

DECISION-MAKING PROCESS IN SELECTING A NEW FOODSERVICE SYSTEM

The school foodservice environment is changing rapidly, and some of these changes necessitate school foodservice directors to consider alternative foodservice systems for their districts. Centralized systems are viable alternatives that are increasing in popularity because of their cost and labor efficiencies.

This chapter will focus on the decision-making process that a school foodservice director might follow when considering a new foodservice system. Factors to consider in the decision-making process, along with related research, will be discussed. In this chapter, information will be presented about:

- Trends in schools that may impact decisions for alternative foodservice systems
- Foodservice systems used by school districts
- Factors influencing decisions to centralize food production
- Generic decision-making process
- Decision-making process for centralizing food production
- Advantages of a centralized foodservice system
- Advice of school foodservice directors with centralized foodservice systems to those directors considering centralization
- Satisfaction of directors and employees with centralized foodservice systems
- Impact of centralized foodservice system on food quality

Trends in Schools that May Impact Decisions for Alternative Foodservice Systems

There have been many changes in the school foodservice environment, and change seems to be never-ending. Many of these changes impact the way food is produced and served in schools, and may necessitate changes in the foodservice system to meet the demand for school meals.

There are many general trends that are impacting large numbers of school districts. At the 1999 American School Food Service Association (ASFSA) Leadership Conference, attendees from across the United States identified food and operational trends that are impacting their operations (Friedland, 1999).

Food Trends

The types of menu items offered are changing. In addition, school foodservice directors are finding that there is an increase in the use of branded foods and in the number of choices offered to students. There is an increase in the number of children with special needs and in the diagnoses of food allergies. More students are requesting vegetarian alternatives and organic foods.

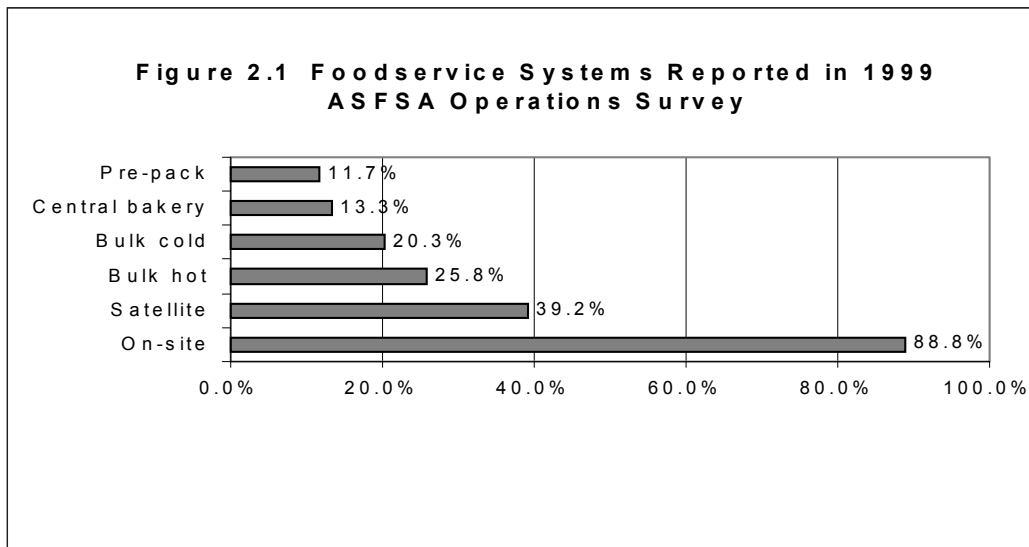
Operational Trends

School foodservice directors are experiencing many operational changes. One of the areas that is presenting a major challenge relates to labor. **Labor availability** issues include labor shortages, which result in turnover and training problems, and the need for more qualified employees, which leads to increased labor costs. **Diversity** issues in the workforce include an increase in generational differences in the workforce, including changing expectations and work ethic, and an increase in employees whose first language is not English, which results in training challenges and cultural sensitivity issues. Further, there often is a lack of necessary transportation for employees.

In addition to labor challenges, school foodservice directors report increases in costs as a result of new regulations, use of their kitchens for nontraditional operations, increases in cooperative purchasing, increases in geographic distances due to the consolidation of schools, and increases in the number of students eating at school. Many other trends were identified, but these are the major ones that might impact a school foodservice director's decision to select an alternative foodservice system.

Foodservice Systems Used by School Districts

The 1999 Operations Survey conducted by the ASFSA found that nearly 89% of all school districts have on-site kitchens for their foodservice operations. Twenty-three (23%) percent of the directors indicated that their district has a central production facility, and 13% has a central bakery. Figure 2-1 summarizes the findings of the survey.



Source: American School Food Service Association. (1999). Straight from the source: Findings from ASFSA's 1999 operations survey. *School Foodservice & Nutrition*, 53, 16.

Factors Influencing Decisions to Centralize Food Production

Twelve foodservice directors identified reasons that they centralized food production in their school districts, which included:

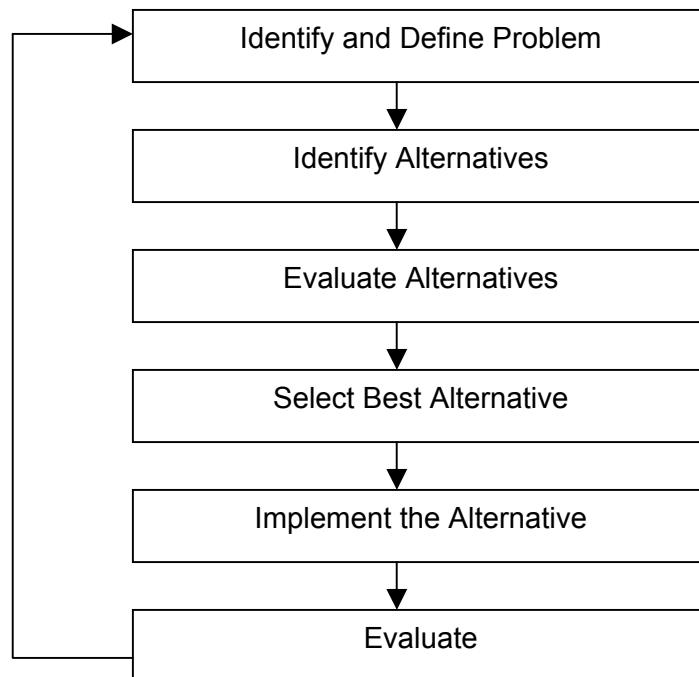
- Growth in the number of schools and children in the school district
- Quality/consistency
- Financial
 - Labor
 - Limited money to build new kitchens
 - Less equipment required at satellites
 - Purchasing power for raw goods, both from the increase in volume and one drop at the central kitchen
 - Square footage needs reduced at schools
 - Lower utility costs
 - Savings at the central and receiving kitchens
- Facility limitations
 - No kitchens in schools
 - Old kitchens in schools
 - Multi-use schools, limiting cafeteria space

- Labor
 - Declining skill base
 - Tight labor market/limited availability of labor
- Flexibility
- Food safety and quality control
 - HACCP
 - Standardized recipes and procedures
 - Legal documentation
- Resource for disasters (floods, earthquakes, volcanoes, etc.)

Decision-Making Process

There are many factors to consider when making a decision, and there is a generic decision-making process that is used to guide decisions. The main steps in the decision-making process are presented in Figure 2.2.

Figure 2.2 Generic Decision-Making Process



It is important to follow all of these steps in making decisions. Koogler and Nicholanco (1977) noted that when decisions are made about prepared food systems, “in many instances, the final decision precedes the analysis” (p. 95). A systematic process in which alternatives are thoroughly explored in the context of the needs of the school district will ensure that a good decision is made. This ensures that a decision is not made, then data collected to support the decision.

Decision-Making Process for Centralizing Food Production

The generic decision-making process serves as a model of making a decision about whether or not to centralize food production in a school district. Let’s use an example to illustrate the decision-making process and the kinds of decisions that will be needed.

The Springvale School District, located adjacent to a major metropolitan area, has experienced major growth over the past three years. This growth is expected to continue for the next five to eight years, and it is anticipated that several new schools will need to be built in the next five years to handle the growth. The school foodservice director is feeling the pressure of planning new kitchens, containing growing costs, and staffing the foodservice department in an area where the labor market is very tight. The foodservice director has been reading USDA’s MealTalk listserv, and several foodservice directors report success with central kitchens. The foodservice director has limited knowledge about what would be involved in implementing a central kitchen but believes that option should be explored.

Step 1. Identify and define the problem. In this situation, the problem is meeting the food and nutrition needs for a school district that is growing rapidly. In that district, cost containment is critical and there is a shortage of labor available to meet the needs of the foodservice department. The school foodservice director needs to explore options that are available to address the challenges of growth, cost containment, and labor availability within the context of the district. The option selected will need to support the mission and goals of the operation.

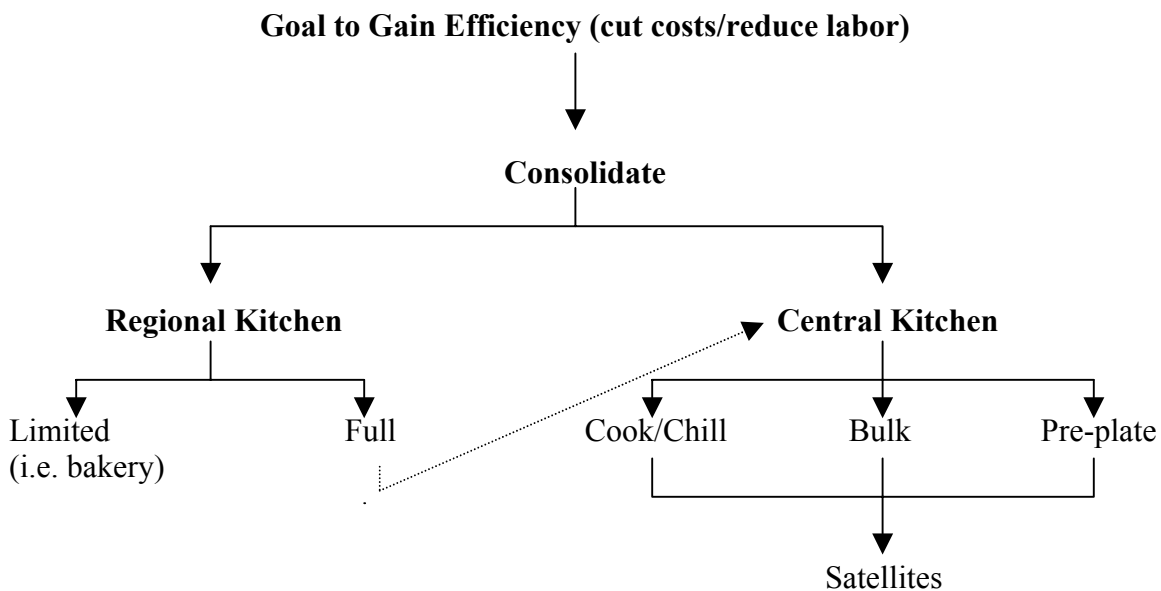
Step 2. Identify alternatives. There are several alternatives that could be considered:

- Continue to use an on-site or conventional foodservice system.
- Form regional/base kitchens, and transport food to satellite schools for service.
- Centralize some cooking functions, such as baking.
- Build a central kitchen and transport food to satellite schools for service.

When considering some form of consolidation, there are several other decisions that will need to be made. Figure 2.3 illustrates the many options/decisions that will need to be made. This model illustrates that food production can be consolidated through regional kitchens (a school kitchen in which foods are prepared, served at that school, and

transported to other schools for service) or with central kitchens. Regional kitchens may be used to centralize just one function, such as baking, or may be used as one or more regional kitchens in which food is prepared and distributed to a number of schools.

Figure 2.3 Options for consolidating food production



The district school foodservice director may decide to use regional kitchens to gain efficiencies. This strategy would be less costly than moving to a centralized foodservice system and may be more readily accepted by administrators and staff. It also requires less time to implement. Regional kitchens may be formed by:

- ◆ Geography—choosing the base kitchen to prepare food for schools that are geographically close by to reduce the transportation time.
- ◆ Customer—for example, one base kitchen might serve elementary schools and another one would serve middle and high schools.

The other option is to use a central kitchen to serve all of the schools in the district. With a central kitchen, decisions will need to be made about the temperature at which food will be transported (hot or cold) and the form in which the food will be transported (bulk or pre-plated). The dotted line in the model indicates that sometimes centralizing food production is done in phases. A district may use regional kitchens for a few years and then may move to a centralized foodservice system.

Case in Point

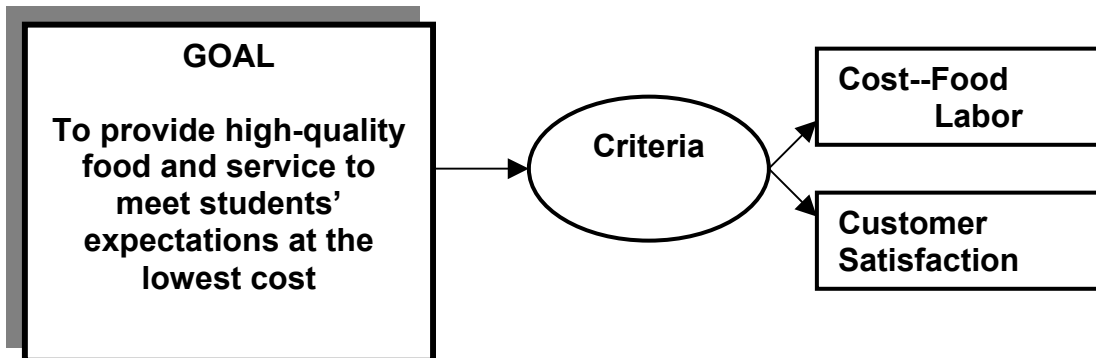
The Fargo, North Dakota school district had 20 schools, and all of them did on-site production. They started doing some production at a high school for the elementary schools, and after two years moved to total production for the elementary schools. Over the next two years, they centralized all of the baking at another high school. Their central warehouse was in a different location. The delivery trucks were crisscrossing, using too much time. The foodservice director requested a central kitchen for five years and finally achieved the goal when the school foodservice department had saved enough money to pay for the project themselves. After two more years, they shipped the first meals from their new central production facility—bakery, meal production, and warehouse at one location!

Step 3. Evaluate alternatives. An extensive research process will be needed to collect all of the data necessary for evaluating alternatives. The school foodservice director will identify the criteria that will be used for evaluating the alternatives.

Nettles and Gregoire (2000) studied the process that school foodservice directors used to select a new foodservice system. Factors that 90% of directors considered in selecting a system, listed in descending order of importance, include: student satisfaction with food quality, food safety concerns, long-range needs of the school district, temperature of food at service, holding time of prepared food, projected total labor cost, teacher/administration satisfaction with food quality, school district administration support, amount of space available for food production, production flexibility, and projected meals per labor hour. There were many other criteria that were used to a lesser extent in the decision-making process.

Step 4. Select the best alternative. When selecting the best alternative, it is important to keep in mind the impetus for considering a change of foodservice system in the first place. Also, it will be critical to select the best alternative in relation to the goal/s of the operation. Figure 2.4 illustrates the relationship between the criteria used to evaluate decisions and the goal of the operation.

Figure 2.4 Criteria to accomplish goal of school foodservice operation



Step 5. Implement the alternative. Once the best alternative has been determined, it will be implemented. The implementation phase often will be very time consuming, and will require much planning and preparation. There often will need to be new policies and procedures developed for the new system. Also, a new menu, or at least a modified menu, will be required. Recipes may need to be restandardized. For example, if it is determined that an on-site foodservice system will be replaced with a centralized foodservice system, recipes will need to be scaled for the new volumes and modified for the new procedures. Cook/chill often requires changes in how some products such as pasta, are handled. A new system also will require new HACCP procedures, and those should be planned prior to implementation.

Step 6. Evaluate. Once the alternative is implemented, an ongoing evaluation process is needed. Factors such as food quality (both in terms of consumer acceptance and food safety) and financial performance (such as food and labor costs) should be evaluated. In addition, other criteria may be important to evaluate. Based on continuous evaluation, procedures can be modified to better meet the goals of the foodservice operation.

Advice of School Foodservice Directors with Centralized Foodservice Systems to Those Considering Centralization

School foodservice directors who operate centralized foodservice systems can provide some excellent advice to school foodservice directors who are considering consolidating food production, whether it be centralizing only one function, using base kitchens, or starting a central production facility. Considerations relate to four areas: decision-making, planning, construction, and implementation.

Decision-Making

- Develop a global vision for your foodservice system.
- Recognize perceptions that people may have about mass-produced food. For example:
 - Food that is mass-produced will have a “plastic” appearance
 - Pre-plate = mass-produced
 - Disposables are bad for the environment
- Do extensive research about the alternatives that are available.
- Visit school foodservice operations that have central kitchens. Be sure to include travel in the budget.
- Ask a lot of questions of directors who operate central kitchens.
- Determine what computer systems are available.

Planning

- Involve many people in planning facilities, including representatives of the following groups: staff, security, collective bargaining unit or school food service association officers (if applicable), Department of Education, human resources, PTA, safety office, health department, community, school board, USDA representative, to name just a few.
- Interview consultants.
- Hire a competent consultant early in the planning process.
- Be a part of the selection of the architect.
- Get your school board’s support.
- Involve the health department.
- Consider proximity of foodservice with school administration. If located together there are shared overhead costs. Central kitchens with separate locations bear all building overhead costs alone.
- Conduct a feasibility study.
- Develop facility with operations (workflow) in mind and consistent with the vision for the entire operation.
- Pay attention to the little things such as electrical outlets, plumbing, and slopes of floors and drains. Seek help with details.
- Plan the facility with enough flexibility for future change.
- Order three times the transportation equipment (carts, insulated containers, etc.) you think you will need!
- Plan HACCP from the beginning.
- Trust advice of staff (before consultants).
- Review actual plans and provide feedback/input.

Construction

- Hire experienced contractors.
- Be constantly and consistently involved in daily building project.
- Expect delays.

Implementation

- Plan to phase-in operations.
- Develop monitoring crew for satellite operations.
- Have a contingency plan (weather, foodborne illness, power out, driving/delivery conditions).

Throughout the entire process, it is important to involve staff in the planning and to communicate to staff. This will ensure that different perspectives are represented and that employees have a buy-in to the process.

Advantages of Centralized Food Production

There are many advantages to centralized food production that have been identified by school foodservice directors. One of the noted advantages is the prestige of the central kitchen, and the pride that develops. The central kitchen becomes a showplace, and it is used for student tours. Cost control is one advantage that relates to each of the following areas:

Menu Planning

- One menu is planned throughout the district, thus, there is need for only one nutritional analysis and menu costing.
- Less time is required for menu planning activities.
- Nutrient Standard Menu Planning can be implemented more easily due to having only one menu.
- The menu can be planned to stay within the budget, and there will be consistency across all schools within a district.

Purchasing/Inventory Control

The purchasing and inventory processes are centralized in foodservice operations that are doing centralized food production. This provides economies of scale that can be very beneficial for decreasing costs and increasing the quality and consistency of the food products purchased. This centralization also provides the scale to ensure that appropriate

procedures are in place to ensure inventory control and turnover. Specifically, advantages related to purchasing include:

- Competition for distributors and manufacturers is increased as the volume of purchases is increased.
- Purchasing in large quantities offers cost savings.
- One drop-off point at a central warehouse often results in lower food and supply costs compared to multiple small deliveries to many locations.
- Inventory control procedures will be in place to ensure that all purchases are recorded and that issuing of food from the storeroom will be recorded.
- Security will be increased in central purchasing. Limiting theft will decrease the cost of goods (food and supplies).
- Inventory turnover will be improved, ensuring that the quality of the food products is maintained.

Labor Efficiencies/Cost Control

Labor efficiency often is the impetus for adopting a centralized foodservice system. Economies of scales can be realized in terms of labor, just like it is for purchasing and inventory control. Some of the advantages related to labor are:

- The total labor costs for an operation will be decreased.
- Staff skills and specialization can be developed.
- There is an increased opportunity for the use of full-time staff in the centralized foodservice operation, which provides stability to the operation.
- Overtime can be controlled.

Quality Control

Centralizing food production also centralizes the quality control function. Quality control advantages include:

- Improved quality and consistency occurs when all production occurs at one site. In an on-site foodservice system with many schools there is variation in the quality and consistency of the food based on the training of employees, use of standardized recipes, size of portions served, and, depending on how purchasing takes place, the quality of food purchased. Centralizing food production controls for many of the variables that impact quality and consistency.
- Food safety risks can be reduced with centralized foodservice systems. Because of the scope of the system, there often is an employee hired whose major responsibility is quality control and assurance. This person can develop appropriate HACCP systems for the central kitchen, train employees about safe food handling and how to implement the HACCP system, and monitor food quality. This detailed attention to food safety often is not possible in a decentralized (on-site) system due to the high cost.

Disadvantages of Centralized Food Production

While centralized food production has many advantages, there also are some potential disadvantages that must be considered when making decisions. Areas such as cost, employee impact, and food production issues present possible disadvantages.

Cost

Several cost issues may present disadvantages.

- There are high initial capital costs for the building (either for a new building or to renovate an existing facility) and for the equipment. This may present some challenges for funding the project.
- There may be several new costs that the school foodservice operation has not had before, such as building insurance, building repairs, transportation costs, packaging materials, security system, and lawn care and snow removal. Some costs that may increase with the new system include utilities, pest control, cash handling, refuse collection, and uniforms.

Employee Impact

Centralized food production may have several potential disadvantages for employees. These disadvantages and how they are going to be eliminated or reduced will need to be considered in making decisions about using centralized food production and in the planning process.

- Some employees with high levels of technical skills will be needed. Bakers and equipment maintenance personnel would be two examples. These employees may be difficult to recruit and the pay level would be higher than for other employees.
- Some jobs in a central food production facility are very monotonous. Related to this is the increased risk of musculoskeletal disorders that occurs with repetitive work.

Food Production Issues

There are several potential disadvantages related to food production.

- Equipment malfunctions can cause significant problems; thus, preventive maintenance will be extremely important.
- Some may perceive that there is a loss of food quality with centralized food production. Others believe that the quality is better because of the control mechanisms that are in place.

- Recipe modifications are required for large quantity food production. The form in which food is purchased also may change to yield high-quality products.
- Food safety takes on a bigger role in centralized food production due to the potential for a large impact on customers.
- Food production and service are separated, which limits the feedback that food production workers get from their customers.

While there are potential disadvantages, many can be reduced or eliminated. Through the processes of planning, selecting equipment, and implementing the new system, decisions may be made that will remove the disadvantages.

Satisfaction with Foodservice Systems

One factor that might influence the decision-making process to adopt a different foodservice system is the satisfaction of foodservice directors and employees in operations that have adopted a new system. There have been several research studies exploring this issue in hospital and school settings.

Green (1997) conducted a case study of one North Carolina school district that installed a cook/chill (centralized) foodservice system. Green studied the following variables: routinization, autonomy, instrumental communication (having adequate information to do their job), and evaluation of product quality. Employees reported satisfaction with both their jobs and the quality of the food that they produced. Green observed that satisfaction may be high with this group because the foodservice director took steps to ensure that employees had job variety, were involved in making decisions, and were informed throughout the process on planning and implementing the new system.

Kim and Shanklin (1999a) conducted a longitudinal study in one Midwestern school district that was moving from a combination conventional/central kitchen system to a centralized cook/chill foodservice system. These researchers measured job satisfaction prior to implementation of the new system, and five months and 1.5 years after implementation. There were no differences in satisfaction with supervision, coworkers, work, pay, promotion, and overall satisfaction between the employees prior to implementation and after five months. After 1.5 years, employees' overall satisfaction, and satisfaction with coworkers and the work increased significantly compared to prior to and five months after implementation. Satisfaction with pay, promotion, and supervisor were no different at any of the three times.

Kim and Shanklin (1999a) also studied attitudes of employees at each of the three time periods described above. The following attitudes were examined: how knowledgeable they were about the new system, how excited they were about the new system, improved food quality, improved food temperature, increased participation, improved working

conditions, impact on job security, and improved overall quality. Employees reported knowledge increased five months after implementation, the level of excitement decreased at five months and increased at 1.5 years. Attitudes about improved food quality, food temperature, increased lunch participation, working conditions, and overall quality decreased at five months but returned to the beginning level after 1.5 years. These researchers concluded that employees were resistant to the new system and showed discomfort early in the process. After becoming accustomed to the new system, their resistance and discomfort to the new system decreased. Kim and Shanklin (1999a) concluded that “management should encourage employees’ participation during the transition period, help them understand the reasons for implementing a new system, and prepare them for changes in job content and work environment (p. 67).”

Impact of Centralized Foodservice Systems on Food Quality

Another important consideration in the decision-making process is the quality of the food that will result from the new system. There has been some research in school foodservice to determine the impact of a centralized foodservice system on food quality.

Green (1997) evaluated the implementation of a centralized cook/chill foodservice system in North Carolina. Employees evaluated the quality of nine menu items prepared in the cook/chill facility. Employees rated eight of the nine items as good or very good, although 29% of the employees reported that there were items that they would not eat themselves, including beefaroni, macaroni and cheese, beef soup, and lasagna. Green (1997) concluded that there is a “need for continuous testing, development, and adaptation of recipes to withstand the cook/chill process and subsequent storage.”

Kim and Shanklin (1999b) examined students’ acceptance of spaghetti with meat sauce in a midwestern school district that was changing from a conventional foodservice system to a centralized cook/chill foodservice system. They selected two cohorts of students, one in fourth grade and one in fifth grade, to evaluate the menu item before and after the foodservice system change. They found that one cohort group rated the spaghetti higher before the system change, and the other group rated it higher after the system change. Plate waste was lower after the system change even though the portions served were larger.

Summary

The decision-making process is a complex and time-consuming process. Directors selecting centralized cook/chill systems reported that the system selection process took several months: 53% took 6-12 months and 41% took longer than 12 months (Nettles & Gregoire, 2000). It is recommended that school foodservice directors contemplating a change in foodservice system for their district take the necessary time to make a good decision, collect information about the various options, use the steps in the decision-making process, and follow the advice given by current directors of centralized foodservice systems.

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