



## Competencies, Knowledge, and Skills for Chefs Working in School Nutrition Programs

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# Competencies, Knowledge, and Skills for Chefs Working in School Nutrition Programs

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Improve the operation of child nutrition programs through research, education and training, and information dissemination.

### **VISION**

Lead the nation in providing research, education, and resources to promote excellence in child nutrition programs.

### **MISSION**

Provide relevant research-based information and services that advance the continuous improvement of child nutrition programs.

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## COMPETENCIES, KNOWLEDGE, AND SKILLS FOR CHEFS WORKING IN SCHOOL NUTRITION PROGRAMS

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### EXECUTIVE SUMMARY

In 2021, the Institute of Child Nutrition (ICN) Applied Research Division (ARD) completed the project, *Exploratory Investigation of the Roles, Responsibilities, and Impact of Chefs Working in School Nutrition Programs*, to identify the a) job functions and functional areas of school nutrition chefs; b) roles, job descriptions, and job titles of school nutrition chefs; c) educational attainment and employment background of school nutrition chefs; d) the primary functional areas in which school nutrition chefs operate in school nutrition programs; and e) other key functions and impact of chefs in school nutrition (Institute of Child Nutrition, 2021b). This research identified key job duties and responsibilities of the school chef, but it also identified the benefits and impact of chefs on school meals and school nutrition program operations. Chefs working in school districts is a burgeoning concept for school nutrition programs. It is essential that the competencies, knowledge, and skills required to successfully execute the role of the chef in a school nutrition program be identified. For this reason, the ICN ARD conducted a study to develop a competency framework for chefs working in school nutrition programs.

The *Competencies, Knowledge, and Skills for Chefs Working in School Nutrition Programs* study was conducted in three phases. The first phase was an expert panel work group that consisted of school nutrition professionals (school nutrition directors, administrators, and chefs; State agency professionals; the United States Department of Agriculture Food and Nutrition Service staff; and the ICN Culinary Institute of Child Nutrition [CICN] staff). This expert panel work group confirmed the functional areas, knowledge, and skill statements that were identified in previous ICN ARD research and confirmed competency statements developed by the research team. In the second phase, an electronic panel of school nutrition professionals (similar in composition to the group in phase one) validated the competencies, knowledge, and skill statements using an online questionnaire. The results of the project's second phase yielded 31 competency statements and 259 knowledge and skill statements. In the final phase of the project, school nutrition directors and chefs participated in an online expert panel meeting using the Zoom platform to review and make recommendations regarding the development of the resource and four user-friendly tools.

The resource, *Competencies, Knowledge, and Skills of Effective School Nutrition Chefs*, was developed to assist school nutrition administrators and chefs in identifying the knowledge and skills required to effectively work in a school environment. The resource contains 10 functional areas with 31 competencies and 259 knowledge and skill statements. The resource includes four modifiable tools to assist school nutrition administrators and school chefs with effective use of the resource to meet their school nutrition program needs. The tools include the following: a) a competency-based job description template, b) a competency-based interview guide, c) a competency-based performance plan, and d) a career development plan. Included in each tool are instructions to guide the user through the functionality of the form and to provide instruction on the use of the tool.

## Competencies, Knowledge, and Skills for Chefs Working in School Nutrition Programs

The *Competencies, Knowledge, and Skills of Effective School Nutrition Chefs* resource is an invaluable tool for school nutrition professionals seeking to create a chef position, train chefs recently hired, and/or for chefs interested in entering the school nutrition profession. School nutrition program administrators can use the competency-based resource in hiring, establishing performance expectations, providing employee feedback, training, and guiding career/workforce development. Chefs can use the competency-based resource to identify gaps in knowledge and skills required to become acclimated to the school nutrition program, to create a professional development plan, to identify mentors as resources, and to identify education and training resources.



## INTRODUCTION

The Competencies, Knowledge, and Skills (CKS) series contains the Institute of Child Nutrition (ICN) Applied Research Division's (ARD) signature research-based resources for child nutrition professionals. The CKS resources identify the competencies, knowledge, and skills most professionals in the child nutrition industry need to perform their job functions effectively.

These resources support workforce development for the child nutrition profession by offering a foundation for developing job descriptions, staff training plans, employee performance assessments, individual professional development priorities, and mentoring strategies. As of 2022, the ICN ARD has expanded and updated CKS resources to support child nutrition positions, including district-level school nutrition professionals (Nettles et al., 2010), school nutrition managers (Cater et al., 2017; Institute of Child Nutrition, 2018), school nutrition assistants/technicians (Institute of Child Nutrition 2021), child nutrition providers in Child and Adult Care Food Programs (CACFP) (Lartey-Rowser, 2015), and State agency (SA) child nutrition professionals (Cross & Nettles, 2013).

In 2021, the ICN ARD completed the project, *Exploratory Investigation of the Roles, Responsibilities, and Impact of Chefs Working in School Nutrition Programs*, to identify the following:

1. Job functions and functional areas of school nutrition chefs;
2. Roles, job descriptions, and job titles of school nutrition chefs;
3. Educational attainment and employment background of school nutrition chefs;
4. Hiring requirements related to educational attainment and previous work experience of school nutrition chefs;
5. School nutrition directors' perceptions, preferences, and behaviors related to school nutrition chefs;
6. Impact of school nutrition chefs on the quality, palatability, and variety of school food, as well as students' consumption of food;
7. School nutrition directors', school nutrition administrators', school nutrition managers', and school nutrition chefs' perceived impact of school nutrition chefs on the program's participation, finances, student engagement activities, food and nutrition education, and staff training;
8. School nutrition chefs' knowledge, perceptions, and practices regarding their involvement in school nutrition programs; and
9. The primary functional areas in which school nutrition chefs operate in school nutrition programs (Institute of Child Nutrition, 2021b).

The researcher used a multi-phased research approach to accomplish the research objectives for the project, *Exploratory Investigation of the Roles, Responsibilities, and Impact of Chefs Working in School Nutrition Programs* (Institute of Child Nutrition, 2021b). In Phase I, the researcher utilized a holistic, multiple-case study design during visits to six school districts in six states, representing five United States Department of Agriculture (USDA) Food and Nutrition (FNS) regions. Data collected in this phase informed the development of the project's survey instrument for Phase II. In Phase II of the project, the researcher utilized an expert panel of 16 school nutrition professionals to develop and evaluate a survey instrument. The final phase, Phase III, was an online national survey to address the study's purpose and objectives.

Some of the key findings in the study included:

1. There are benefits to hiring a chef, such as (a) elevated flavor profiles of school meals and recipes, (b) development of creative and innovative school menus and recipes, and (c) enhanced food quality of school meals. However, there are also some challenges to identifying qualified chefs.
2. The most significant challenges a school nutrition program faces when trying to hire a chef are (a) lack of funds to support a chef position, (b) lack of awareness of school nutrition program career opportunities, (c) lack of career advancement in school nutrition programs, and (d) lack of support of school administrators to recruit and hire a chef.
3. Before being hired at a school nutrition program, chefs have limited training in program administration, school nutrition policies, USDA foods, and meal patterns.
4. The characteristics, qualities, and traits needed for chefs to succeed in school nutrition program operations are like those required to succeed in the hospitality industry. These characteristics include (a) “ability to motivate other school nutrition staff,” (b) “ability to employ time management skills,” (c) “ability to make appropriate decisions regarding menu planning, procurement, inventory management, food production, and service,” and (d) “ability to maintain emotional control.”
5. Both chefs and school nutrition administrators agree that chefs have a positive impact on meal quality attributes, including menu variety, customer satisfaction, variety of fruits and vegetables, plate waste, food quality, innovative recipe development, menu innovations, food presentation, various flavor profiles, cafeteria ambiance, food packaging and storage practices, food taste, food freshness, and foods served at the appropriate temperature.
6. Both chefs and school nutrition administrators agree that chefs have a positive impact on program operations, including student participation in breakfast and lunch, actively engaging students in school nutrition program activities, labor and budgeting costs, support (administrative, teacher, student, and community), safety and sanitation, branding the school nutrition program, inventory control, use of USDA foods, staff morale, efficiencies (cost, serving line, kitchen, staff), and certain practices (food procurement and food purchasing) (Institute of Child Nutrition, 2021b).

Chefs working in school districts is a relatively new concept for school nutrition programs. Therefore, it is essential to identify the competencies, knowledge, and skills needed to successfully execute the role of the chef in a school nutrition program. The functional areas and job responsibilities identified in the *Exploratory Investigation of the Roles, Responsibilities, and Impact of Chefs Working in School Nutrition Programs* project provided an understanding of the overall role of chefs working in school nutrition programs. However, more research was required to achieve a more in-depth and comprehensive description of the job duties and responsibilities of chefs working in school nutrition programs and the knowledge and skills necessary for a chef to perform successfully and effectively in a school nutrition program. For this reason, this study aimed to develop a competency framework for chefs working in the school nutrition environment.

The specific objectives of the current project were:

1. To develop an evidence-based competency framework to establish requisite knowledge and skills for chefs working in school nutrition programs by:
  - a. Validating the functional areas identified in GY17, Project #2, *Exploratory Investigation of the Roles, Responsibilities, and Impact of Chefs Working in School Nutrition Programs*;
  - b. Confirming the knowledge and skill statements developed in GY17, Project #2 for each functional area;
  - c. Developing corresponding competency statements to categorize the confirmed knowledge and skill statements; and
  - d. Aligning confirmed knowledge and skill statements to appropriate competencies within functional areas.
2. To elicit the views of ICN stakeholders and end-users regarding:
  - a. The proposed framework (including the evidence-based knowledge and skill statements) and
  - b. The optimal methods of disseminating the CKS for chefs working in school nutrition programs.

## METHODOLOGY

This research project was conducted in three phases. Phase I utilized an expert panel of State agency child nutrition professionals, school nutrition program directors, school nutrition program chefs, the ICN's Culinary Institute of Child Nutrition (CICN) chefs, and USDA FNS staff to confirm a) the knowledge and skill statements, b) the placement of statements under previously identified functional areas, and c) the experience level required for each statement. The findings from Phase I were used to develop an electronic survey to validate the knowledge and skills statements and their placement for Phase II of the project. In Phase II, the electronic survey was sent to a review panel of child nutrition professionals across the United States (US), including State agency child nutrition professionals, school nutrition program directors, school nutrition program chefs, ICN CICN chefs, and USDA FNS staff to validate the CKS statements. Phase III of the project included school nutrition program directors and school nutrition program chefs, who were charged with reviewing the draft CKS resource and providing feedback on usability, resource design, and dissemination.

### **Informed Consent**

The researchers followed informed consent procedures established by the University of Southern Mississippi's Human Subjects Protection Review Committee. Correspondence with expert panel members included a confidentiality statement, a consent form, and contact information for the Human Subjects Protection Review Committee at the University of Southern Mississippi, Hattiesburg, Mississippi. Acceptance of the invitation and written agreement to become a member of the expert panel (in each phase) served as consent to participate in the study. The Institutional Review Board at The University of Southern Mississippi reviewed and approved the study.

### **Phase I**

#### ***Expert Panel***

State agency Child Nutrition Program directors, Culinary Institute of America's Healthy Kid Collaborative representatives, ICN staff, and USDA FNS staff were contacted and asked to provide recommendations for school nutrition professionals who could participate in the research project. The criteria for participation included:

- School nutrition professionals with experience collaborating with school chefs in the school nutrition environment;
- Chefs with experience working in a school nutrition program at a district and/or site level on a full-time or part-time basis;
- School nutrition professionals working in school nutrition programs that meet or exceed meal pattern standards requirements established by USDA FNS;
- Individuals with an active email address; and
- Individuals willing to participate in research.

Eligible participants, including school nutrition directors and/or administrators, chefs working in school nutrition programs, SA professionals, and USDA FNS staff, were contacted via email and invited to participate in Phase I of the research project, a face-to-face expert work group to confirm the functional

areas and the knowledge and skill statements identified in previous ICN ARD research, and to develop competency statements to categorize those knowledge and skill statements. Seventeen participants were selected to serve on the expert panel. After individuals agreed to participate, confirmation letters were mailed. Participants were State agency representatives, school chefs, and current or former school nutrition directors representing various school district enrollment sizes and USDA FNS regions.

**Knowledge and Skill Statements.** Knowledge and skill statements are defined as information or abilities one must possess in a specific content area necessary for successful performance in a competency area. The knowledge and skill statements for the current research were drafted from previous ICN ARD research on chefs in schools (Lartey, 2018); other ICN CKS research; and job descriptions for chefs working in schools supplied by (a) school nutrition directors participating in ICN ARD research, (b) identified on school district websites, and (c) other online sources. The knowledge and skill statements identified were reviewed and sorted into similar themes or categories. Based on the analysis, 243 knowledge and skill statements were drafted.

**Expert-Panel, Workgroup Session.** In preparation for the two-day workgroup session, researchers provided participants with pre-meeting documents to review. These documents were shared with participants to expose them to the meeting content, generate ideas regarding the meeting content, and support meeting discussions. The documents included draft knowledge and skill statements with instructions to: a) review the wording of each knowledge and skill statement; b) take action to either accept the statement as written, modify the statement, or delete the statement; c) determine the functional area for which the knowledge or skill statement is best suited; and d) provide new knowledge or skill statements as deemed appropriate. The researcher requested panel members use their school nutrition experience while considering the differences in school nutrition programs across the US so that the final knowledge and skill statements would address the various responsibilities of school nutrition chefs throughout different program types and requirements of different school nutrition programs.

The expert work group session was facilitated by three researchers, with a research assistant capturing participants' suggestions and comments. The expert work group participants were divided into sub-groups during the work group session for discussion and consensus building to accomplish the following objectives:

- Review the definitions of each function area and take action to either keep or modify;
- Review the wording of each knowledge and skill statement and take action to keep, modify, or delete;
- Categorize the draft knowledge and skill statements into the appropriate functional area;
- Decide if there are any missing knowledge/skill statements and recommend wording;
- Agree on the placement of the knowledge and skill statements in each functional area;
- Group knowledge and skill statements into themes under each functional area; and
- Determine whether the knowledge and/or skill is entry level or advanced.

The first task for the expert panel was to evaluate the definitions of functional areas. Functional areas are broad categories of similar tasks that reflect the job duties performed in the local school nutrition operation. Each sub-group discussed the functional area definition options and worked to reach a consensus on a definition for each functional area. The researchers assembled the expert work group

once the sub-groups agreed on each definition. The researchers completed consensus-building activities for the entire work group panel to agree on each functional area definition.

The second task for the expert panel was to evaluate the draft knowledge and skill statements. The three options for the sub-groups were to: 1) accept the statement with no changes, 2) delete the statement, or 3) modify the wording of the statement. Each sub-group discussed the three options for addressing each knowledge and skill statement and the process to reach a consensus within their group. The sub-groups used the following process to review the draft knowledge and skill statements:

- Review each statement and determine if it reflects current practice in school nutrition programs;
- Consider differences among school nutrition programs across the country;
- Discuss questions or concerns identified during the review of the pre-meeting documents;
- Decide on the action to take for each statement;
- Revise statements, as appropriate, based on group discussion;
- Identify the best functional area for each statement and place the statement in the appropriate functional areas;
- Identify gaps in the knowledge and skill statements, create new statements, and place the new statements in the appropriate functional areas.

Once the sub-groups completed the assignment, the researchers used consensus-building activities to reach an agreement with the entire expert panel work group on the wording and placement of knowledge and skill statements. After the expert panel work group meeting, the work session results were compiled and reviewed for accuracy. Researchers created a summary of the expert panel work group discussion.

***Competency Statements.*** After summarizing the work group discussions, researchers grouped similar knowledge and skill statements for each functional area into smaller categories and drafted competency statements. Competency statements are underlying characteristics within each functional area that lead to the successful performance of a job duty. When appropriate, researchers used recommendations from the expert panel members, competency research literature, and previous ICN ARD CKS research to guide the categorization and wording of competency statements.

***Expert Panel Final Review.*** At the conclusion of the meeting, researchers used the CKS summary data from the work group to prepare a review questionnaire for the expert panel participants. The review was conducted by email, and a questionnaire was sent as an attachment. Expert panel members participated in the review to come to an agreement on the outcomes of the meeting. Expert panel members were asked to complete the questionnaire and return the questionnaire by email as an attachment. The objectives of the review were to:

- Review the established functional areas and functional area definitions;
- Confirm the placement of the knowledge and skills statements into the appropriate functional areas;
- Confirm the categorization of knowledge and skill statements into the appropriate competency;
- Identify if the knowledge and skill statements represent entry-level or advanced-level knowledge or skills; and

- Confirm the wording of the competency statements.

All expert panel members (n=9) returned the work group summary. The outcomes of the expert work group meeting and final questionnaire guided the development of an electronic survey to validate the competencies, knowledge, and skills statements and categorize these statements into appropriate competencies.

## **Phase II**

### ***Review Panel***

Phase II of the project was an expert review panel of school nutrition program professionals representing all seven USDA geographic regions. Participants for this research phase were identified at the study's inception, as described earlier. A total of 64 potential participants were emailed an explanation of the research study and an invitation to participate. Participants were State agency professionals, school nutrition directors, chefs, and administrators.

**Review Panel Survey.** The expert review panel members utilized an online survey to complete this portion of the research. The objectives of the review panel online survey were the following:

- Review functional areas and functional area definitions;
- Confirm placement of the knowledge and skill statements into the appropriate competency;
- Confirm that the knowledge and skill statements are placed under the appropriate category of either entry level or advanced level; and
- Confirm the wording of the competency statements.

The survey consisted of 206 knowledge and skill statements (117 entry-level and 89 advanced-level statements) and 31 competency statements within ten functional areas. Each functional area contained one or more competency statements, and each competency statement contained three or more knowledge and/or skill statements.

## **Phase III**

After the review panel confirmed data from the expert work group in Phase II, researchers and ICN staff developed and formatted a draft CKS resource for Phase III of the project. In Phase III, a group of school nutrition professionals, chefs working in school nutrition programs, State agency professionals, and ICN staff were invited to participate in an electronic review panel meeting to review the draft CKS resource for formatting, content appropriateness, usability, and readability. Participants were invited by email to participate in an expert panel meeting utilizing the Zoom platform. The email sent to potential participants included a cover letter, a consent form, a draft CKS resource, a guided review form, and a demographic questionnaire. The cover letter explained the purpose of the evaluation and provided instructions for the review procedure, provided the researcher's contact information, and shared meeting instructions. Following the electronic review panel meeting via Zoom, researchers developed a final draft of the CKS resource.

## **Data Analysis**

Quantitative data analysis was used to assess responses to the Phase I and Phase II questionnaires. Descriptive statistics, including means, standard deviation, and frequencies of total responses, were assessed using IBM SPSS Statistics 28.



## RESULTS AND DISCUSSION

### Phase I

A convenience sample of nine school nutrition directors, chefs working in school nutrition programs, and State agency professionals, along with two ICN staff and one USDA FNS staff member, attended a face-to-face two-day expert panel work group meeting. Of the participants, four were current or recently retired school nutrition directors or assistant directors. Two district-level chefs and two State agency professionals attended along with one school nutrition manager/supervisor. Six of the seven USDA geographic regions were represented—Midwest, Southeast, Southwest, Western, Mid-Atlantic, and Northeast regions. Demographic information is in Table 1.

The expert panel work group meeting started with 243 knowledge and skill statements for the participants to review and make determinations as to whether each should be retained, modified, or excluded. During the face-to-face meeting, the expert panel members accepted 150 statements, modified 53 statements, deleted 40 statements, and added nine new statements. At the conclusion of the expert panel meeting, there were ten functional areas and 212 knowledge and skill statements.

After the work group meeting, a post-meeting expert panel review was needed to evaluate and confirm the work completed in the face-to-face meeting. Panel members finalized the knowledge and skill statements, categorized the statements, confirmed the placement of the statements into competency areas, and confirmed the accuracy and appropriateness of the competency statements. The post-meeting expert panel review was conducted electronically.

Expert panel members were asked to classify each knowledge and skill statement into one of two designated categories: entry level or advanced level. Each statement was classified as either entry level or advanced level based on the highest percentage of responses within the respective categories. Furthermore, expert panel members were asked to confirm and validate the draft knowledge, skill, and competency statements under each functional area and evaluate the placement of the knowledge and skill statements within a specified competency area. Expert panel members were also given the opportunity to make recommendations on the wording of the competency statements, confirm the appropriateness of the competencies within a functional area, and the accuracy of the competency in reflecting the knowledge and skill statements. The determination of agreement, placement, wording, and appropriateness of the competencies was based on the greatest percentage of responses for the evaluation of the competency statements.

**Table 1***Phase I Expert Panel Members (n=9) Professional and Program Characteristics*

<b>Demographic Questions</b>	<b>Frequency</b>	<b>%</b>
Which statement best describes your position?		
School nutrition director/assistant director	4	44.4
School nutrition supervisor/manager	1	11.1
District level chef	2	22.2
Director chef	0	0
State agency professional	2	22.2
Allied organization	0	0
What is the student enrollment in your school district?		
≤ 2,500	1	11.1
2500-9,999	2	22.2
≥10,000	4	44.4
Not applicable	2	22.2
In which USDA region do you work/serve/live?		
Mountain Plains	0	0
Midwest	2	22.2
Southeast	2	22.2
Southwest	2	22.2
Northeast	1	11.1
Mid-Atlantic	1	11.1
Western	1	11.1
What percentage of students in your school district are approved for free and reduced-priced meals?		
<25%	0	0
25.1–50%	4	44.4
50.1–75%	2	22.2
>75%	0	0
Not applicable	3	33.3
How many years of experience do you have in school nutrition?		
0–5 years	2	22.2
6–10 years	3	33.3
11–15 years	1	11.1
16–20 years	1	11.1
More than 20 years	2	22.2

## Phase II

Of the 64 school nutrition professionals invited to participate in the electronic expert review panel, (a) 45 (70.3%) did not respond to the invitation or could not be reached via email; (b) five (7.8%) declined to participate; (c) 14 individuals agreed to participate (21.9%), and (d) 13 (20.3%) returned the review panel survey. Demographic information is in Table 2.

**Table 2**

*Phase II Review Panel Members' (n=13) Professional and Program Characteristics*

Demographic Questions	Frequency	%
Which statement best describes your position?		
School nutrition director/administrator	8	61.5
Chef (district, local, state, national)	3	23.1
State agency professional	1	7.7
Allied organization	1	7.7
In which USDA region do you work/serve/live?		
Mountain Plains	2	15.4
Midwest	2	15.4
Southeast	3	23.1
Southwest	1	7.7
Northeast	2	15.4
Mid-Atlantic	1	7.7
Western	2	15.4

The expert review panel members reviewed the knowledge and skill statements for each of the ten functional areas and confirmed their agreement with the classification of each statement into the entry-level or advanced-level category. The final placement was based on the greatest percentage of responses between the two categories. The review panel also assessed the competencies in each functional area and indicated their agreement with three statements about the competencies: the statement is appropriate, the statement accurately reflects the list of knowledge and skill statements, and the statement is clearly worded. For each statement, participants indicated strong agreement, and the mean level of agreement was greater than 3.54 on a 4.0 scale. The means and standard deviations for the evaluation of the competency statements in the ten functional areas are listed in Table 3. Tables 4–13 present the frequencies and percentages for the knowledge and skill statement placement in each of the ten functional areas.

**Functional Areas****Table 3***Competency Statements: Mean Agreement Ratings and Standard Deviations on a 4.0 Scale*

<b>Functional Area</b>	<b>Statement appropriate for functional area</b>		<b>Statement accurately reflects the knowledge and skills listed</b>	
	<b>N</b>	<b>M ± SD</b>	<b>N</b>	<b>M ± SD</b>
<b>Recipe Development</b>				
Competency 1.1: Utilizes expertise in food preparation and industry standards to create recipes that are consistent in quality and quantity and meet School nutrition program meal patterns and nutrition standards.	13	3.69 ± 0.82	13	3.85 ± 0.36
Competency 1.2: Understand the importance of collaborating with stakeholders and utilizing resources to create menu items that enhance students' school nutrition program experience.	13	3.77 ± 0.42	13	3.62 ± 0.49
<b>Stakeholder Engagement</b>				
Competency 2.1: Works collaboratively and effectively within and outside the school nutrition program to achieve program-related goals.	13	3.92 ± 0.27	13	3.69 ± 0.46
Competency 2.2: Actively promotes the school nutrition program to internal and external stakeholders.	13	3.85 ± 0.36	13	4.00 ± 0.00
Competency 2.3: Utilizes customer-oriented approaches to achieve and maintain quality service and engagement.	13	3.92 ± 0.27	13	3.85 ± 0.36
Competency 2.4: Anticipates, incorporates, and monitors food trends and student preferences for school meals.	13	3.69 ± 0.46	13	3.62 ± 0.62
Competency 2.5: Knows and demonstrates methods of effective communication with supervisors, staff, and new and existing customers, and potential customers.	13	3.77 ± 0.42	13	3.85 ± 0.36

*(Table 3 continues)*

*(Table 3 continued)**Competency Statements: Mean Agreement Ratings and Standard Deviations on a 4.0 Scale*

Functional Area	Statement appropriate for functional area		Statement accurately reflects the knowledge and skills listed	
	N	M ± SD	N	M ± SD
<b>Financial Accountability</b>				
Competency 3.1: Demonstrates understanding and practical knowledge of the school nutrition program's financial responsibilities and goals.	13	3.77 ± 0.42	13	3.69 ± 0.46
<b>Food and Workplace Safety</b>				
Competency 4.1: Establishes practices that protect the health and well-being of all customers and staff through the safe handling of food during purchase, delivery, storage, preparation, and service.	13	3.77 ± 0.58	13	3.77 ± 0.58
Competency 4.2: Maintains practices to manage workplace and environmental safety.	13	3.92 ± 0.28	13	3.83 ± 0.37
Competency 4.3: Demonstrates knowledge of and ability to follow federal, State, and local food safety regulations and standardized policies and procedures for safe food handling.	13	3.85 ± 0.36	13	3.85 ± 0.36
<b>Culinary Proficiency</b>				
Competency 5.1: Ensures that the foods selected are prepared, cooked, and served using methods that enhance flavor and attractiveness, preserve nutritive value, and promote freshness.	13	3.62 ± 0.74	13	3.62 ± 0.74
Competency 5.2: Follows school nutrition guidelines and standards to create quality meals that appeal to school nutrition program customers.	13	3.85 ± 0.36	13	3.85 ± 0.36
Competency 5.3: Demonstrates ability to operate and maintain food production in various quantities and systems.	13	3.77 ± 0.42	13	3.77 ± 0.42

*(Table 3 continues)*

*(Table 3 continued)**Competency Statements: Mean Agreement Ratings and Standard Deviations on a 4.0 Scale*

Functional Area	Statement appropriate for functional area		Statement accurately reflects the knowledge and skills listed	
	N	M ± SD	N	M ± SD
<b>Menu Development</b>				
Competency 6.1: Collaborates with stakeholders to build and maintain customer satisfaction through enhanced menu development.	13	3.77 ± 0.42	13	3.77 ± 0.42
Competency 6.2: Utilizes principles of menu planning to incorporate current food trends and create menus that improve student participation rates, while adhering to Federal requirements, policies, and program standards.	13	3.69 ± 0.61	13	3.69 ± 0.61
<b>Operation Management</b>				
Competency 7.1: Monitors and processes information and outcomes in the school nutrition program through analysis, evaluation, and reasoning to make informed decisions for the program.	13	3.69 ± 0.46	13	3.69 ± 0.46
Competency 7.2: Designs, implements, and evaluates processes for managing staff scheduling and performance.	13	3.85 ± 0.36	13	3.85 ± 0.36
Competency 7.3: Establishes processes for maintaining food quality, palatability, and appearance.	13	3.85 ± 0.36	13	3.77 ± 0.42
Competency 7.4: Understands and establishes procedures to enhance food service operations.	13	3.67 ± 0.47	13	3.77 ± 0.42
Competency 7.5: Adheres to quality standards in developing, maintaining, and evaluating production and inventory records and reports within the school nutrition program.	13	3.77 ± 0.58	13	3.77 ± 0.42

*(Table 3 continues)*

*(Table 3 continued)**Competency Statements: Mean Agreement Ratings and Standard Deviations on a 4.0 Scale*

Functional Area	Statement appropriate for functional area		Statement accurately reflects the knowledge and skills listed	
	N	M ± SD	N	M ± SD
<b>Operation Management</b>				
Competency 7.6: Demonstrates an understanding of operational systems (such as kitchen equipment technology, computer programs, and CN software) in the school nutrition program.	13	3.69 ± 0.61	13	3.54 ± 0.75
Competency 7.7: Maintains standards of the school nutrition program that align with federal, state, and local regulations and guidelines.	13	3.85 ± 0.36	13	3.85 ± 0.36
<b>Menu Development</b>				
Competency 7.7: Maintains standards of the school nutrition program that align with federal, State, and local regulations and guidelines.	13	3.85 ± 0.36	13	3.85 ± 0.36
<b>Personnel Management</b>				
Competency 8.1: Provides leadership that encourages staff to support the vision and goals of the school nutrition program and enables professional growth and development through feedback, training, and encouragement.	13	3.85 ± 0.36	13	3.85 ± 0.36
Competency 8.2: Applies general management knowledge to educate staff on human resource policies, procedures, and practices.	13	3.62 ± 0.62	13	3.62 ± 0.62
Competency 8.3: Demonstrates the ability to interact and communicate with school nutrition program staff in a manner that builds and sustains relationships.	13	3.85 ± 0.36	13	3.85 ± 0.36

*(Table 3 continues)*

*(Table 3 continued)**Competency Statements: Mean Agreement Ratings and Standard Deviations on a 4.0 Scale*

Functional Area	Statement appropriate for functional area		Statement accurately reflects the knowledge and skills listed	
	N	M ± SD	N	M ± SD
<b>Procurement</b>				
Competency 9.1: Identifies strategies for obtaining food and supplies while complying with applicable school nutrition program policies and procedures.	13	3.77 ± 0.58	13	3.77 ± 0.58
Competency 9.2: Incorporates procurement best practices and complies with federal, state, and local procurement regulations and guidelines.	13	3.69 ± 0.46	13	3.69 ± 0.46
<b>Training</b>				
Competency 10.1: Selects, develops, and evaluates training programs to ensure staff are adequately trained.	13	3.85 ± 0.36	13	3.85 ± 0.36
Competency 10.2: Incorporates instructional techniques that are effective for adult learners.	13	3.85 ± 0.36	13	3.85 ± 0.36
Competency 10.3: Implements educational experiences for staff by incorporating various teaching modalities and topic areas.	13	3.77 ± 0.42	13	3.85 ± 0.36

***Functional Area 1: Recipe Development***

The Recipe Development functional area contains two competency statements. Expert review panel members indicated their agreement with the placement of the 13 knowledge and skill statements—seven knowledge and skill statements (six entry level and one advanced level) in Competency 1.1 and six knowledge and skill statements (two entry level and four advanced level) in Competency 1.2—into the entry-level or advanced-level categories of expertise. The level of agreement for the statement's classification into entry or advanced level was based on the greatest percentage of responses between the two categories. The majority (84.6%) of the panel members agreed that the knowledge and skill statements were appropriately grouped in Competency 1.1. Conversely, a little over half (53.8%) of the



participants did not agree with the placement of statements into entry or advanced level in Competency 1.2 (Table 4). Therefore, Competency 1.2 was reviewed and assessed by the researchers to determine a course of action regarding the placement of statements into entry-level or advanced-level categories.

Participants were also able to provide recommendations for modifications to the statements to ensure they align with the functional areas and the competency for which they were grouped. The panel presented nine recommendations, which the researcher subsequently evaluated for their similarity, relevance, and consistency with prior research findings. The recommendations were also used to inform modifications to the placement of statements in Competency 1.2. This resulted in the Recipe Development functional area increasing to 17 total knowledge and skill statements—six entry-level and three advanced-level knowledge and skill statements for Competency 1.1 and two entry-level and six advanced-level knowledge and skill statements for Competency 1.2.

**Table 4**

*Functional Area 1: Recipe Development*

Competency Statement	Knowledge and Skill Statements Appropriately Grouped as Entry Level or Advanced Level <sup>a</sup> N (%)	
	Yes	No
Competency 1.1: Utilizes expertise in food preparation and industry standards to create recipes that are consistent in quality and quantity and meet school nutrition program meal patterns and nutrition standards.	11 (84.6%)	2 (15.4%)
Competency 1.2: Understands the importance of collaborating with stakeholders and utilizing resources to create menu items that enhance students' school nutrition program experience.	6 (46.2%)	7 (53.8%)

<sup>a</sup>Number responding (percentage)

### ***Functional Area 2: Stakeholder Engagement***

The Stakeholder Engagement functional area contains five competency statements. Expert review panel members indicated their agreement with the placement of twenty-five knowledge and skill statements:

- Five knowledge and skill statements in Competency 2.1 (four entry level and one advanced level),
- Five knowledge and skill statements in Competency 2.1 (three entry level and two advanced level),
- Four knowledge and skill statements in Competency 2.3 (three entry level and one advanced level),
- Four knowledge and skill statements in Competency 2.4 (all entry level), and
- Seven knowledge and skill statements in Competency 2.5 (all entry level).

The level of agreement for the statement's classification into entry or advanced level was based on the greatest percentage of responses among the two categories. Over half (53.9%) of the panel members agreed that the knowledge and skill statements were appropriately grouped in Competency 2.1. A large majority of panel members agreed that Competencies 2.2, 2.3, and 2.4 were appropriately grouped into entry level or advanced level (76.9%, 76.9%, and 84.6%, respectively). However, more than 50% of the panel members did not believe that the knowledge and skill statements in Competency 2.5 were grouped appropriately (Table 5).

Participants provided recommendations for modifications to the statements to ensure they align with the functional areas and the competency for which they were grouped. The panel presented 29 recommendations for modifications, eight of which were made for Competency 2.5. The researchers evaluated the statements for their similarity, relevance, application to chefs working in schools, and consistency with prior research findings. This resulted in the Stakeholder Engagement functional area increasing from 25 statements to 30 knowledge and skill statements: (a) two entry-level and four advanced-level knowledge and skill statements for Competency 2.1, (b) one entry-level and five advanced-level knowledge and skill statements for Competency 2.2, (c) three entry-level and two advanced-level knowledge and skill statements for Competency 2.3, (d) two entry-level and three advanced-level knowledge and skill statements for Competency 2.4, and (e) four entry-level and four advanced-level knowledge and skill statements for Competency 2.5.

**Table 5*****Functional Area 2: Stakeholder Engagement***

<b>Competency Statement</b>	<b>Knowledge and Skill Statements Appropriately Grouped as Entry Level or Advanced Level<sup>a</sup></b>	
	<b>Yes</b>	<b>No</b>
Competency 2.1: Works collaboratively and effectively within the school nutrition program to achieve program-related goals.	7 (53.8%)	6 (46.2%)
Competency 2.2: Actively promotes the school nutrition program to internal and external stakeholders	10 (76.9%)	2 (15.4%) <sup>b</sup>
Competency 2.3: Utilizes customer-oriented approaches to achieve and maintain quality service and engagement.	10 (76.9%)	3 (23.1%)
Competency 2.4: Anticipates, incorporates, and monitors food trends and student preferences for school meals.	11 (84.6%)	2 (15.4%)
Competency 2.5: Knows and demonstrates methods of effective communication with supervisors, staff, and new and existing customers, and potential customers.	5 (35.7%)	7 (53.8%) <sup>bc</sup>

<sup>a</sup>Number responding (percentage)<sup>b</sup>Missing data<sup>c</sup>Multiple marked data***Functional Area 3: Financial Accountability***

The Financial Accountability functional area contains one competency statement. Expert review panel members indicated their agreement with the placement of the seven knowledge and skill statements (six entry level and one advanced level) into two categories of expertise. The decision for the statements' classification into entry level or advanced level was based on the greatest percentage of responses among the two categories. The majority (61.5%) of the panel members agreed that the knowledge and skill statements were appropriately grouped into entry-level or advanced-level statements (Table 6).

Participants provided recommendations for modifications to the statements to ensure they align with the functional areas and the competency for which they were grouped. The researcher reviewed the panel's five recommendations to ensure they were similar, relevant, and aligned with prior research findings. As a result, there are four entry-level knowledge and skill statements and three advanced-level knowledge and skill statements for Functional Area 3.

**Table 6***Functional Area 3: Financial Accountability*

<b>Competency Statement</b>	<b>Knowledge and Skill Statements Appropriately Grouped as Entry Level or Advanced Level<sup>a</sup> N (%)</b>	
	<b>Yes</b>	<b>No</b>
Competency 3.1: Demonstrates understanding and practical knowledge of the school nutrition program's financial responsibilities and goals.	8 (61.5%)	5 (38.5 %)

<sup>a</sup>Number responding (percentage)*Functional Area 4: Food and Workplace Safety*

The Food and Workplace Safety functional area contains three competency statements. Expert review panel members indicated their agreement with the placement of the 22 knowledge and skills statements (nine entry-level statements in Competency 4.1, five entry-level statements in Competency 4.2, and eight entry-level statements in Competency 4.3) into two categories of expertise. The decision for the statements' classification into entry level or advanced level was based on the greatest percentage of responses among the two categories. Most of the panel members agreed that the knowledge and skill statements were appropriately grouped into entry-level or advanced-level statements for all competency statements (84.6%, 100%, and 76.9% for Competencies 4.1, 4.2, and 4.3, respectively) (Table 7).

Participants provided recommendations for modifications to the statements to ensure they align with the functional areas and the competency for which they were grouped. The researcher evaluated seven recommendations from the panel. This resulted in 26 statements: (a) ten entry-level knowledge and skill statements for Competency 4.1, (b) six entry-level knowledge and skill statements for Competency 4.2, and (c) seven entry-level and three advanced-level knowledge and skill statements for Competency 4.3.

**Table 7***Functional Area 4: Food and Workplace Safety*

Competency Statement	Knowledge and Skill Statements Appropriately Grouped as Entry Level or Advanced Level <sup>a</sup> N (%)	
	Yes	No
Competency 4.1: Establishes practices that protect the health and well-being of all customers and staff through the safe handling of food during purchase, delivery, storage, preparation, and service.	11 (84.6%)	1 (7.7%) <sup>b</sup>
Competency 4.2: Maintains practices to manage workplace and environmental safety.	13 (100%)	0 (0%)
Competency 4.3: Utilizes customer-oriented approaches to achieve and maintain quality service and engagement.	10 (76.9%)	3 (23.1%)

<sup>a</sup>Number responding (percentage)<sup>b</sup>Missing data*Functional Area 5: Culinary Proficiency*

The Culinary Proficiency functional area contains three competency statements. Expert review panel members indicated their agreement with the placement of the 33 knowledge and skill statements (15 entry-level statements in Competency 5.1, three entry-level and three advanced-level statements in Competency 5.2, and 12 entry-level statements in Competency 5.3) into the two categories of expertise identified. The decision for a statement's classification into entry or advanced level was based on the greatest percentage of responses between the two categories. Most of the panel members agreed that the knowledge and skill statements were appropriately grouped into entry-level or advanced-level statements for all competency statements (76.9%, 92.3%, and 84.6% for Competencies 5.1, 5.2, and 5.3 respectively).

Participants suggested revisions to the statements to ensure their alignment with the designated functional areas and competencies. Seven recommendations were presented by the panel and analyzed by the researcher. This resulted in a decrease in the number of statements from 33 down to 32: (a) 11 entry-level and three advanced-level knowledge and skill statements for Competency 5.1, (b) four entry-level and three advanced-level knowledge and skill statements for Competency 5.2, and (c) six entry-level and five advanced-level knowledge and skill statements for Competency 5.3 (Table 8).

**Table 8***Functional Area 5: Culinary Proficiency*

Competency Statement	Knowledge and Skill Statements Appropriately Grouped as Entry Level or Advanced Level <sup>a</sup> N (%)	
	Yes	No
Competency 5.1: Ensures that the foods selected are prepared, cooked, and served using methods that enhance flavor and attractiveness, preserve nutritive value, and promote freshness.	10 (76.9%)	2 (15.4%) <sup>b</sup>
Competency 5.2: Follows school nutrition guidelines and standards to create quality meals that appeal to school nutrition program customers.	12 (92.3%)	1 (7.7%)
Competency 5.3: Demonstrating knowledge and skills in culinary arts and applying sound practices in food planning, food production, and service models.	11 (84.6%)	2 (15.4%)

<sup>a</sup>Number responding (percentage)<sup>b</sup>Missing data*Functional Area 6: Menu Development*

The Menu Development functional area contains three competency statements. Expert review panel members indicated their agreement with the placement of the 19 knowledge and skill statements (four entry-level and one advanced-level knowledge and skill statement in Competency 6.1 and nine entry-level and five advanced-level statements in Competency 6.2) into the two categories of expertise. The decision for the statement classification into entry-level or advanced level was based on the greatest percentage of responses among the two categories. Eighty-five percent of the panel members agreed that the knowledge and skill statements were appropriately grouped into entry-level or advanced-level statements for both competencies (Table 9).

Participants suggested revisions to the statements to ensure their alignment with the designated functional areas and competencies. The researcher assessed the panel's five recommendations and increased the number of knowledge and skill statements. The final number of knowledge and skill statements is 20 in the Menu Development functional area—three entry-level and three advanced-level knowledge and skill statements for Competency 6.1 and eight entry-level and six advanced-level knowledge and skill statements for Competency 6.2.

**Table 9***Functional Area 6: Menu Development*

Competency Statement	Knowledge and Skill Statements Appropriately Grouped as Entry Level or Advanced Level <sup>a</sup> N (%)	
	Yes	No
Competency 6.1: Collaborates with stakeholders to build and maintain customer satisfaction through enhanced menu development.	11 (84.6%)	2 (15.4%)
Competency 6.2: Utilizes principles of menu planning to incorporate current food trends and create menus that improve student participation rates, while adhering to Federal requirements, policies, and program standards.	11 (84.6%)	2 (15.4%)

<sup>a</sup>Number responding (percentage)*Functional Area 7: Operation Management*

The Operation Management functional area contains three competency statements. Expert review panel members indicated their agreement with the placement of the 44 knowledge and skill statements:

- Seven knowledge and skill statements in Competency 7.1 (six entry level and one advanced level),
- Seven knowledge and skill statements in Competency 7.2 (all entry level),
- Four knowledge and skill statements in Competency 7.3 (all entry level),
- Seven knowledge and skill statements in Competency 7.4 (six entry level and one advanced level),
- Eight knowledge and skill statements in Competency 7.5 (seven entry level and one advanced level),
- Four knowledge and skill statements in Competency 7.6 (three entry level and one advanced level), and
- Seven knowledge and skill statements in Competency 7.7 (all entry level)

The level of agreement for the statement's classification into entry or advanced level was based on the greatest percentage of responses among the two categories. Most panel members agreed that competencies were appropriately grouped into entry level or advanced (92.3%, 61.5%, 76.9%, 92.3%, 61.5%, 84.6%, and 100%, respectively) (Table 10).

Participants suggested revisions to the statements to ensure their alignment with the designated functional areas and competencies. The researcher reviewed 19 recommendations. This increased the number of statements from 44 to 60: (a) four entry-level and four advanced-level knowledge and skill statements for Competency 7.1, (b) five entry-level and seven advanced-level knowledge and skill statements for Competency 7.2, (c) three entry-level and one advanced-level knowledge and skill statements for Competency 7.3, (d) six entry-level and one advanced-level knowledge and skill statements for Competency 7.4, (e) seven entry-level and five advanced-level knowledge and skill statements for Competency 7.5, (f) six entry-level and one advanced-level knowledge and skill statements, and (g) 10 advanced-level knowledge and skill statements.

**Table 10***Functional Area 7: Operation Management*

Competency Statement	Knowledge and Skill statements appropriately grouped as Entry Level or Advanced Level <sup>a</sup> N (%)	
	Yes	No
Competency 7.1: Monitors and processes information and outcomes in the school nutrition program through analysis, evaluation, and reasoning to make informed decisions for the program.	12 (92.3%)	1 (7.7%)
Competency 7.2: Designs, implements, and evaluates processes for managing staff scheduling and performance.	8 (61.5%)	5 (38.5%)
Competency 7.3: Establishes processes for maintaining food quality, palatability, and appearance.	10 (76.9%)	3 (23.1%)
Competency 7.4: Understands and establishes procedures to enhance food service operations.	12 (92.3%)	1 (7.7%)
Competency 7.5: Adheres to quality standards in developing, maintaining, and evaluating production and inventory records and reports within the school nutrition program.	8 (61.5%)	5 (38.5%)
Competency 7.6: Demonstrates an understanding of operational systems (such as kitchen equipment technology, computer programs, and CN software) in the school nutrition program.	11 (84.6%)	2 (15.4%)
Competency 7.7: Maintains standards of the school nutrition program that align with federal, state, and local regulations and guidelines.	13 (100%)	0 (0%)

<sup>a</sup>Number responding (percentage)



**Functional Area 8: Personnel Management**

The Personnel Management functional area contains three competency statements. Expert review panel members indicated their agreement with the placement of the 19 knowledge and skill statements (11 entry-level knowledge and skill statements in Competency 8.1, four entry-level statements in Competency 8.2, and four entry-level statements in Competency 8.3). The decision for the statement classification into entry-level or advanced level was based on the greatest percentage of responses among the two categories. There were an equal number of participants ( $n = 6,46.2\%$ ) who agreed that the statements were appropriately grouped as there were six “no responses” and/or missing data for Competency 8.1. The reason for the missing data was not identified. However, in competencies two and three for functional area eight, there was no missing data. Eighty-five percent of the panel members agreed that the knowledge and skill statements were appropriately grouped into entry-level or advanced-level statements for Competency 8.2, and one hundred percent of the panelists agreed for Competency 8.3 (Table 11).

Participants suggested revisions to the statements to ensure their alignment with the designated functional areas and competencies. Because of the missing data in Competency 8.1, the researchers used the participants’ recommendations and previous research to make a final determination for the competency. Subsequently, the researcher assessed the panel’s eight recommendations and increased the number of knowledge and skill statements. The final number of knowledge and skill statements is 36 in the Personnel Management functional area—one entry-level and 10 advanced-level knowledge and skill statements for Competency 8.1, one entry-level and 15 advanced-level knowledge and skill statements for Competency 8.2, and nine entry-level knowledge and skill statements for Competency 8.3.

**Table 11****Functional Area 8: Personnel Management**

Competency Statement	Knowledge and Skill Statements Appropriately Grouped as Entry Level or Advanced Level <sup>a</sup>	
	Yes	No
Competency 8.1: Provides leadership that encourages staff to support the vision and goals of the school nutrition program and enables professional growth and development through feedback, training, and encouragement.	6 (46.15%)	1 (7.7%) <sup>b</sup>
Competency 8.2: Applies general management knowledge to educate staff on human resource policies, procedures, and practices.	11 (84.6%)	2 (15.4%)
Competency 8.3: Demonstrates the ability to interact and communicate with school nutrition program staff in a manner that builds and sustains relationships.	13 (100%)	0 (0%)

<sup>a</sup>Number responding (percentage)<sup>b</sup>Missing data

**Functional Area 9: Procurement**

The Procurement functional area contains two competency statements. Expert review panel members indicated their agreement with the placement of the seven knowledge and skill statements (two entry-level and one advanced-level knowledge and skill statements in Competency 9.1 and one entry-level and three advanced-level statements in Competency 9.2). The decision for the statement classification into entry level or advanced level was based on the greatest percentage of responses among the two categories. The majority of the panel members agreed that the statements in both competencies were appropriately grouped, 84.6% for Competency 9.1 and 92.3% for Competency 9.2 (Table 12).

Participants were allowed to propose changes to the statements to ensure they correspond with the functional areas and competencies for which they were categorized. The researcher assessed the panel's two recommendations and increased the number of knowledge and skill statements. The final number of knowledge and skill statements is 10 in the Procurement functional area—four entry-level and two advanced-level knowledge and skill statements for Competency 9.1 and one entry-level and three advanced-level knowledge and skill statements for Competency 9.2. This is an increase in the number of statements from the original.

**Table 12****Functional Area 9: Procurement**

Competency Statement	Knowledge and Skill Statements Appropriately Grouped as Entry Level or Advanced Level <sup>a</sup> N (%)	
	Yes	No
Competency 9.1: Identifies strategies for obtaining food and supplies while complying with applicable school nutrition program policies and procedures.	11 (84.6%)	2 (15.4%)
Competency 9.2: Incorporates procurement best practices and complies with federal, State, and local procurement regulations and guidelines.	12 (92.3%)	1 (7.7%)

<sup>a</sup>Number responding (percentage)

**Functional Area 10: Training**

The Training functional area contains three competency statements. Expert review panel members indicated their agreement with the placement of the 19 knowledge and skills statements (two entry-level and two advanced-level knowledge and skill statements in Competency 10.1, five entry-level and one advanced-level statements in Competency 10.2, and seven entry-level and two advanced-level statements in Competency 10.3). The decision for the statement classification into entry level or advanced level was based on the greatest percentage of responses among the two categories. The majority of the panel members agreed that the statements were appropriately grouped into entry-level or advanced-level statements for Competency 10.1 (100%), Competency 10.2 (84.6%), and Competency 10.3 (84.6%) (Table 13).

Participants proposed modifications to the statements to ensure their congruence with the specified functional areas and competencies. The researcher evaluated the panel's four recommendations, which led to an expansion in the number of knowledge and skill statements. The final number of knowledge and skill statements is 21 in the Procurement functional area—two entry-level and four advanced-level knowledge and skill statements for Competency 10.1, one entry-level and five advanced-level knowledge and skill statements for Competency 10.2, and six entry-level and three advanced-level knowledge and skill statements for Competency 10.3.

**Table 13****Functional Area 10: Training**

Competency Statement	Knowledge and Skill Statements Appropriately Grouped as Entry Level or Advanced Level <sup>a</sup> N (%)	
	Yes	No
Competency 10.1: Selects, develops, and evaluates training programs to ensure staff are adequately trained.	13 (100%)	0 (0%)
Competency 10.2: Incorporates instructional techniques that are effective for adult learners.	11 (84.6%)	2 (15.4%)
Competency 10.3: Implements educational experiences for staff by incorporating various teaching modalities and topic areas.	11 (84.6%)	1 (7.7%) <sup>b</sup>

<sup>a</sup>Number responding (percentage)

<sup>b</sup>Missing data

### Phase III

In the final phase of the project, researchers met via Zoom with a group of school nutrition professionals, including school chefs and school nutrition program directors to a) review the draft documents associated with the CKS resource, b) elicit responses from the panel regarding the layout and design of the draft documents, and c) identify optimal methods of dissemination. Twenty-six school nutrition professionals were invited to participate in Phase III of the project, and eight agreed to participate in the phase. Of the eight who agreed, one participant dropped out of the project due to job commitments that conflicted with the Zoom meeting time.

The electronic expert panel members (n=7) received the following tools via email to review prior to the meeting date: a) competency-based job description, b) competency-based interview guide, c) competency-based performance plan, and d) career development plan. During the expert panel meeting, the panel members collectively reviewed and discussed the proposed CKS resource tools and previous CKS resources to provide recommendations and best practices for creating effective and engaging resources, including recommendations for layout, typography, color schemes, imagery, and readability. For each of the tools, the expert panel members met in small groups to discuss recommendations for the tool and in a large group to reach consensus on the recommendations.

For the competency-based job description and interview guide, panel members discussed the a) usability of the resource for school nutrition professionals, b) suitability of the information for the target population, and c) gaps or areas where additional information could be added to support the user. This discussion led to modifications of the job description template in the education and work experience section to closely align with the needs of someone working as a school chef. This included added job experience and education related to culinary arts, such as apprenticeships, certifications, and work experience. Additionally, panel members suggested a) the addition of questions that would address concepts such as recipe development for various operations, b) the elimination of questions that were similar or redundant, c) missing concepts important for chefs working in schools like team building and change management, and d) specific skills and knowledge relevant to school chefs for the interview questions template.

For the evaluation of the competency-based performance plan and career development plan, panel members discussed the following: a) additional information needed to enhance the performance plan or the career development plan, b) the design of the plans (usability), and c) suitable platforms for distributing the tools and resources. Modification recommendations were made by the panel regarding encouraging local districts to use the templates as they are or modify them to meet the school district's standards. The panel also assessed the terminology used in the performance plan. The recommendations were centered around the terms, definitions, and ratings for the level of proficiency used to assess a chef's performance. Panel members recommended expanded definitions to include examples and additional information to help the user understand what each proficiency level represents.

Panel members also provided recommendations for the design of the CKS resource. There were several recommendations from the panel regarding the layout and design of the resource. First, the participants recommended that the ICN ARD avoid human images as they tend to date the resource over time. The second recommendation was to ensure that the resource included a fillable format and used dropdown boxes for users to complete the forms. Third, the panel recommended that the ICN ARD

create forms as Word documents that can be customized to meet the needs of the school district or that districts can borrow information from and apply to their previously created documents. Finally, panel members recommended that the CKS resource be designed in a way that end users can easily follow the directions and the flow of the document.

## CONCLUSIONS AND RECOMMENDATIONS

The purpose of this research project was to develop an evidence-based competency framework for chefs working in school nutrition programs and to create a user-friendly resource for school nutrition professionals. The original CKS contained 10 functional areas and 243 knowledge and skill statements. After Phase I of the research process, the number of knowledge and skill statements changed to 208 (169 entry-level and 39 advanced-level statements). The final CKS document has 10 functional areas, 31 competency statements, and 259 knowledge and skill statements. The number of entry-level statements from the original document decreased from 169 to 134 in the final document (Table A1). The number of advanced-level statements in the original document increased from 39 to 125 in the final CKS document (Table A2).

### Implications for School Nutrition Programs

Qualified chefs are crucial to the success of an effective school nutrition program seeking to incorporate the expertise of a culinary expert into their program's operations. The results of this research project provide an evidence-based competency framework that schools can use to support hiring, training, and promoting chefs.

The competencies, knowledge, and skills confirmed in this project were used to develop a resource. The resource includes the competencies, knowledge, and skills statements identified in the research process that are assigned to ten functional areas: recipe development, stakeholder engagement, financial accountability, food and workplace safety, culinary proficiency, menu development, operation management, personnel management, procurement, and training. Additionally, the resource, *Competencies, Knowledge, and Skills of Effective School Nutrition Chefs*, can be used to:

- Develop job descriptions (based on the list of knowledge and skills required for chefs working in schools),
- Identify the most appropriate interview questions for chef candidates who would be interviewed,
- Plan and provide an orientation for newly hired chefs working in schools,
- Provide professional development for a chef currently working in the school nutrition program; and
- Assist personal professional growth and development of chefs by means of identification and collaboration between a mentor and mentee.

The tools associated with this research were developed for this project are web-based and designed to be accessible and modified by school nutrition administrators and professionals to meet their individual and district needs.

### Application

It is important to note that chefs can be hired in various roles at the school district level. This research is designed to set the standard for foundational competencies, knowledge, and skills needed for a chef aspiring to work or currently working in a school nutrition program. The ICN has CKS resources to cover the role of the school nutrition assistants and technicians, managers, and directors. If the chef is

working in either of those capacities at the school district, the CKS resources created for those positions will be applicable to the chef.

The *Competencies, Knowledge, and Skills of Effective School Nutrition Chefs* resource is an invaluable tool for school nutrition professionals seeking to create a position for a chef or to train chefs recently hired and for chefs interested in entering the school nutrition profession. School nutrition program administrators can use the competency-based resource in hiring, establishing performance expectations, providing employee feedback, training, and guiding career/workforce development. Chefs can use the competency-based resource for identifying gaps in knowledge and skills that are required to become acclimated to the school nutrition program, creating a professional development plan, identifying mentors as resources, and identifying education and training resources.

The information gained from this research project will assist the Institute of Child Nutrition, the Culinary Institute of Child Nutrition, State agencies, the USDA FNS, and other training professionals in developing resources that enhance hiring practices and professional development opportunities for school chefs.

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## **APPENDIX**

### **List of Entry-Level and Advanced-Level Knowledge and Skill Statements**

**Table A1***Entry-Level Knowledge and Skill Statements for Chefs Working in School Nutrition Programs*

<b>Functional Area</b>
<b>Competency Statement</b>
<b>Knowledge/Skill Statements</b>
<b><i>Recipe Development</i></b>
<b>Competency 1.1: Utilizes expertise in food preparation and industry standards to create recipes that are consistent in quality and quantity and meet school nutrition program meal patterns and nutrition standards.</b>
Knows methods to develop standardized recipes.
Knows how to describe product and recipe development strategies.
Knows how to utilize research to create new menu items for quantity food production.
Skilled in using standardized recipes to control food quality, recipe yield, and portion size.
Skilled in developing, writing, and scaling standardized recipes.
Skilled in using recipe conversion factors to scale recipe yields.
<b>Competency 1.2: Understands the importance of collaborating with stakeholders and utilizing resources to create menu items that enhance the students' school nutrition program experience.</b>
Knows how to create recipes to serve the needs and preferences of the students participating in school nutrition programs.
Knows how to successfully partner with a variety of stakeholders.
<b><i>Stakeholder Engagement</i></b>
<b>Competency 2.1: Works collaboratively and effectively within the school nutrition program to achieve program-related goals.</b>
Skilled in networking with other school nutrition professionals.
Skilled at working effectively with other departments within the school.
<b>Competency 2.2: Actively promotes the school nutrition program to internal and external stakeholders</b>
Knows the importance of chef involvement in promoting school nutrition programs
<b>Competency 2.3: Utilizes customer-oriented approaches to achieve and maintain quality service and engagement.</b>
Knows techniques for providing high-quality customer service.

Knows how to serve students with dignity and respect.
Knows how to create a positive atmosphere for engaging employees and students.
<b>Competency 2.4: Anticipates, incorporates, and monitors food trends and student preferences for school meals.</b>
Knows how to identify trends among students that may impact menu options.
Knows how to communicate and effectively interact with people from a global perspective.
<b>Competency 2.5: Knows and demonstrates methods of effective communication with supervisors, staff, and new and existing customers, and potential customers.</b>
Knows how to communicate with coworkers, customers, and stakeholders in various ways.
Knows the lines of communication within the school and district, including chain of authority and levels of job responsibilities
Skilled in utilizing active listening techniques with coworkers and students.
Skilled in interacting with coworkers and students honestly, ethically, and fairly.
<b><i>Financial Accountability</i></b>
<b>Competency 3.1: Demonstrates understanding and practical knowledge of the school nutrition program's financial responsibilities and goals.</b>
Knows fundamentals of managing food costs.
Knows fundamentals of effective finance management.
Knows how to maintain food costs by monitoring the use of standardized recipes, standardized yields, portion size, and ingredients.
Skilled in managing financial resources, including labor and inventory.
<b><i>Food and Workplace Safety</i></b>
<b>Competency 4.1: Establishes practices that protect the health and well-being of all customers and staff through the safe handling of food during purchase, delivery, storage, preparation, and service.</b>
Knows how to describe the proper cooking temperature and final safe internal temperature of the food being cooked.
Knows how to monitor proper cooking, holding, and cooling methods to ensure proper temperatures are maintained.
Knows fundamentals of product shelf life.
Knows basic principles of food service safety and sanitation for food, equipment, staff, and the facility.
Knows how to monitor stock rotation and use-by dates.

## Competencies, Knowledge, and Skills for Chefs Working in School Nutrition Programs

Knows processes for maintaining food at the proper temperature during freezing, thawing, preparation, holding, serving, and cooling.
Knows how to implement corrective action if food is not cooked, held, or cooled to the proper temperature.
Knows how to label, date, and promptly store all food items.
Knows how to implement corrective action and report potential safety hazards and accidents.
Skilled in developing procedures for maintaining and monitoring the proper temperature of dry storage areas and refrigeration equipment.
<b>Competency 4.2: Maintains practices to manage workplace and environmental safety.</b>
Knows how to improve workplace safety for school nutrition program employees.
Knows how to store and maintain chemical supplies and other hazardous materials.
Knows how to follow all manufacturers' instructions for the proper use and care of equipment to prevent injuries, such as burns, cuts, etc.
Knows how to maintain a system for labeling and storing all chemicals and other hazardous materials in compliance with all local and State laws.
Knows how to implement a system for maintaining and cleaning ventilation hoods and other heat-generating equipment (i.e., ovens, warmers, and dish machines).
Skilled in developing and monitoring safe, effective methods for controlling insects, rodents, and other kitchen pests.
<b>Competency 4.3: Utilizes customer-oriented approaches to achieve and maintain quality service and engagement.</b>
Knows principles of sanitary food handling using Hazard Analysis and Critical Control Points (HACCP).
Knows Occupational Safety and Health Act and other laws that govern safety standards applying to food service establishments.
Knows food safety systems and laws.
Knows State and local sanitation and safety requirements for food service establishments.
Skilled in implementing HACCP
Skilled in monitoring and corrective action procedures for the HACCP system.
Skilled in implementing Standard Operating Procedures.
<b><i>Culinary Proficiency</i></b>
<b>Competency 5.1: Ensures that the foods selected are prepared, cooked, and served using methods that enhance flavor and attractiveness, preserve nutritive value, and promote freshness.</b>

## Competencies, Knowledge, and Skills for Chefs Working in School Nutrition Programs

Knows techniques to improve food quality and acceptability while maintaining compliance with meal standards.
Knows how to identify the availability and seasonality of fruits, vegetables, and fresh herbs.
Knows flavor profiles.
Knows meal service principles that encourage food quality.
Knows a variety of methods to assess food quality
Skilled in proper cooking techniques to retain nutrients in a variety of foods.
Skilled in selecting and storing seasonal fruits, vegetables, and fresh herbs.
Skilled in preparing a variety of fruits and vegetables using basic cooking methods.
Skilled in the basic processing of fruits, vegetables, and fresh herbs (peel, slice, dice, trim, etc.).
Skilled in creating basic sauces and stocks.
Skilled in enhancing food quality.
<b>Competency 5.2: Follows school nutrition guidelines and standards to create quality meals that appeal to school nutrition program customers.</b>
Knows basics of human nutrition.
Knows how to utilize culinary techniques to develop regionally specific and student-centered recipes.
Knows how to prepare school meals that meet the nutritional requirements for reimbursement as established by USDA regulations.
Skilled in food presentation.
<b>Competency 5.3: Demonstrating knowledge and skills in culinary arts and applying sound practices in food planning, food production, and service models.</b>
Knows how to calculate the yield of fresh fruits and vegetables and determine yield percentage.
Knows culinary fundamentals and production systems.
Knows weight and measurement conversions.
Skilled in speed scratch/scratch cooking techniques.
Skilled in batch cooking principles.
Skilled in general culinary mathematics.
<b><i>Menu Development</i></b>
<b>Competency 6.1: Collaborates with stakeholders to build and maintain customer satisfaction through enhanced menu development.</b>
Knows the impact of student preferences on menu planning.

Knows how to minimize food waste through menu planning.
Knows how to build and maintain customer satisfaction with innovative menu planning.
<b>Competency 6.2: Utilizes principles of menu planning to incorporate current food trends and create menus that improve student participation rates, while adhering to Federal requirements, policies, and program standards.</b>
Knows how to incorporate local foods in the school nutrition program menu.
Knows how to create processes to generate menu ideas.
Knows how to develop fresh ideas that provide solutions to menu challenges.
Knows how to inform menu planning based on the results of recipe development and testing.
Skilled at identifying, incorporating, and evaluating food trends.
Skilled in forecasting for menu planning.
Skilled in applying principles of menu planning that incorporate a variety of foods.
Skilled in menu writing that allows staff to prepare and serve food with available resources and equipment.
<b><i>Operation Management</i></b>
<b>Competency 7.1: Monitors and processes information and outcomes in the school nutrition program through analysis, evaluation, and reasoning to make informed decisions for the program.</b>
Knows the importance of discussing progress or needed changes with the school nutrition director.
Knows how to employ critical-thinking strategies for making key decisions in food service operations.
Knows the relationship between food production and the distribution system.
Skilled at time management.
<b>Competency 7.2: Designs, implements, and evaluates processes for managing staff scheduling and performance.</b>
Knows principles of effective delegation.
Knows how to develop employee schedules to ensure maximum use of labor hours.
Skilled in managing food production schedules.
Skilled in delegating job duties and responsibilities to others.
Skilled in planning and supervising food preparation and cooking activities of production sites.
<b>Competency 7.3: Establishes processes for maintaining food quality, palatability, and appearance.</b>

## Competencies, Knowledge, and Skills for Chefs Working in School Nutrition Programs

Knows production processes, quality control, and other techniques to maximize food production in large quantities.
Knows how to minimize food waste through food production processes.
Skilled in establishing work standards for the productivity of meals.
<b>Competency 7.4: Understands and establishes procedures to enhance food service operations.</b>
Knows meal service principles that enhance serving line appearance.
Knows how to implement systems for evaluating service techniques and serving lines.
Knows how to maintain a quality food service operation.
Skilled in identifying types of packaging for food presentation.
Skilled in managing serving lines and tray presentations.
Skilled in promoting and practicing quality customer service standards.
<b>Competency 7.5: Adheres to quality standards in developing, maintaining, and evaluating production and inventory records and reports within the school nutrition program.</b>
Knows the essential information and acceptable methods for preparing production records as required to maintain compliance within federal and State regulations.
Knows the importance of developing complete and accurate records and documentation.
Skilled in maintaining records and supporting documents in accordance with federal, state, and local regulations and policies.
Skilled in managing material and facility resources.
Skilled in establishing and monitoring inventory procedures.
Skilled in maintaining efficiency in the ordering process.
Skilled in streamlining inventory management.
<b>Competency 7.6: Demonstrates an understanding of operational systems (such as kitchen equipment technology, computer programs, and CN software) in the school nutrition program.</b>
Knows how to maintain and troubleshoot kitchen technologies.
Knows the value of technology in school nutrition financial management and accountability.
Skilled in basic computer operations and relevant computer programs.
Skilled in implementing appropriate technology when tracking inventory.
Skilled in utilizing technology and information systems to generate and submit reports.
Skilled in utilizing computers and high technology kitchen appliances.

<b>Competency 7.7: Maintains standards of the school nutrition program that align with federal, state, and local regulations and guidelines.</b>
No entry-level knowledge/skill statement
<b><i>Personnel Management</i></b>
<b>Competency 8.1: Provides leadership that encourages staff to support the vision and goals of the school nutrition program and enables professional growth and development through feedback, training, and encouragement.</b>
Knows methods to lead, direct, and inspire food service staff.
<b>Competency 8.2: Applies general management knowledge to educate staff on human resource policies, procedures, and practices.</b>
Knows basic human resources management techniques.
<b>Competency 8.3: Demonstrates the ability to interact and communicate with school nutrition program staff in a manner that builds and sustains relationships.</b>
Knows how to maintain emotional control.
Knows how to be an active listener.
Knows techniques to foster respect among peers.
Knows the fundamentals of creating a pleasant working environment for food service workers.
Skilled in promoting respect and appreciation for the individuals that make up the workforce.
Skilled in promoting a team approach among employees to problem-solve and meet program goals.
Skilled in establishing and maintaining cooperative and effective working relationships with others.
Skilled in treating employees and others with respect.
Skilled in maintaining a positive attitude and creating a positive image for the school nutrition program.
<b><i>Procurement</i></b>
<b>Competency 9.1: Identifies strategies for obtaining food and supplies while complying with applicable school nutrition program policies and procedures.</b>
Knows the fundamentals of developing or reviewing a specification to ensure the purchase of the highest quality product.
Knows forecasting methods to order accurate amounts of food and supplies.
Knows policies and procedures for receiving and accepting products delivered to the school nutrition program.



Skilled in ordering or requisitioning food and other supplies.
<b>Competency 9.2: Incorporates procurement best practices and complies with federal, state, and local procurement regulations and guidelines.</b>
Knows fundamentals of completing and maintaining accurate procurement processes.
<b><i>Training</i></b>
<b>Competency 10.1: Selects, develops, and evaluates training programs to ensure staff are adequately trained.</b>
Knows how to select and develop trainings with a variety of presentation methods.
Knows principles and methods for measuring the effectiveness of trainings.
<b>Competency 10.2: Incorporates instructional techniques that are effective for adult learners.</b>
Skilled in conducting culinary training for school nutrition program staff.
<b>Competency 10.3: Implements educational experiences for staff by incorporating various teaching modalities and topic areas.</b>
Knows how to train staff on the operation of commercial kitchen equipment.
Knows how to implement training to increase employee knowledge about safety, sanitation, and accident prevention.
Skilled in training staff on food production techniques, nutrient-retention techniques, and scheduling food preparation.
Skilled in providing employee training for HACCP procedures.
Skilled in demonstrating cooking techniques and equipment to staff using the “show, do, review” method.
Skilled in training staff on proper cooking temperatures and required corrective action as needed.

**Table A2***Advanced-Level Knowledge and Skill Statements for Chefs Working in School Nutrition Programs*

<b><i>Functional Area</i></b>
<b>Competency Statement</b> <b>Knowledge/Skill Statement</b>
<b><i>Recipe Development</i></b>
<b>Competency 1.1: Utilizes expertise in food preparation and industry standards to create recipes that are consistent in quality and quantity and meet school nutrition program meal patterns and nutrition standards.</b>
Knows methods to create and analyze recipes for the school nutrition program.
Knows the USDA recipe standardization process.
Knows how to develop recipe testing systems using the USDA Recipe Standardization Guide for School nutrition programs.
<b>Competency 1.2: Understands the importance of collaborating with stakeholders and utilizing resources to create menu items that enhance the students' school nutrition program experience.</b>
Knows how to collaborate to develop recipes for students with special dietary needs.
Knows how to collaborate to develop student-centered recipes.
Knows how to collaborate with other school nutrition program staff, parents, students, and other partners to test and develop menu items.
Knows how to utilize the Food Buying Guide.
Skilled in evaluating recipes for acceptability in school nutrition programs,
Skilled in utilizing the Food Buying Guide to ensure recipe compliance and accuracy.
<b><i>Stakeholder Engagement</i></b>
<b>Competency 2.1: Works collaboratively and effectively within the school nutrition program to achieve program-related goals.</b>
Knows how to collaborate with internal and external stakeholders (i.e., support groups, community partners, school boards, parent-teacher associations, teachers, and school nutrition professionals).
Knows how to collaborate as part of a team to implement program initiatives, including grants and cooperative agreement grants.
Skilled in collaborating with garden to cafeteria programs, if applicable.
Skilled at incorporating more locally sourced products into school nutrition programs.
<b>Competency 2.2: Actively promotes the school nutrition program to internal and external stakeholders.</b>

## Competencies, Knowledge, and Skills for Chefs Working in School Nutrition Programs

Knows appropriate channels for effectively communicating with school nutrition program stakeholders
Skilled in using marketing tools (including any available technology) and techniques to promote school nutrition programs and increase participation.
Skilled in enhancing the reputation and public perception of school nutrition programs.
Skilled in promoting the school nutrition department to customers and stakeholders.
Skilled in engaging communities through special events, catering, and/or promotion.
<b>Competency 2.3: Utilizes customer-oriented approaches to achieve and maintain quality service and engagement.</b>
Knows how to use data-driven methods to improve student satisfaction
Knows fundamentals of student engagement to identify student preferences.
<b>Competency 2.4: Anticipates, incorporates, and monitors food trends and student preferences for school meals.</b>
Knows how to engage the local community to identify and incorporate local preferences which may introduce students to a variety of foods.
Knows how to promote and serve local foods in the cafeteria.
Skilled in creating menu offerings that accommodate dietary needs and student food preferences.
<b>Competency 2.5: Knows and demonstrates methods of effective communication with supervisors, staff, and new and existing customers, and potential customers.</b>
Knows how to engage stakeholders.
Skilled at public speaking.
Skilled at presenting research and development findings.
Skilled at participating in public relations functions with new and existing customers/stakeholders.
Skilled at developing a rapport with administrators, school nutrition staff, teachers, and students to understand customer needs.
<b><i>Financial Accountability</i></b>
<b>Competency 3.1: Demonstrates understanding and practical knowledge of the school nutrition program's financial responsibilities and goals.</b>
Knows the financial goals of the school nutrition program.
Knows how to communicate with the school nutrition director and/or business manager to set and meet school nutrition program's financial goals.
Skilled in improving the cost efficiency of procurement.
<b><i>Food and Workplace Safety</i></b>

<b>Competency 4.1: Establishes practices that protect the health and well-being of all customers and staff through the safe handling of food during purchase, delivery, storage, preparation, and service.</b>
No Knowledge/Skill statements
<b>Competency 4.2: Maintains practices to manage workplace and environmental safety.</b>
No Knowledge/Skill statements
<b>Competency 4.3: Utilizes customer-oriented approaches to achieve and maintain quality service and engagement.</b>
Skilled in developing and implementing a system for documenting deficiencies and corrections by HACCP.
Skilled in identifying the critical control points within the production flow of food in the school nutrition program.
Skilled in developing and monitoring Standard Operating Procedures as a part of the food safety plan.
<b><i>Culinary Proficiency</i></b>
<b>Competency 5.1: Ensures that the foods selected are prepared, cooked, and served using methods that enhance flavor and attractiveness, preserve nutritive value, and promote freshness.</b>
Skilled in developing and evaluating food quality standards to help school nutrition staff assess menu items before service.
Skilled in developing and elevating flavor profiles in school meal recipes and menus.
Skilled in utilizing a variety of cooking techniques to increase acceptability and consumption.
<b>Competency 5.2: Follows school nutrition guidelines and standards to create quality meals that appeal to school nutrition program customers.</b>
Knows how to incorporate current food-related trends into school meals.
Knows how to utilize USDA Foods.
Skilled in developing creative and innovative school menus and recipes.
<b>Competency 5.3: Demonstrating knowledge and skills in culinary arts and applying sound practices in food planning, food production, and service models.</b>
Knows large-scale food production systems.
Knows how to identify and operate large production equipment.
Knows the role of forecasting in controlling under and over production.
Skilled in increasing the efficiency of food production in school kitchens.
Skilled in managing large-scale production systems.
<b><i>Menu Development</i></b>
<b>Competency 6.1: Collaborates with stakeholders to build and maintain customer satisfaction through enhanced menu development.</b>

## Competencies, Knowledge, and Skills for Chefs Working in School Nutrition Programs

Knows how to work with the menu development team in school nutrition programs.
Knows how to communicate with a registered dietitian nutritionist or director about any recommendations, menu inconsistencies, and modifications needing documentation.
Skilled in creating menus that meet the needs of students participating in the school nutrition program.
<b>Competency 6.2: Utilizes principles of menu planning to incorporate current food trends and create menus that improve student participation rates, while adhering to Federal requirements, policies, and program standards.</b>
Knows school meal pattern standards for menu planning.
Knows how to develop food-based menu planning that meets USDA meal pattern requirements.
Knows the basics of child nutrition and how it applies to menu planning.
Knows how to use the Dietary Guidelines for Americans, USDA Menu Planner for School Meals, and/or Food Buying Guide as menu planning tools.
Skilled in utilizing USDA Foods.
Skilled in developing a system for menu planning that includes cost analysis, forecasting, nutrient analysis, and student preferences.
<b><i>Operation Management</i></b>
<b>Competency 7.1: Monitors and processes information and outcomes in the school nutrition program through analysis, evaluation, and reasoning to make informed decisions for the program.</b>
Knows the basics of strategic planning.
Knows how to conceptualize new products, processes, and systems.
Knows how to balance analysis, wisdom, experience, and perspective when making decisions.
Knows how to interpret operational records and financial reports and apply the information to enhance operational efficiency.
<b>Competency 7.2: Designs, implements, and evaluates processes for managing staff scheduling and performance.</b>
Knows how to develop production schedules for the school nutrition program.
Knows how to revise production schedules for school nutrition programs based on labor or material shortages, backlogs, emergencies, and other interruptions.
Knows basic principles of key performance indicators.
Skilled in scheduling and coordinating the work of kitchen staff to ensure that food preparation is safe and clean, meets school nutrition program nutrition standards, and is appealing.
Skilled in setting performance standards for employees.
Skilled in scheduling all duties fairly for maximum efficiency and employee productivity.
Skilled in planning production schedules to effectively utilize resources and coordinate activities for the food service staff.

<b>Competency 7.3: Establishes processes for maintaining food quality, palatability, and appearance.</b>
Skilled in identifying school nutrition program food production methods to ensure foods are high quality and meet meal pattern standards.
<b>Competency 7.4: Understands and establishes procedures to enhance food service operations.</b>
Knows how to establish and maintain serving line efficiency.
<b>Competency 7.5: Adheres to quality standards in developing, maintaining, and evaluating production and inventory records and reports within the school nutrition program.</b>
Knows methods for developing accurate operational reports.
Knows physical and perpetual methods of recording food products and supplies in inventory and when to use each method.
Skilled in completing production records that clearly reflect the USDA meal pattern requirements
Skilled in documenting production data, including volume produced, consumption of raw materials, or quality control measures.
Skilled at evaluating trends to control costs and increase revenue.
<b>Competency 7.6: Demonstrates an understanding of operational systems (such as kitchen equipment technology, computer programs, and CN software) in the school nutrition program.</b>
Knows how to use child nutrition software (such as menu planning, nutrient analysis, and K12 management software).
<b>Competency 7.7: Maintains standards of the school nutrition program that align with federal, state, and local regulations and guidelines.</b>
Knows the fundamentals of local school wellness policy initiatives.
Knows the basics of the school nutrition program's role in menu-related local school wellness policy initiatives and assists in the implementation of the local wellness policy.
Knows federal, state, and local regulations and guidelines regarding school meals.
Knows how to collaborate in the launch of a Farm-to-School Program.
Knows how to incorporate a Farm-to-School program in the local school nutrition program.
Knows how to interpret meal pattern standards and information received from the USDA Food and Nutrition Services regarding school meals.
Knows, understands, and follows prescribed diet orders for students with special dietary needs.
Knows how to use Child Nutrition (CN) labels or product formulation statements for crediting foods.
Knows regulations for implementing offer-versus-serve (OVS) in school nutrition programs.
Skilled in maintaining program integrity and accountability regarding meal requirements and documentation.
<b><i>Personnel Management</i></b>

<b>Competency 8.1: Provides leadership that encourages staff to support the vision and goals of the school nutrition program and enables professional growth and development through feedback, training, and encouragement.</b>
Knows techniques for motivating school nutrition program staff and promoting cooperation.
Knows how to manage staff in ways that improve their ability to succeed on the job.
Skilled in effective leadership styles.
Skilled at motivating a team.
Skilled in guiding employees' developmental processes.
Skilled in working with various groups of people.
Skilled in coaching program staff.
Skilled in building relationships with teammates so that coaching efforts are received in a positive, developmental manner.
Skilled in mentoring school nutrition staff.
Skilled in providing staff with coaching, training, and opportunities to improve culinary skills and encourage career advancement.
<b>Competency 8.2: Applies general management knowledge to educate staff on human resource policies, procedures, and practices.</b>
Knows how to implement relevant school district staff policies.
Knows how to conduct meetings to keep school nutrition program staff informed and educated.
Knows civil rights legislation.
Knows district policies on student relations.
Knows district policies on interpersonal relationships.
Knows the importance and impact of working effectively with a multifaceted workforce.
Knows policies and procedures for evaluating employees.
Skilled in monitoring and correcting job performance.
Skilled in managing a workplace of employees with varied experience and abilities.
Skilled in evaluating employees according to district procedures.
Skilled in counseling employees on work-related concerns to encourage good employee morale and improve performance.
Skilled in monitoring and assessing employee performance to help determine departmental and individual training needs.
Skilled in using fair, constructive methods to correct employees and resolve differences.
Skilled in providing clear direction and communication of job expectations to school nutrition staff.
Skilled in written and verbal communications to keep employees informed.
<b>Competency 8.3: Demonstrates the ability to interact and communicate with school nutrition program staff in a manner that builds and sustains relationships.</b>
No advanced level knowledge/skill statement
<b>Procurement</b>

<b>Competency 9.1: Identifies strategies for obtaining food and supplies while complying with applicable school nutrition program policies and procedures.</b>
Knows procurement requirements for purchasing all goods and services for school nutrition program.
Knows processes for sourcing ingredients and supplies.
<b>Competency 9.2: Incorporates procurement best practices and complies with federal, state, and local procurement regulations and guidelines.</b>
Knows procedures for reporting possible compliance problems in food processing and packaging.
Knows how to evaluate procurement options using entitlement funds and local and commercial sourcing.
Knows federal, State, and local regulations and guidelines regarding school meal procurement.
<b>Training</b>
<b>Competency 10.1: Selects, develops, and evaluates training programs to ensure staff are adequately trained.</b>
Knows the importance of professional standards in training school nutrition staff.
Skilled in selecting and developing trainings with a variety of presentation methods.
Skilled in developing and implementing trainings that enhance learning and improve job skills.
Skilled in assessing the current learning needs of staff and tailoring trainings to align with individual learning preferences.
<b>Competency 10.2: Incorporates instructional techniques that are effective for adult learners.</b>
Knows how to implement training to comply with United States Department of Agriculture professional standards.
Knows principles of adult learning.
Knows principles and methods for teaching and instructing individuals and groups.
Skilled in training adults.
Skilled at teaching adults on a one-on-one basis and in groups.
<b>Competency 10.3: Implements educational experiences for staff by incorporating various teaching modalities and topic areas.</b>
Knows how to provide basic nutrition education and training to employees.
Skilled in training staff on proper menu substitutions if items are missing or have run out.
Skilled in properly training staff on the completion of food production records.





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