Meeting the Challenges of Serving Scratch-Prepared Foods in School Nutrition Programs

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Meeting the Challenges of Serving Scratch-Prepared Foods in School Nutrition Programs

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MEETING THE CHALLENGES OF SERVING SCRATCH-PREPARED FOODS IN SCHOOL NUTRITION PROGRAMS

EXECUTIVE SUMMARY

Background

The prevalence of ultra-processed foods (UPFs) in children's diets is a major public health concern. Between 1999 and 2018, UPF consumption among U.S. children aged 2–19 years increased from 61.4% to 67.0% of daily calories. High intake of UPFs is associated with obesity, metabolic disorders, poor cardiometabolic health, and academic difficulties. Although UPFs dominate children's diets, certain types (e.g., fortified cereals, plant-based meat alternatives, high-pressure processed foods) can provide public health benefits in specific contexts.

Scratch cooking in schools—preparing meals from basic, unprocessed ingredients—offers a viable pathway toward healthier school meals. Research shows that scratch-prepared meals improve nutritional quality; reduce calories, fat, and sodium; and increase student acceptance and participation. However, implementation is constrained by barriers including costs, staffing, facilities, and procurement regulations.

Objectives

The objectives of this study were to:

- Identify challenges school nutrition professionals face when offering scratch-prepared meals;
- Assess the prevalence of these challenges nationally; and
- Recommend strategies and best practices for overcoming barriers.

Methodology

The project was conducted in three phases:

Phase I: Literature Review: Examined existing evidence on scratch cooking in schools and UPF impacts.

Phase II: Review Panel: Experts from the school nutrition field, State agencies, chefs, food distributors, and equipment providers validated survey content.

Phase III: Data Collection & Analysis:

- Pilot survey (n=76) tested reliability. Cronbach's Alpha >0.80 confirmed strong internal consistency.
- National survey distributed to over 218,000 school nutrition professionals; 661 completed responses were analyzed.

- Respondents represented all U.S. states and territories except Delaware, Guam, the U.S. Virgin Islands, American Samoa, and the Northern Mariana Islands.

Key Findings

Approximately 64% of respondents were district-level directors/supervisors. Nearly one-third had 20+ years of experience. Most worked in small (<5,000 students) or very small (<1,000 students) districts. Seventy-five percent of respondents reported "some food prepared from scratch," while only 13.8% reported "most food prepared from scratch."

The major challenges associated with ingredients and scratch cooking in schools were additional food costs (81.5%) and compliance with procurement regulations (83%). The major challenges associated with recipes and scratch cooking were staff skill level (68.2%), developing crediting statements (59.2%), and staff support (51.4%). Small districts reported more difficulty adjusting recipe serving sizes, and decentralized production increased quality consistency issues. The leading barriers associated with menus and scratch cooking in schools were additional labor costs (65.8%), food costs (60.8%), and staff skill level (58.2%). Site-level staff rated food safety and staff skill as greater challenges than district administrators. Regional variability was evident in cycle menu development and cost calculation.

When survey respondents were asked to identify strategies to overcome these challenges, seven themes emerged:

Staffing & Training: Increase wages, provide culinary training, and improve leadership support.

Financial Management: Advocate for higher reimbursements, pursue grants, bulk purchasing.

Procurement & Vendor Relations: Simplify United States Department of Agriculture (USDA) rules, use purchasing cooperatives, partner with multiple vendors.

Operations & Menu Planning: Phase in scratch recipes, use cycle menus, hybrid USDA/scratch approaches.

Facilities & Equipment: Invest in modern kitchens and centralized production models.

Policy & Regulations: Streamline compliance, support universal meals, and reduce paperwork.

Collaboration & Partnerships: Build partnerships with farms, culinary schools, and regional networks.

Conclusions

The transition to scratch cooking in schools holds significant promise for improving children's diets and health outcomes. Systemic barriers, particularly food and labor costs, procurement regulations, workforce training gaps, and facility limitations make large-scale implementation difficult.

Findings suggest the following challenges. Financial issues are the most pressing, especially for frontline staff. Workforce skill gaps and administrative burdens hinder recipe and menu development. Local context (district size, production style, state policies) strongly shapes challenges.

Applications

For School Districts:

- Start small and introduce scratch recipes gradually.
- Invest in culinary training and professional development.
- Balance high-cost items with budget-conscious menu planning.

For Policymakers and Funders:

- Increase federal/state reimbursement rates.
- Expand grant opportunities for training and equipment.
- Streamline procurement and compliance processes.

For Community Partners and Vendors:

- Strengthen farm-to-school supply chains.
- Partner with local colleges and culinary institutions.
- Share best practices across districts.

For Researchers:

- Examine contextual differences (e.g., district size, location, production models).
- Use mixed-methods research to better capture staff and student perspectives.

INTRODUCTION

Background

The escalating prevalence of ultra-processed foods (UPFs) in children's diets has become a pressing public health concern. According to Lobstein, T., et al. (2018), UPFs are “Foods that have been extensively modified through industrial processes, containing ingredients that are not typically found in the kitchen, and often high in added sugars, unhealthy fats, and sodium, and low in essential nutrients and fiber” (Lobstein et al., 2018, p. 15). Their widespread consumption has been linked to various adverse health outcomes in children, including obesity, metabolic disorders, and developmental issues (Monteiro et al., 2018). Schools, as pivotal environments for shaping children's dietary habits, have the potential to counteract these trends through the implementation of scratch cooking—preparing meals from basic, unprocessed ingredients. However, transitioning to scratch cooking in school settings presents numerous challenges.

Prevalance and Health Impacts of Ultra-Processed Foods in Children’s Diets

Recent studies indicate a significant increase in UPF consumption among children globally. In the United States, data from the National Health and Nutrition Examination Survey (NHANES) revealed that the proportion of energy intake from UPFs among youths aged 2–19 years rose from 61.4% in 1999 to 67.0% in 2018 (Wang et al., 2021).

High UPF intake in children has been associated with various negative health outcomes. Higher UPF consumption was linked to greater increases in BMI and waist circumference over time (Hall et al., 2019). Elevated UPF intake has been correlated with adverse cardiometabolic risk factors, including higher fasting glucose levels and lower HDL cholesterol (Juul & Hemmingsson, 2015). Early and frequent consumption of UPFs may lead to micronutrient deficiencies and has been suggested to compromise academic abilities in children and adolescents (Fardet & Rock, 2019). Associations have been observed between high UPF consumption and increased risks of asthma, hypertension, and dental caries in children (Moubarac et al., 2017).

Still, recent scholarship urges more nuance regarding UPFs: negative impacts appear to depend on specific formulations (e.g., sodium, free sugars, refined starches, certain additives) rather than “processing” per se, and some UPFs can deliver nutritional or public-health benefits in defined contexts (e.g., fortification and food security). (Levine, 2023; Trumbo et al., 2024).

Several UPFs (notably fortified ready-to-eat cereals) contribute vitamins and minerals that are in short supply in many populations. Recent analyses report that cereal consumption is associated with higher intakes of fiber and key micronutrients, and with better overall diet quality across age and income groups. Evidence from national surveys in Europe and the Netherlands shows voluntary fortification raises habitual intakes of vitamins A, B-complex, C, D, and E, calcium, and iron, reducing inadequacy prevalence (Zhu et al., 2023; Derbyshire, 2025).

Plant-based meat alternatives (PBMAs) such as hummus and tofu are typically ultra-processed. Recent comparative analyses indicate that they often provide comparable protein to meat, with lower

saturated fat and higher fiber on average, and many are fortified with B12, iron, and zinc (Andreani et al., 2023; Lindberg et al., 2024/2025; De Brie et al, 2025).

High-pressure processing and improved packaging, often used in UPFs, help inactivate pathogens and enzymes, extend shelf life, and reduce waste. Ultimately, this enhances food safety and stability (Teshome et al., 2022).

Benefits of Scratch Cooking in School Settings

Implementing scratch cooking in schools has been associated with numerous benefits, including improved nutritional quality of meals, positive health outcomes for students, and increased student acceptance and participation in school meal programs.

Scratch-cooked meals are lower in additives and richer in nutrients. A study by Gray et al. (2015) showed significant improvements in fat profiles and nutrient levels in childcare menus using scratch cooking. The LiveWell@School Food Initiative observed reductions in calories, saturated fat, and sodium in scratch-cooked meals (Woodward-Lopez et al., 2016).

Scratch cooking can also improve student participation in school meal programs. Saxe-Custack et al. (2021) found increased food acceptance among students involved in chef-led cooking programs. Some schools saw a 16% rise in meal participation (Chef Ann Foundation, 2023). Additionally, engaging students in cooking activities fosters healthy eating behaviors and connects schools with local agriculture and communities (Moubarac et al., 2017).

Challenges to Implementing Scratch Cooking in Schools

Despite its benefits, several barriers hinder the widespread adoption of scratch cooking in schools. Many schools lack proper kitchens and equipment (Ralston et al., 2008). Hiring and training skilled staff is difficult (Strozykowski et al., 2021). Initial investments in food, labor, and training associated with scratch cooking are costly (Monteiro et al., 2018). Creating compliant and appealing scratch menus is challenging (Wagner et al., 2019). Preparing scratch meals is time-consuming (Strozykowski et al., 2021). Consistent access to fresh ingredients is problematic in some areas (Rauber et al., 2021).

The pervasive consumption of ultra-processed foods among children poses significant health risks. Schools have a vital role in countering these trends through scratch cooking. Therefore, the objectives of this study are to identify the following items:

1. The challenges affecting the capability of school nutrition professionals to offer scratch-prepared foods in schools (i.e., cost, ability to control food quality, ability to comply with nutrition standards, equipment and facility constraints, the skill level of staff, availability of staff, availability of local and traditional foods, food safety concerns, stakeholder demand, etc.);
2. The degree to which these challenges are prevalent in school meal programs across the United States; and

3. Recommendations of strategies, techniques, and best practices to mitigate these challenges (i.e., training, resources, grants, etc.).

METHODOLOGY

Research Overview

This project included the four phases listed below:

- Phase I: Literature Review (to support draft survey development)
- Phase II: Review Panel (to assess the draft survey for face and content validity)
- Phase III: Data Collection and Analysis
- Pilot online survey (to assess the draft survey for internal consistency and inter-rater reliability)
- National online survey

Phase I: Literature Review

The primary investigator conducted a literature review in the University of Southern Mississippi's online library in Phase I. Within that system, the EBSCOhost platform was utilized, all databases were selected, and the following filters were selected: 2018 to present, peer-reviewed academic journals, and English language. Some of the keywords used in the search included scratch food preparation in schools, scratch cooking in schools, raw ingredients school nutrition, cooking skills school nutrition, and culinary skills school nutrition. The initial survey draft, which was created with the assistance of Dr. Ruaa Al Juboori, Assistant Professor in the Department of Public Health and a Statistician at the Institute of Child Nutrition (ICN), was developed in Qualtrics and consisted of 10 pages/questions (Appendix A). The first page was a consent form, explaining the study, discussing the risks and benefits of participation, and informing individuals that participation was voluntary and confidential. Participants who selected "I consent to participate in this study" were advanced to question/page two, while participants who selected "I DO NOT consent to participate in this study" were advanced to the end of the survey.

Question two asked participants to identify which state or U.S. territory their school was located by using a drop-down box. Question number three asked participants to select the answers that most closely match their current job title and student enrollment at their school district. The answer choices for question three were:

- District-Level School Nutrition Director or Supervisor
- Site-Level School Nutrition Manager
- School Nutrition Staff/Worker
- School Nutrition Other, please specify.

Question number four asked participants, "What is the student enrollment in your school district?" The answer choices were:

- Less than 1,000 (Very Small)
- 1,000 to 5,000 (Small)
- 5,001 to 20,000 (Medium)
- Greater than 20,000 (Large)

For question five, participants were presented with a list of nine potential challenges related to ingredients and scratch-prepared foods in schools. They were instructed to select and drag five challenges

to a box on the right, ranking them from 1 (greatest challenge) to 5 (least). If participants identified additional challenges, they could use the "Other" text boxes at the bottom of the page.

Question six provided a text box for participants to describe ways to overcome the challenges associated with ingredients and offering scratch-prepared foods in schools identified in question five.

Question sets "seven and eight" and "nine and 10" were worded and formatted similarly to question set "five and six." However, for question seven, participants were provided with a list of potential challenges associated with recipes and offering scratch-prepared food in schools, and for question nine, participants were provided with a list of potential challenges associated with menus and offering scratch-prepared food in schools.

Once a draft survey was developed, an application was submitted to and subsequently approved by The University of Southern Mississippi's Internal Review Board.

Phase II: Review Panel

In Phase II, 48 individuals were invited to participate in a review panel to assess the initial draft survey for face and content validity. Review panel participant selection consisted of non-probability purposive sampling, with at least two representatives from each of the following areas being invited:

- Chefs with two or more years of experience working in the school nutrition setting.
- Representatives from food distribution organizations who provide food to school meal programs.
- Representatives from commercial foodservice equipment manufacturers/distributors who provide equipment for school meal programs.
- Representatives from school district administrative offices in school districts where scratch food production is being emphasized.
- School nutrition directors (who are not chefs) from school districts where scratch food production is emphasized.
- State agency CNP representatives with two or more years of experience supporting school districts where scratch food production is emphasized.
- Culinary Institute of Child Nutrition representatives.

Review panel participant recommendations were sought from ICN directors/assistant directors, USDA FNS representatives, allied school nutrition professionals who are members of the ICN's National Advisory Board, and State agency school nutrition directors.

Appendix B is an example of the email that was used to obtain recommendations for review panel participants. Once a potential list of review panel participants was identified, researchers sent out invitations (Appendix C) to participate in the review panel. The invitation included an explanation and instructions for participating in the study, a consent form (Appendix D), a link to the survey in Qualtrics, and a survey evaluation form (Appendix E). Consenting participants were asked to complete, save, and return the survey evaluation form via email.

Of the 48 individuals invited, 11 participated in the review panel. Based on review panel recommendations, the following revisions were made. The answer choices for question three were increased from four to six and updated as follows:

- District-Level School Nutrition Director or Supervisor
- District-Level School Nutrition Staff, please specify job title _____
- District-Level Staff, please specify job title _____
- Site-Level School Nutrition Manager/Supervisor
- Site-Level School Nutrition Staff, please specify job title _____
- Site-Level Staff, please specify job title _____

The list of potential challenges in question six was reduced from nine to six and reworded as follows:

- Buying local foods
- Participating in a Farm-to-School program
- Writing bid specifications
- Finding vendors for all ingredients
- Additional food cost
- Complying with federal/state/local purchasing regulations

This list of potential challenges for question nine was reduced from 12 to 11 and updated as follows:

- Maintaining or increasing participation
- Menu variety
- Developing cycle menus
- Additional food costs
- Additional labor costs
- Calculating food costs
- Students with special dietary needs
- Food safety
- The skill level of staff
- Equipment barriers/challenges
- Facility barriers/challenges

Once the survey was revised (Appendix F), it was submitted to the USDA FNS for review. Based on feedback from the USDA, the following survey revisions were made (Appendix G). For question three, regarding job titles, the answer choice "Other, please specify" was added. Additionally, five questions were added related to personal and program characteristics of participants. Those questions are provided below.

How many years have you worked in School Nutrition Programs?

- 1 to 5 years.
- 6 to 10 years.
- 11 to 15 years.
- 16 to 20 years.
- Greater than 20 years.

What percent of students are approved for free and reduced-price meals in your school district?

- 0–19%
- 20–39%
- 40–59%
- 60–79%
- 80% or greater

What is the percent average daily participation (%ADP) of students in the National School Lunch Program (NSLP) at your school or district?

- 0–24%
- 25–49%
- 50–74%
- 75% or greater

Which answer below best describes the community where your school or job site is located?

- City: located in an urban area and city with a population of 100,000 or more.
- Suburb: located outside a principal city, but inside an urban area with a population of 100,000 or more.
- Town: located 10 or more miles from a city or suburb.
- Rural: located 2.5 or more miles from a town.

Which production style best describes the school nutrition program throughout your school district?

- Most food items are prepared from scratch.
- Some food items are prepared from scratch.
- No food items prepared from scratch.

Phase III: Data Collection and Analysis

Pilot Data Collection.

The draft survey was validated for internal consistency and inter-rater reliability. The pilot consisted of a random sample of 500 school nutrition directors representing the seven USDA regions. The pilot sample was provided by Market Data Retrieval, an organization specializing in providing sample population contact information.

Potential participants were sent an email inviting them to participate in the online survey (Appendix H). Two weeks after the email invitation was sent, pilot sample participants were sent an email reminder (Appendix I). The total data collection period for the pilot was three weeks. Seventy-six people participated in the pilot.

Pilot Data Analysis.

The focus of the pilot was on evaluating the internal consistency and inter-rater reliability of the matrix-style survey questions 10, 12, and 14 of the national survey. Cronbach's Alpha values were used to evaluate internal consistency. Inter-rater reliability was measured with Kendall's W (Kendall's Coefficient of Concordance).

National Survey Data Collection.

A convenience sample of 218,744 school nutrition directors representing all USDA regions was sent an email letter inviting them to participate in the online national survey (Appendix H). The sample included a list of all the contacts in the Institute of Child Nutrition's Database of contacts. Two weeks after the email invitation was sent, the sample participants were sent an email reminder (Appendix I). The total data collection period for the national survey was six weeks.

National Survey Data Analysis.

Descriptive statistics were used to compute quantitative data (frequencies, percentages, means, modes, standard deviations, and internal consistency). Kruskal-Wallis tests and post hoc analyses were used for examining differences in ranked menu challenges by job type, enrollment size, production style, and state. For open-ended survey data (survey questions 11, 13, 15, identify strategies for overcoming challenges associated with serving scratch prepared foods in schools), the researcher categorized the responses by theme. The data from these three questions were combined prior to thematic analysis because there was no discernible difference in the comments offered by respondents between the ingredients question (question 11), the recipe question (question 13), and the menus question (question 15).

RESULTS AND DISCUSSION

Pilot Survey Results

A total of 76 individuals responded to the pilot survey. Three participants did not attempt any questions; two of these participants did not provide consent and did not begin the survey, and one consented but did not proceed with the survey. Fourteen participants stopped responding after question five and did not answer question six or subsequent questions.

Cronbach's Alpha was utilized to evaluate the internal consistency of each of the matrix-style questions (survey question numbers 10, 12, and 14). All Cronbach's Alpha values were above 0.80, indicating strong internal consistency. This suggests that the selected challenges within each category reliably measured cohesive constructs related to the specific aspects of scratch cooking, such as sourcing ingredients, following recipes, and planning menus.

Inter-rater reliability was measured with Kendall's W. The non-significant results indicated a low or moderate agreement among participants on the ranking of challenges associated with scratch cooking in each of the matrix-style questions (survey question numbers 10, 12, and 14). This suggests that participants had varied perspectives on which challenges were most important for each question area (ingredients, recipes, and menus). Such variability could be due to differences in the contexts or operational needs of each participant, such as the size of their school district, available resources, or specific experiences with scratch cooking.

Based on the results of the pilot, the project statistician recommended the removal of two of the three "Other, please specify in the box below" answer options to each of the matrix-style questions (numbers 10, 12, and 14) to simplify the data analysis process. No additional changes were made to the survey based on pilot results.

Question 10: Challenges Related to Ingredients—Internal Consistency

Cronbach's Alpha=.850. N of Items=6 (calculated without including the other option)
Cronbach's Alpha=.810. N of Items=6 (calculated with including the other option)
The reliability analysis for Question 10, with seven items, yields a Cronbach's Alpha of 0.810, indicating strong internal consistency among challenges related to ingredients and scratch-cooking in schools. The additional "Other" item had a low mean (0.17) and minimal correlations with other items (< 0.15), suggesting it captures unique challenges.

The inter-item correlation matrix shows strong correlations between "Buying local foods" and "Participating in a Farm-to-School program" (r = 0.612) and between "Finding vendors" and "Complying with regulations" (r = 0.608), highlighting interconnected challenges related to procurement and compliance. Below are the other option specifications:

Question 10: Challenges Related to Ingredients—Inter-rater Reliability

Results of Kendall's W Test.

The results of the Kendall's W test indicate a low level of agreement among participants regarding the ranking of challenges associated with scratch cooking in schools (see Tables 1A and 1B below). The Kendall's W coefficient was 0.152, which suggests weak agreement across the participants' responses. A chi-square value of 6.071 (df = 5, p = 0.299) further indicates that the observed variability in the rankings is not statistically significant at the 0.05 level, implying that the rankings are likely influenced by chance rather than a consistent pattern among respondents. The mean ranks show that participants gave relatively higher priority to challenges such as writing bid specifications (mean rank = 2.75) and complying with purchasing regulations (mean rank = 2.88). Conversely, challenges like participating in a Farm-to-School program (mean rank = 4.75) were ranked lower on average, suggesting varied opinions on their importance. These findings highlight the diverse perspectives among respondents, pointing to the need for further exploration of context-specific barriers and preferences through qualitative insights or subgroup analyses (e.g., by USDA region or years of experience).

Table 1A

Mean Rank of Responses to Question Number 10, Challenges Related to Ingredients and Scratch Cooking in Schools

Items	Mean Rank
Buying local foods.	3.63
Participating in a Farm-to-School program.	4.75
Writing bid specifications.	2.75
Finding vendors for all ingredients.	3.75
Additional food cost.	3.25
Complying with federal/state/local purchasing regulations.	2.88

Table 1B

Results of Kendall's W Test—Question Number 10, Challenges Related to Ingredients and Scratch Cooking in Schools

Test Statistics	Values
N	8.000
Kendall's W	0.152
Chi-Square	6.071
df	5.000
Asymp. Sig.	0.299

Question 12: Challenges Related to Recipes—Internal Consistency

Cronbach's Alpha=.832. (calculated without including the other option). Cronbach's Alpha=.824. (calculated with including the other option)

The reliability analysis for Question 12, examining challenges associated with recipes and scratch-cooking in schools, resulted in a Cronbach's Alpha of 0.824, indicating good internal consistency across the 13 items. This suggests that the items reliably measure similar challenges faced in school recipe preparation. Item means vary, with "The skill level of staff" having the highest mean (0.51) and "Other, please specify" the lowest (0.03), indicating that some challenges are more commonly reported than others. The inter-item correlation matrix reveals moderate relationships, notably between "Finding recipes" and "Developing crediting statements" (r = 0.478) and between "Getting staff support" and "Skill level of staff" (r = 0.613).

Question 12: Challenges Related to Recipes—Inter-rater Reliability

The Kendall's W test was conducted to assess the level of agreement among participants on the top challenges associated with recipes in scratch cooking (see tables 2A and 2B below).The analysis yielded a Kendall's W value of 0.459, suggesting moderate agreement among participants in their rankings. The chi-square value of 15.154 (df = 11, p = 0.176) indicates that the observed level of agreement is not statistically significant at the 0.05 level. This suggests that the participants did not strongly agree on the ranking of these challenges beyond what might occur by chance.

In terms of the mean ranks, participants identified the skill level of staff (mean rank = 3.00) as one of the top challenges. In contrast, challenges like gathering other stakeholders' input or preferences (mean rank = 11.00) and gathering student preferences (mean rank = 9.00) were ranked lower, indicating they were perceived as less critical. The moderate agreement reflected by Kendall's W highlights some variability in participants' perspectives, which may reflect differences in their contexts or operational priorities. Overall, these findings underscore the need to further explore recipe-related challenges, possibly through qualitative feedback or subgroup analysis (e.g., by school size or staff role).

Table 2A

Mean Rank of Responses to Question Number 12, Challenges Related to Recipes and Scratch Cooking in Schools

Ranks	Mean Rank
Finding recipes.	4.00
Changing the serving size of recipes.	4.00
The skill level of staff.	3.00
Developing crediting statements for the recipes.	5.33
Consistent quality of prepared foods over time.	5.33
Consistent quality of prepared foods site-to-site.	8.33
Providing necessary food safety training.	7.67
Getting staff support.	5.00
Gathering student preferences.	9.00
Gathering other stakeholders' (parents, teachers, etc.) input/preferences.	11.00
Customer satisfaction.	6.67
Students with special dietary needs.	8.67

Table 2B

Results of Kendall's W Test—Question Number 12, Challenges Related to Recipes and Scratch Cooking in Schools

Test Statistics	Values
N	3.000
Kendall's W[a]	0.459
Chi-Square	15.154
df	11.000
Asymptomatic Significance	0.176

[a]Kendall's Coefficient of Concordance

Question 14: Challenges Related to Menus—Internal Consistency

Cronbach's Alpha=.826. (calculated without including the other option)
Cronbach's Alpha=.817. (calculated with including the other option)

The reliability analysis for Question 14, which assessed challenges associated with menus and scratch-cooking in schools, yielded a Cronbach's Alpha of 0.817, indicating good internal consistency across the 12 items. This suggests that the items are consistently measuring related challenges faced in school menu planning. Item means range from 0.03 (Other, please specify) to 0.42 (Skill level of staff), indicating variability in how frequently different challenges were identified. The inter-item correlation matrix shows moderate correlations among items, with notable relationships between "Additional labor costs" and "Facility barriers/challenges" ($r = 0.473$), and "Skill level of staff" and "Facility barriers/challenges" ($r = 0.465$), suggesting that these challenges are interconnected. The low correlation of the "Other" item with other items (all values < 0.20) indicates that it captures unique or less common challenges.

Question 14: Challenges Related to Menus—Inter-rater Reliability

The Kendall's W test was used to evaluate the level of agreement among participants regarding the top challenges associated with menus in scratch cooking (See table 3A and 3B below). The analysis produced a Kendall's W value of 0.430, suggesting moderate agreement in participants' rankings. The chi-square value of 12.909 ($df = 10$, $p = 0.229$) indicates that the observed agreement is not statistically significant at the 0.05 level. This implies that the level of agreement observed may have occurred by chance and reflects some variability in participants' perspectives on the challenges.

The moderate level of agreement suggests that while participants identified similar challenges, there were differences in how they prioritized them. This variability may reflect differences in operational contexts, such as variations in school size, resources, or staff capacity. Further exploration through qualitative feedback or subgroup analysis could provide deeper insights into the specific challenges associated with menu planning and execution in scratch cooking across different settings.

Table 3A

Mean Rank of Responses to Question Number 14, Challenges Related to Menus and Scratch Cooking in Schools

Ranks	Mean Rank
Maintaining or increasing participation.	7.67
Menu variety.	8.00
Developing cycle menus.	7.33
Additional food costs.	4.33
Additional labor costs.	2.67
Calculating food costs.	3.67
Students with special dietary needs.	9.67
Food Safety.	7.67
The skill level of staff.	4.67
Equipment barriers/challenges.	5.00
Facility barriers/challenges.	5.33

Table 3B

Results of Kendall's W Test—Question Number 14, Challenges Related to Menus and Scratch Cooking in Schools

Test Statistics	Values
N	3.000
Kendall's W	0.430
Chi-Square	12.909
df	10.000
Asymptomatic Significance	0.229

National Survey Results

A total of 1072 individuals opened the national survey. However, 60 individuals selected "Do Not Consent," and 14 did not answer the consent question. Additionally, 337 respondents did not complete any questions beyond demographics. Therefore, the total number of participants that completed the national survey was 661.

Demographics

Respondents represented every state of the U.S. Territory except for Delaware, Guam, the U.S. Virgin Islands, American Samoa, and the Northern Mariana Islands. Most respondents were from Texas (n=64, 9.7%) and California (n=61, 9.2%) (Table J1 in the appendices).

Many respondents (N=422, 63.8%) were school nutrition directors or district-level supervisors (Table 4). Only 15.3% (N=101) of respondents were site-level school nutrition managers or supervisors. The remainder of the participants identified as district-level or school-level nutrition staff. Tables K1 through K6 in Appendix K provide a comprehensive listing of all specific position titles participants identified when with the following general position titles were selected: district-level school nutrition staff, district-level staff, site-level school nutrition staff, and site-level staff.

Almost one-third of participants reported working in school meal programs for greater than 20 years (N=191, 28.9%). The remainder of respondents were evenly distributed regarding the number of years worked, from one to 20 years (Table 5).

Table 4

Job Title (n = 661)

Job Title	**N**	**%**
School Nutrition Director or Supervisor	422	63.8%
School Nutrition Staff	54	8.2%
Staff	9	1.4%
Site-Level		
School Nutrition Manager/Supervisor	101	15.3%
School Nutrition Staff	23	3.5%
Staff	16	2.4%
Other	36	5.4%

Table 5

Years Working in School Meal Programs (n = 661)

Years	N	%
1 to 5 years	131	19.8%
6 to 10 years	122	18.5%
11 to 15 years	126	19.1%
16 to 20 years	91	13.8%
Greater than 20 years	191	28.9%

Most respondents were from very small school districts (N=250, 37.8%). Only 4.1% (n=27) were from very large school districts (Table 6). The distribution of respondents based on the percentage of students eligible for free/reduced-price meals was even (Table 7). Most, 28.7% (N=190) reported 40–59% eligibility. Only 6.8% (N=45) reported 0–19% eligibility. Approximately one-half (N=328, 49.6%) of participants reported a percent average daily participation (ADP) rate in the National School Lunch Program of 50–74% , while 3.5% (N=23) reported a percentage ADP rate of 0–24% (Table 8). The distribution of respondents based on location type was distributed evenly (Table 9). The location of "Town" represented the largest group at 31.0% (N=205), while suburbs represented the smallest group (19.5% (N=129).

Table 6

School District Student Enrollment (n = 661)

Enrollment Size	N	%
Less than 1,000 (very small)	250	37.8%
1,000 to 5,000 (small)	210	31.8%
5,001 to 20,000 (medium)	120	18.2%
20,000 to 40,000 (large)	54	8.2%
Greater than 40,000 (very large)	27	4.1%

Table 7

Free/Reduced Price Meals in School District (n = 655)

Percent of Students	N	%
0–19%	45	6.8%
20–39%	149	22.5%
40–59%	190	28.7%
60–79%	99	15.0%
80% or greater	172	26.0%

Table 8

Average Daily Participation (ADP) Percentage of Students in the NSLP (n = 650)

ADP % of Students	N	%
0–24%	23	3.5%
25–49%	102	15.4%
50–74%	328	49.6%
75% or greater	197	29.8%

Table 9

Location of School or Job Site (n = 657)

Location	N	%
City	133	20.1%
Suburb	129	19.5%
Town	205	31.0%
Rural	190	28.7%

The overwhelming majority of respondents indicated that the production style in their district was "Some food items prepared from scratch" (N=492, 74.4%), while 13.8% (N=91) reported "most food items were prepared from scratch," and 11.8% (N=78) indicated "no food items were prepared from scratch" (Table 10).

Table 10

School Production Style (n = 661)

Production Style	N	%
Most food items are prepared from scratch.	91	13.8%
Some food items are prepared from scratch.	492	74.4%
No food items prepared from scratch.	78	11.8%

Quantitative Data: Challenges Associated with INGREDIENTS and Scratch Cooking in Schools

Table 11 (below) provides an overview of the greatest challenges associated with ingredients and scratch cooking identified by survey respondents. Additional food costs (N=444, 81.5%) and complying with federal/state/local purchasing regulations (N=377, 83.0%) were most often identified. Approximately one quarter (N=133, 24.4%) of respondents ranked "finding vendors for all ingredients" as a major challenge associated with scratch cooking in schools.

Table 11

Ranked Challenges Associated with Ingredients and Schools (n=545)

	N = 545		Rankings			
Challenges	**N**	**%**	**M**	**SD**	**Median**	**Mode**
Additional food costs	444	81.5%	2.28	1.306	2	1
Complying with federal/state/local purchasing regulations	377	83.0%	2.38	1.404	2	1
Buying local foods	330	60.6%	3.23	1.462	3	2
Participating in a farm-to-school program	251	46.1%	3.61	1.612	4	5
Writing bid specifications	248	45.6%	3.45	1.611	3	2
Finding vendors for all ingredients	232	42.6%	3.04	1.553	3	3
Other	133	24.4%	1.83	1.438	1	1

*Note: an additional 64 participants wrote something in the "other, please specify in the box below ," but did not rank these answer choices.

For the challenge "additional food cost," significant differences were observed by job title ($p = 0.033$) and district enrollment size ($p = 0.038$). Specifically, site-level school nutrition staff reported greater difficulty (median rank = 3) compared to district-level staff (median rank = 1.5), indicating frontline staff experience more cost-related barriers. Similarly, for the challenge "Complying with Federal/State/Local Purchasing Regulations," significant differences were noted by job title ($p = 0.033$) and district enrollment ($p = 0.040$), with site-level staff rating this issue as more difficult (median = 1) compared to district-level staff (median = 2). Additionally, the challenge "Participating in a Farm to School

Program" differed significantly by production style ($p = 0.028$). Respondents from districts that prepare some items from scratch rated this as a greater challenge (median = 4) than those from non-scratch or fully scratch-cooking districts (median = 3).

The quantitative data on ingredient-related challenges highlight several critical barriers faced by school meal programs in implementing scratch cooking. The most frequently identified issues were additional food costs and the burden of complying with federal, state, and local purchasing regulations. These findings emphasize that financial constraints remain at the forefront of obstacles, with frontline staff—particularly site-level employees—reporting greater difficulties compared to district-level administrators. This difference suggests that those directly engaged in day-to-day operations experience the financial and administrative pressures more acutely.

The challenge of complying with procurement regulations also reflects systemic complexity, where navigating bid specifications and legal requirements can slow down or even deter efforts to source fresh, local ingredients. Interestingly, while farm-to-school initiatives and local procurement are often promoted as solutions for improving meal quality, the data indicate that these approaches are also perceived as burdensome, especially in districts that only partially implement scratch cooking. This suggests that the benefits of local sourcing may be counterbalanced by administrative and logistical hurdles.

The significant differences observed across job titles and district enrollment sizes reinforce the importance of contextualized support. Smaller districts and site-level staff may require targeted financial assistance, simplified procurement processes, and technical guidance to overcome these barriers. Additionally, differences across production styles imply that strategies must be tailored to whether districts are fully, partially, or not at all engaged in scratch cooking.

These results reveal that cost and compliance barriers are deeply intertwined, shaping the feasibility of scratch cooking across diverse school settings. Addressing these challenges will likely require coordinated policy changes, increased reimbursement rates, and greater flexibility in procurement regulations. At the local level, capacity building, training, and collaborative purchasing arrangements could help reduce the burden on individual schools and districts.

Quantitative Data: Challenges Associated with RECIPES and Scratch Cooking in Schools

The major challenges associated with recipes and scratch cooking in schools were "the skill level of staff" (N=376, 68.2%), "developing crediting statements for recipes" (N=326, 59.2%), and "getting staff support (N=283, 51.4%). Only 16.7% report "gathering other stakeholders' (parents, teachers, etc.) input/preferences" as a major challenge associated with recipes.

Table 12

Ranked Challenges Associated with Recipes and Schools (n=551)

	N = 551		Rankings			
Challenges	**N**	**%**	**M**	**SD**	**Median**	**Mode**
The skill level of staff	376	68.2%	2.27	1.715	2	1
Developing crediting statements for recipes	326	59.2%	2.74	1.949	2	1
Getting staff support	283	51.4%	3.07	2.095	3	2
Consistent quality of prepared foods over time	243	44.1%	3.91	2.141	4	4
Consistent quality of prepared foods site-to-site	234	42.5%	3.55	2.229	3	2
Finding recipes	199	36.1%	3.35	2.869	3	1
Customer satisfaction	175	31.8%	4.63	2.732	4	5
Students with special dietary needs	172	31.2%	4.55	2.850	4	5
Changing the serving size of recipes	166	30.1%	4.42	3.042	4	3
Providing necessary food safety training	158	28.7%	4.33	3.015	3	3
Gathering student preferences	154	27.9%	4.57	2.729	4	4
Gathering other stakeholders' (parents, teachers, etc.) input/preferences	92	16.7%	5.61	3.354	5	5
Other	33	6.0%	3.36	3.101	3	1

*Note: an additional 13 participants wrote something in the "other, please specify in the box below," but did not rank these answer choices.

For job type, two challenges stood out. "Getting staff support" was rated as a significantly greater challenge by non-directors' median (4), (such as managers and other staff) compared to directors' median (3), ($p = 0.0157$). This highlights that staff in non-director roles may face more difficulties in getting support for menu changes or scratch cooking initiatives. Similarly, "gathering student preferences" was perceived as a higher challenge by non-directors' median (3.5), compared to directors' median (3), ($p = 0.0124$). This might indicate that those not in leadership positions may have less access or fewer mechanisms for obtaining student feedback. When examining differences by enrollment size, the challenge of "changing the serving size of recipes" was significantly more difficult for smaller districts median (4), than for larger ones, median (3) ($p = 0.0472$). This could reflect limitations in staffing, kitchen infrastructure, or flexibility in menu planning that are more pronounced in schools with fewer students. Respondents from schools with decentralized, on-site production reported greater difficulty in maintaining the "consistent quality of prepared foods over time" median (4), compared to those using centralized production models median (3), ($p = 0.0349$). This suggests that consistency in food quality may be more difficult to achieve when production is spread across multiple locations.

Finally, there were differences by state in how "students with special dietary needs" were ranked as a challenge ($p = 0.0411$). Respondents from Mississippi reported this as a higher challenge compared to respondents from other states.

The results for recipe-related challenges reveal that "staff skill level," "developing crediting statements," and "gaining staff support" were the most frequently identified obstacles. These findings suggest that scratch cooking implementation requires more than access to ingredients; it also depends heavily on workforce capacity and administrative alignment.

The prominence of staff skill level underscores the need for consistent, hands-on culinary training for school nutrition personnel. Developing crediting statements, a technical but essential task for compliance, further illustrates the administrative burden associated with transitioning to scratch cooking. This dual challenge of technical skill and regulatory knowledge places stress on staff who may already be operating under tight time and resource constraints.

Differences by job type suggest that frontline staff feel these pressures more acutely than directors, especially in terms of obtaining support and incorporating student preferences. Smaller districts also reported greater difficulty adjusting recipe serving sizes, likely reflecting limited staff and kitchen infrastructure. These findings point to the importance of tailored interventions, including mentoring, shared resources, and technology tools that simplify compliance tasks.

Overall, the data show that recipe-related challenges are a blend of technical, operational, and relational factors. Addressing them will require a coordinated approach involving training, administrative support, and tools for streamlining recipe adaptation and compliance.

Quantitative Data: Challenges Associated with MENUS and Scratch Cooking in Schools

The most challenging items associated with menus were: "additional labor costs" (N=346, 65.8%), "additional food costs" (N=320, 60.8%), "the skill level of staff" 58.2%), "maintaining or increasing participation" (N=273, 51.9%), and "equipment barriers/challenges" (N=267, 50.8%). "Students with special dietary needs" was identified by only 22.8% of participants as a major challenge associated with menus and scratch cooking in schools.

Table 13

Ranked Challenges Associated with Menus and Schools (n=526)

	N = 526		Rankings			
Challenges	**N**	**%**	**M**	**SD**	**Median**	**Mode**
Additional labor costs	346	65.8%	2.52	1.577	2	1
Additional food costs	320	60.8%	2.84	1.818	2	2
The skill level of staff	306	58.2%	2.89	1.739	3	3
Maintaining or increasing participation	273	51.9%	3.26	2.286	3	1
Equipment barriers/challenges	267	50.8%	3.44	2.017	3	2
Menu variety	228	43.3%	3.79	2.234	4	4
Facility barriers/challenges	194	36.9%	3.84	2.390	4	2
Developing cycle menus	157	29.8%	4.15	2.633	4	2
Calculating food costs	155	29.5%	4.12	2.466	3	3
Food safety	133	25.3%	4.86	2.869	5	5
Students with special dietary needs	120	22.8%	5.27	3.312	4.5	3
Other	10	1.9%	2.30	1.567	1.5	1

*Note: An additional 11 participants wrote something in the "other, please specify in the box below," but did not rank these answer choices.

The perceived challenge of "developing cycle menus" varied significantly by state ($p = 0.0214$). For example, some states such as Mississippi and Alabama reported a median difficulty rank of 3, whereas others like Tennessee and Georgia reported a median of 2, indicating regional variability in menu planning barriers. Similarly, "calculating food costs" showed significant differences across production styles ($p = 0.0251$), with the "no scratch cooking" group reporting the highest median rank of 4, compared to a median of 3 in programs that partially or fully scratch cook. Among job roles, significant differences were observed for "food safety" ($p = 0.0267$) and "the skill level of staff" ($p = 0.0412$). Site-level nutrition staff reported a higher median challenge ranking 3 for both issues, while district-level administrators rated them lower, at 2.

Menu-related challenges were dominated by concerns over additional labor costs, food costs, and staff skill levels, followed by difficulties in maintaining participation and addressing equipment barriers. These findings highlight that the shift to scratch cooking requires significant operational adjustments that go beyond individual recipes.

The financial dimension—both labor and food costs—emerged as central to menu planning feasibility. This is consistent with broader findings that cost remains the single greatest obstacle to scaling scratch cooking programs. Importantly, site-level staff perceived issues such as food safety and staff skills as more challenging than district-level staff, indicating that those who directly manage kitchens often face the steepest barriers.

Regional and production-style differences also shaped responses. For example, calculating food costs was reported as especially difficult in districts not engaged in scratch cooking, suggesting a lack of established systems for managing complex menu development. Similarly, states varied in their perception of cycle menu development, pointing to the importance of regional context and available training resources.

Overall, menu-related barriers reflect the interconnected nature of staffing, financial resources, equipment, and student engagement. To overcome these challenges, strategies should prioritize investments in staff training, upgraded kitchen infrastructure, and tools for cost analysis and menu planning. Just as importantly, policies that support increased reimbursement and streamline compliance could reduce the operational strain on schools attempting to expand scratch cooking efforts.

Qualitative Data: Strategies for Overcoming Challenges Associated with Serving Scratch-Prepared Foods in School Meal Programs

As mentioned in the methodology, the qualitative data from survey questions 11, 13, and 15 were combined prior to thematic analysis. Each of these questions asked respondents to identify strategies for overcoming the challenges of offering scratch-prepared foods in schools. Question 11 was asked from the perspective of ingredients, while questions 13 and 15 were asked from the perspective of recipes and menus, respectively. Because there was no discernible difference in the comments offered by respondents between the three questions, the researchers determined the results would be most beneficial when analyzed collectively.

Seven food service management themes emerged when analyzing the data from survey questions 11, 13, and 15. Those themes included: staffing and training, financial management, procurement and vendor relations, operations and menu planning, facilities and equipment, policy and regulations, and collaboration and partnerships.

Staffing and Training.

Table L in the appendices is a comprehensive list of all the participant responses associated with the theme “Staffing and Training.” A review of these responses revealed the following overarching strategies associated with staffing and training: wages (and benefits) for school nutrition staff need to be increased to attract/retain skilled staff; school nutrition staff need to receive on-the-job culinary training (knife skills, recipe prep, handling raw proteins); prep hours or a second shift need to be added for school nutrition staff; school administration and school meal program management staff need to demonstrate supportive leadership demonstrating the value of non-director staff as professionals.

Financial Management.

A comprehensive list of all the participant responses associated with the theme “Financial Management” is provided in Table M of the appendices. The following strategy themes emerged from these responses: school administrators need to advocate for higher federal/state reimbursements; schools need to apply for Farm to School and culinary training grants; and school meal program directors need to

budget strategically to offset higher-cost scratch meals with lower-cost menu items and purchasing in bulk when storage allows.

Procurement and Vendor Relations.

Participant responses associated with the theme "Procurement and Vendor Relations" are provided in Table N in the appendix. The following strategy themes were observed: the USDA needs to simplify procurement/bid rules to reduce red tape, school nutrition programs need to join co-ops or group purchasing organizations (GPOs), work with multiple vendors, farmers, and/or specialty suppliers to meet procurement needs, and design menus around reliable vendor availability.

Operations and Menu Planning.

Table O (in the appendix) provides a list of all the participant responses associated with the theme "Operations and Menu Planning." The following strategy from that list included: when switching to scratch cooking, start small, introducing one to two scratch recipes at a time; use cycle menus to maximize ingredient cross-utilization; implement a hybrid approach, combining the USDA commodities with scratch-prepped items; and engage students via surveys/taste tests to improve participation.

Facilities and Equipment.

The following strategies provide a summary of the strategies listed in Table P of the appendix. School meal program kitchens need to be upgraded with modern equipment (e.g., combi-ovens, kettles, refrigeration) to support scratch cooking. School meal programs need to consider centralized kitchens or cook-chill facilities, and school administration needs to advocate for cafeteria funds to support infrastructure improvements.

Policy and Regulations.

A summary of strategies associated with "Policy and Regulations" suggests that theUSDA should reduce burdensome sodium/whole grain requirements and simplify NSLP compliance and procurement paperwork. Further, school administration and school meal program professionals need to advocate for universal free meals and increased funding for school meal programs and seek clearer state guidance regarding procurement and compliance associated with scratch cooking.

Collaboration and Partnerships.

Table R in the appendix provides a comprehensive list of all the participant responses regarding strategies for overcoming the challenges associated with scratch cooking in schools and the theme "Collaboration and Partnerships." Themes within that list included: school meal programs sharing best practices with other districts, school meal programs partnering with local culinary schools and colleges, building community connections between local schools and farms, Farm-to-School programs, and leveraging regional school meal program director networks for support.

CONCLUSIONS

The findings of this study collectively underscore the complexity of transitioning school meal programs from a reliance on UPFs toward scratch cooking.. While the benefits of scratch-prepared meals are well documented—including improved nutritional profiles, enhanced student participation, and stronger connections to local food systems—the results demonstrate that systemic barriers continue to challenge implementation at scale.

At the core of these barriers are financial and regulatory pressures. Cost-related concerns, particularly additional food and labor expenses, consistently emerged as top challenges across the national sample. The burden of navigating complex federal, state, and local procurement rules further exacerbates inequities, particularly in small or resource-limited districts.

Equally critical are workforce issues. Across both recipe and menu challenges, the skill level of staff emerged as one of the most significant barriers. Many programs reported difficulties in developing crediting statements, ensuring consistency in food quality, and adapting recipes to meet diverse student needs. These findings highlight the urgent need for sustained investment in workforce development, including accessible and ongoing culinary training tailored to school nutrition professionals. Leadership support also plays a pivotal role in validating staff contributions and ensuring that investments in training translate into meaningful practice.

Menu-related findings reinforced the intersection of financial, staffing, and infrastructure barriers. Respondents emphasized that while scratch cooking has the potential to increase student participation, its feasibility is constrained by additional labor demands, equipment limitations, and the challenge of maintaining consistent participation across diverse student populations. Differences observed by district size, production style, and states further emphasize that one-size-fits-all approaches are insufficient; solutions must be adapted to local realities.

The qualitative analysis aligned with these quantitative trends, identifying seven management themes—staffing and training, financial management, procurement and vendor relations, operations and menu planning, facilities and equipment, policy and regulations, and collaboration and partnerships. Each of these themes points toward the need for multi-level solutions that extend beyond individual districts to include systemic reforms. Specifically, increased reimbursement rates, streamlined procurement regulations, expanded grant opportunities, and strengthened regional networks can collectively ease the transition to scratch cooking.

Ultimately, the study demonstrates that while enthusiasm for scratch cooking is high and the benefits are undeniable, achieving widespread implementation requires coordinated investment at the federal, state, and local levels. Addressing cost burdens, building staff capacity, upgrading facilities, and reforming policy structures will be essential to advancing equitable access to healthier school meals. By strategically targeting these barriers, stakeholders can create conditions where scratch cooking is not only feasible but sustainable, ensuring that all children—regardless of geography or socioeconomic status—have access to nutritious, freshly prepared meals.

APPLICATIONS

The practical applications of these findings extend to multiple levels of school nutrition management, policy, and research:

1. For School Districts and School Meal Program Directors
    - Use incremental approaches—such as piloting one or two scratch recipes at a time—to build staff confidence and student acceptance.
    - Invest in professional development for staff, including on-the-job culinary training, to elevate the overall skill level and improve recipe quality and consistency.
    - Balance higher-cost scratch items with lower-cost menu options and utilize cycle menus for ingredient cross-utilization.

2. For Policymakers and Funders
    - Expand financial support for scratch cooking initiatives through higher federal/state reimbursements and grants targeting kitchen upgrades and culinary training.
    - Streamline procurement and compliance processes to reduce administrative burdens, particularly for smaller districts.
    - Encourage Farm-to-School and local sourcing policies that make fresh ingredients more accessible and affordable.

3. For Community Partners and Vendors
    - Develop partnerships between school districts, local farms, culinary schools, and food distributors to strengthen supply chains and provide training support.
    - Share best practices across districts to create a collective knowledge base that can be adapted regionally.

4. For Researchers
    - Investigate contextual factors such as district size, location, and production models to identify tailored strategies that can be scaled effectively.
    - Expand mixed-methods research combining survey data with qualitative interviews to better understand staff-level perspectives and student acceptance.

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APPENDIX A

GY23 Challenges of Scratch Cooking in Schools Survey

Initial Draft

Question/Page 1

CONSENT FORM

Dear Child Nutrition Professional/Stakeholder,

The Institute of Child Nutrition Applied Research Division (ICN ARD) is conducting a research study to determine the challenges affecting the capability of school nutrition programs to offer scratch-prepared foods in schools. For the purpose of this research scratch prepared foods are foods prepared using raw, whole ingredients rather than pre-packaged or processed food products. Scratch food preparation typically involves techniques such as chopping, measuring, and mixing ingredients by hand, rather than using pre-made mixes, prepared ingredients, or ready to heat products.

There is no risk for participating in this process. However, the benefits include contributing to the improvement of CN program operations by informing the decision-making processes regarding future research, education, and training needs of CN professionals. The survey should take less than 10 minutes to complete.

Participation in this research study is voluntary. Your name will not be associated with any information collected in this process, and your personal information and school information will remain confidential.

This project (USM IRB Protocol # 23-0855) has been reviewed by the Human Subjects Protection Review Committee, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research subject should be directed to the chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5116, Hattiesburg, MS 39406, (601) 266-5997.

Please select one of the two boxes below:

- I consent to participate in this study. (1)
- I DO NOT consent to participate in this study (2)

Page Break

Question/Page 2

In which state or U.S. territory do you currently reside?

▼ Alabama (1) ... Guam (57)

Page Break

Question/Page 3

Please select the answer that most closely matches your current job title. (Select only one response.) Your selection will impact the next question you see.

- District-Level School Nutrition Director or Supervisor
- Site-Level School Nutrition Manager
- School Nutrition Staff / Worker
- School Nutrition Other, please specify _____

Page Break

Question/Page 4

What is the student enrollment in your school district?

- Less than 1,000 (Very Small)
- 1,000 to 5,000 (Small)
- 5,001 to 20,000 (Medium)
- Greater than 20,000 (Large)

Page Break

Question/Page 5

The column on the right contains a list of potential challenges associated with INGREDIENTS and offering scratch-prepared foods in schools.

Please drag and click five (5) items from the column on the left to the box on the right that you feel are greatest challenges to offering scratch-prepared foods in schools. If you do not see an item(s) that you feel is a challenge associated with INGREDIENTS and offering scratch-prepared foods in schools, please add it to the list in the "Other" boxes at the bottom.

Afterwards, please rank the five items you selected with the number "1" representing the greatest challenge and the number "5" representing the least of the five challenges.

For the purpose of this research scratch prepared foods are foods prepared using raw, whole ingredients rather than pre-packaged or processed food products. Scratch food preparation typically involves techniques such as chopping, measuring, and mixing ingredients by hand, rather than using pre-made mixes, prepared ingredients, or ready to heat products.

The 5 Greatest Challenges to Offering Scratch-Prepared foods in Schools
_____ Locate where to purchase ingredients.
_____ Buying local foods.
_____ Participating in a Farm-to-School program.
_____ Writing bid specifications.
_____ Finding vendors to supply your school nutrition program.
_____ Food cost.
_____ Accessing new food items.
_____ Understanding what ingredients are available.
_____ Complying with federal/state/local purchasing regulations.
_____ Other, please specify in the box below.
_____ Other, please specify in the box below.
_____ Other, please specify in the box below.

Question/Page 6

In the text box below, please recommend ways to best overcome the challenges associated with INGREDIENTS and offering scratch-prepared foods in schools that you identified in the previous question.

_____
_____

Page Break

Question/Page 7

The column on the right contains a list of potential challenges associated with RECIPES and offering scratch-prepared foods in schools.

Please drag and click five (5) items from the column on the left to the box on the right that you feel are greatest challenges to offering scratch-prepared foods in schools. If you do not see an item(s) that you feel is a challenge associated with RECIPES and offering scratch-prepared foods in schools, please add it to the list in the “Other” boxes at the bottom.

Afterwards, please rank the five items you selected with the number “1” representing the greatest challenge and the number “5” representing the least of the five challenges.

For the purpose of this research scratch prepared foods are foods prepared using raw, whole ingredients rather than pre-packaged or processed food products. Scratch food preparation typically involves techniques such as chopping, measuring, and mixing ingredients by hand, rather than using pre-made mixes, prepared ingredients, or ready to heat products.

The 5 Greatest Challenges to Offering Scratch-Prepared foods in Schools
_____ Finding recipes.
_____ Changing the serving size of recipes.
_____ The skill level of staff.
_____ Developing crediting statements for the recipes.
_____ Consistent quality of prepared foods overtime.
_____ Consistent quality of prepared foods site-to-site.
_____ Providing necessary food safety training.
_____ Getting staff support.
_____ Gathering student input/preferences.
_____ Gathering other stakeholders' (parents, teachers, etc.) input/preferences.
_____ Achieving/maintaining customer satisfaction.
_____ Meeting the needs of students with special dietary needs.
_____ Other, please specify in the box below.
_____ Other, please specify in the box below.
_____ Other, please specify in the box below.

Question/Page 8

In the text box below, please recommend ways to best overcome the challenges associated with RECIPES and offering scratch-prepared foods in schools that you identified in the previous question.

_____

_____

Page Break

Question/Page 9

The column on the right contains a list of potential challenges associated with MENUS and offering scratch-prepared foods in schools.

Please drag and click five (5) items from the column on the left to the box on the right that you feel are greatest challenges to offering scratch-prepared foods in schools. If you do not see an item(s) that you feel is a challenge associated with MENUS and offering scratch-prepared foods in schools, please add it to the list in the "Other" boxes at the bottom.

Afterwards, please rank the five items you selected with the number "1" representing the greatest challenge and the number "5" representing the least of the five challenges.

For the purpose of this research scratch prepared foods are foods prepared using raw, whole ingredients rather than pre-packaged or processed food products. Scratch food preparation typically involves techniques such as chopping, measuring, and mixing ingredients by hand, rather than using pre-made mixes, prepared ingredients, or ready to heat products.

The 5 Greatest Challenges to Offering Scratch-Prepared foods in Schools
_____ Maintaining or increasing participation.
_____ Achieving good menu variety.
_____ Developing cycle menus.
_____ Controlling food costs.
_____ Controlling labor costs.
_____ Calculating food costs.
_____ Meeting the needs of students with special dietary needs.
_____ Maintaining food safety while transporting scratch-prepared foods.
_____ Serving scratch-prepared meals with the current site level serving style.
_____ The skill level of staff.
_____ Equipment barriers/challenges.
_____ Facility barriers/challenges.
_____ Other, please specify in the box below.
_____ Other, please specify in the box below.

_____ Other, please specify in the box below.

Question/Page 10

In the text box below, please recommend ways to best overcome the challenges associated with MENUS and offering scratch-prepared foods in schools that you identified in the previous question.

_____
_____

APPENDIX B

Email for Soliciting Recommendations for Review Panel Participants

Dear Child Nutrition Industry Professional

The Institute of Child Nutrition (ICN) is conducting a study to explore challenges affecting the capability of school nutrition programs to offer scratch-prepared foods in schools.

To achieve this goal, we are developing an online national survey and we need to conduct a review panel to evaluate this survey before we begin data collection. Review panel participants must be subject matter experts (SMEs) and be willing to participate in the research. SMEs must have some knowledge of scratch or fresh food production in an institutional setting. SMEs may include ICN education and training specialists, ICN researchers, USDA, FNS representatives, State Agency personnel, school food authorities, industry partners, or allied organization partners.

Review panel participation takes approximately 30 minutes to 1 hour to complete and will be conducted via email.

If you or someone you know meets these criteria, we would appreciate a recommendation, to include the following information:

- Name
- Job title
- Email address

Thank you for your assistance!

Sincerely,

Keith

Keith Rushing, PhD, RD
Director, Applied Research Division

This project has been reviewed by the Human Subjects Protection Review Committee, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research subject should be directed to the chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5147, Hattiesburg, MS 39406, (601) 266-6820.

APPENDIX C

Review Panel Invitation

Dear Child Nutrition Professional

The Institute of Child Nutrition (ICN) Applied Research Division invites you to evaluate a draft national survey. The purpose of this survey is to explore the challenges school nutrition programs face when attempting to offer scratch-prepared foods, the degree to which these challenges are prevalent in school nutrition programs across the United States, and potential strategies to mitigate these challenges.

You are receiving this invitation because of your experience in the child nutrition industry. Your participation is voluntary, and you may choose to stop participating at any time with no negative consequences. At no time during this project will information gathered be associated with you or the organization where you are employed.

Please review the *Consent Form* attached to this email. If you are willing to participate, please complete, save and return the consent form via email to keith.rushing@usm.edu.

Please review the survey at the link below and complete the attached review panel evaluation form.

Survey hyperlink: XXXXXXXXXXXXXXXXXXXXXXXXXXXXX

Once you have completed the form, please save it and email it as an attachment to Keith.Rushing@usm.edu . Thank you for taking time from your busy schedule to complete the evaluation. If you have any questions, please do not hesitate to contact me by email at Keith.Rushing@usm.edu or by telephone at 1-800-321-3054.

Sincerely,

Keith

Keith Rushing, PhD, RD
Research Scientist
Institute of Child Nutrition
Applied Research Division

This project (Protocol # 0855-01) has been reviewed by the Human Subjects Protection Review Committee, which ensures that research projects involving human subjects follow federal regulations.

APPENDIX D

Review Panel Concent Form

ORI | Office of Research Integrity

INSTITUTIONAL REVIEW BOARD

STANDARD (ONLINE) INFORMED CONSENT

STANDARD (ONLINE) INFORMED CONSENT PROCEDURES

The Project Information and Research Description sections of this form should be completed by the Principal Investigator before submitting this form for IRB approval. Use what is given in the research description and consent sections below when constructing research instrument online.

Last Edited July 20th, 2017

Today's date:10-17-2023

PROJECT INFORMATION

Project Title: Meeting the Challenges of Serving Scratch-Prepared Foods in School Nutrition Programs (USM IRB Protocol Number: 23-0855		
Principal Investigator: Keith Rushing, Ph.D., RDN	Phone: 601-543-9866	Email: keith.rushing@usm.edu
College: College of Education and Human Science	Department: Institute of Child Nutrition, Applied Research Division	

RESEARCH DESCRIPTION

1. **Purpose**:

The purpose of this study is to explore the challenges affecting the capability of school nutrition programs to offer scratch-prepared foods in schools

2. **Description of Study:**

Your participantion in this project will include participating in an online review panel to assess a draft survey. Once the survey is revised it will be conduction nationally. The objectives of this national survey are to identify the following items:

1. The challenges affecting the capability of school nutrition professionals to offer scratch-prepared foods in schools (i.e., cost, ability to control food quality, ability to comply with nutrition standards, equipment and facility constraints, the skill level of staff, availability of staff, availability of local and traditional foods, food safety concerns, stakeholder demand, etc.);
2. The degree to which these challenges are prevalent in school nutrition programs across the United States; and
3. Recommendations of strategies, techniques, and best practices to mitigate these challenges (i.e., training, resources, grants, etc.).

3. **Benefits:**

The outcome of the research will aid the Institute of Child Nutrition in developing training resources specifically designed to support school nutrition professionals.

4. **Risks:**

There are no known risks associated with participating in this study.

5. **Confidentiality:**

Results in this study will be reported in summary form only. The information you provide will not be linked back to you in any reports and will be available only to the researchers.

6. **Alternative Procedures:**

Not applicable.

7. **Participant's Assurance:**

This project has been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations.

Any questions or concerns about rights as a research participant should be directed to the Chair of the IRB at 601-266-5997. Participation in this project is completely voluntary, and participants may withdraw from this study at any time without penalty, prejudice, or loss of benefits.

Any questions about the research should be directed to the Principal Investigator using the contact information provided in Project Information Section above.

CONSENT TO PARTICIPATE IN RESEARCH

Consent is hereby given to participate in this research project. All procedures and/or investigations to be followed and their purpose, including any experimental procedures, were explained to me. Information was given about all benefits, risks, inconveniences, or discomforts that might be expected.

The opportunity to ask questions regarding the research and procedures was given. Participation in the project is completely voluntary, and participants may withdraw at any time without penalty, prejudice, or loss of benefits. Unless described above and agreed to by the participant, all personal information is strictly confidential, and no names will be disclosed. Any new information that develops during the project will be provided if that information may affect the willingness to continue participation in the project.

Questions concerning the research, at any time during or after the project, should be directed to the Principal Investigator with the contact information provided above. This project and this consent form have been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5116, Hattiesburg, MS 39406-0001, 601-266-5997.

Include the following information only if applicable. Otherwise delete this entire paragraph before submitting for IRB approval: The University of Southern Mississippi has no mechanism to provide compensation for participants who may incur injuries as a result of participation in research projects. However, efforts will be made to make available the facilities and professional skills at the University. Participants may incur charges as a result of treatment related to research injuries. Information regarding treatment or the absence of treatment has been given above.

CONSENT TO PARTICIPATE IN RESEARCH

By clicking the box below, consent is hereby given to participate in this research project. All procedures and/or investigations to be followed and their purposes, including any experimental procedures, were explained to me. Information was given about all benefits, risks, inconveniences, or discomforts that might be expected.

☐

Check this box if you consent to this study, and then click "Continue." (Clicking "Continue" will not allow you to advance to the study, unless you have checked the box indicating your consent.)

If you do not wish to consent to this study, please close your browser window at this time.

APPENDIX E

Review Panel Evaluation Form

Survey Evaluation Form

Please place an x in the box or boxes to the right of the phrases that most accurately represent your current position title. (Select all that apply)	
	Chef
	School nutrition director
	School nutrition manager or supervisor
	A representative from school district administrative office
	A representative from a food distribution organization that provides food to school nutrition programs.
	A representative from a commercial foodservice equipment manufacturer/distributor that provides equipment to school nutrition programs.
	Other (please type below):

Instructions for completing this evaluation:

Please evaluate the statements that are shaded grey (below) by placing an X box adjacent to your agreement level (*Strongly Disagree to Strongly Agree*). If you have other recommendations, please type them in the unshaded box at the bottom of each table.

Consent Form				
The content and instructions for completing the CONSENT FORM were clear and appropriate.	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**

Question 1 In which state or U.S. territory do you currently reside?				
The content of this question is appropriate.	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
Other recommendations for **Question 1** (please type below):				

Question 2 Job Title				
The instructions and content of this question is appropriate.	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
Other recommendations (please type below):				

Question 3 What is the student enrollment in your school district?				
The content of this question is appropriate.	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
Other recommendations (please type below):				

Question 4 **INGREDIENTS**				
The instructions and content of this question is appropriate.	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
Other recommendations (please type below):				

Question 5 **RECIPES**				
The instructions and content of this question is appropriate.	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
Other recommendations (please type below):				

Question 6 MENUS				
The instructions and content of this question is appropriate.	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
Other recommendations (please type below):				

OVERALL				
	Strongly Disagree	**Disagree**	**Agree**	**Strongly Agree**
The survey is organized in a logical sequence.				
The survey uses language that is familiar to school nutrition professionals.				
The format of the survey is easy to use and understand.				
Other recommendations (please type below):				

Thank you for your assistance!

APPENDIX F

GY23 Challenges of Scratch Cooking in Schools Survey
Revised Draft 1
Post Review Panel

Question/Page 1

CONSENT FORM

Dear Child Nutrition Professional/Stakeholder,

The Institute of Child Nutrition Applied Research Division (ICN ARD) is conducting a research study to determine the challenges associated with **scratch-cooking** in schools.

For the purpose of this research, **scratch-cooking** is defined as using raw, whole ingredients rather than pre-packaged or processed food item products. Scratch-cooking typically involves techniques such as chopping, measuring, and mixing ingredients by hand, rather than using pre-made mixes, prepared ingredients, or ready to heat products.

There is no risk for participating in this process. However, the benefits include contributing to the improvement of child nutrition (CN) program operations by informing the decision-making processes regarding future research, education, and training needs of CN professionals. The survey should take less than 10 minutes to complete.

Participation in this research study is voluntary. Your name will not be associated with any information collected in this process, and your personal information and school information will remain confidential.

This project (USM IRB Protocol # 23-0855) has been reviewed by the Human Subjects Protection Review Committee, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research subject should be directed to the chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5116, Hattiesburg, MS 39406, (601) 266-5997.

Please select one of the two boxes below:

- I consent to participate in this study. (1)
- I DO NOT consent to participate in this study (2)

Question/Page 2

In which state or U.S. territory do you currently reside?

▼ Alabama (1) ... Guam (57)

Question/Page 3

Please select the answer that most closely matches your current job title. Select only one response.

- District-Level School Nutrition Director or Supervisor
- District-Level School Nutrition Staff, please specify job title _____
- District-Level Staff, please specify job title _____
- Site-Level School Nutrition Manager/Supervisor
- Site-Level School Nutrition Staff, please specify job title _____
- Site-Level Staff, please specify job title _____

Question/Page 4

What is the student enrollment in your school district?

- Less than 1,000 (Very Small)
- 1,000 to 5,000 (Small)
- 5,001 to 20,000 (Medium)
- 20,000 to 40,000 (Large)
- Greater than 40,000 (Very Large)

Question/Page 5

REMINDER: **Scratch-Cooking** is defined as using raw, whole ingredients rather than pre-packaged or processed food item products. Scratch-cooking typically involves techniques such as chopping, measuring, and mixing ingredients by hand, rather than using pre-made mixes, prepared ingredients, or ready to heat products.

Please drag and click items from the column on the left to the box on the right that you feel are greatest challenges associated with **INGREDIENTS** and scratch-cooking. Please add any items you feel are missing from the list in the "Other" boxes at the bottom.

Once you have made your choices, please rank the items in the box on the right in descending order (1 = greatest challenge, 2 = next greatest challenge, etc.) by dragging the items up and down within the list.

Challenges associated with INGREDIENTS and scratch-cooking in schools
_____ Buying local foods.
_____ Participating in a Farm-to-School program.
_____ Writing bid specifications.
_____ Finding vendors for all ingredients.
_____ Additional food cost.
_____ Complying with federal/state/local purchasing regulations.
_____ Other, please specify in the box below.
_____ Other, please specify in the box below.
_____ Other, please specify in the box below.

Question/Page 6

In the text box below, please identify what strategies you would recommend to best overcome the challenges you identified in the previous question.

_____

Question/Page 7

REMINDER: **Scratch-Cooking** is defined as using raw, whole ingredients rather than pre-packaged or processed food item products. Scratch-cooking typically involves techniques such as chopping, measuring, and mixing ingredients by hand, rather than using pre-made mixes, prepared ingredients, or ready to heat products. Please drag and click items from the column on the left to the box on the right that you feel are greatest challenges associated with **RECIPES** and scratch-cooking. Please add any items you feel are missing from the list in the "Other" boxes at the bottom. Once you have made your choices, please rank the items in the box on the right in descending order (1 = greatest challenge, 2 = next greatest challenge, etc.) by dragging the items up and down within the list.

Challenges associated with RECIPES scratch-cooking in schools
_____ Finding recipes.
_____ Changing the serving size of recipes.
_____ The skill level of staff.
_____ Developing crediting statements for the recipes.
_____ Consistent quality of prepared foods over time.
_____ Consistent quality of prepared foods site-to-site.
_____ Providing necessary food safety training.
_____ Getting staff support.
_____ Gathering student preferences.
_____ Gathering other stakeholders' (parents, teachers, etc.) input/preferences.
_____ Customer satisfaction.
_____ Students with special dietary needs.
_____ Other, please specify in the box below.
_____ Other, please specify in the box below.
_____ Other, please specify in the box below.

Question/Page 8

In the text box below, please identify what strategies you would recommend to best overcome the challenges you identified in the previous question.

_____

Question Page 9

REMINDER: **Scratch-Cooking** is defined as using raw, whole ingredients rather than pre-packaged or processed food item products. Scratch-cooking typically involves techniques such as chopping, measuring, and mixing ingredients by hand, rather than using pre-made mixes, prepared ingredients, or ready to heat products.

Please drag and click items from the column on the left to the box on the right that you feel are greatest challenges associated with **MENUS** and scratch-cooking.

Please add any items you feel are missing from the list in the "Other" boxes at the bottom. Once you have made your choices, please rank the items in the box on the right in descending order (1 = greatest challenge, 2 = next greatest challenge, etc.) by dragging the items up and down within the list.

Challenges associated with MENUS and scratch cooking in schools
_____ Maintaining or increasing participation.
_____ Menu variety.
_____ Developing cycle menus.
_____ Additional food costs.
_____ Additional labor costs.
_____ Calculating food costs.
_____ Students with special dietary needs.
_____ Food Safety.
_____ The skill level of staff.
_____ Equipment barriers/challenges.
_____ Facility barriers/challenges.
_____ Other, please specify in the box below.
_____ Other, please specify in the box below.
_____ Other, please specify in the box below.

Question/Page 10

In the text box below, please identify what strategies you would recommend to best overcome the challenges you identified in the previous question.

_____

_____

APPENDIX G

GY23 Challenges of Scratch Cooking in Schools Survey – Revised Draft 2 Post USDA Review

Question/Page 1

CONSENT FORM

Dear Child Nutrition Professional/Stakeholder,

The Institute of Child Nutrition Applied Research Division (ICN ARD) invites you to complete a short survey. The purpose for conducting this research study is to determine the challenges associated with **scratch-cooking** in schools.

For the purpose of this research, **scratch-cooking** is defined as using raw, whole ingredients rather than pre-packaged or processed food item products. Scratch-cooking typically involves techniques such as chopping, measuring, and mixing ingredients by hand, rather than using pre-made mixes, prepared ingredients, or ready to heat products.

There is no risk for participating in this survey. However, the benefits include contributing to the improvement of child nutrition (CN) program operations by informing the decision-making processes regarding future research, education, and training needs of CN professionals. The survey should take 15 minutes to complete.

Participation in this research study is voluntary. Your name will not be associated with any information collected in this process, and your personal information and school information will remain confidential.

This project (USM IRB Protocol # 23-0855) has been reviewed by the Human Subjects Protection Review Committee, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research subject should be directed to the chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5116, Hattiesburg, MS 39406, (601) 266-5997.

Please select one of the two boxes below:

- I consent to participate in this study. (1)
- I DO NOT consent to participate in this study (2)

Question/Page 2

In which state or U.S. territory do you currently reside?

▼ Alabama (1) ... Guam (57)

Question/Page 3

Please select the answer that most closely matches your current job title. Select only one response.

- District-Level School Nutrition Director or Supervisor
- District-Level School Nutrition Staff, please specify job title _____
- District-Level Staff, please specify job title _____
- Site-Level School Nutrition Manager/Supervisor
- Site-Level School Nutrition Staff, please specify job title _____
- Site-Level Staff, please specify job title _____
- Other, please specify._____

Appendix G)

Question/Page 10

REMINDER: **Scratch-Cooking** is defined as using raw, whole ingredients rather than pre-packaged or processed food items. Ingredients are the specific food items used when you are cooking a particular dish. Scratch-cooking typically involves techniques such as chopping, measuring, and mixing ingredients by hand, rather than using pre-made mixes, prepared ingredients, or ready to heat products.

Please drag and click items from the column on the left to the box on the right that are your top five (5) greatest challenges associated with **INGREDIENTS** and scratch-cooking. Please add any other items using the "Other" boxes at the bottom.

Once you have made your choices, please rank the items in the box on the right in descending order (1 = greatest challenge, 2 = next greatest challenge, etc.) by dragging the items up and down within the list.

Challenges associated with INGREDIENTS and scratch-cooking in schools
_____ Buying local foods.
_____ Participating in a Farm-to-School program.
_____ Writing bid specifications.
_____ Finding vendors for all ingredients.
_____ Additional food cost.
_____ Complying with federal/state/local purchasing regulations.
_____ Other, please specify in the box below.
_____ Other, please specify in the box below.
_____ Other, please specify in the box below.

Question/Page 11

In the text box below, please identify what strategies you would recommend to best overcome the challenges you identified in the previous question.

_____

Question/Page 12

REMINDER: **Scratch-Cooking** is defined as using raw, whole ingredients rather than pre-packaged or processed food item products. Scratch-cooking typically involves techniques such as chopping, measuring, and mixing ingredients by hand, rather than using pre-made mixes, prepared ingredients, or ready to heat products. Please drag and click items from the column on the left to the box on the right that are your top five (5) greatest challenges associated with **RECIPES** and scratch-cooking. A recipe is a set of instructions for preparing a particular food dish. Please add any other items using the "Other" boxes at the bottom. Once you have made your choices, please rank the items in the box on the right in descending order (1 = greatest challenge, 2 = next greatest challenge, etc.) by dragging the items up and down within the list.

Challenges associated with RECIPES scratch-cooking in schools
_____ Finding recipes.
_____ Changing the serving size of recipes.
_____ The skill level of staff.
_____ Developing crediting statements for the recipes.
_____ Consistent quality of prepared foods over time.
_____ Consistent quality of prepared foods site-to-site.
_____ Providing necessary food safety training.
_____ Getting staff support.
_____ Gathering student preferences.
_____ Gathering other stakeholders' (parents, teachers, etc.) input/preferences.
_____ Customer satisfaction.
_____ Students with special dietary needs.
_____ Other, please specify in the box below.
_____ Other, please specify in the box below.
_____ Other, please specify in the box below.

Question/Page 13

In the text box below, provide recommended strategies to best overcome the challenges identified above.

_____

Question/Page 14

REMINDER: **Scratch-Cooking** is defined as using raw, whole ingredients rather than pre-packaged or processed food item products. Scratch-cooking typically involves techniques such as chopping, measuring, and mixing ingredients by hand, rather than using pre-made mixes, prepared ingredients, or ready to heat products.

Please drag and click items from the column on the left to the box on the right that are your top five (5) greatest challenges associated with **MENUS** and scratch-cooking. A menu is a list of food items available to customers over a period of time (day, week, month, etc.) at a foodservice operation such as a school cafeteria. Please add any other items using the "Other" boxes at the bottom

Please add any items you feel are missing from the list in the "Other" boxes at the bottom. Once you have made your choices, please rank the items in the box on the right in descending order (1 = greatest challenge, 2 = next greatest challenge, etc.) by dragging the items up and down within the list.

Challenges associated with MENUS and scratch cooking in schools
_____ Maintaining or increasing participation.
_____ Menu variety.
_____ Developing cycle menus.
_____ Additional food costs.
_____ Additional labor costs.
_____ Calculating food costs.
_____ Students with special dietary needs.
_____ Food Safety.
_____ The skill level of staff.
_____ Equipment barriers/challenges.
_____ Facility barriers/challenges.

_____ Other, please specify in the box below.

_____ Other, please specify in the box below.

_____ Other, please specify in the box below.

Question/Page 15

In the text box below, provide recommended strategies to best overcome the challenges identified above.

_____

APPENDIX H

Recruitment Letter for the Pilot and National Survey

Dear School Nutrition Professional:

The Institute of Child Nutrition (ICN) Applied Research Division (ARD) is conducting a research study to explore the challenges affecting the capability of school nutrition programs to offer scratch-prepared foods in schools. Please help us by completing a short online survey.

If you choose to participate, use the hyperlink or QR code below to complete the survey.

https://usmep.co1.qualtrics.com/jfe/form/SV_0fv2x3CS9Hes3Lo

The survey is anonymous, and there is no information linking you to the online survey that you complete. The information you provide will be reported only to the researchers, and results will not be reported for individual districts. Your participation in this study is completely voluntary, and you may withdraw from the study at any time without consequences. We solicit open and honest answers based on your own professional position and experiences.

Child nutrition professionals contributed to the development of the survey, as the ICN realizes that our research efforts are made better by involving those at the local level. The results of this study will assist the ICN in developing resources and training for scratch food preparation in schools.

Thank you for taking time from your busy schedule to complete the online survey. Without your assistance, this study will not be successful. Please support our research efforts by completing the online survey. If you have questions or concerns, please do not hesitate to contact me by e-mail at Keith.Rushnig@usm.edu or by telephone at 1-800-321-3054.

Sincerely,

Keith

Keith Rushing, PhD, RD
Research Scientist
Institute of Child Nutrition
Applied Research Division

This project (Protocol # 23-0855) has been reviewed by the Human Subjects Protection Review Committee, which ensures that research projects involving human subjects follow federal regulations.

APPENDIX I

Two-Week Follow-Up Reminder

Meeting the Challenges of Serving Scratch-Prepared Foods in School Nutrition Programs

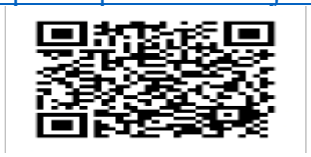
Greetings,

About two weeks ago, you should have received a survey from the Institute of Child Nutrition (ICN) Applied Research Division (ARD).

If you have already completed and returned the survey, please disregard this reminder, and accept our sincere thanks. If you have not, please try to complete the survey in the next few days. Your participation is critical to the success of this study.

If you choose to participate, use the hyperlink or QR code below to complete the survey.

https://usmep.co1.qualtrics.com/jfe/form/SV_0fv2x3CS9Hes3Lo



Thank you for your contribution to this study and support for our CNP research efforts.

Sincerely,

Keith

Keith Rushing, PhD, RD
Research Scientist
Institute of Child Nutrition
Applied Research Division

This project (Protocol # 23-0855) has been reviewed by the Human Subjects Protection Revi

APPENDIX J

Table J1

Table J1

State Where Respondents Reside

State/Territory	N	%
Texas	64	9.7%
California	61	9.2%
New York	30	4.5%
Indiana	29	4.4%
Pennsylvania	29	4.4%
Illinois	27	4.1%
Minnesota	27	4.1%
Ohio	27	4.1%
Wisconsin	22	3.3%
Georgia	21	3.2%
Washington	20	3.0%
Arkansas	18	2.7%
Massachusetts	17	2.6%
Oregon	16	2.4%
Virginia	16	2.4%
Alabama	15	2.3%
Iowa	14	2.1%
Kentucky	12	1.8%
Oklahoma	12	1.8%
Colorado	11	1.7%
Michigan	10	1.5%
Nebraska	10	1.5%
Arizona	9	1.4%
Florida	9	1.4%
Mississippi	9	1.4%
South Carolina	9	1.4%
Utah	9	1.4%
Connecticut	8	1.2%
Missouri	8	1.2%
North Carolina	8	1.2%
South Dakota	8	1.2%
Idaho	7	1.1%
Kansas	7	1.1%
Vermont	7	1.1%
Louisiana	6	0.9%
Maine	6	0.9%
North Dakota	6	0.9%
Tennessee	6	0.9%
Alaska	4	0.6%
Maryland	4	0.6%
New Mexico	4	0.6%
West Virginia	4	0.6%

Montana	3	0.5%
Nevada	3	0.5%
New Jersey	3	0.5%
Wyoming	2	0.3%
Hawaii	1	0.2%
New Hampshire	1	0.2%
Puerto Rico	1	0.2%
I do not reside in the United States	1	0.2%

APPENDIX K

Table K1–K6

Table K1

Responses From Participants Who Selected the Job Title: District-Level School Nutrition Staff (please specify job title)

ADMINISTRATIVE ASSISTANT
Area Manager
Assistant Director
Assistant Food Services Coordinator
Bach
CACFP Coordinator
CAFETERIA MANAGER
Cafeteria manager
Chef Coordinator
Chef, Wellness Coordinator
Child nutrition assistant
Child nutrition coordinator
Consulant
Coordinator
Coordinator 2
Dietitian
Dietitian
Dietitian
Director
Director
director of food service
Director of Food Services
Director of Nutrition
District Chef
District Director
District Kitchen Manager

District School Nutrition Manager
Farm to School Coordinator
Farm to School Specialist
Field Manager
Field manager
FNS - Program Clerk
Food production
Food Program Coordinator
Food serv worker
Food Service Assistant
food service assistant
Food Service Coordinator
Food Service Director
Food Service Director
Food Service Director
Food Service Director
food service director
FOOD SERVICE PROGRAM ASSISANT
Food Service Specialist
Food service supervisor
Food Service Supervisor, Major City, Large District
fruit person
FSD
Head cook- Kitchen Manager
itchen manager
kitchen manager
Kitchen Manager
Kitchen Manager.
Lead Food Service

Lead Food Srvc Wrkr
Manager
Manager Central Kitchen
Menu Coordinator, Dietitian
Menu Developer
Menu Planner
Menu Planner Chef
Menu Planner/Trainer
Nutrition Bookkeeper
Nutrition Coordinator
Nutrition Coordinator
Nutritionist
Operations Coordinator
Procurement Specialist
program rep
Registered Dietitian
Registered Dietitian
Registered Dietitian
Registered Dietitian
Registered Dietitian
Roving Cook
School Lunch Manager
School Nutrition Program Coordinator
School Nutrition Project Manager
Senior Account Clerk
Supervisor II
vending/cashier

Table K2

Responses From Participants Who Selected the Job Title: District-Level Staff (please specify job title)

Administrative Asst
Administrative Officer
Dish washer
Food Service Coordinator
Food Service Director
Food Service Worker/Kitchen manager
GM
Head Cook
head cook/supervisor
Lead cook
Manager
Menu Coordinator Dietitian
Nutrition Lead
school nurse
School Nutrition Office Manager
student nutrional
Trainer
Training Supervisor

Table K3

Responses From Participants Who Selected the Job Title:Site-Level School Nutrition Staff (please specify job title)

39 yrs, was manager, now asst. Manager, cashier, prep where ever else needed. ,
Administration Nutritional Assistan
Administrator
Assistant Cook
Cafeteria

cafeteria cook
cafeteria specialist
Cafeteria Worker
Central Kitchen Lead scratch cook program
Chef/Team Lead
Child Nutrition Specialist
CNP Manager
coo/manager
Cook
Cook
Cook
Cook
Cook
Cook
Cook 2
Cook assistant
Cook Manager
cook/manager
Food Assistance
Food Director
Food service assistant
Food Service Lead Elementary School
food services director
Head chef
Head Cook
Head cook
Head Cook
Head Cook
head start Nutrition coordinator

Health and safety coordinator
kitchen manager
Kitchen Manager
Kitchen manager, cook
Kitchen mgr
Kitchen Mngr
lead Food Service assistant
manager
manager/cook
Manager/Head cook
Nutrition Services Assistant
Production assistant
Receiving Supervisor
Salad prep/dishes
School nutrition associate
SNA Manager II

Table K4

Responses From Participants Who Selected the Job Title: Site-Level Staff (please specify job title)

Assistant Director
Assistant director
Assistant food service
CACFP Admin
CACFP Sponsor Staff
Center Director
Cook
cook
cook
Cook

Cook/technician
Cooks assistant
family services
Food & Nutrition Manager
Kitchen manager
Lead cook
Lead Teacher
Lunchroom Supervisor
Manager
paraprofessional
Paraprofessional
Program Coordinator-Childcare center
School nutrition Assistant
Teacher
Teacher
Teacher Assistant

Table K5

Responses From Participants Who Selected the Job Title: Other (please specify job title)

Accounts Payable
Assistant manager in food nutrition
CACFP Sponsoring Organization, Operations Manager
Child care Director
Child care provider
CHILDCARE
Childcare Provider
Church camp site faculty manager
clerk
Clerk/former mgr

CN Program Consultant, Former Director
Consultant
Consultant RDN
Consultant School Nutrition Registered Dietitian with many clients (districts and charter schools and RCCIs)
Consultant/Trainer
cook
Cooperative Mgr
Day care provider
Daycare
Daycare Cook
Director
Director
Director Childcare center-Private
Director of the School Nutrition Program for PWC/OYS
Director, head cook. only one in the kitchen
Director/Head Cook
District level Director and Kitchen Manager
District-Level Program Chef
Early Childhood Educator
Equipment Representative
Executive Chef
Extension Community Nutrition Instructor for Region
Extension working with schools
Food Service Director, Lunch Lady, Server, Dishwasher, everything
foooservice mgr
FSD charter school
FSMC admin
group home

Head Start Nutrition Manager
HS Data Specialist/Interim Nutrition Specialist
I help with from scratch trainings for schools
Industry
juvenile rehabilitation officer
Kentucky Dept of Ag: Chefs in Schools
Kitchen Coordinator
Kitchen Operations Lead in a Central Kitchen
NYS Licensed Child Care Center - Director of Finance and Operations
Office Assistant at state office food branch
Office Asst.
production specialist manager
Retired Food Service Supervisor
retired school district dietitian
Retired site-level staff
sa
School Chef
School kitchen server
School Nutrition Consultant
School Nutrition Consultant
School Nutrition Supporting non-profit Organization (previously a CN Director)
school staff
Site Level Nutrition Manager and Head Cook
site level Nutritional Director
Site Nutrition manager/Head Cook
Sr Food Service Asst
State Agency
State Agency
State Agency

State Agency
State Agency - CACFP Trainer
State agency, nutrition program consultant
State Regulator
Student Nutrition Secretary
Youth Detention - Kitchen Manager

APPENDIX L

Table L, M, N, O, P, Q, R, & S

Table L.

Strategies associated with Staffing and Training

Staff is my biggest challenge, which also adds to cost. I don't have any strategies yet. Don't really plan on cooking from scratch any time soon.
Right now with staffing shortages I don't have time to do my job because I'm always in the kitchens. Once I get staff and they are trained, I can look into this a bit more.
Additional funds to provide training and attract and keep staff. Wages are low… The school corporation sets the hourly wages and will not allow a wage increase to assist in keeping employees.
Matching the skill level of cooking with potential applicants is a challenge. Staff can be trained on the job but timing and budget constraints…
Getting quality workers who know how to cook. Paying them enough. Takes more workers to cook from scratch.
Enough Staff. Trained Staff. Lower Prices. More time to serve students breakfast and lunch…
Mostly talent and training for present staff is the challenge.
Having a Director that know the job. with hiring adequate staff that can understand and follow recipes
Good wages for school food service staff so we can hire culinary trained staff.
Increase hours in the morning for prep time needed. Train staff to prep and not just serve.
I believe that training in the kitchen—cooking raw meat, cutting fresh vegetables—would boost confidence. Knife skills would help…
Finding trained staff, or having the time to properly train staff can be challenging.
Increased wages for CNP to motivate more applicants… as well as on-site training for staff to teach ways to maximize scratch cooking.
The time needed to prepare scratch food is the only real challenge. If I had to name a second, it would be finding the trained individuals…
Overhaul of training programs to reach employees who are unwilling to put in extra time requiring training to occur during their workday.
Have a larger cooking kitchen, more staff to prepare the foods from scratch, additional staff to train people to cook foods from scratch.
More training.
Providing enough kitchen staff to prepare meals from scratch. Extending hours for employees.
Additional training but with a high staff turnover it is a constant issue. Scratch standardized recipes available and training videos.

Local level training of staff on cooking techniques and resource to update infrastructure.

Additional state assistance to help hire enough staff to be able to have the manpower to prepare from scratch meals.

Hire more skilled staff; use more small/micro purchasing…

Our greatest challenge in cooking from scratch is the current labor shortage and the lack of necessary culinary skills…

Developing partnerships with local farmers… More resources and 'boots on the ground' for training staff on scratch cooking.

Schools need to raise the pay to be able to compete with other jobs and making this job look appealing.

We need to hire more staff and commit to training them to cook from scratch.

Paying people more money and having a full staff who is trained correctly would make it a lot easier to cook from scratch.

Staffing is the very biggest challenge, then time constraints. Trying to do some prep the day before.

Need more funding to purchase the food and continue to train the staff in scratch cooking skills. And funding for additional staff.

The biggest issue is lack of knowledge on the part of staff. I have incorporated more training for my staff, but most trainings are only in English…

Lots and lots of training.

Hire more staff and increase hours to work. Hire more staff to accommodate cooking from scratch recipes.

Training, additional funds for hiring kitchen assistance, grants and help obtaining grants to upgrade equipment.

The local foods for school subsidy has been extremely helpful… We have worked very hard at training our staff on culinary skills for processing fresh foods.

When hiring let staff know that they are going to be preparing foods from scratch.

Our biggest challenge would be having enough staff & also having staff that have the knowledge of scratch cooking.

Extra training for staff, starting small/simple…

Consistency of final product: Training and follow up. Safety of handling raw product: Training… Having a Team with the correct culinary skills: Training, compensation, additional staff.

Staff would need more training on proper food handling and cooking techniques to avoid food borne illness.
Lots of research and reaching out to other schools… Options to overcome the cost increase… Training on scratch-cooking and batch cooking.
Staff attended some ICN culinary hands on training last year…
Training staff and using time wisely. Talk with others who have gone through the scratch-cooking challenges.
Staff training.
Employee training for staff. Training/education for School administration and meal scheduling.
More training on how to comply with the procurement process…
More training on how to do bids and buying local.

Table M.

Strategies associated with Financial Management

Additional funds to provide training and attract and keep staff, Wages are low… The school corporation sets the hourly wages and will not allow a wage increase to assist in keeping employees.
Higher reimbursement would help. The increase in labor and benefits cannot be covered with what we receive now.
Good wages for school food service staff so we can hire culinary trained staff.
Grants would be the best option to be able to spend money to receive better quality ingredients. Also batch cooking requires more labor which is another issue in our district.
Increased wages for CNP to motivate more applicants… as well as on-site training for staff to teach ways to maximize scratch cooking with 4 staff members.
We would need approximately $20,000,000 in Federal funds and 3 years to put kitchen additions on all schools.
Providing enough kitchen staff to prepare meals from scratch. Extending hours for employees. My biggest concern would be providing enough staff for this idea to work.

Convincing the Administration and School Board that the School Meal Program is important and we need the hours, skilled labor and additional salaries to accomplish this.

More funding so that we can adequately staff the kitchens, and enough funding to cover a wage competitive with other food service jobs where staff scratch cook.

Additional training but with a high staff turnover it is a constant issue. Scratch standardized recipes available and training videos.

Paying people more money and having a full staff who is trained correctly would make it a lot easier to cook from scratch.

Need more funding to purchase the food and continue to train the staff in scratch cooking skills. And funding for additional staff.

Extra Funding – specifically for labor. Competitive pay.

Increase reimbursements to cover the costs of scratch cooking. Also, when we serve scratch made meals our participation goes down.

Increase salaries to attract workers with the culinary skills required to perform the job well.

Table O.

Strategies Associated with Procurement and Vendor Relations

Training on writing bids for fresh produce and meat, finding local farms.
Not being required to have a specific percentage of food coming from one main vendor. Find foods in US that we need. Example: fresh peaches, pineapple, berries, etc. This might be a vendor issue.
Flexibility on bids, higher thresholds and less regulations for small procurement purchasing.
Working closely with our distributor to ensure product consistency and mitigate shortages and product changes.
Procurement is not a challenge, other than trying to procure locally when we already have other formal solicitations in place for the same products so would have to go 'off-contract' if changing to a local grower/producer.
When write bids specs make sure you add equal or approve. Finding vendors that will deliver and get the right product without delay. Ensure that there is no hidden cost after the commitment to buy. Bid specs will help identify sourcing opportunities.
We put our main distributor out to bid for the 2025–2026 school year.
Making it simpler for Farmers to become USDA-approved. Making the procurement process easier. There are several farmers that I could purchase from, but because of all the red tape, it isn't possible to do this.
It is extremely helpful that our state's Farm to School Grant had a list of approved vendors that we could purchase from, that reduced the compliance burden somewhat because a lot of the vendors are close to us.
Using a co-op to purchase, they are familiar and follow the procurement regulations.
I would like to see USDA create an editable form for procurement. As a small district procurement and bid writing takes a lot of resources from spending time training, nutrition education, and recipe development.
As a small district, participating in a GPO helps with writing bid specifications. It's also helpful to try to develop relationships with local sellers who may not sell to schools, but are interested in starting.
We are connecting with neighboring districts to create group delivery days to entice smaller farms who don't normally deliver. We hope this might result in the creation of a local food 'hub.'
Partner with COOP and their partners to help find local fresh produce in an urban setting.
I do a lot of Farm to School… Less restrictions on purchasing rules would be great—such as bids for many products. We do not always have many choices and once you have a relationship with a producer, it is great to keep it.

Using DOD Funds for fresh fruit and vegetables. Getting help from the ESCs for writing bid specifications.
Having more approved vendors. Being able to shop ingredients in person.
Making it easier to get local vendors, bidding out products is extremely hard in rural communities.
Find a best practice district to review their bid specs and purchasing strategies to help you get started.
We use a COOP and some items that we would like to use are either not available (due to lack of interest) or too pricey.
Need vendors in our area to offer more of the reduced sodium ingredients, whole grain ingredients. Need a list of local people/farms that are USDA approved that we can buy from.
Finding local food, learning more about writing bid specification, knowing the vendors to get ingredients from.
We get a decent amount of funding for Commodity food, but it is mostly prepared food. It would be great if there was a lot more items available for purchasing raw products.

Table P.

Strategies Associated with Operations and Menu Planning

Create cycle menu.
Start small, maybe one to two new recipes at first, and build with your team. Have professional development on the HOW to accomplish this, do not just order ingredients and toss a recipe at them. Practice the recipe, and get a student advisory with feedback.
We are always trying new items on the menus and putting on for a minimum of 3 times to give them a chance to like them. Making from scratch takes more ingredients and more food cost.
Grow your menu while you grow your staffing.
Create menus that use products efficiently to reduce waste and maximize production. Working closely with our distributor to ensure product consistency and mitigate shortages and product changes.
Our scratch items are hit or miss and generally participation is lower on those days. It is hard to balance feeding students vs scratch made food that no one is eating. So better recipes/ideas for scratch foods that kids eat more of!
We modify menus to use what we can purchase, we use multiple vendors to get all the items we require.

We wrote menus to reflect what we could get from our vendor(s) as well as locally. Not ideal but does enable us to offer more scratch items.

We currently have 11 or more menu items. Offering 4–5 quality items, if made from scratch, in my opinion is ideal. Staffing is the main issue, specifically with scratch food items that have many components and take time to prepare. Employees are willing to prepare more scratch food items if there wasn't so many offered, and got paid more.

Recipes using local products with multiple cultures involved. Kids don't want to eat casseroles. They want sandwiches and handheld main entrees. Good healthy, tasty and appealing to the eye scratch cooked recipes would help.

We've tried many different recipes, sent out surveys to get the input from the students and we still have so much waste when we make anything homemade.

We would need more staffing and labor hours if we were to make more meals from scratch. It's difficult to comply with state regulations when you don't have a lot of experience doing the job.

Using standardized recipes.

Using Commodity as much as possible. Balance scratch-made with ready-made products to keep labor and food costs more equal.

Breakfast seems to be the struggle in my district.

Some strategies to help with the challenges associated with scratch cooking include pre prepping to lighten the strain of getting meals prepared in a timely manner.

Making sure we are keeping costs down but providing a nutritious and palatable meal.

Options to overcome the cost increase of fresh ingredients. Training on scratch-cooking and batch cooking. Meeting guidelines are easier to reach and maintain with scratch-cooking. Guidance on HOW to meet the fat requirements.

Creating recipes that is not totally scratch cooking with few ingredients. For example using alfredo sauce already made but still cooking the pasta and meat.

I think the option to add more vegetables to standard recipes and popular items should be allowed, encouraged, and even promoted with target campaigns.

Identify products that can be used as 'staples' to create several dishes for the menus in your cycles, where those cycles rotate seasonally, so you're able to purchase items as they're grown.

We need better recipes and use food students are more willing to eat.

Limit choices.

Adjust your menu.

Possibly partner with other districts to bulk buy from local farmers. Buying locally would help. Finding farm locally. Making scratch cooking recipes that are easier and quicker but yet still federal follow regulations.

Start small, and slowly work on integrating more scratch cooked recipes. Look at other districts menus, follow social media groups, find credited recipes.

Our students don't eat scratch cooking any longer. They are all eating convenience food due both parents working.

Table Q.

Strategies Associated with Facilities and Equipment

We would need approximately $20,000,000 in Federal funds and 3 years to put kitchen additions on all schools.

Have a larger cooking kitchen, more staff to prepare the foods from scratch, additional staff to train people to cook foods from scratch.

Need more funding, more staff, a bigger kitchen work area, and more storage space.

Our hands are tied with the facility issues, all other issues or roadblocks are manageable.

New buildings with appropriate kitchen space. The kitchens were built back in the day when students purchased lunch. Our community has changed and now we are a low income community with 82% of our students qualifying for free lunch. The kitchens and cafeterias were not built to handle this volume.

Need a walk in refrigerator to store all the fresh foods. Our facility does not have one.

Local level training of staff on cooking techniques and resource to update infrastructure. We need to keep in mind there are schools out there that are so old they can't even plug in another computer yet alone modern cooking equipment.

We don't have the equipment, training or space for scratch cooking.

All we have for equipment at this school is two small ovens and 8 stove top burners.

Need to have a 2nd shift. Employees on 2nd shift would cook all food from scratch. Then 1st shift comes in and warms food and serves it.

Out of 7 schools, we have one kitchen that can do batch cooking, but the cooks there do not know how to scratch cook. The rest of the schools have only ovens & warmers.

I wish this school had a working kitchen.

Allow the cafeteria funds to be used to update the infrastructure specific to Child Nutrition Services such as the electrical or plumbing for newer, or updated equipment needed to scratch cook.
Kitchen layout: Kitchen renovations after Covid.
Our kitchen is very small, I believe it is less than 20 square feet and does not have a stove. We cook prepared meals with hot plates and convection ovens. While we could cook from scratch with these tools, it would take too long to prepare meals for our 120+ learners in the allotted timeframes without hiring a second nutrition staff member.
A new building, due that our school is an old medical facility.
It's equipment that is not 24 years old, more efficient equipment. What we need is all free meals so we receive money to pay for all of the things (equipment, employees).
More equipment such as combi ovens, kettles, etc. has aided in our ability to process fresh foods.
We have small storage spaces and we have been short handed. These limitations make scratch cooking harder and more expensive.
Facilities and equipment improvements are the only way we could manage scratch cooking in all schools.

Table R.

Strategies Associated with Policy and Regulations

Making it simpler for Farmers to become USDA-approved. Making the procurement process easier. There are several farmers that I could purchase from, but because of all the red tape, it isn't possible to do this.
Increase State or Federal funding for purchases of locally grown foods, including farm to school programs. Give extra reimbursement money for procuring locally or unprocessed foods.
Flexibility on bids, higher thresholds and less regulations for small procurement purchasing.
Lobbying for higher reimbursement for our program. Buying clean label ingredients is definitely more expensive.
Increase reimbursements to cover the costs of scratch cooking. Also, when we serve scratch made meals our participation goes down.

Convincing the Administration and School Board that the School Meal Program is important and we need the hours, skilled labor and additional salaries to accomplish this.

Procurement is not a challenge, other than trying to procure locally when we already have other formal solicitations in place for the same products so would have to go 'off-contract' if changing to a local grower/producer.

Allow the cafeteria funds to be used to update the infrastructure specific to Child Nutrition Services such as the electrical or plumbing for newer, or updated equipment needed to scratch cook.

I would like to see USDA create an editable form for procurement. As a small district procurement and bid writing takes a lot of resources from spending time training, nutrition education, and recipe development.

Our school corporation sets the hourly wages and will not allow a wage increase to assist in keeping employees.

We don't have enough kitchen staff to prepare meals from scratch. We also don't have adequate space to store additional product. We are bound by USDA guidelines that require us to provide certain meal components and calories at each grade level.

Options to overcome the cost increase of fresh ingredients. Training on scratch-cooking and batch cooking. Meeting guidelines are easier to reach and maintain with scratch-cooking. Guidance on HOW to meet the fat requirements.

We do not always have many choices and once you have a relationship with a producer, it is great to keep it. Less restrictions on purchasing rules would be great—such as bids for many products.

Being able to offer benefits to all staff for retention and also to draw new staff. Extra staff is needed for scratch cooking for prep and execution. We need policy change to allow cafeteria funds to pay for staff benefits.

It is extremely helpful that our state's Farm to School Grant had a list of approved vendors that we could purchase from, that reduced the compliance burden somewhat because a lot of the vendors are close to us.

Need vendors in our area to offer more of the reduced sodium ingredients, whole grain ingredients. Need a list of local people/farms that are USDA approved that we can buy from.

Our biggest challenge is lack of knowledge on the part of staff. I have incorporated more training, but most trainings are only in English and I have a predominately Spanish speaking staff. USDA needs to provide training materials in multiple languages.

We get a decent amount of funding for Commodity food, but it is mostly prepared food. It would be great if there was a lot more items available for purchasing raw products.
USDA requires a grain-based breakfast most days of the week. We would like to offer more scratch protein-based breakfasts but struggle with the current regulations.
Our students don't eat scratch cooking any longer. They are all eating convenience food due both parents working. Regulations around meal patterns make it difficult to be flexible.

Table S.

Strategies Associated with Collaboration and Partnerships

Start with small steps, build your team up with the knowledge and tools they need, slowly add more, try to integrate local ingredients whenever possible, make lots of community connections, tell your story, elevate student voice (spend time cooking what kids want to eat).
Working with state agency to try and collaborate with local producers.
Networking with my area Directors in S. California. Letting my vendors know upfront that I'd like to buy local, fresh foods.
Work with other schools for ideas and recipes.
Partner with COOP and their partners to help find local fresh produce in an urban setting.
I do a lot of Farm to School……Less restrictions on purchasing rules would be great - such as bids for many products. We do not always have many choices and once you have a relationship with a producer, it is great to keep it.
Developing partnerships with local farmers that meet qualifications for school meal programs. More resources and 'boots on the ground' for training staff on scratch cooking.
Just start somewhere. Build relationships with internal and external key stakeholders that can/could influence procurement and production: from farmer to design of kitchen.
Good relationship with your Farm-to-School Provider. Support from school administration and local government for fiscal support for shortfall of expenses. Partnering with the Culinary Program, within the school, and other school nutrition groups to conduct trainings on skill sets (such as knife handling) and updating recipes.
We are connecting with neighboring districts to create group delivery days to entice smaller farms who don't normally deliver. We hope this might result in the creation of a local food 'hub'.

Possibly partner with other districts to bulk buy from local farmers.

Conduct a gathering of local vendors, farm to table see what they have to offer. Must be in compliance, see if samples are available.

Utilize a cooperative buying group, set up meetings with local farmers for next years needs.

Collaborating with manufacturing companies to increase 'child nutrition friendly' options at a more affordable price.

Co-ops are an excellent resource for procurement challenges. Learning from other directors who have had success with similar challenges is also a must-go-to.

Extra Training for Staff, Starting Small/Simple, Working with local Food Procurement Group, Working with/getting help from other local districts.

We found a food vendor that is located nearby who is able to make all the meals from scratch at their facility, with locally sourced and organic items, when possible. Gourmet Gorilla, in IL. They are great. And that organization would be better answered to the challenges that arise.

Partner with other districts so that we have more buying power which would help vendors be able to support stocking ingredients we are in need of.

We have access to the OKC Food Hub who is instrumental in helping us coordinate our district purchasing requirements with farmers and producers.

As a small district, participating in a GPO helps with writing bid specifications. It's also helpful to try to develop relationships with local sellers who may not sell to schools, but are interested in starting.

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