FOOD EDUCATION IN AMERICA

www.foodday.org
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CSPI
The Center for Science in the Public Interest (CSPI) is a nonprofit organization based in Washington, D.C. Since 1971, CSPI has been working to improve the public’s health through its work on nutrition and food safety. CSPI is supported primarily by the subscribers to its Nutrition Action Healthletter and philanthropic foundations.

Food Day
Food Day, created by the nonprofit Center for Science in the Public Interest, inspires Americans to change their diets and our country’s food policies. Every October 24, thousands of events all around the country bring Americans together to celebrate and enjoy real food and to push for improved food policies. Food Day works throughout the year to make food education more available in schools.

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Contents

Executive summary i
Introduction 1
Federal programs and initiatives 3
Nationwide programs 6
State and local policies 8
State and local projects 9
Curricula and resources 10
K–12 content standards for food education 12
Research-based approach 13
Professional development 14
Experience of other countries 15
Experience of environmental education 16
Recommendations 17
Endnotes 18
Bibliography 21
Executive summary

Getting food education – cooking, gardening and academic skills – into every school will require collaboration from many groups and individuals, as well as an approach based on research. This report describes the state of food education in America to provide a baseline and recommend what more could be done.

Food education in U.S. schools is negligible, scattered, and inefficient, without a national food literacy curriculum or standards. When it is available at all, food education is mostly carried out through small local projects.

There are many examples of successful food education projects, but the groups implementing them haven’t come together as a unified movement or gained enough political clout to increase their reach. Comprehensive national food education is in its infancy.

The best programs in schools include nutrition classes and hands-on activities where kids can grow food, and then touch, taste, and cook it. They often help schools fulfill a United States Department of Agriculture (USDA) requirement that each school district implement a wellness policy that includes food education. Food education programs are funded mostly by federal dollars allocated for low-income families, with just a small portion spent directly in schools. Implementation varies from state to state, and national programs, such as to support family and consumer science classes, are often the targets of budget cuts.

There is little systematic and comprehensive information on what works and what doesn’t in food education. It’s hard for teachers to know what curriculum to use. Some of the materials are produced by research institutions, while others are based on anecdotal evidence or produced by industry to promote their own products.

Improvements in school meals have made it possible to meet nutrition criteria essential for health. That needs to be taken further by teaching students how to cook and prepare meals at home.

There is an urgent need for national standards that will provide skills and knowledge to students, support teacher training, assist the development and rating of materials and curricula, and help to integrate food education into the core of learning.

How can 79 million children enrolled in schools around the country be educated about food? It’s going to take involvement from all levels of stakeholders: states and cities, school districts, the academic community and philanthropic organizations, and parents.
**Introduction**

Schools have the unique ability to educate all children throughout the country about food and nutrition. Yet elementary school children receive an average of just 3.4 hours of food and nutrition education a year.\(^1\) We need to understand current practices to inform change.

**Food education is too important to leave to Big Food**

The typical American diet is contributing to obesity, diabetes, heart disease, and other health problems. Those problems cost Americans more than $150 billion per year.\(^2\) Consuming foods too high in fat, sodium, and sugar, with not enough whole grains, fruits, and vegetables, is inconsistent with the Dietary Guidelines for Americans. Eating patterns develop in childhood and have the potential to last a lifetime.

One-third of children in the United States are overweight or obese and total health-care costs attributable to obesity could reach $957 billion by 2030.\(^3\) Meanwhile more than 15 million children in the United States remain hungry.\(^4\) Obesity and poor nutrition are major contributors to diet-related diseases, and major risk factors for them are often established in childhood through unhealthy eating habits and poor health literacy. For instance, fewer than 20 percent of adolescents aged 12 to 18 eat the recommended five or more servings of fruits or vegetables daily.\(^5\)

Yet many children are exposed to the marketing messages of the food industry, which is spending almost $2 billion a year to teach children and teens to want candy, sugar drinks, sugary cereals, and other highly-processed junk foods.\(^5\) Providing children with food education can counterbalance these powerful messages.

Food education includes learning about food and nutrition, both in the classroom and with hands-on cooking and gardening. Such activities could be integrated into the school curriculum, taught in separate classes, or offered in after-school programs. These programs **put the tools of eating healthier diets into the hands of children themselves.** Studies indicate:

- The more children learn about food and nutrition, the likelier they are to eat fruit and vegetables.\(^7\)
- The more children cook and prepare fresh food from scratch, the likelier they are to appreciate healthier and more varied ingredients.\(^8, 9\)
- The more children plant and harvest fruit and vegetables, the more motivated they’ll be to eat them.\(^10\)

**Schools, together with local communities and families, need to be at the heart of food education.** They need to teach children about food, where it comes from, and how it affects their bodies.

Cooking classes are available to some children through family and consumer sciences classes, but less than 25 percent of high school students take those classes, which are often among the first programs to suffer school budget cuts.
Food skills are one of the most valuable life skills one could ever learn, and every child should learn about food: where it comes from and how it affects his or her body.

Schools across the country are launching initiatives that could be models for a national food education policy. Although gardening and cooking in schools are becoming more popular, thanks to programs like Farm to School, the great majority of students do not receive sufficient hours of food education for it to be effective. Health education mandated by states varies in quality and quantity, and often food and nutrition get short shrift.

As the first step toward making food education available in every school, we need to understand current practices to inform behavior and policy change. This report offers a nationwide picture of the status of food education, including federal, state, and local programs; promising practices; existing policies; and content standards for the establishment of consistent learning objectives. Numerous educators, public officials, state coalitions, teachers, and nonprofit groups helped shape the report.

Get Food Education in Every School

In 2013, the Food Day project of the Center for Science in the Public Interest joined forces with the Jamie Oliver Food Foundation (USA) to promote the importance of having food education and cooking classes in schools across America. The nationwide campaign, Get Food Education in Every School, aimed to raise awareness about food education and amplify the message that food education should become an integrated part of the school curriculum.

The campaign raised awareness about the lack of food literacy and built a broad coalition of more than 80 organizations that believe schools should integrate food education into the academic curriculum and provide students with hands-on experiences and education around cooking and gardening skills. The coalition sought to build support for food education at the local, state, and federal levels.

The campaign developed the #FoodEd hashtag to promote the issue on social media. It promotes interdisciplinary classroom, garden education, and cooking classes, as well as sharing best practices.

The American Association of Family & Consumer Sciences, American College of Lifestyle Medicine, American Medical Student Association, Edible Schoolyard Project, Center for Ecoliteracy, The Food Trust, National Association of Nutrition Professionals, and Nourish are among the organizations that supported the campaign.
Federal programs and initiatives
Getting effective food education into every school will require learning from existing federal programs that support various aspects of food education.

Most of the federal dollars allocated for nutrition and food education are designated for low-income populations. Combined, these federal dollars are almost 70 times greater than the budget of the federal Farm to School program. However only a part of the funds reaches school students directly in schools.

SNAP-Ed and EFNEP
The U.S. Department of Agriculture (USDA) has two programs to provide nutrition education to low-income populations, the Supplemental Nutrition Assistance Program Education (SNAP-Ed) and the Expanded Food and Nutrition Education Program (EFNEP). Both include children and adolescents and are sometimes implemented in schools.

In 2012, SNAP-Ed funding provided education for six million participants of whom two-thirds were in the K–12 age range. Partner groups, including land-grant universities and nonprofits, implement SNAP-Ed. For example, The Food Trust uses SNAP-Ed funding to provide nutrition education programs in 100 schools in Pennsylvania. The new SNAP-Ed program allows states to support community-wide education programs.

The USDA’s National Institute of Food and Agriculture (NIFA) administers EFNEP, which is provided by land-grant universities in all states and territories through a state cooperative extension office and a network of local or regional offices. EFNEP reaches 450,000 children every year, mostly in schools. SNAP-Ed funding was $407 million in FY 2015 and EFNEP’s budget was almost $68 million in FY 2015.

www.snap.nal.usda.gov
www.nifa.usda.gov/nea/food/efnep/about.html

Team Nutrition
The USDA’s Food and Nutrition Service’s Team Nutrition initiative largely supports school food-service providers, and one of its goals is nutrition education for students. In 2013, it provided $5.2 million in training grants to 19 states. A major part of the grants went to training and technical assistance, but the grants also funded efforts to integrate nutrition education into curricula.

In 2012, New Jersey received a USDA Team Nutrition grant of close to $325,000 for nutrition education programs and training for food service personnel. Eight child-care centers and 11 elementary and middle schools received mini-grants of between $1,000 and $2,500 to plant school gardens.

www.fns.usda.gov/tn/team-nutrition

Coordinated School Health
The Center’s for Disease Control and Prevention Coordinated School Health includes nutrition education in its goals as part of health education. According to the CDC, “nutrition education should be part of a comprehensive school health education
Between 40 and 50 hours of nutrition education may be needed per year for it to be effective. A school year includes about 1,000 hours of classroom time.

curriculum.” Every five years, state health and education departments and national nonprofits can apply for grants. These grants are largely for programs on school-based youth risk-behavior surveillance and pregnancy prevention, and it’s not clear if any recent funding has been designated for nutrition or food education.

www.cdc.gov/healthyyouth/cshp/

Let’s Move! campaign

The Let’s Move! campaign, launched by First Lady Michelle Obama in 2010, has the goal of ending childhood obesity within a generation and targets families, communities, schools, local officials, and companies. No other government campaign has accomplished so much to raise public awareness about the obesity problem and eating healthy diets. As a part of its strategy, Let’s Move! encourages schools to plant a garden and incorporate nutrition and physical education into the school curriculum.

www.letsmove.gov

School wellness policies

Each school system that participates in the National School Lunch Program or other federal child nutrition programs is required to establish a nutrition and physical activity wellness policy. In February 2014, USDA proposed a rule to update school wellness policies, as required by the Healthy, Hunger-Free Kids Act of 2010, and a final rule was expected to be published in 2015. School districts need to adopt policies that include specific goals for nutrition promotion and education.16

A local school wellness policy is one of the ways to introduce food education in schools. The policies should be transparent, and the community and parents should be involved in crafting them. A good policy should specify a sufficient number of hours of food education.

The Rudd Center at the University of Connecticut provides a district school wellness policy,17 as does the National Alliance for Nutrition and Physical Activity (NANA).18

www.fns.usda.gov/tn/local-school-wellness-policy
Farm-to-school programs bring fresh locally grown foods into cafeterias; assist in teaching students about food, agriculture, and healthy diets; and benefit the local economy.

**USDA Farm-to-School**

The Healthy, Hunger-Free Kids Act of 2010 provides $5 million per year for a [Farm to School Grant Program](http://www.fns.usda.gov/farmtoschool/farm-school), which offers grants for technical assistance and administration costs.

Implementation grants support food- and nutrition-based learning, taste tests to encourage eating fruits and vegetables, and school gardens. USDA also funds culinary education and the development of agriculture-based curricula.


**Green Ribbon Schools**

The U.S. Department of Education’s [Green Ribbon Schools](http://www2.ed.gov/programs/green-ribbon-schools/) is an annual award program created to encourage state education agencies to consider matters of facilities, health, and environment comprehensively. The award recognizes improved health and wellness in schools. In 2014, honorees included 39 public and nine private schools from 27 states.


**HealthierUS School Challenge**

The [HealthierUS School Challenge](http://healthymeals.nal.usda.gov/hsmrs/HUSSC/) (HUSSC) is a voluntary certification run by USDA’s Food and Nutrition Service. It recognizes schools that have created healthier school environments through promotion of nutrition and physical activity.

As of July 2014, HUSSC certified 6,691 schools in 49 states and the District of Columbia that provide nutrition education.

Nationwide programs

Although food education is not mandatory in schools nationwide, many food-education activities are taking place in schools across the U. S., from nutrition classes to programs where kids can grow, touch, cook, and taste food.

Family and consumer sciences

Food education (cooking skills, food science, and nutrition) is a part of the curriculum in family and consumer science classes. Unfortunately, the classes have suffered huge budget cuts, and implementation varies from state to state. Some of the family and consumer sciences courses meet state graduation requirements and count for science credits.

www.aafcs.org

Family, Career and Community Leaders of America (FCCLA) is a membership organization for students in family and consumer sciences. It has more than 5,500 chapters and 200,000 members.

www.fccla.com

Agriculture in the Classroom

Agriculture in the Classroom (AITC) was created in 1981, when USDA invited agricultural and educational leaders to increase agricultural literacy. The group included the National Dairy Council and American Farm Bureau Federation. Today, AITC partners include The Fertilizer Institute, Monsanto Company, and National Pork Producers Council. AITC reaches 5.3 million of the K–12 population, spending approximately $1.50 per student. About 80 percent of the budgets come from private sources, 19 percent from state (public) sources, and one percent or less from federal sources.

Although programs focus on teaching scientific knowledge on agriculture, including understanding agro-ecosystems, USDA’s “My Plate,” and evaluating different points of view on topics like fertilizers or animal welfare practices, AITC may be influenced by the interests of its corporate funders.

www.agclassroom.org

Farm to School Network

The National Farm to School Network (NFSN) is an information, advocacy, and networking hub for communities working to bring local food sourcing and food and agriculture education into school systems and pre-schools. It encourages school gardens, cooking lessons, and farm trips.

NFSN published a report to provide a deeper understanding of farm-to-school programs, Evaluation for Transformation: A Cross-Sectoral Evaluation Framework for Farm to School, which helps programs establish a baseline for evaluating their activities and provides guidance on policy opportunities.

The Farm to School Network has no formal relationship with USDA Farm-to-School, but collaborates with USDA as a partner.

www.farmtoschool.org
Family and consumer sciences teachers, along with health education and science teachers, are qualified to teach nutrition in schools. The classes are frequently dropped because of budget cuts, and the implementation varies from state to state.

**Cooking Matters**

*Cooking Matters* is a program of Share Our Strength’s No Kid Hungry campaign. It helps families to shop for and cook healthy meals on a budget. In 2012, program partners taught more than 23,000 families in 29 states, with some courses offered at after-school programs. Cooking Matters provides many resources including *Exploring Food Together,* a toolkit of activities that can be used in the classroom.

www.cookingmatters.org

**Recipe for Success Foundation**

The *Foundation* started its work in Houston to address the childhood obesity problem by changing the way children understand, appreciate, and eat their food and by helping the community provide healthier foods for its residents. The hands-on evidence-based curriculum *Seed-to-Plate Nutrition Education* reaches 4,000 children every month. The Foundation offers the curriculum to be used by other interested organizations around the country through an affiliate partner program.

www.recipe4success.org

**Veggiecation**

The program, implemented across the United States and Canada, is designed to promote eating more vegetables. It includes an educator training workshop, a portable cooking kit, recipes designed for classroom cooking, and educational posters. After one year, students participating in the *Veggiecation* program in Connecticut, which includes hands-on education, reported a 63 percent higher daily consumption of vegetables.

www.veggiecation.com

**FoodCorps**

Founded in 2009 through a partnership with AmeriCorps, *FoodCorps* has 182 paid public service members and 17 fellows at 145 sites in 16 states and Washington, D.C., who teach hands-on lessons about nutrition and cooking and build school gardens. The program’s evaluation showed that 65 percent of participating classrooms improved attitudes toward trying new fruits and vegetables. The Laurie M. Tisch Center for Food, Education and Policy at Teachers College, Columbia University, is working now to measure consumption change. The results will be ready in 2017.

www.foodcorps.org
State and local policies

State governments have direct oversight over most aspects of education in schools. They can decide on the policies they want to implement. Local or state policies indicate what could work nationally.

Some state, local, and school-district policies include requirements for food and nutrition education. Food education is often included in Farm to School-related legislation, school health policies related to nutrition education, and some state requirements for family and consumer sciences classes. The policies often lack specific guidelines on the content standards and the number of contact hours each student should receive.

Bridging the Gap survey
During the 2011–2012 school year, the Bridging the Gap project at the University of Illinois at Chicago, surveyed 668 school districts to assess local school wellness policies.

The study found that nearly 93 percent of districts required nutrition education goals in their wellness policies and more than half required skills-based nutrition education, but lacked specific requirements for implementation and compliance.

Farm to School-related bills
The Farm to School Network released a survey with a summary of Farm to School-related bills proposed since 2002. In 2012 and 2013, 20 states passed Farm to School-related legislation, and 17 other states introduced legislation. Many included food and nutrition education and gardening.

State school health policies
The National Association of State Boards of Education has a database of state school health policies regarding nutrition education. For example, in Alaska, although nutrition education is not required, in 1999, the state adopted content and performance standards for students, Skills for a Healthy Life, which includes understanding how the human body is affected by diet.

In California, the education code requires coordination of classroom instruction with the food service program on basic elements of nutrition, incorporation of nutrition education into the health curriculum, and encourages districts to develop programs for students in grades 7–12 that provide practical information about nutrition.

Washington, D.C.
The D.C. Healthy Schools Act established a School Gardens Program in 2010 as an integral part of public and charter schools. There are 80 school gardens in D.C.

Mississippi Healthy Students Act
The Healthy Students Act, passed in 2007 as a step to reduce childhood obesity, mandates 45 minutes of health education per week in grades K–8, and 60 hours of class time of health education per year for graduation in grades 9–12. After a year, 89 percent of adolescents reported learning in school the importance of healthy eating.
**State and local projects**
A lot of great work is being done by numerous nonprofits, volunteers, parents, and teachers to bring food education to every school. Here is a sampling.

**Food Literacy Center**
The Food Literacy Center in California teaches low-income elementary children cooking and nutrition, and trains community members as food literacy instructors. It currently serves 2,400 kids annually in four schools and 20 library branches in the greater Sacramento region. 91 percent of participants reported that healthy food tastes good, 87 percent of kids were able to provide an example of a healthy vegetable, and 80 percent knew how to make a healthy snack and read a recipe.

www.foodliteracycenter.org

**Gardeneers**
Gardeneers programs in Chicago provide schools with a garden, continued maintenance, and a curriculum for the entire growing season. The program identifies and trains leaders to create and maintain school gardens and lead lessons during and after school.

www.gardeneers.org

**Seeds of Cuisine**
The Seeds of Cuisine program in Portland, OR, supports students in meeting academic goals through integrating language, arts, and science into cooking and gardening. All participating students completed an essay, a formal lab report, and a field project.

www.thecurriculumofcuisine.org

**Vermont FEED**
The Vermont Food Education Every Day (FEED) is a farm-to-school program run by the Northeast Organic Farming Association of Vermont and Shelburne Farms. It works with schools to raise awareness about healthy food, the role of farms and farmers, and nutrition.

www.vtfeed.org

**Wellness in the Schools**
In New York City, Wellness in the Schools has taught over 30,000 kids about healthy eating through its Cook for Kids programs.

www.wellnessintheschools.org
**Curricula and resources**
Promising practices in food education around the country range from interdisciplinary classroom and garden education to cooking classes. Here are some resources making a difference in the way students eat and think about food.

**CATCH**
*CATCH* (Coordinated Approach To Child Health) is a school-based health program designed to promote healthy food choices, among other goals. Supported by over 25 years of rigorous research and development, it coordinates health efforts across all aspects of the educational experience: classroom, food services, physical education, and family. Proven to reverse childhood obesity in El Paso and Austin schools, it has been adopted by more than 8,500 schools in the United States and abroad.

[www.catchinfo.org](http://www.catchinfo.org)

**Center for Ecoliteracy**

The Center for Ecoliteracy advances ecological education in K–12 schools, and offers excellent food-related resources, including a conceptual framework for an integrated curriculum.

[www.ecoliteracy.org](http://www.ecoliteracy.org)

**Edible Schoolyard Project**

The Edible Schoolyard Project, founded by chef Alice Waters, supports the building and sharing of a national PreK–12 curriculum that integrates food-based learning across all academic subjects. It promotes edible education in classrooms and cafeterias.

[www.edibleschoolyard.org](http://www.edibleschoolyard.org)

**FoodFight**

The three-part *FoodFight* curriculum is designed for use in grades 7–12 and engages students in conversations about food, food politics, and critical consumption. The curriculum discusses how advertising shapes eating and buying habits, looks at nutrition through the lens of the political food landscape, and asks students to commit to a social action project.

[www.foodfight.org](http://www.foodfight.org)

**Laurie M. Tisch Center for Food, Education & Policy**

The Laurie M. Tisch Center for Food, Education and Policy at Teachers College, Columbia University created the research-based *Linking Food and the Environment (LiFE)* Curriculum Series for grades 4–8 that teaches about food, the food system, and healthy eating. Evaluation of the curriculum demonstrated that it significantly improved children’s eating habits and increased their physical activity.

Food education needs to be integrated into other parts of the school curriculum, including the Common Core standards, for it to be effective. Many resources for educators do it very well.

**Food Day School Curriculum**

Based on the *LiFE* Curriculum Series, Teachers College created a unique curriculum for Food Day. Designed for upper elementary and middle school students, with appendices for adapting it for lower elementary and high school students, the *Food Day School Curriculum* offers five lessons designed to teach children about healthy eating and advocating for a healthier community.

[www.foodday.org/foodeducation](http://www.foodday.org/foodeducation)

**Life Lab**

*Life Lab’s* teacher’s manual, *The Growing Classroom*, offers lessons correlated with Next Generation Science standards, and Common Core Math and English Language Arts standards. An online standards database permits searching by lesson, grade level, key word, or standard.

[www.lifelab.org](http://www.lifelab.org)

**Nourish**

The *Nourish* initiative provides award-winning multimedia resources used by more than 20,000 educators in all 50 states. It is dedicated to increasing food literacy and building healthier communities. *Nourish* combines PBS television programming, curriculum resources, web content, short films, and seminars.

[www.nourishlife.org](http://www.nourishlife.org)

**Planet Health**

*Planet Health* is an interdisciplinary middle school nutrition curriculum that includes 33 lessons across different subject areas. It also has step-by-step instructions for educators and administrators on how to incorporate *Planet Health* into their school curricula. Subject areas include language arts, math, science, and social studies. The curriculum was developed by the Harvard School of Public Health and is used by Massachusetts schools. In a trial, the use of *Planet Health* decreased obesity among girls over two school years, and increased fruit and vegetable consumption.

[www.planet-health.org](http://www.planet-health.org)
K–12 content standards for food education

National standards should address students’ skills and knowledge, support teachers training, assist the development and rating of materials and curricula, and help integrate food education in core curriculum courses.

Many experts believe that standards for food and nutrition education curricula and learning objectives for K–12 are urgently needed. What skills, knowledge, and values should they include? And who should be responsible for the development of those standards? Existing family and consumer sciences standards, health education standards, environmental education standards, and New Generation Science standards are all good examples of how to approach the development of food education standards.

According to two prominent nutrition experts, a comprehensive curriculum “might include basic cooking techniques; caloric requirements; sources of food, from farm to table; budget principles; food safety; nutrient information, where to find it and how to use it; and effects of food on well-being and risk for chronic disease.”

Institute of Medicine

In an effort to involve schools in preventing obesity, in March 2013, the Institute of Medicine convened a panel of experts to discuss the role of national standards for nutrition education, Nutrition Education in the K–12 Curriculum: The Role of National Standards.

Workshop participants identified promising practices, attributes of national standards for nutrition education, and suggested approaches to build use among educators.

Nourish Food Literacy Rubric

The Nourish initiative of the nonprofit WorldLink developed a Food Literacy Rubric to provide a framework for assessing the food literacy of an individual or group. For food literacy practitioners, the rubric also serves as the basis for developing national standards.

The Nourish initiative defines food literacy as “understanding the story of one’s food, from farm to table and back to the soil; the knowledge and ability to make informed choices that support one’s health, community, and the environment.”

The Rubric’s food literacy indicators include:
- the concept of a food system
- seasonal and local food
- the distinction between whole and processed food
- biodiversity in food
- access to healthy and affordable food
- food traditions
- growing food
- cooking food
- shopping for food
The need for a research-based approach

As of today, there is little information on what works and what doesn’t in food education. Studies need to determine which aspects of existing programs, specific curricula, accessible resources, and supportive policies are most effective in teaching students about the food system and healthier and more sustainable food choices.

Evidence-based research is the foundation of any new local, state, or federal policy. Common evaluation criteria allow for the comparison of existing food education programs to ultimately determine what aspects of programs are essential to advance food education in schools. The need for quantitative evidence on the effectiveness of school-based educational interventions remains unmet.

The existing research shows that food education can influence:
- health outcomes
- school performance measures
- environmental consciousness
- interest in and knowledge about agriculture

Elements contributing to the effectiveness of food education include adequate duration and intensity, parent and community involvement, and coordination with the school curriculum and school meals program.

Research design and measurement

In order to provide quantitative evidence on the effectiveness of education programs, it is essential to consider measurement and evaluation prior to starting a program or a new phase of an existing program.

Data collected in surveys should be coupled with actual behavioral observations: food diaries, photo documentation, food choices in cafeterias, etc. The data should be collected prior to, or from the very beginning of a program, as well as from added control groups (e.g., through a phase-in of programs across a number of schools). This approach can ensure that measured changes can be credibly attributed to the implementation of the program.

In general, measurement could focus on three areas:
- increased knowledge
- change in attitude toward trying a variety of foods
- behavioral changes, particularly eating a healthier diet

In addition, evaluation should ultimately establish the link to health and school-performance outcomes.
Professional development

The ability to navigate the food environment requires reinforcement by adult role models. Teacher wellness programs and professional development are essential.

Studies have shown that teachers who do not practice healthy habits themselves do not feel adequately prepared to teach or model healthy behaviors. By providing educators with the knowledge necessary to make their own healthier eating and buying decisions, along with the tools to understand and explain the multiple factors that shape the food system, they can help to lead students toward healthier and more sustainable lives.

Workplace wellness

For a variety of reasons, workplace wellness programs have not infiltrated our schools. There are nearly five million teachers, administrators, janitors, and other school staff. Yet there is no consistent or coordinated approach toward staff wellness programs in public schools.

FoodFight, a nonprofit organization based in New York City, produced a Teacher Wellness Program, which addresses questions of food politics, consumerism, and media literacy. It addresses how marketing and branding influence shopping and eating habits; how food policies impact health, shopping skills, and label reading; and the role teachers have in shaping students’ attitudes about health.

Institute of Medicine

The workshop hosted by the Institute of Medicine, Nutrition Education in the K–12 Curriculum: The Role of National Standards, addressed the role of professional training for new and existing teachers and suggested the following:

- National, state, and accreditation standards should address the minimum number of credit hours of undergraduate study required to qualify teachers to teach nutrition.
- Teachers will need training and professional development to implement nutrition education standards.
- Integrated nutrition education, stand-alone courses, and combinations of the two provide a variety of options for schools to implement nutrition education.
Experience of other countries
The United Kingdom and Italy have recently integrated food education into the curriculum nationwide.

School Food Plan in the UK
The UK’s 2013 School Food Plan revised school food and nutrition standards and introduced cooking and food education into the school curriculum for all children up to age 14. Two chefs drafted the plan with the help of an expert panel. It made cooking a compulsory part of the curriculum for children ages 6–14 and included training for school principals in food and nutrition. The Department for Education quickly incorporated the changes into the national curriculum, linking food education with the requirements for design and technology.

The changes to the curriculum are believed to have the potential to improve the academic performance and health of children. The report found that the best schools do an excellent job of weaving food education—cooking, growing vegetables, and even animal husbandry—into school life and the curriculum.

[www.schoolfoodplan.com](http://www.schoolfoodplan.com)

School and Food in Italy
School and Food is a mandatory program of the Italian Ministry of Education, University, and Research. The program was piloted regionally in 2009 and implemented nationwide in 2010. It aims to position the school system as the main place where students learn about food and nutrition.

Interdisciplinary food education was introduced in schools first through regional projects, and then was expanded nationally a year later to include all students in fourth and fifth grades. The government published the guidelines for teachers, families, publishing houses, companies, and public entities. A textbook for elementary schools, We and Food, in collaboration with Slow Food, covers nutrition, cultural, and social aspects of food, the environment, economics, and food production and distribution.

As a part of the program, every teacher is required to include food education as an interdisciplinary topic. The knowledge requirements include:
- awareness about senses and taste
- nutrition
- food safety
- food production chain
- local food traditions
Experience of environmental education

Many states have environmental literacy plans and active environmental education alliances or associations.

Environmental education programs provide good models for advocates of food education. Environmental education also includes food-related issues, opening opportunities for linking food and environmental education in schools.

NAAEE

For more than 40 years, North American Association for Environmental Education (NAAEE) has been offering professional development and support for the advancement of environmental education, including an annual conference for environmental education professionals.

Guidelines for Excellence

NAAEE created Environmental Education Materials: Guidelines for Excellence, a tool for educators to navigate the multiple resources available on the topic with key characteristics of high quality materials. The project was funded by the U.S. Environmental Protection Agency.

No Child Left Inside

No Child Left Inside (NCLI), a coalition of 2,000 groups organized by the Chesapeake Bay Foundation, was created in 2007 to raise awareness in Congress and within the broader public about the need for more attention to, and resources for, environmental education in schools.

A bipartisan No Child Left Inside Act, introduced in 2011 in Congress, aimed to amend the Elementary and Secondary Education Act (No Child Left Behind), to include environmental education. The legislation was approved by the Senate but didn’t pass the House. It included:

- new funding for environmental education
- development of standards
- teacher training
- development of state environmental literacy plans

In anticipation of the federal No Child Left Inside Act, many states (such as Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont) developed plans for environmental literacy, passed environmental education policies, or provided funding.

For example, in Connecticut, a steering committee led by the Connecticut Outdoor and Environmental Education Association created the first environmental literacy plan in 2009.

In 2013, the Act was re-introduced with updated language that reflected progress made by the states in developing plans and the need for support for effective implementation. No Child Left Inside coalition continues to closely monitor the process.

Compared to environmental education, food education is with a need to develop a shared definition, benchmarks of excellence, and content standards for each grade level.
**Recommendations**
Every city and state should require food education in schools.

Improving the nation’s health and reducing obesity will take everyone’s involvement, and schools must be at the center of this important work.

**States**
State departments of education, public health, and agriculture should work together with other agencies and organizations to develop state food literacy plans. Such plans should include specific content standards, food literacy as a high-school graduation requirement, and professional development for teachers.

**School districts**
School districts could revise their wellness policies to include strong K–12 food and nutrition-education components. School boards and superintendents should:

- create wellness-policy committees that include parents and community members;
- ensure that wellness policies require food education for each grade level, that it be integrated into other subjects, and that it include a specific number of nutrition education courses or contact hours;
- provide food and nutrition-education training for teachers;
- provide adequate funding for family and consumer science classes.

**Schools**
To support food and nutrition education, schools should:

- create school health councils to implement, monitor, and evaluate school wellness policies;
- consider paid lunch hours for teachers so they can spend time with students in the cafeteria;
- promote teacher training and professional development, and encourage teachers to act as role models.

**Federal government**
Congress should establish federal food education programs with funding for states. Because enormous disparities in education funding exist between high-spending and low-spending states, federal support could provide schools with more equal opportunities.

**Foundations**
Foundations could help support food education in schools through grants to state and local education agencies, schools, and nonprofit organizations.

**Researchers**
While cities and schools implement their programs, more evidence is needed from successful food education programs. Researchers should be involved at every step of the implementation from development to evaluation to providing detailed evidence on what works effectively.

**Food education advocates**

- **Create content standards**
  Food education advocates should convene a working group of experts to create food education content standards, devise guidelines for curricula, and advise school districts.

- **Establish a food literacy conference**
  An annual food literacy meeting would bring together educators, nonprofit organizations, policymakers, and advocates to share expertise and start work on the development of shared content standards and learning objectives.

- **Provide resources to schools**
  A guide on food and nutrition education could support schools in setting specific goals and implementing a plan for food education promotion. The guidelines should include content standards for food and nutrition education and could offer tools for rating educational materials and identifying what is important for students and educators to know to be food literate.
Endnotes

10 Murphy, J.M. “Findings from the Evaluation Study of the Edible Schoolyard.” Center for Ecoliteracy, Berkeley, California, April 2003.


