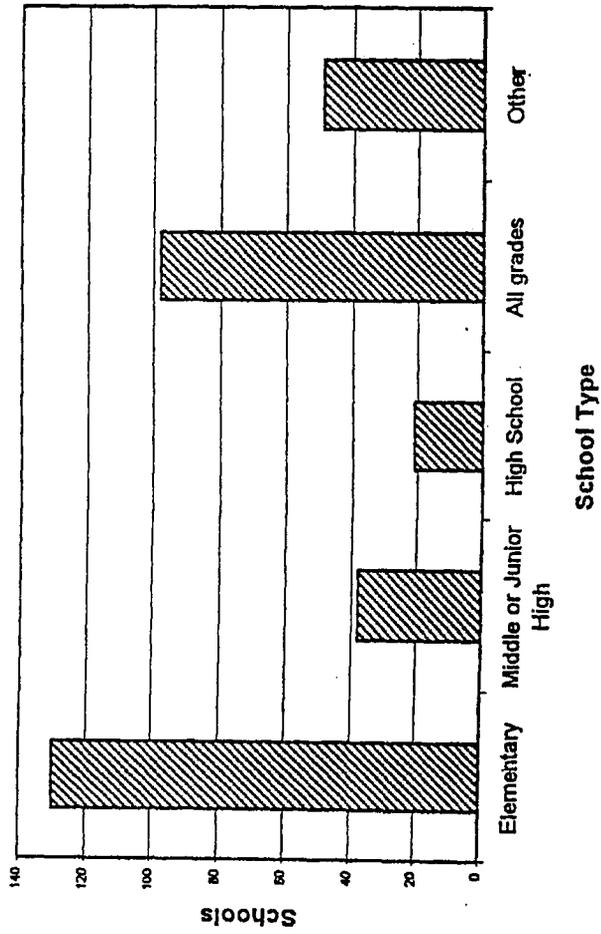
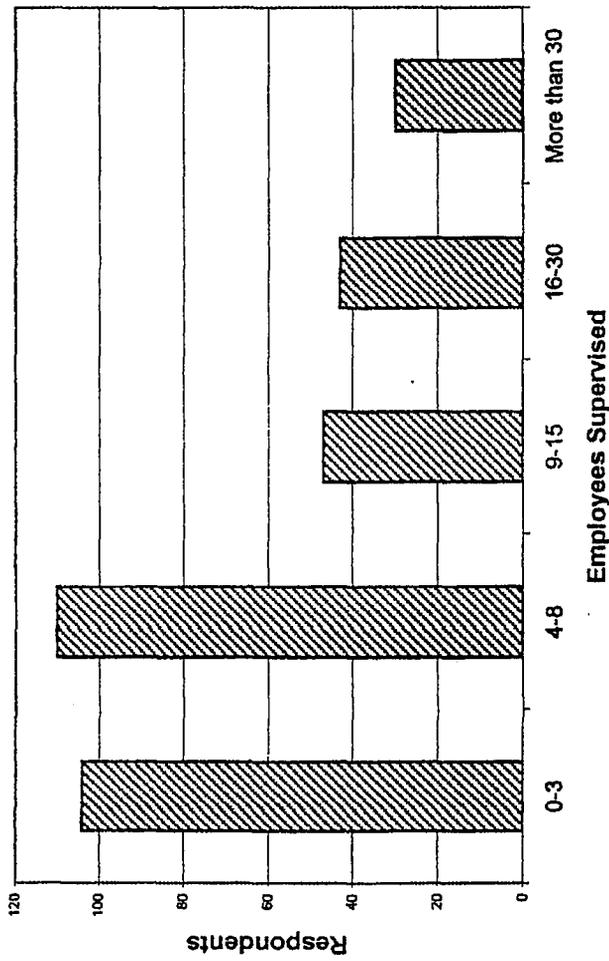


Figure 3. Type of School(s) in Which Site Managers Work



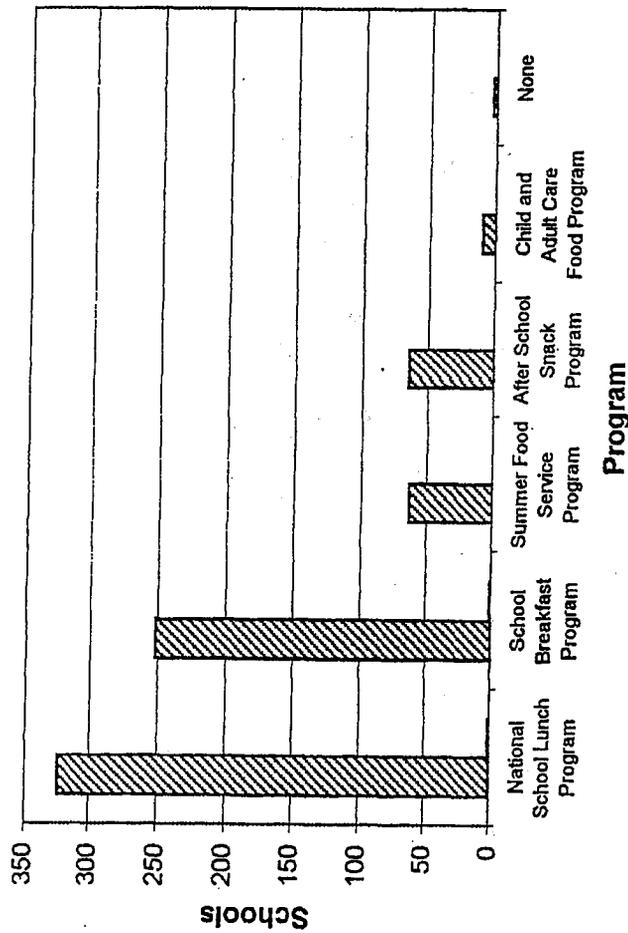
Type School	Schools	Percent
Elementary	130	39%
Middle or Junior High	38	11%
High School	21	6%
All grades	98	29%
Other	49	15%
Total	336	100%

Figure 4. Number of Employees Supervised by Respondents



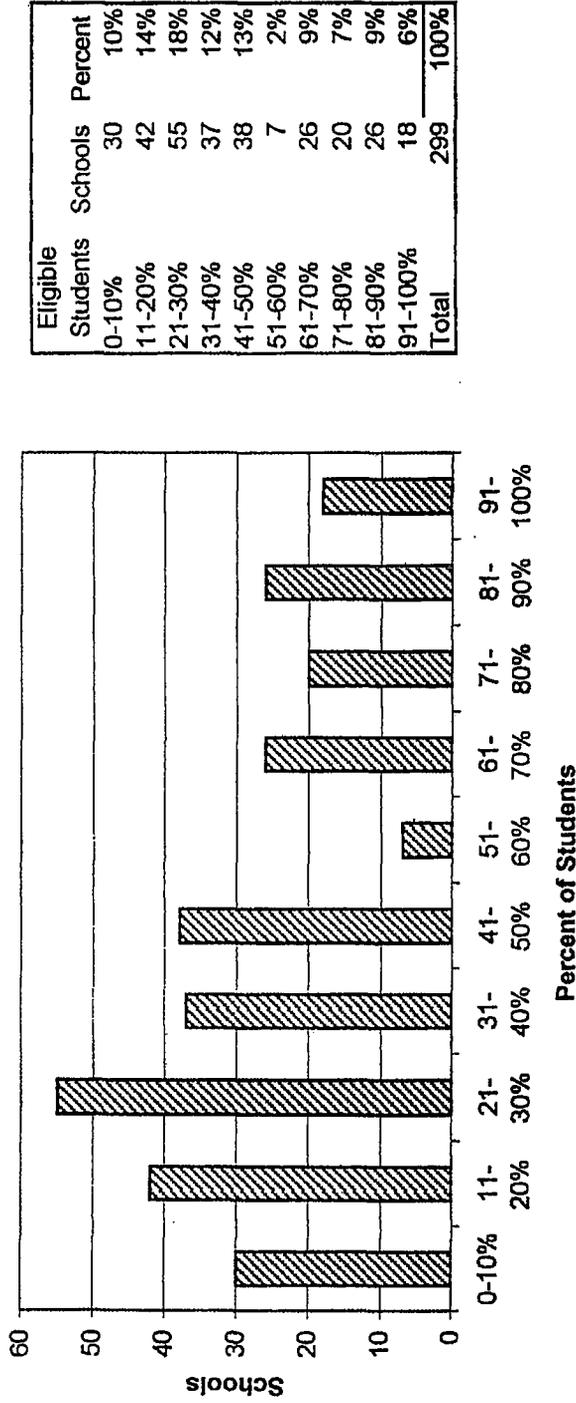
Employees Supervised	Respondents	Percent
0-3	104	31%
4-8	110	33%
9-15	47	14%
16-30	43	13%
More than 30	30	9%
Total	334	100%

Figure 5. Participation in Federally Funded School Nutrition Programs by Respondents' Schools (n = 339)



Program	Schools	Percent
National School Lunch Program	325	96%
School Breakfast Program	252	74%
Summer Food Service Program	64	19%
After School Snack Program	65	19%
Child and Adult Care Food Program	10	3%
None	3	1%

Figure 6. Percent of Students Eligible for Free and Reduced Price Lunch



Reimbursable Lunches

Figure 7 (p. 19a) indicates the number of reimbursable lunches served each day in the respondents' schools. More than half (61%) of the respondents' schools served fewer than 500 reimbursable lunches, while an additional 24% served 500 to 1,000 reimbursable lunches each school day.

Lunch Participation Rates

Figure 8 (p. 19b) is a summary of the average student participation rate in the respondents' school lunch programs. Half (50%) of the respondents' schools had participation rates over 71%, and an additional 25% of the respondents' schools had 51%-70% student participation. Only 8% reported a rate less than 30%. The modal range was 81-90% participation, reported by 18% of respondents.

Anticipated Changes in Participation Rates

Figure 9 (p. 19c) is a summary of respondents' perceptions regarding anticipated changes in student participation over the next two years. Almost half (47%) of the respondents expected no change, while 45% expected an increase in the student participation rate in their food service program (excluding à la carte). Only 8% expected a decrease.

Internet Access

When asked about the availability of Internet access in their workplace (Figure 10, p. 19d), only 46% of the responding site managers indicated they currently had Internet access, while another 17% indicated they would have Internet access at their workplace within the next year. More than one out of three (37%) did not expect to have access to the Internet within the next year. While it appears that Internet access is increasingly common, training via the Internet currently would reach fewer than half of the respondents at their workplace.

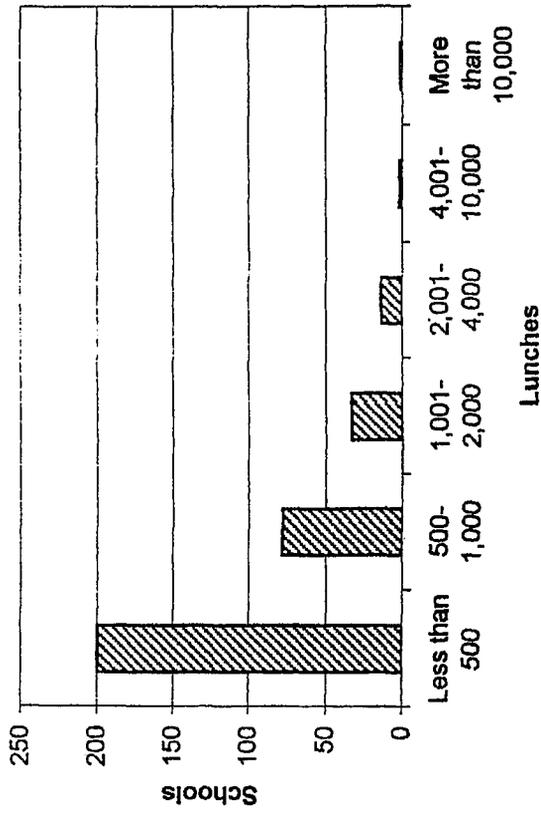
Years of Experience

The extent of respondents' experience as site managers is graphed in Figure 11 (p. 19e). While it is notable that 46% of the respondents had 11 or more years of experience as managers, there was a fairly large percentage drop between those who reported 11 to 15 years of experience in their positions as site managers (21%) and those who reported 16 to 20 years of experience (9%). Only 9% had more than 25 years experience.

Operation of School Food Service

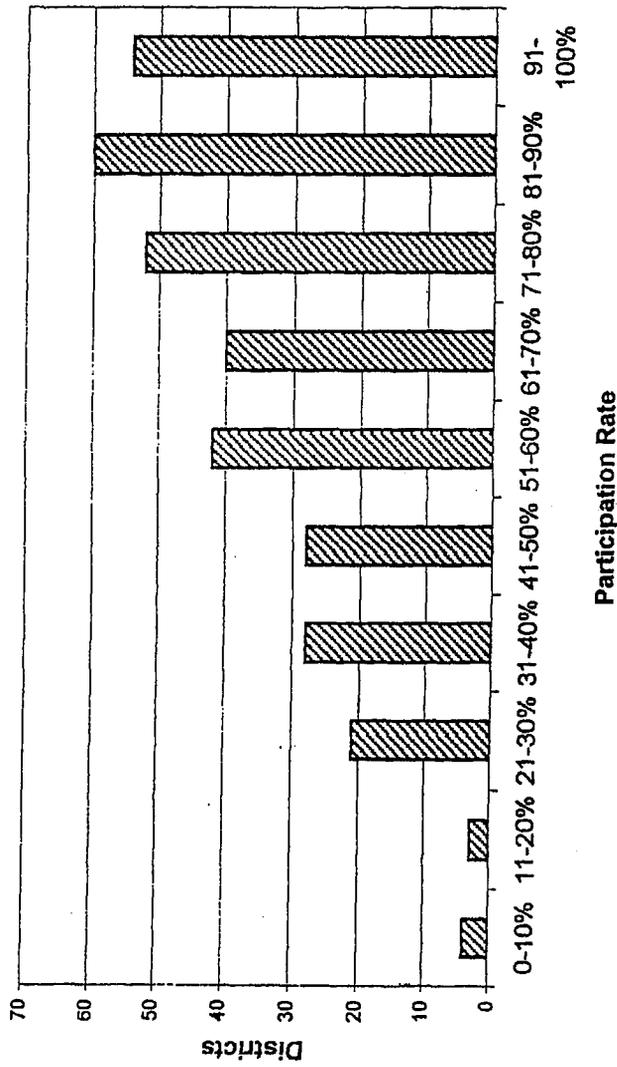
Respondents were asked if their school's food service was self-operated or operated by a management company. As seen in Figure 12 (p. 19f), the overwhelming majority (89%) of respondents worked in self-operating food service environments.

Figure 7. Reimbursable Lunches Served per Day



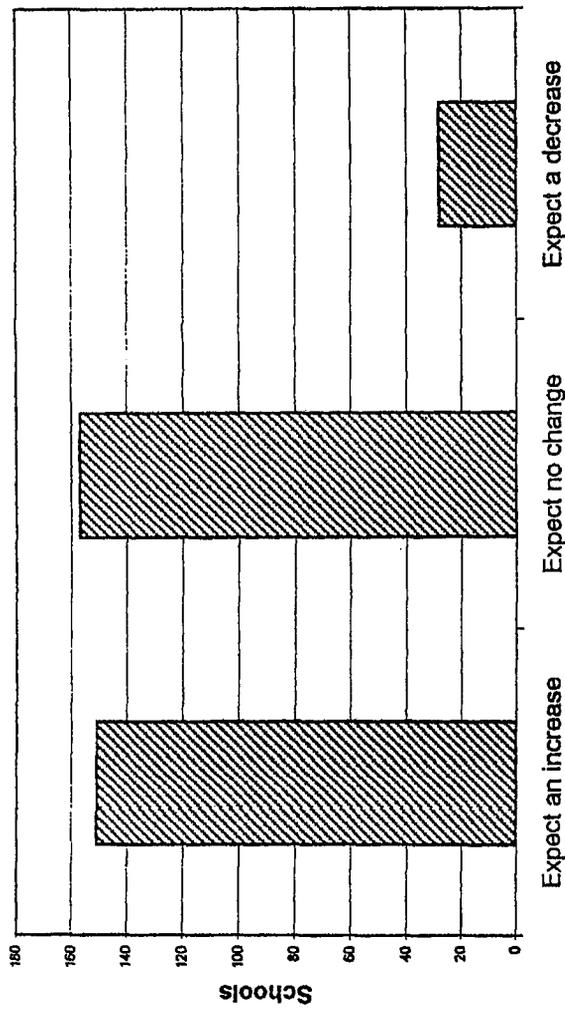
Lunches	Schools	Percent
Less than 500	200	61%
500-1,000	78	24%
1,001-2,000	33	10%
2,001-4,000	14	4%
4,001-10,000	2	1%
More than 10,000	1	0%
Total	328	100

Figure 8. Lunch Participation Rate



Rate	Schools	Percent
0-10%	4	1%
11-20%	3	1%
21-30%	21	6%
31-40%	28	8%
41-50%	28	8%
51-60%	42	13%
61-70%	40	12%
71-80%	52	16%
81-90%	60	18%
91-100%	54	16%
Total	332	100

Figure 9. Changes Anticipated in Student Participation in Next Two Years



Change	Schools	Percent
Expect an increase	151	45%
Expect no change	157	47%
Expect a decrease	28	8%
Total	336	100%

Figure 10. Availability of Internet Access in Manager's Workplace

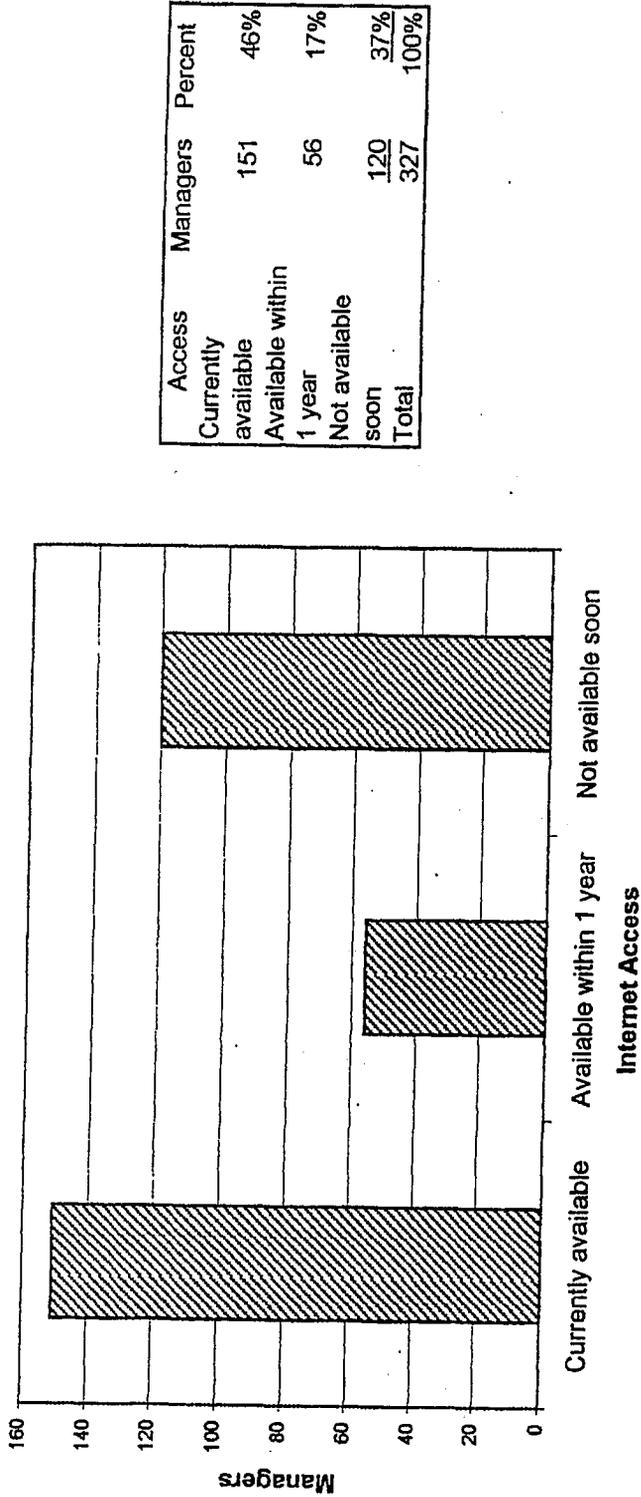


Figure 11. Respondents' Years of Experience as a Site Manager

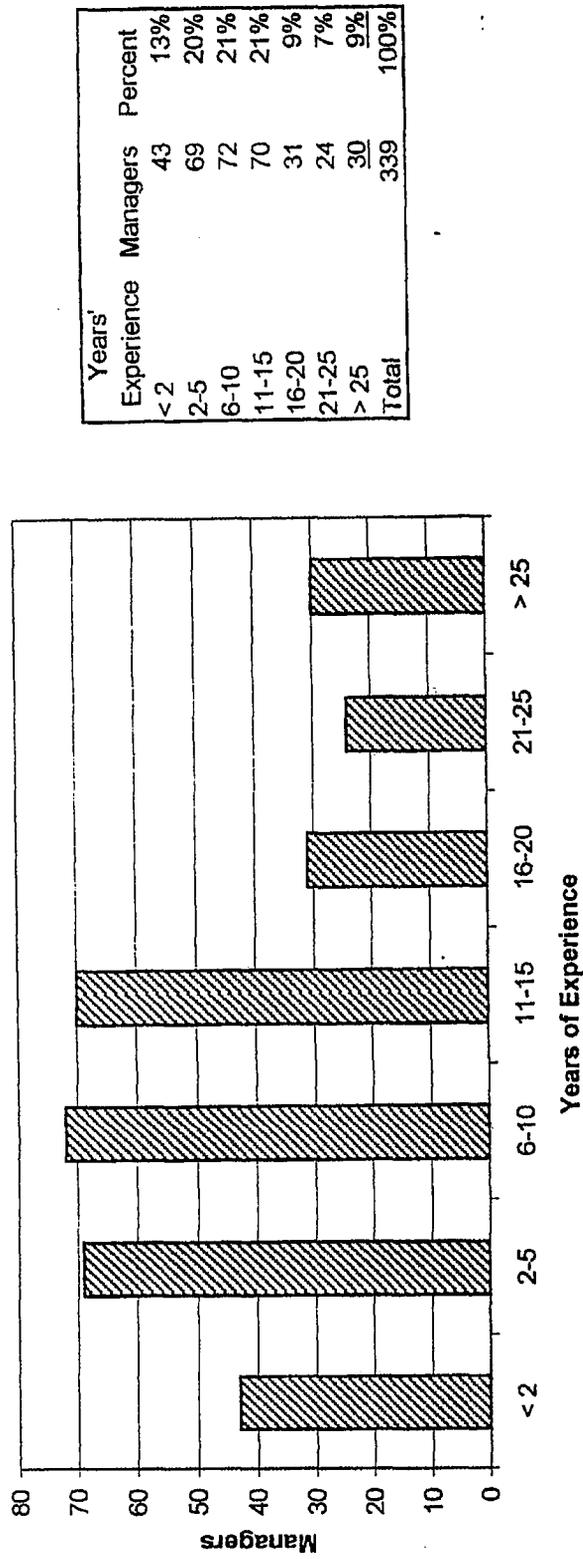
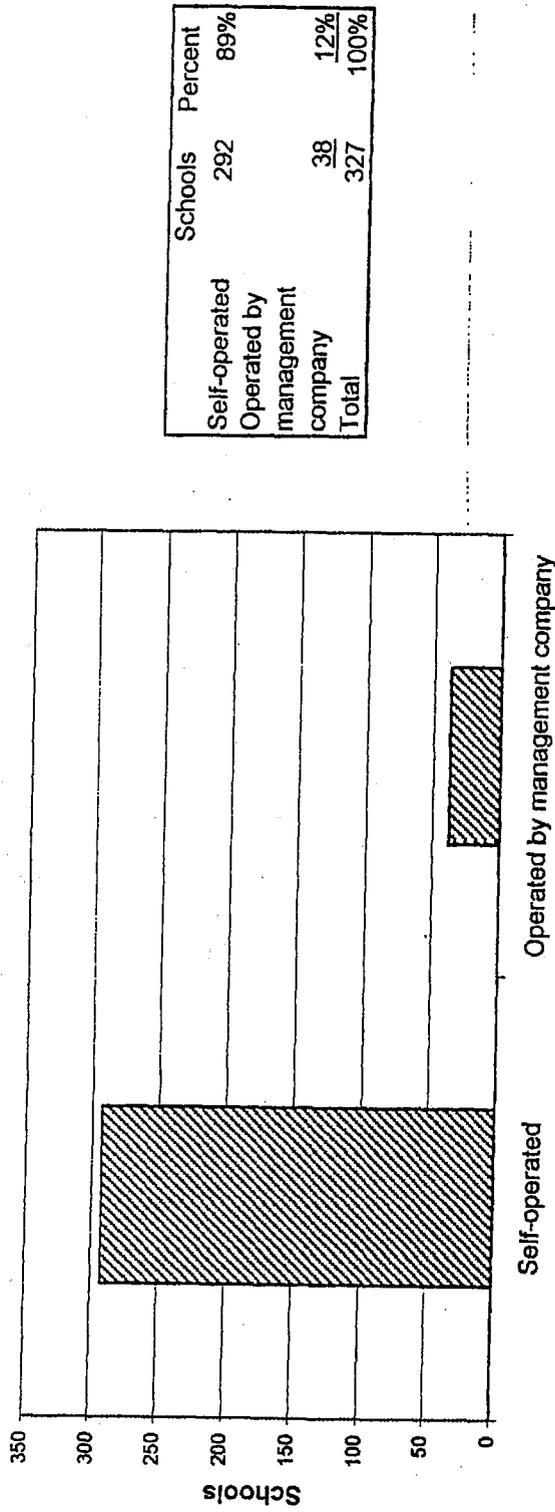


Figure 12. Operation of School Food Service



Staff Turnover

When asked about the percent of staff positions that they supervise which become vacant each year, 80% of the respondents indicated that their staff positions are relatively stable, changing less than 5% each year (Figure 13, p. 20a). Only 9% of the respondents indicated they had a turnover rate exceeding 10%. This might explain why managers assigned relatively low ratings to the topic "Dealing with employee turnover." (See "Low Priority Topics" in Chapter 4.)

Production Methods

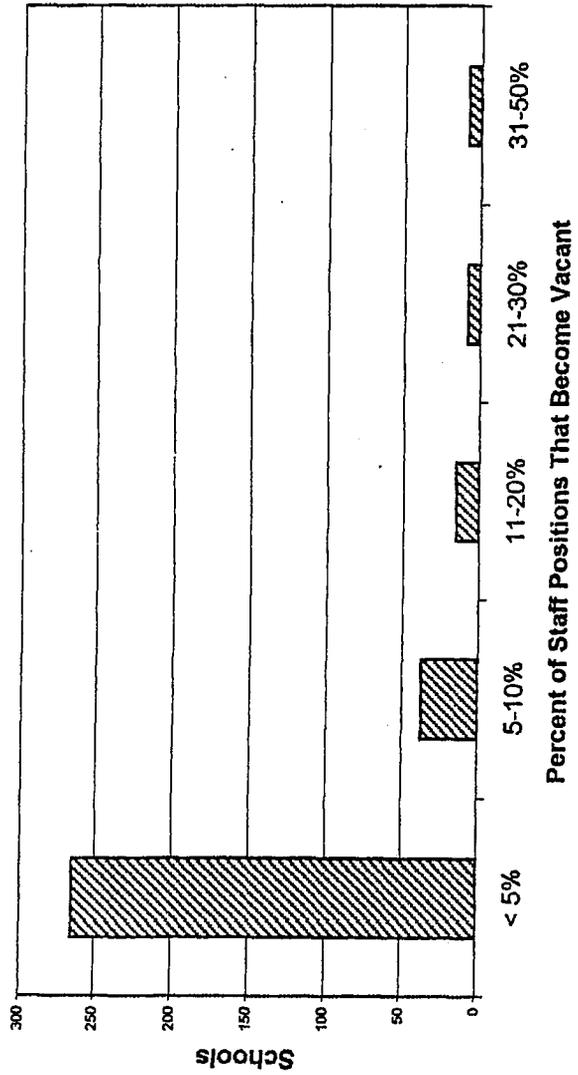
Figure 14 (p. 20b) shows the production methods reported by respondents. Most respondents (83%) reported that their schools use on-site food preparation; 8% reported using central production. Only 9% of respondents reported that their schools are satellite or receiving schools.

As illustrated in Figure 15 (p. 20c), there was some variation by region with regard to the type of production used in the schools. In all regions, more than half of the schools used on-site food preparation; however, the percentages ranged from 63% in the West to 97% in the Southeast and Southwest, with all other regions falling in the range of 78-83%. In the Southeast, only one other production method – central production – was reportedly in use, and that by only 3% of the schools. Similarly, in the Southwest, only one other production method – serving as satellite-receiving schools – was used, again by only 3% of the responding schools. Schools in the West showed the most variation in production method, with 63% using on-site food preparation, 20% using central production, and 17% serving as satellite-receiving schools. In the Northeast, Mid-Atlantic, and Midwest, satellite-receiving schools represented the second most common production method, being reported by 11-13% of respondents. With the exception of the West (where the highest percentage of schools used central production) and the Southwest (where no schools used central production), the use of the central production method ranged from 3% to 10% in all other regions. Only the Mid-Atlantic reported any use of the vended method, and that by only 3% of the schools.

Priority Assigned to Training

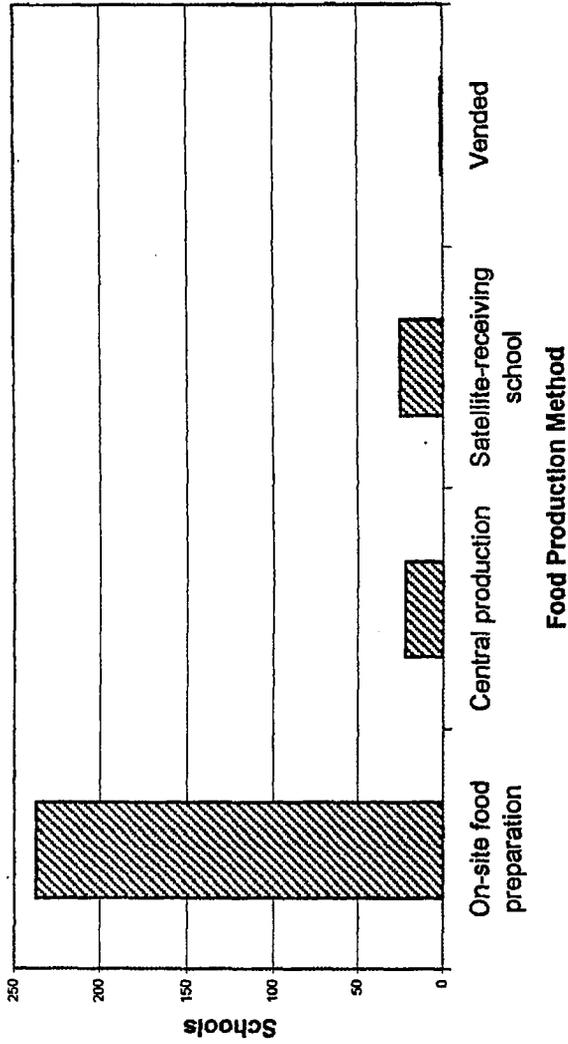
Finally, Figure 16 (p. 20d) shows regional differences among the respondents in their interest in training. There was relatively little regional variation in the proportion of respondents who indicated they had a high level of interest in further training; 33% to 44% selected the "high priority" response category. The regions varied more broadly in the proportion of managers reporting a low interest in training. Almost one-fourth (23%) of the respondents in the Mountain Plains region indicated a low level of interest in training, compared with an overall average of 12%. In the Southeast and Midwest, the percentage of respondents reporting a high interest in training was five times larger than the percentage reporting a low interest.

Figure 13. Percent of Staff Positions Supervised by Respondents That Become Vacant Each Year



Staff Positions	Schools	Percent
< 5%	265	80%
5-10%	37	11%
11-20%	15	5%
21-30%	8	2%
31-50%	8	2%
Total	333	100%

Figure 14. Method of Food Production Used in Respondents' Schools



Production Method	Schools	Percent
On-site food preparation	237	83%
Central production	22	8%
Satellite-receiving school	25	9%
Vended	1	0%
Total	285	100%

Figure 15. Percent of Schools by Type of Production and by Region

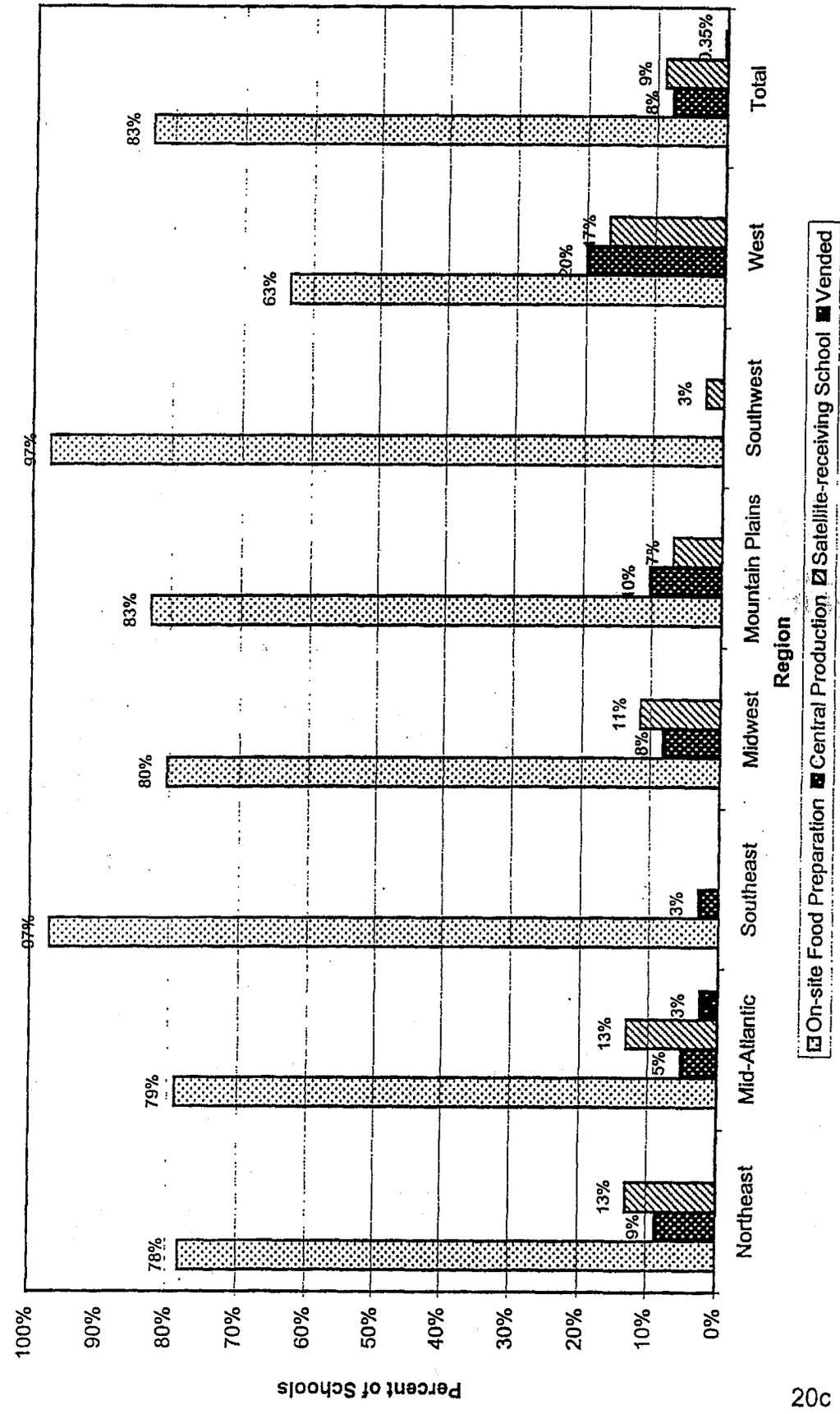
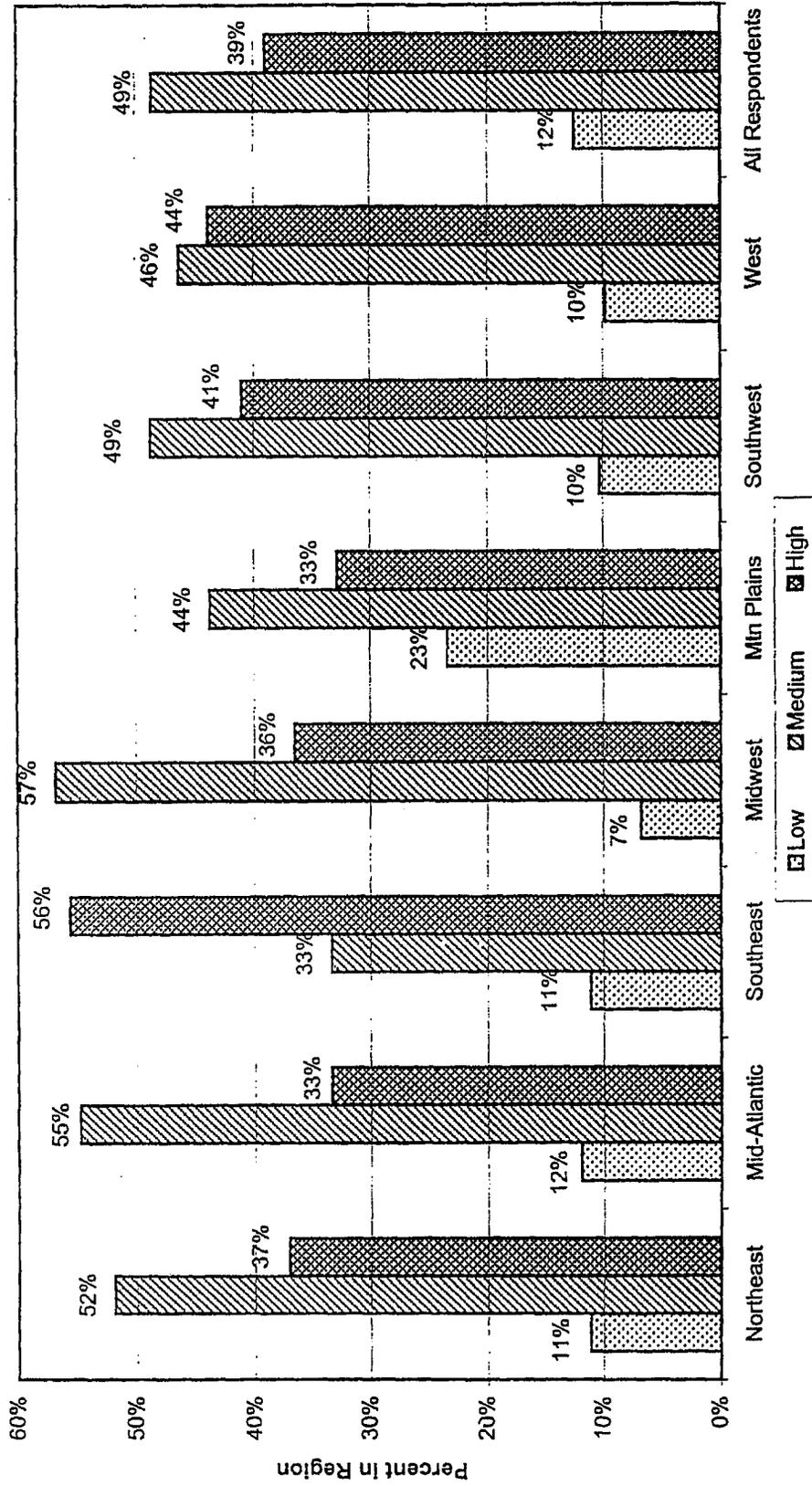


Figure 16 . Percent of Respondents by Region Indicating Low, Medium, and High Levels of Interest in Training



Priority Assigned to Professional Development

Chapter 4: Survey Results—Site Managers' Perceived Training Needs

Results of the survey of school food service site managers yielded a distinct group of topics for which respondents expressed a relatively strong need for training. Analysis of survey results focused first on those training topics whose need index was higher than 2.0. That is, researchers first looked at those items whose average response was between "Somewhat needed" (2.0) and "Much needed" (3.0). Table 2 (p. 21a) provides a one-page summary of top-ranking training topics, as well as preferred formats and delivery modes. In addition to the tables described in this section, all of which present results in terms of percentages, additional tables on training topics are included in Appendix B (Response Frequencies; Items Sorted by Need Index, p. 33) and Appendix C (Response Percentages and Frequencies; Items Sorted by Item Number, p. 36).

High-Priority Needs: Employee Relations and Practical Skills

Based on respondents' ratings, the topic with the highest need index was "Team-building and motivating food service workers." This item (Item 16) had a need index of 2.16 and was rated as "Much needed" by 38% of the respondents and as "Somewhat needed" by 40% of the respondents. A similar item (Item 17), "Communicating effectively with food service workers to reduce conflict," received the sixth highest rating, with a need index of 2.06. This item was rated as "Much needed" by 33% of the respondents and as "Somewhat needed" by 40% of the respondents. In addition, a related item (Item 18), "Evaluating on-the-job performance and providing constructive feedback to workers," was the seventh highest rated item, with a need index of 2.06 as well. It was rated as "Much needed" by 33% of the respondents and as "Somewhat needed" by 39% of the respondents. Still another item related to dealing with employees, "Encouraging professional manner and dress by food service workers" (Item 20), had an overall need index below 2.0 but was rated as a needed training topic by 80% of respondents with experience levels of 16-20 years (see Table 3, p. 21b). These results, combined with anecdotal information received through telephone interviews with food service site managers prior to development of the survey instruments, suggest that learning to motivate and unite workers is a major topic of concern among site managers. Insight gained through telephone interviews indicates that much of site managers' time and energy are devoted to dealing with employee relations and performance issues.

Interestingly, the second highest rated topic was "Using fire extinguishers correctly and training employees to use them," which had a need index of 2.12. This item (Item 36) was rated as "Much needed" by 35% of the respondents and as "Somewhat needed" by 41% of the respondents. These results are supported by anecdotal information received during a telephone interview in which a site

Table 2. Summary of Results: Percent and Preference Indices for Highest-Ranking Topics, Formats, and Delivery Modes

Item	Training Topics	% Much needed	% Some-what needed	% Not a priority	Need index (high = needed)
16	Team building and motivating food service workers	38%	40%	22%	2.16
36	Using fire extinguishers correctly and training employees to use them	35%	41%	24%	2.12
37	Handling food properly (cooling, heating, thawing)	36%	38%	26%	2.10
43	Preparing food efficiently (using fewer steps)	32%	42%	26%	2.07
35	Training employees to use kitchen equipment and utensils safely and properly	35%	36%	29%	2.06
17	Communicating effectively with food service workers to reduce conflict	33%	40%	27%	2.06
18	Evaluating on-the-job performance and providing constructive feedback to workers	33%	39%	28%	2.05
28	Enhancing the appearance, taste, and presentation of food	30%	45%	25%	2.05
30	Marketing/promoting the food service program	30%	45%	25%	2.04
34	Training employees to use correct sanitation practices (hand washing, using gloves)	36%	33%	31%	2.04
41	Modifying recipes to reduce fat, sugar, and salt	30%	43%	27%	2.03
33	Ensuring quality customer service	30%	42%	28%	2.02

Item	Training Format	% Highly preferred	% Preferred	% Not preferred	Format preference index (high = preferred)
58	Seminars that allow interaction with other managers	44%	41%	15%	2.30
59	Focus on timely topics (e.g., new temperatures for meats and poultry)	40%	44%	16%	2.24
54	Use of demonstrations ("how-to" sessions)	41%	40%	19%	2.22
52	Use of hands-on activities	43%	35%	21%	2.22
61	Inclusion of practical information in the session	37%	46%	17%	2.20
60	Small classes; lots of involvement by participants	39%	39%	22%	2.17
57	Handing out printed materials during the session	31%	42%	27%	2.04

Item	Training Delivery Mode	% Highly pre-ferred	% Pre-ferred	% Not pre-ferred	Delivery mode preference index (high = preferred)
66	Theme-based seminars allowing for discussions with	39%	44%	17%	2.23
69	State agency sponsored conferences/workshops	40%	41%	19%	2.22
67	Sessions sponsored by the food service industry	37%	46%	16%	2.21
71	State school food service association conferences	36%	42%	22%	2.14
72	District-wide in-services	36%	41%	23%	2.13
64	Video-based instruction	29%	48%	24%	2.05
70	American School Food Service Association conferences	32%	40%	28%	2.04

Table 3. Training Topics on Which Patterns Related to Respondents' Experience as Site Managers* Emerged in Respondents' Preference Ratings

Item	Training Topic	Chi-square and <i>p</i> values	Experience levels of respondents who expressed a relatively high level of interest in this topic ("Needed" %**)	Experience levels of respondents who expressed a relatively low level of interest in this topic ("Needed" %**)
20	Encouraging professional manner and dress by food service workers	$\chi^2 = 21.514$ (df=12) <i>p</i> = .043	16-20 years (80%)	All others (39-62%)
29	Competing effectively with fast food chains	$\chi^2 = 22.291$ (df=12) <i>p</i> = .034	16-20 years (77%)	All (33-56%)
35	Training employees to use kitchen equipment and utensils safely and properly	$\chi^2 = 28.491$ (df=12) <i>p</i> = .005	16-20 years (87%); Less than 2 years (85%)	11-15 years (56%) More than 25 years (58%)

* Chi square values measured extent of differences in response frequencies based on respondents' years of experience as site managers. For the training topics listed in this table, the likelihood of finding by chance chi-square values of the magnitude observed was less than 5% (i.e., $p < .05$) if no experience-related differences actually existed in the population. Chi square values for other training topics were not statistically significant.

** Percent of respondents at this experience level who indicated that training on this topic for their own professional development was "somewhat needed" or "much needed."

manager reported that one of the most useful training sessions she had attended involved a demonstration of how to extinguish a grease fire. Notably, this training session provided participants an opportunity to actually use a fire extinguisher. The high rating given to this item is indicative of its importance to site managers and a perceived strong need to be addressed through training of both site managers and their employees. The importance of this item was further documented in an earlier multi-state survey of the training needs of school nutrition program directors and managers in public schools. This study, conducted from 1995 through 1997, found that 86% of the responding managers considered "Operating fire extinguishers" to be a needed training topic. In fact, this topic ranked 21st out of 65 topics included in the earlier survey.

In the current survey, three topics related to food handling and preparation received the next highest ratings. These items, in order of need index, were as follows: "Handling food properly (cooling, heating, thawing)" (Item 37, need index 2.10) "Preparing food efficiently (using fewer steps)" (Item 43, need index 2.07); and "Training employees to use kitchen equipment and utensils safely " (Item 35, need index 2.06). All three of these items were rated as "Much needed" or "Somewhat needed" by 71-74% of all respondents. The third item's responses varied according to respondents' experience level, with interest in training being expressed by 87% of respondents with 16-20 years experience and by 85% of respondents with less than 2 years experience.

Marketing and Quality Assurance

A total of 12 items, including those discussed above, had a need index above 2.01, indicating a relatively strong need for training. The remaining items dealt primarily with marketing and quality assurance, although one additional item dealt with employee training. In order of need, these items were as follows: "Enhancing the appearance, taste, and presentation of food" (Item 28); "Marketing/promoting the food service program" (Item 30); "Training employees to use correct sanitation practices (hand washing, using gloves): (Item 34); "Modifying recipes to reduce fat, sugar, and salt" (Item 41); and "Ensuring quality customer service" (Item 33). These five topics were rated as "Much needed" or "Somewhat needed" by 69-75% of the respondents.

Computer Use

Although the training topic "Using computers for ordering supplies, e-mailing forms, etc." (Item 47) had a need index of only 1.93, it deserves mention because 33% of the respondents rated it as "Much needed." Only seven items received the same or a higher percentage of "Much needed" ratings, and all seven of those items had need indices above 2.0. The low need index for computer use is due to the fact that 41% of the respondents rated this topic as "Not a priority." Thus, there appears to be relatively little middle ground, with the need for training in this area being very high for some and very low for others.

This disparity may be linked to the demographic data indicating that only 46% of the respondents reported having Internet access currently, while 37% reported not anticipating having it within the next year.

Low Priority Topics

Nine topics were rated as "Not a priority" by 50% or more of the respondents (see Table 4, pp. 23a-b). One of these topics was "Competing effectively with fast food chains" (Item 29). Half of the respondents did not consider this topic to be a priority, although 77% of respondents with 16-20 years experience did express interest in training in this area. This topic also was mentioned in several telephone interviews prior to development of the survey instrument.

The other topics that were not considered priorities by most respondents involved feeding programs such as the school breakfast programs, after school snack programs, and summer feeding programs. A regional difference was noted regarding after school snack programs, however, with respondents from the Northeast and West expressing a relatively high level of interest in this topic. Still, less than 50% of respondents from these regions indicated a need for training in this area, though the percentage from all other regions was less than 30%.

Also not considered priorities were recycling, dealing with employee turnover, working with vendors and others outside the school, managing water safety and analysis, and managing vending machines and stadium concessions. A regional difference was noted, though, in dealing with employee turnover, as 59% of respondents from the Northeast expressed a need for training in this area. Overall, it appears that site managers are less concerned about secondary responsibilities than about their primary responsibility of managing the staff and food production/presentation issues at their own sites.

Table 4. Site Managers' Perceived Need for Training by Topic Area: Percent and Need Index (Sorted by Need Index)

Item	Training Topics	% Much needed	% Some-what needed	% Not a priority	Need index (high = needed)
16	Team building and motivating food service workers	38%	40%	22%	2.16
36	Using fire extinguishers correctly and training employees to use them	35%	41%	24%	2.12
37	Handling food properly (cooling, heating, thawing)	36%	38%	26%	2.10
43	Preparing food efficiently (using fewer steps)	32%	42%	26%	2.07
35	Training employees to use kitchen equipment and utensils safely and properly	35%	36%	29%	2.06
17	Communicating effectively with food service workers to reduce conflict	33%	40%	27%	2.06
18	Evaluating on-the-job performance and providing constructive feedback to workers	33%	39%	28%	2.05
28	Enhancing the appearance, taste, and presentation of food	30%	45%	25%	2.05
30	Marketing/promoting the food service program	30%	45%	25%	2.04
34	Training employees to use correct sanitation practices (hand washing, using gloves)	36%	33%	31%	2.04
41	Modifying recipes to reduce fat, sugar, and salt	30%	43%	27%	2.03
33	Ensuring quality customer service	30%	42%	28%	2.02
39	Cutting costs (e.g., using leftovers)	27%	44%	28%	1.99
44	Training services in portion sizing	30%	39%	31%	1.98
25	Planning menus to meet USDA meal requirements and customer acceptability	30%	35%	35%	1.95
19	Training employees one-on-one or in small groups	28%	38%	34%	1.94
47	Using computers for ordering supplies, e-mailing forms, etc.	33%	26%	41%	1.93
40	Expanding/standardizing recipes	27%	38%	35%	1.92
24	Teaching nutrition to students	26%	39%	35%	1.91
38	Receiving, storing, rotating, and ordering foods	28%	35%	37%	1.91
42	Applying basic food production techniques	21%	47%	32%	1.88
26	Evaluating new food products	19%	50%	31%	1.88
23	Coordinating the food service program (menus, décor) with classroom study themes	23%	41%	36%	1.87
27	Providing more food choices (e.g., salad bars)	25%	37%	39%	1.86
22	Interacting effectively with students in different age groups	19%	40%	41%	1.78
20	Encouraging professional manner and dress by food service workers	19%	39%	42%	1.77
45	Training cashiers	23%	29%	47%	1.76
14	Working effectively with school administrators and teachers	20%	34%	45%	1.75
29	Competing effectively with fast food chains	23%	27%	50%	1.72
50	Dealing with added responsibilities outside the food service realm	17%	36%	46%	1.71
31	Instituting school breakfast programs	17%	24%	59%	1.58
49	Recycling; disposing of waste properly	11%	33%	56%	1.55

Table 4. Site Managers' Perceived Need for Training by Topic Area: Percent and Need Index (Sorted by Need Index)

Item	Training Topics	% Much needed	% Some-what needed	% Not a priority	Need index (high = needed)
21	Dealing with employee turnover	15%	22%	62%	1.53
15	Working effectively with vendors and others outside the school	10%	29%	62%	1.48
48	Managing the issue of water safety and analysis	9%	28%	63%	1.47
51	Instituting an after school snack program	13%	16%	71%	1.43
32	Managing summer feeding programs	9%	17%	74%	1.35
46	Managing vending machines and stadium concessions	7%	10%	82%	1.25

Chapter 5: Survey Results—Site Managers' Training Format and Delivery Mode Preferences

In addition to requesting information on managers' need for training in certain content areas, the instrument asked respondents to rate certain training formats and delivery modes. This information can be used in planning sessions that offer the training environments preferred by managers.

In addition to the tables described in this section, all of which present format and delivery mode results in terms of percentages, additional tables on training formats and delivery modes are included in Appendix D (Format Preference Response Frequencies; Items Sorted by Preference Index, p. 39), Appendix E (Format Preference Response Frequencies and Percentages; Items Sorted by Item Number, p. 41), Appendix F (Delivery Mode Preference Response Frequencies; Items Sorted by Preference Index, p. 43), and Appendix G (Delivery Mode Preference Response Frequencies and Percentages; Items Sorted by Item Number, p. 45).

Preferred Training Formats

Analysis of survey results (see Table 5, p. 24a) indicated that most respondents preferred training formats that were interactive, hands-on, timely, practical, and demonstrative. More than 80% of the respondents rated the following formats as "Highly preferred" or "Preferred": 1) "Seminars that allow interaction with other managers"; 2) "Focus on timely topics (e.g., new temperatures for meats and poultry)"; 3) "Use of demonstrations ("how-to" sessions)"; and 4) "Inclusion of practical information in the session." The formats "Use of hands-on activities" and "Small classes; lots of involvement by participants" were preferred by 79% and 78% of the respondents respectively. The other preferred format was "Handing out printed materials during the session," which was a preference of 73% of the respondents.

The two training formats least preferred by respondents were "Instruction by local chefs in food preparation and presentation" and "Use of role-playing as a part of the training session." These two formats were rated as "Not preferred" by 43% and 47% of the respondents respectively.

Preferred Training Delivery Modes

Survey results (Table 6, p. 24b) indicated that most respondents preferred group-based training that allowed for networking with other site managers, such as through seminars, conferences, and workshops. At least 77% of the respondents preferred or highly preferred the following delivery modes (listed in order of preference index): 1) "Theme-based seminars allowing for discussions"; 2) "State agency sponsored conferences/workshops"; 3) "Sessions sponsored by

Table 5. Site Managers' Preferences for Training Formats: Percent and Format Preference Index (Sorted by Format Preference Index)

Item	Training Format	% Highly preferred	% Preferred	% Not preferred	Format preference index (high = preferred)
58	Seminars that allow interaction with other managers	44%	41%	15%	2.30
59	Focus on timely topics (e.g., new temperatures for meats and poultry)	40%	44%	16%	2.24
54	Use of demonstrations ("how-to" sessions)	41%	40%	19%	2.22
52	Use of hands-on activities	43%	35%	21%	2.22
61	Inclusion of practical information in the session	37%	46%	17%	2.20
60	Small classes; lots of involvement by participants	39%	39%	22%	2.17
57	Handing out printed materials during the session	31%	42%	27%	2.04
56	Use of charts and other visuals during presentations	23%	48%	29%	1.94
62	In-depth explanations of theories behind practices	18%	45%	37%	1.82
55	Instruction by local chefs in food preparation and presentation	22%	34%	43%	1.79
53	Use of role-playing as a part of the training session	19%	34%	47%	1.72

Table 6. Site Managers' Preferences for Training Delivery Modes: Percent and Delivery Mode Preference Index (Sorted by Delivery Mode Preference Index)

Item	Training Delivery Mode	% Highly preferred	% Preferred	% Not preferred	Delivery mode preference index (high = preferred)
66	Theme-based seminars allowing for discussions with	39%	44%	17%	2.23
69	State agency sponsored conferences/workshops	40%	41%	19%	2.22
67	Sessions sponsored by the food service industry	37%	46%	16%	2.21
71	State school food service association conferences	36%	42%	22%	2.14
72	District-wide in-services	36%	41%	23%	2.13
64	Video-based instruction	29%	48%	24%	2.05
70	American School Food Service Association	32%	40%	28%	2.04
63	Computer-based instruction (CD-ROM or disk)	32%	28%	39%	1.93
73	Courses offered by colleges/universities	24%	39%	37%	1.87
65	Instruction delivered via the Internet/World Wide Web	17%	32%	52%	1.65
68	Interactive teleconferences	13%	29%	59%	1.54

the food service industry"; 4) "State school food service association conferences"; and 5) "District-wide in-services." All five of these delivery modes had preference indices of 2.13 or higher and were highly preferred by 36-40% of the respondents.

The "American School Food Service Association" as a delivery mode had a preference index of only 2.04 and was highly preferred by only 32% of the respondents. The difference between national and state or district-based training may involve issues of cost and time, as attending national conferences can be more expensive and time-consuming.

Only one self-study delivery mode, "Video-based instruction," had a preference index above 2.0. Even so, its preference index of 2.05 was notably lower than the other preferred modes (with the exception of "American School Food Service Association" discussed above), and only 29% of the respondents highly preferred video-based instruction.

"Computer-based instruction (CD-ROM or disk)" and "Courses offered by colleges/universities" had preference indices of 1.93 and 1.87 respectively and were highly preferred by only 32% and 24% of the respondents respectively. Still, less than 40% of the respondents indicated a lack of preference for these delivery modes.

The least preferred training delivery modes were "Instruction delivered via the Internet/World Wide Web" and "Interactive teleconferences." More than 50% of the respondents did not prefer these delivery modes. Again, we must take into account that only 46% of the respondents currently have Internet access. Nevertheless, it does appear that these more isolating, "on-your-own" training modes are less popular than those that allow site managers to interact and learn together.

Chapter 6: Training Plan Recommendations

Based on survey results, the research team makes the following general and specific recommendations for developing a training plan for school food service site managers.

General Recommendations

Because of the indicated preferences in training formats and delivery modes, it seems that NFSMI could play an important role by developing a set of relevant theme-based seminar programs that allow site managers to meet and network with each other. These themes might be most usefully focused on team building and practical topics that would help site managers run their operations more smoothly and efficiently. Because printed information was one of the preferred delivery modes, not only could NFSMI develop seminar outlines but it could also create printed material that would be useful to seminar participants. Video-based instruction was seen as an acceptable self-study mode; this category had the highest number of respondents who considered it simply a "preferred" training delivery mode.

Specific Recommendations: Employee Management and Training

Because employee management and training represent 5 of the 12 highest ranking training topics, much emphasis should be placed on these areas. Team building, motivation, communication, employee evaluation, and training skills should be topics that are addressed at district and state conferences and seminars. There is much inherent correlation among these topics, and this interrelationship should be used to great advantage in training. A training session that focuses primarily on one of these topics should include elements that would be helpful in the other areas as well. For example, training in team building and motivating food service workers would ideally include training in using effective communication, performance evaluation, and constructive feedback. It is important that learning be carried over from one topic to another.

Three preferred topics involved training employees to perform specific tasks (e.g., use a fire extinguisher, use kitchen equipment and utensils) or to follow certain practices (e.g., wash hands, use gloves). In order to be able to train employees effectively, site managers must first learn effective teaching techniques. Demonstration sessions may be useful for helping site managers learn to break tasks down into simple steps, to model tasks, to reinforce incremental progress, and to re-teach as necessary.

Management training in many settings includes role-playing as a skill-building tool. It should be noted here that role-playing was not a preferred training format among respondents. Therefore, it is recommended that sessions

addressing employee management be more discussion oriented, possibly moderated by an individual with experience in employee relations, motivation, evaluation, and/or instruction. Small groups are recommended to allow for involvement by all participants. The preference for printed materials could be addressed by providing participants with outlines of the session and with printed checklists that could be used in employee evaluations.

Specific Recommendations: Practical Skills Training

The remaining preferred training topics dealt with practical skills that were needed on the job. Respondents wanted training in how to use fire extinguishers; how to handle food properly in terms of cooling, heating, and thawing; how to prepare food efficiently (using fewer steps); how to enhance the appearance, taste, and presentation of food; how to modify recipes to reduce fat, sugar, and salt; how to market/promote the food service program; and how to ensure quality customer service.

Demonstrations ("how-to" sessions) and hands-on activities are preferred formats that fit well with practical skills training. These strategies (learning by observing and learning by doing) should be used whenever possible. Further, it is important that training be practical. Session leaders should use settings, equipment, and products similar to those found at the managers' sites. Local chefs were not preferred as instructors or session leaders by most respondents; therefore, it is recommended that session leaders be individuals who are more familiar with a school environment.

Video-based instruction, supplemented by printed material, may be a training option in the areas of food handling, food preparation, food presentation, and recipe modification. Whatever the delivery mode, supplementation with printed material is recommended.

The topics dealing with marketing/promoting the food service program and ensuring quality customer service may be addressed effectively in seminars that allow interaction and networking with other site managers. This format permits the sharing of ideas and experiences that are helpful in determining what works best in certain situations.

Training in computer use may be worthy of consideration due to the relatively high percentage of respondents who rated it as "Much needed." However, such training should be targeted only toward those site managers who are prepared and equipped to benefit from it.

In summary, food service site managers are perceived to have very practical training needs that can best be met by very practical training sessions that carry over directly to their work environments.

Appendix A: Survey Instrument and Cover Letter



National Food Service Management Institute
The University of Mississippi
Post Office Drawer 188
University, MS 38677-0188
800-321-3054

November 8, 1999

Dear School Food Service Site Manager:

The training needs of school food service site managers continue to change due to environmental conditions and changes in food service operations, school nutrition programs, and personnel. These changes have raised important questions about the knowledge managers will need to continue to perform their work effectively over the next several years, the priority of each of these training needs, and the methods that are most desirable in addressing these concerns. To answer these questions, the National Food Service Management Institute has contracted with The University of Mississippi's Center for Educational Research and Evaluation to conduct a survey on managers' educational needs. We would like your opinion on these topics.

Please complete the following survey to describe your training needs as accurately as possible by November 24, 1999. A postage-paid, addressed envelope is enclosed for your use in returning the completed form to Dr. Kathleen Sullivan, Director of the Center for Educational Research and Evaluation. No identifying information will be included in the report. Thank you in advance for your participation.

Sincerely,

Jane R. Logan, Ph.D.
Executive Director

c. State Director
School Nutrition Programs

Please return the completed form to Dr. Kathleen Sullivan, P. O. Box 1357, University, MS 38677.

In completing the survey, please fill in the bubble that corresponds with the appropriate response for each item, as shown in the following example:



Demographic Information

1. Student population within the school(s) you supervise:
 Less than 500 500-1,000 1,001-2,000
 2,001-4,000 4,001-10,000 More than 10,000
2. Your school is a(n):
 Elementary school Middle/Jr. High school High school Other _____
3. Number of employees you supervise:
 0-3 4-8 9-15 16-30 More than 30
4. What federally funded school nutrition program(s) does your school participate in?
 National School Lunch Program School Breakfast Program
 Summer Food Service Program After School Snack Program
 Child and Adult Care Food Program None
5. Combined percentage of students who are eligible for free or reduced price lunches:
 0-10% 11-20% 21-30% 31-40% 41-50%
 51-60% 61-70% 71-80% 81-90% 91-100%
6. Number of reimbursable lunches served per day for which you are responsible:
 Less than 500 500-1,000 1,001-2,000
 2,001-4,000 4,001-10,000 More than 10,000
7. Average student lunch participation rate in your food service program (excluding a la carte):
 0-10% 11-20% 21-30% 31-40% 41-50%
 51-60% 61-70% 71-80% 81-90% 91-100%
8. Changes anticipated in student participation in your food service program within the next two years (excluding a la carte):
 Expect an increase Expect a decrease Expect no change
9. Do you have access to the Internet/World Wide Web at work?
 Currently available Will be available within the next year
 Is not scheduled to be made available soon
10. Your length of experience as a food service site manager:
 Less than 2 years 2 to 5 years 6 to 10 years 11 to 15 years
 16 to 20 years 21 to 25 years More than 25 years
11. Is your school food service:
 Self-operated Operated by a management company
12. Of all staff positions that you supervise, what is the average percent that become vacant each year?
 Less than 5% 5% to 10% 11% to 20%
 21% to 30% 31% to 50% More than 50%
13. Indicate the type of food production you have.
 On-site food preparation Central production Satellite/receiving school Vended

Training Topics

Please rate the following items based only on your own circumstances and your own needs, using the scale provided below:

- 1 = Much needed for my own training*
- 2 = Somewhat needed for my own training*
- 3 = Not a priority for my own training needs*

Training Topics	1	2	3
14. Working effectively with school administrators and teachers	○	○	○
15. Working effectively with vendors and others outside the school	○	○	○
16. Team building and motivating food service workers	○	○	○
17. Communicating effectively with food service workers to reduce conflict	○	○	○
18. Evaluating on-the-job performance and providing constructive feedback to workers	○	○	○
19. Training employees one-on-one or in small groups	○	○	○
20. Encouraging professional manner and dress by food service workers	○	○	○
21. Dealing with employee turnover	○	○	○
22. Interacting effectively with students in different age groups	○	○	○
23. Coordinating the food service program (menus, décor) with classroom study themes	○	○	○
24. Teaching nutrition to students	○	○	○
25. Planning menus to meet USDA meal requirements and customer acceptability	○	○	○
26. Evaluating new food products	○	○	○
27. Providing more food choices (e.g., salad bars)	○	○	○
28. Enhancing the appearance, taste, and presentation of food	○	○	○
29. Competing effectively with fast food chains	○	○	○
30. Marketing / promoting the food service program	○	○	○
31. Instituting school breakfast programs	○	○	○
32. Managing summer feeding programs	○	○	○
33. Ensuring quality customer service	○	○	○
34. Training employees to use correct sanitation practices (hand washing, using gloves)	○	○	○
35. Training employees to use kitchen equipment and utensils safely and properly	○	○	○
36. Using fire extinguishers correctly and training employees to use them	○	○	○
37. Handling food properly (cooling, heating, thawing)	○	○	○
38. Receiving, storing, rotating, and ordering foods	○	○	○
39. Cutting costs (e.g., using leftovers)	○	○	○
40. Expanding / standardizing recipes	○	○	○
41. Modifying recipes to reduce fat, sugar, and salt	○	○	○
42. Applying basic food production techniques	○	○	○
43. Preparing food efficiently (using fewer steps)	○	○	○
44. Training servers in portion sizing	○	○	○
45. Training cashiers	○	○	○
46. Managing vending machines and stadium concessions	○	○	○
47. Using computers for ordering supplies, e-mailing forms, etc.	○	○	○
48. Managing the issue of water safety and analysis	○	○	○
49. Recycling; disposing of waste properly	○	○	○
50. Dealing with added responsibilities outside the food service realm	○	○	○
51. Instituting an after school snack program	○	○	○

Training Formats and Delivery Modes

Please rate the following items based only on your own circumstances and your own preferences, using the scale provided below:

- 1 = A highly preferred training format or delivery mode*
2 = A preferred training format or delivery mode for me
3 = Not a preferred training format or delivery mode for me

Training Formats	1	2	3
52. Use of hands-on activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
53. Use of role-playing as a part of the training session	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
54. Use of demonstrations ("how-to" sessions)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
55. Instruction by local chefs in food preparation and presentation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
56. Use of charts and other visuals during presentations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
57. Handing out printed materials during the session	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
58. Seminars that allow interaction with other managers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
59. Focus on timely topics (e.g., new temperatures for meats and poultry)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
60. Small classes; lots of involvement by participants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
61. Inclusion of practical information in the session	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
62. In-depth explanations of theories behind practices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Delivery Modes for Training	1	2	3
63. Computer-based instruction (CD-ROM or disk)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
64. Video-based instruction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
65. Instruction delivered via the Internet/World Wide Web	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
66. Theme-based seminars allowing for discussions with other managers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
67. Sessions sponsored by the food service industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
68. Interactive teleconferences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
69. State agency sponsored conferences / workshops	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
70. American School Food Service Association conferences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
71. State school food service association conferences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
72. District-wide in-services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
73. Courses offered by colleges / universities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Priority of Training

74. Considering all of the pressures associated with your job, how high a priority would you assign to training for yourself? Low Medium High

**Appendix B: Site Managers' Perceived Need for Training by Topic
Area: Frequencies and Need Index**

**Appendix B. Site Managers' Perceived Need for Training by Topic Area: Frequencies and Need Index
(Sorted by Need Index)**

Item	Training Topics	Much needed	Some-what needed	Not a priority	Total	Need index (high = needed)
16	Team building and motivating food service workers	122	127	70	319	2.16
36	Using fire extinguishers correctly and training employees to use them	117	136	78	331	2.12
37	Handling food properly (cooling, heating, thawing)	117	123	84	324	2.10
43	Preparing food efficiently (using fewer steps)	106	139	84	329	2.07
35	Training employees to use kitchen equipment and utensils safely and properly	115	117	95	327	2.06
17	Communicating effectively with food service workers to reduce conflict	109	130	89	328	2.06
18	Evaluating on-the-job performance and providing constructive feedback to workers	107	128	90	325	2.05
28	Enhancing the appearance, taste, and presentation of food	98	147	82	327	2.05
30	Marketing/promoting the food service program	97	147	83	327	2.04
34	Training employees to use correct sanitation practices (hand washing, using gloves)	117	109	103	329	2.04
41	Modifying recipes to reduce fat, sugar, and salt	99	141	88	328	2.03
33	Ensuring quality customer service	95	135	90	320	2.02
39	Cutting costs (e.g., using leftovers)	90	145	93	328	1.99
44	Training services in portion sizing	97	128	103	328	1.98
25	Planning menus to meet USDA meal requirements and customer acceptability	98	116	115	329	1.95
19	Training employees one-on-one or in small groups	92	123	113	328	1.94
47	Using computers for ordering supplies, e-mailing forms, etc.	107	82	131	320	1.93
40	Expanding/standardizing recipes	89	123	114	326	1.92
24	Teaching nutrition to students	85	126	114	325	1.91
38	Receiving, storing, rotating, and ordering foods	91	112	121	324	1.91
42	Applying basic food production techniques	67	153	105	325	1.88
26	Evaluating new food products	63	162	102	327	1.88
23	Coordinating the food service program (menus, décor) with classroom study themes	74	134	118	326	1.87
27	Providing more food choices (e.g., salad bars)	81	121	128	330	1.86
22	Interacting effectively with students in different age groups	62	132	133	327	1.78
20	Encouraging professional manner and dress by food service workers	63	126	138	327	1.77
45	Training cashiers	75	94	152	321	1.76
14	Working effectively with school administrators and teachers	66	113	149	328	1.75
29	Competing effectively with fast food chains	73	88	162	323	1.72
50	Dealing with added responsibilities outside the food service realm	56	116	149	321	1.71
31	Instituting school breakfast programs	55	76	192	323	1.58
49	Recycling; disposing of waste properly	35	106	179	320	1.55

**Appendix B. Site Managers' Perceived Need for Training by Topic Area: Frequencies and Need Index
(Sorted by Need Index)**

Item	Training Topics	Much needed	Some- what needed	Not a priority	Total	Need index (high = needed)
21	Dealing with employee turnover	50	73	202	325	1.53
15	Working effectively with vendors and others outside the school	31	94	201	326	1.48
48	Managing the issue of water safety and analysis	30	90	200	320	1.47
51	Instituting an after school snack program	43	51	227	321	1.43
32	Managing summer feeding programs	29	53	239	321	1.35
46	Managing vending machines and stadium concessions	23	33	259	315	1.25

**Appendix C: Site Managers' Perceived Need for Training by Topic
Area: Percent, Frequency, and Need Index (Sorted by Item Number)**

Appendix C . Site Managers' Perceived Need for Training by Topic Area: Percent, Frequency, and Need Index (Sorted by Item Number)

Item	Training Topics	% Much needed	% Some-what needed	% Not a priority	Need index (high = needed)
14	Working effectively with school administrators and teachers	20%	34%	45%	1.75
15	Working effectively with vendors and others outside the school	10%	29%	62%	1.48
16	Team building and motivating food service workers	38%	40%	22%	2.16
17	Communicating effectively with food service workers to reduce conflict	33%	40%	27%	2.06
18	Evaluating on-the-job performance and providing constructive feedback to workers	33%	39%	28%	2.05
19	Training employees one-on-one or in small groups	28%	38%	34%	1.94
20	Encouraging professional manner and dress by food service workers	19%	39%	42%	1.77
21	Dealing with employee turnover	15%	22%	62%	1.53
22	Interacting effectively with students in different age groups	19%	40%	41%	1.78
23	Coordinating the food service program (menus, décor) with classroom study themes	23%	41%	36%	1.87
24	Teaching nutrition to students	26%	39%	35%	1.91
25	Planning menus to meet USDA meal requirements and customer acceptability	30%	35%	35%	1.95
26	Evaluating new food products	19%	50%	31%	1.88
27	Providing more food choices (e.g., salad bars)	25%	37%	39%	1.86
28	Enhancing the appearance, taste, and presentation of food	30%	45%	25%	2.05
29	Competing effectively with fast food chains	23%	27%	50%	1.72
30	Marketing/promoting the food service program	30%	45%	25%	2.04
31	Instituting school breakfast programs	17%	24%	59%	1.58
32	Managing summer feeding programs	9%	17%	74%	1.35
33	Ensuring quality customer service	30%	42%	28%	2.02
34	Training employees to use correct sanitation practices (hand washing, using gloves)	36%	33%	31%	2.04
35	Training employees to use kitchen equipment and utensils safely and properly	35%	36%	29%	2.06
36	Using fire extinguishers correctly and training employees to use them	35%	41%	24%	2.12
37	Handling food properly (cooling, heating, thawing)	36%	38%	26%	2.10
38	Receiving, storing, rotating, and ordering foods	28%	35%	37%	1.91
39	Cutting costs (e.g., using leftovers)	27%	44%	28%	1.99
40	Expanding/standardizing recipes	27%	38%	35%	1.92
41	Modifying recipes to reduce fat, sugar, and salt	30%	43%	27%	2.03
42	Applying basic food production techniques	21%	47%	32%	1.88
43	Preparing food efficiently (using fewer steps)	32%	42%	26%	2.07
44	Training services in portion sizing	30%	39%	31%	1.98
45	Training cashiers	23%	29%	47%	1.76

Appendix C . Site Managers' Perceived Need for Training by Topic Area: Percent, Frequency, and Need Index (Sorted by Item Number)

Item	Training Topics	% Much needed	% Some-what needed	% Not a priority	Need index (high = needed)
46	Managing vending machines and stadium concessions	7%	10%	82%	1.25
47	Using computers for ordering supplies, e-mailing forms, etc.	33%	26%	41%	1.93
48	Managing the issue of water safety and analysis	9%	28%	63%	1.47
49	Recycling; disposing of waste properly	11%	33%	56%	1.55
50	Dealing with added responsibilities outside the food service realm	17%	36%	46%	1.71
51	Instituting an after school snack program	13%	16%	71%	1.43

**Appendix D: Site Managers' Preferences for Training Formats:
Frequencies and Format Preference Index
(Sorted by Format Preference Index)**

**Appendix D. Site Managers' Preferences for Training Formats: Frequencies and Format Preference Index
(Sorted by Format Preference Index)**

Item	Training Format	Highly preferred format	Preferred format	Not a preferred format	Total	Format preference index (high = preferred)
58	Seminars that allow interaction with other managers	143	131	48	322	2.30
59	Focus on timely topics (e.g., new temperatures for meats and poultry)	130	143	51	324	2.24
54	Use of demonstrations ("how-to" sessions)	131	127	60	318	2.22
52	Use of hands-on activities	139	113	68	320	2.22
61	Inclusion of practical information in the session	118	148	55	321	2.20
60	Small classes; lots of involvement by participants	126	125	70	321	2.17
57	Handing out printed materials during the session	99	136	87	322	2.04
56	Use of charts and other visuals during presentations	74	154	93	321	1.94
62	In-depth explanations of theories behind practices	58	145	117	320	1.82
55	Instruction by local chefs in food preparation and presentation	71	111	140	322	1.79
53	Use of role-playing as a part of the training session	59	109	148	316	1.72

Appendix E: Site Managers' Preferences for Training Formats: Percent, Frequency, and Format Preference Index (Sorted by Item Number)

Appendix E. Site Managers' Preferences for Training Formats: Percent, Frequency, and Format Preference Index (Sorted by Item Number)

Item	Training Format	% Highly preferred	% Preferred	% Not preferred	Format preference index (high = preferred)
52	Use of hands-on activities	43%	35%	21%	2.22
53	Use of role-playing as a part of the training session	19%	34%	47%	1.72
54	Use of demonstrations ("how-to" sessions)	41%	40%	19%	2.22
55	Instruction by local chefs in food preparation and presentation	22%	34%	43%	1.79
56	Use of charts and other visuals during presentations	23%	48%	29%	1.94
57	Handing out printed materials during the session	31%	42%	27%	2.04
58	Seminars that allow interaction with other managers	44%	41%	15%	2.30
59	Focus on timely topics (e.g., new temperatures for meats and poultry)	40%	44%	16%	2.24
60	Small classes; lots of involvement by participants	39%	39%	22%	2.17
61	Inclusion of practical information in the session	37%	46%	17%	2.20
62	In-depth explanations of theories behind practices	18%	45%	37%	1.82

Item	Training Format	Highly preferred format	Preferred format	Not a preferred format	Total
52	Use of hands-on activities	139	113	68	320
53	Use of role-playing as a part of the training session	59	109	148	316
54	Use of demonstrations ("how-to" sessions)	131	127	60	318
55	Instruction by local chefs in food preparation and presentation	71	111	140	322
56	Use of charts and other visuals during presentations	74	154	93	321
57	Handing out printed materials during the session	99	136	87	322
58	Seminars that allow interaction with other managers	143	131	48	322
59	Focus on timely topics (e.g., new temperatures for meats and poultry)	130	143	51	324
60	Small classes; lots of involvement by participants	126	125	70	321
61	Inclusion of practical information in the session	118	148	55	321
62	In-depth explanations of theories behind practices	58	145	117	320

**Appendix F: Site Managers' Preferences for Training Delivery Modes:
Frequencies and Delivery Mode Preference Index
(Sorted by Delivery Mode Preference Index)**

Appendix F. Site Managers' Preferences for Training Delivery Modes: Frequencies and Delivery Mode Preference Index (Sorted by Delivery Mode Preference Index)

Item	Training Delivery Mode	Highly preferred delivery mode	Preferred delivery mode	Not a preferred delivery mode	Total	Delivery mode preference index (high = preferred)
66	Theme-based seminars allowing for discussions with	126	142	53	321	2.23
69	State agency sponsored conferences/workshops	129	130	60	319	2.22
67	Sessions sponsored by the food service industry	119	148	52	319	2.21
71	State school food service association conferences	116	133	70	319	2.14
72	District-wide in-services	116	130	74	320	2.13
64	Video-based instruction	91	153	75	319	2.05
70	American School Food Service Association	101	129	89	319	2.04
63	Computer-based instruction (CD-ROM or disk)	103	91	126	320	1.93
73	Courses offered by colleges/universities	77	124	119	320	1.87
65	Instruction delivered via the Internet/World Wide Web	53	100	164	317	1.65

**Appendix G: Site Managers' Preferences for Training Delivery Modes:
Percent, Frequency, and Delivery Mode Preference Index
(Sorted by Item Number)**

Appendix G. Site Managers' Preferences for Training Delivery Modes: Percent, Frequency, and Delivery Mode Preference Index (Sorted by Item Number)

Item	Training Delivery Mode	% Highly preferred	% Preferred	% Not preferred	Delivery mode preference index (high = preferred)
63	Computer-based instruction (CD-ROM or disk)	32%	28%	39%	1.93
64	Video-based instruction	29%	48%	24%	2.05
65	Instruction delivered via the Internet/World Wide Web	17%	32%	52%	1.65
66	Theme-based seminars allowing for discussions with other managers	39%	44%	17%	2.23
67	Sessions sponsored by the food service	37%	46%	16%	2.21
68	Interactive teleconferences	13%	29%	59%	1.54
69	State agency sponsored	40%	41%	19%	2.22
70	American School Food Service Association conferences	32%	40%	28%	2.04
71	State school food service association	36%	42%	22%	2.14
72	District-wide in-services	36%	41%	23%	2.13
73	Courses offered by colleges/universities	24%	39%	37%	1.87

Item	Training Delivery Mode	Highly preferred delivery mode	Preferred delivery mode	Not a preferred delivery mode	Total
63	Computer-based instruction (CD-ROM or disk)	103	91	126	320
64	Video-based instruction	91	153	75	319
65	Instruction delivered via the Internet/World Wide Web	53	100	164	317
66	Theme-based seminars allowing for discussions with other managers	126	142	53	321
67	Sessions sponsored by the food service industry	119	148	52	319
68	Interactive teleconferences	40	90	184	314
69	State agency sponsored conferences/workshops	129	130	60	319
70	American School Food Service Association conferences	101	129	89	319
71	State school food service association conferences	116	133	70	319
72	District-wide in-services	116	130	74	320
73	Courses offered by colleges/universities	77	124	119	320