

Nutrition, Food, and Wellness: Rationale and Resources for Implementation in Family and Consumer Sciences Teacher Preparation Programs

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Food and nutrition has been an essential content area within family and consumer sciences education since the profession's origin. Because food is a basic human need and society's focus on health and wellness has increased, the content area's importance and role in the family and consumer sciences (FCS) classroom could not be stronger. This article provides a research-based rationale to support the nutrition, food, and wellness expectations in the National Standards for Teachers of Family and Consumer Sciences (National Association of Teacher Educators for Family and Consumer Sciences [NATEFACS], 2004). A literature review highlights the relevance of the Standard and its relationship to secondary FCS programs. Suggestions for implementing and assessing the standard are provided along with an annotated listing of print and online resources that could be useful to preservice and beginning FCS teachers.

Historically, nutrition, food, and wellness content have been identified as an integral component of the secondary family and consumer sciences curriculum (Cheek, Hastings, & Lokken, 2001; Karza, 1990; Smith, 1992; Stanek, Reischol, & Grandjean, 1991; Stroh, 1988). Wendland and Torrie (1993) reported that food and nutrition was perceived by high school students, parents, and guidance counselors as the most valuable and the most efficient content area. In a list of most popular family and consumer sciences (FCS) courses taught nationwide, those relating to nutrition, food, and wellness included: (a) cultural foods; (b) food science; (c) foods, nutrition and wellness; (d) sports nutrition; (e) food service; (f) professional baking; and (g) professional foods (Werhan & Way, 2006). Upon review of literature from 1985 through 2004, Browne, Myers, Gentzler, and Hausafus (2006) reported that FCS-based food, nutrition, and wellness programs are effective in increasing students' knowledge and improving students' attitudes toward nutrition. Hence, food, nutrition, and wellness content remains a viable component of the FCS secondary curriculum. Given that the *National Standards for Family and Consumer Sciences* (National Association of State Administrators for Family and Consumer Sciences [NASAFACS], 2008) includes content related to nutrition and wellness, food production and services, food science, and dietetics, it is appropriate that FCS teachers are knowledgeable of and prepared to teach the content. Thus, food, nutrition, and wellness subject matter merits inclusion in the educational preparation and training of FCS teachers.

Teaching Food, Nutrition, and Wellness Content

With the emphasis on teacher preparation, it is important to note the relationship between a teacher's content knowledge, the educational training received, and their ability to teach in the

subject matter area. Although not specific to nutrition, Darling-Hammond, Chung, and Frelow (2002) and Wilson, Floden, and Ferrini-Mundy (2002) reported that teachers spent more instructional time on content in which they had received or possessed the most adequate and appropriate training. More specifically, Kubik, Lytle, Hannan, Story, and Perry (2002) acknowledged that adequate teacher training increases teachers' awareness of current nutrition issues and supports healthy lifestyles as well as enhances teaching efficacy. Teachers who spend more time teaching nutrition often have had increased training regarding nutrition information (Birch & Fisher, 1998; Cantrell, Young, & Moore, 2003). Teachers who have sufficient training in nutrition education will deliver instruction that is more comprehensible and more readily applied (Contento, Balch, & Bronner, 1995). Furthermore, training in nutrition is likely to improve not only the teacher's interest in nutrition, but their attitudes toward the subject matter and the time spent on nutrition education (Contento, Manning, & Shannon, 1992).

Celebuski, Farris, and Carpenter (1996) reported that family and consumer sciences (FCS) teachers provided 92% of nutrition education in public schools. Additional research studies (Karza, 1990; Stanek et al., 1991; Stuhldreher, Zuchowski, & Liddel, 1996) have documented that FCS teachers possess the background necessary to teach nutrition content. Thus, FCS teachers can play a vital role in nutrition education in secondary schools.

Hence, it is imperative that family and consumer sciences teacher preparation programs continue to ensure that beginning FCS teachers have the appropriate knowledge, skills, and resources to teach in the content area. This article provides a research-based rationale; implementation and assessment strategies; and resources to support the nutrition, food, and wellness standard and related expectations in the recently adopted *National Standards for Teachers of Family and Consumer Sciences* (National Association of Teacher Educators for Family and Consumer Sciences [NATEFACS], 2004). Nutrition, food, and wellness content is included in Standard 4 which states, "Promote nutrition, food, and wellness practices that enhance individual and family well being across the lifespan and address related concerns in a global society" (NATEFACS, 2004). If FCS teacher preparation programs address this standard, then teacher candidates will be prepared to meet the following expectations (National Association of Teacher Educators for Family and Consumer Sciences [NATEFACS], 2005):

1. Evaluate nutrition and wellness choices and practices to enhance individual and family well being across the lifespan, using reliable guidelines and sources of information;
2. Synthesize principles of food acquisition, handling, preparation, and service to meet long term nutrition needs and preferences of individuals, families, and communities;
3. Evaluate impacts of science, technology, and technological advances on wellness, nutrition, foods, and related issues; and
4. Assess governmental, economic, geographic, and technological influences on nutrition and foods practices, food availability, and related issues in a global society.

Rationale for Standard

The United States Department of Health and Human Services (2000, 2005) reported that relationships among nutrition and health, wellness, and disease prevention are well established. According to the National Center for Health Statistics (2002), the three leading cases of illness and death in the United States – heart disease, cancer, and strokes – and six of the top ten, are all related to dietary factors. Governmental agencies, such as the Centers for Disease Control and Prevention (2006, 2007), the Food and Drug Administration (2004), the United States

Department of Health and Human Services (2000, 2005, 2006), the United States Department of Agriculture (2005), and the American Dietetic Association (2006b, 2006c, 2007b), have issued nutrition guidelines and tools to help consumers maximize health and minimize disease risk. Research shows while Americans, as a whole, have made positive dietary changes in recent years, eating habits remain less than ideal (American Dietetics Association, 2002; International Food Information Council, 2006a). The typical American diet is higher in fat, saturated fat, cholesterol, simple sugars and sodium, and lower in fruits and vegetables, whole grains, and low-fat dairy products than is recommended. Poor dietary practices are prevalent among American children and adolescents (Larson, Neumark-Sztainer, Hannan, & Story, 2007; Neumark-Sztainer, Story, Hannan, & Croll, 2002; Sanchez et al., 2007). Obesity is at an all-time high, and obesity-related disorders, including type 2 diabetes and metabolic syndrome, are no longer rare occurrences in American youth (Centers for Disease Control and Prevention, 2006; Cook, Weitzman, Auinger, Nguyen, & Dietz, 2003; Cruz et al., 2004; Koopman, Mainous, Diaz, & Geesey, 2005; Ogden, Flegal, Carroll, & Johnson, 2002; Weiss et al., 2004). Eating disorders, and the more common “disordered” or abnormal eating patterns, are most often diagnosed in teens (Grunbaum et al., 2004; Neumark-Sztainer, Story, Hannan, Perry, & Irving, 2002). Among lower-income families, food insecurity resulting in under-nutrition is not uncommon (American Dietetics Association, 2006a).

The nutrition content standard indicates that in order to effectively promote nutrition, food, and wellness practices, family and consumer sciences teacher candidates should be able to (a) provide nutrition education using reliable resources; (b) teach the skills necessary to purchase, prepare, and serve healthy food; (c) evaluate current nutrition and food related issues; and (d) assess various influences on food and nutrition in today’s global market (NASAFACS, 1998).

Nutrition knowledge does not always translate into behavior change (American Dietetics Association, 2007b; Epstein, Valoski, Wing, & McCurley, 1994; Sahota et al., 2001). Therefore, quality nutrition education programs should focus on changing attitudes, motivating individuals, and providing the skills necessary to adopt healthy behaviors (American Dietetics Association, 2007b; Contento, Balch, Bronner, Paige, et al., 1995; Gortmaker et al., 1999). According to the American Dietetics Association (2006b), nutrition habits track over time; those individuals who establish positive behaviors early in life are more likely to continue those behaviors for a lifetime. Family and consumer sciences educators who teach junior high and high school age students can provide relevant nutrition information using age-appropriate, creative, and stimulating strategies; instill positive attitudes; and provide the skills needed to establish healthy nutritional habits (American Association of Family and Consumer Sciences, 2004).

Nutrition information is readily available to consumers (American Dietetics Association, 2006b). Television, magazines, and the Internet provide an almost constant supply of news articles and features about nutrition-related topics. The supply of advertisements, particularly those targeting children and youth, appears to be endless. Misinformation about nutrition abounds, and consumers are often caught up in the quick fix mentality. Quick fixes to lose weight, increase muscle mass, lower cholesterol, and so forth, not only do not produce long-term results, but also can exacerbate existing problems. Even among reliable resources, information can be confusing due to conflicting results of research studies. This misinformation and contradictory information can be especially overwhelming to adolescents. By training family and consumer sciences teachers to recognize and use reliable sources of nutrition information and to

evaluate research, they can in turn help adolescents to learn to evaluate nutrition information sources and to discern fact from fiction.

Larson, Story, Eisenberg, and Neumark-Sztainer (2006) surveyed middle and secondary students in Minnesota and reported that 49.8% shopped for groceries and 68.6% assisted in preparing dinner. While many middle and secondary students are interested in nutrition and health, research shows that fewer youth are skilled in food budgeting, purchasing, handling, preparation, and service (Achterberg & McCullum, 1997; Antosh, Soliah, & Walter, 2006). Furthermore, the United States Bureau of Labor Statistics (2000) indicated that restaurants and eating establishments were the most common worksite for youth ages 15 through 17. Youth who prepare food in or outside of the home may put themselves or others at risk for foodborne illness. Preparing individuals to shop wisely to extend the value of their food budget, to store foods to extend their shelf life, and to prepare foods using safe food handling practices to minimize waste and prevent foodborne illnesses are skills that can be used for a lifetime.

Research in the area of food technology and food safety has increased exponentially in the last five years and greater increases can be expected in the future (Food and Drug Administration, 2007). Students of today have more options in the marketplace than ever before. More organic and natural foods are available, genetically engineered foods are common, and newer packaging methods increase convenience, while also extending shelf life (Aase, 2007; Stein, 2007). Consumers recognize the value of the benefits of food technology. However, at the same time, rarely a month goes by when some food is not implicated in a potential or actual outbreak of foodborne illness, and issues such as food additives, hormones, and pesticides are debated in the media (Food and Drug Administration). If family and consumer sciences teacher candidates possess a basic understanding of these issues, they can help others make informed decisions about their own food supply.

Because of the global economy, high school students need to recognize the many factors that influence the availability of foods. Conservation of natural resources, minimization of waste, and economic sustainability of the food supply are issues being addressed by Americans today and in the future (American Dietetics Association, 2007a). It is important for high school students to understand that actions related to food production, manufacturing, and service have global consequences.

The American Dietetic Association (2003) recommends that schools provide learning experiences that will enable and empower school age children and adolescents to develop lifelong eating habits to promote health and well-being. Public schools have been charged with developing and implementing wellness policies (United States Department of Agriculture, 2007). These policies are required by the *Child Nutrition and WIC Reauthorization Act of 2004* (U.S. Congress, 2004). The legislation requires that staff members who provide nutrition education must have adequate training. Because not only is nutrition education one of the major goals, family and consumer sciences (FCS) teachers prepared to teach nutrition education are uniquely suited to provide leadership in planning, developing, and implementing these wellness policies. By ensuring that beginning FCS teachers possess the expertise and competency to effectively teach nutrition and wellness content in secondary FCS classrooms, teacher education programs are preparing FCS teachers to play a critical role in school wellness initiatives. With the recently adopted standard and expectations for nutritional content, FCS beginning teachers will have the necessary educational background and preparation to be a valuable team player in planning, implementing, and maintaining a successful school wellness program.

Implementing and Assessing the Standard

Strategies for implementing and assessing Standard 4 in a family and consumer sciences teacher preparation program could involve the integration of professional coursework in food, nutrition, and wellness, which includes content related to food production and services; food science, dietetics, and nutrition; and nutrition and wellness, since these are identified in the *National Standards for Family and Consumer Sciences* (NASAFACS, 1998) that guide secondary family and consumer sciences programs. Yahnke and Wissman (2000) suggested general education coursework in the biological, psychological, and physical sciences and specialized courses in wellness and nutritional science. Additional strategies might involve pedagogical courses in curriculum development and educational methods to prepare teachers to offer adequate nutrition education and authentic learning experiences, such as problem based learning, service learning, and scenario based assessments.

Lolkus (2004) proposed that nutrition courses that provide opportunities to learn foundational content knowledge and to integrate and apply the content to real-life situations will give future teachers the skills necessary for teaching nutrition effectively. Individuals who understand and care about the importance of nutrition are likely to put forth more time and energy into teaching the content than those individuals who do not find the content relevant and valuable. Furthermore, “students who acquire skills to further their own learning are better able to continue building their own nutrition knowledge” (Lolkus, p. 335). Examples of strategies for implementation and assessment of the standard are discussed for each expectation.

Expectation #1: Nutrition and Wellness Choices and Practices

Course content and related experiences ensure the beginning teachers’ competence to understand the role of nutrients and their relationship to wellness; to evaluate reliable, accurate sources of nutrition information; and to emphasize the use of the dietary guidelines and recommendations for dietary intake (Yahnke & Wissman, 2000). Although knowledge of nutritional needs throughout the life cycle is necessary for family and consumer sciences teacher candidates, understanding the eating habits and food choices of adolescents is especially important for these future teachers since they will be teaching nutrition content to an adolescent population. An examination of adolescents’ food habits indicated a greater consumption of soft drinks, grains, fruit drinks, chips, and candy than whole milk, vegetables, and beef and pork (Enns, Mickle, & Goldman, 2003). In the same national study, “less than one-half of the adolescents consumed the recommended number of servings [from the Food Guide Pyramid]” (p. 15), and the intake of added sugars and fat far exceeded the recommendation. Changing the eating habits of adolescents may be a focus of nutrition education in secondary classrooms. Thus, coursework in educational methods for teacher candidates can emphasize the instructional methods and strategies that promote changes in nutrition knowledge, attitudes, and behaviors.

Rafiroiu and Evans (2005) reported that videos, workshops, and group discussions were the preferred approaches for learning about nutrition, while cooperative learning and demonstrations were listed as the most effective methods of learning nutrition. These teaching strategies and approaches can be utilized in teacher education programs to aid retention of nutrition-related content and to model the use of the strategies in teaching nutrition.

The use of computerized diet assessment programs have been used frequently in nutrition education (Probst & Tapsell, 2005). Family and consumer sciences teacher candidates can assess their own diets to learn how to use computer-assisted diet assessment programs or self-assessment programs, such as those found on the Internet. Probst and Tapsell reviewed 29

computerized diet assessment programs and highlighted the features of each as a useful tool in nutrition education. Although they made no recommendation for the use of specific software programs, Probst and Tapsell encouraged educators to consider the age, ethnicity, and literacy level of the learners before choosing a diet assessment program. If teacher candidates were given the opportunity to use the diet assessment software, they could evaluate their own diets with regard to caloric or nutrient intake or to recommended dietary intake. The assessment data collected could be helpful in making more informed choices and decisions regarding diet. In turn, the teacher candidates would be able to use that knowledge and skill to help middle and secondary students to assess their diets as well.

Expectation #2: Food Acquisition, Handling, Preparation, and Service

Knowledge, skills, and behaviors related to the study of nutrition, food science, and food preparation can be developed through course content and related experiences. Beginning teacher competencies include the ability to “select, store, prepare, and serve nutritious and aesthetically pleasing food” and to “promote safe food handling, appraisal of safety and sanitation practices, . . . [and the] examination of food borne illnesses” (Yahnke & Wissman, 2000, p. 165).

Several studies (Barclay et al., 2003; Ellis & Henroid, 2005) stressed the importance of incorporating food safety into schools at early stages and then continuing through high school. The family and consumer sciences classroom seems to be an appropriate context since content already focuses on health, nutrition, and food preparation. Family and consumer sciences teachers participating in the Ellis and Henroid study agreed that food safety was important and many of the teachers were integrating food safety concepts into several classes.

Family and consumer sciences teacher candidates could get involved and plan activities to promote National Food Safety Education Month, held annually in September (National Restaurant Association Educational Foundation, 2008). In addition, hands-on techniques, such as food labs, demonstrations, and problem-based learning, can be implemented in the university classroom to promote critical and creative thinking and problem solving. Whether the purpose is observational, experimental, or productive in nature, food labs offer an opportunity for experiential learning that is process-oriented and stimulates problem solving (Chamberlain & Cummings, 2003). Encouraging teacher candidates to develop and present food demonstrations allows them to think logically and sequentially about a food-related process and to exhibit proper food handling and preparation techniques.

Duffrin (2003) observed that problem-based learning used in an undergraduate foods classroom “enhanced the classroom environment and acquisition of knowledge while developing students’ communication, critical-thinking, problem-solving, and teambuilding skills” (p. 5). Four sample problems were provided as examples that can be used in the classroom. Incorporating the problem-based approach in teacher education programs models the instructional strategy for teacher candidates and prepares them to use the strategy in the family and consumer sciences classroom.

Family and consumer sciences (FCS) teacher preparation programs could give teacher candidates an opportunity to participate in food safety certification programs, like the ServSafe program (National Restaurant Association Educational Foundation, 2009b). ServSafe, the food service industry standard for food safety training and certification, emphasizes factors associated with foodborne illnesses, good personal hygiene, critical risk factors in food service operations, and sanitary facilities. Upon successful completion of the program and the certifying assessment, FCS teacher candidates would hold the industry-based certification and would be eligible to

integrate the curriculum and offer the certification through their own secondary FCS program. This could serve as an assessment tool for evaluating food safety knowledge.

Foodservice is one of the nation's fastest-growing industries, and job openings are expected to be plentiful until 2016 (United States Bureau of Labor Statistics, n.d.). The trend could be beneficial for food production and food service curricula like those taught within the family and consumer sciences (FCS) classroom. Beginning FCS teachers can explore professional development opportunities to seek specialized training in culinary arts and/or food service programs, such as the ProStart program sponsored by the National Restaurant Association Educational Foundation (2009a). The ProStart program involves two years of training and education, and prepares secondary students for careers in the foodservice and restaurant industry. These programs are increasing in number as states encourage industry-based certifications in career and technical education programs to meet the needs for program relevancy, accountability, consistency, and credentialing (Wilcox, 2006). Building an awareness of these certifications into teacher education programs could ultimately result in training more FCS secondary students for careers in the growing foodservice industry.

Expectation #3: Impact of Science and Technology

Because of the scientific nature of the study of food and nutrition, an adequate background in the sciences may prove helpful for beginning family and consumer sciences teachers. Nutrition and wellness content provides the perfect context for integrating academic content, such as mathematics and science, into the family and consumer sciences curriculum. Food, nutrition, and health-related concepts incorporate principles from mathematics, microbiology, chemistry, and biology. With the *No Child Left Behind* federal legislation (United States Congress, 2001), middle and secondary schools have increased accountability regarding the core content areas of math and science. The integration of academic content into the FCS classroom validates how the FCS curriculum aligns with legislative requirements.

The Food, Math, and Science Teaching Enhancement Resource (FoodMASTER) Initiative is one example of a collaborative partnership with kindergarten through 12th grade programs and university faculty and students (Duffrin, Cuson, & Phillips, 2005). The program provides positive outcomes in using food as a tool for teaching math and science content. To reinforce nutrition content, family and consumer sciences teacher candidates could partner with secondary classes to implement a similar hands-on, inquiry based program or activities.

Biotechnology and genetically modified foods are two ways in which the development and production of food is changing. According to the International Food Information Council (2006b), genomic research has “tremendous potential to improve the quality of human nutrition” (p. 5). The term nutrigenomics has been coined to define the application of genomic research to nutritional science. In a recent survey, the majority of consumers indicated a favorable attitude toward the use of genetic information to offer nutrition-related recommendations. Yet, consumers may not be prepared for those changes and their consequences. Brady and Brady (2003) reported education as the most important factor influencing consumers' knowledge of and attitude toward genetically modified foods. If the scientific and technological advances could be infused into their undergraduate training, family and consumer sciences beginning teachers would have a greater awareness of these new advances in food development, preparation, and production that could impact future trends. Furthermore, discussions among teacher candidates regarding the ethical practices would stimulate thinking about the appropriate uses of the new technology.

Expectation #4: Influences on Food Practices and Availability

According to the American Dietetic Association (2003), all individuals have the fundamental right to nutritious, safe, and culturally appropriate food. Food insecurity is directly related to the availability of food. Holben (2005) asserted that nutrition educators have the responsibility to “understand and be aware of the prevalence and consequences of food insecurity and to understand the concept and importance of community food security” (p. 343). The negative effects of food insecurity impacts the health of individuals across the lifespan. Holben surveyed accredited nutrition and dietetic programs to determine how food security issues were addressed in nutrition coursework. From the survey, approximately 30 to 50 examples of classroom activities were suggested by university faculty to incorporate the content in nutrition-related coursework, from basic nutrition to life cycle and community nutrition to food production. The examples would help teacher candidates learn about food security through their experiences. In addition, Chabot and Holben (2003) recommended the implementation of service learning experiences in the nutrition classroom. Not only do teacher candidates learn about the content, they are able to apply their knowledge in a real-life context and then reflect upon the experience.

Additional General Assessment Strategies

Standardized assessments, such as those used for state teacher certification, can also be used to evaluate the nutritional knowledge, attitudes, and behaviors of teacher candidates. Nutrition topics are included in the Praxis II Family and Consumer Sciences Specialty Exam (Educational Testing Service, 2005) and the certification exam offered by the American Association of Family and Consumer Sciences (2004). A review of those standardized assessments would determine their correlation and alignment to the *National Standards for Teachers of Family and Consumer Sciences* (NATEFACS, 2004).

Byrd-Bredbenner et al., (2007) developed and evaluated a food safety knowledge questionnaire for use with undergraduate students. The instrument could be useful in determining a baseline assessment of one’s knowledge of food safety and sanitation. Further, Brenowitz and Tuttle (2003) developed and validated the Nutrition Teaching Self-Efficacy Scale which determines teacher’s self-efficacy in relation to whether a teacher feels confident in delivering nutrition content and whether it will lead to desired outcomes. Higher self-efficacy resulted in more time spent teaching the concept. Although the scale was validated with elementary school teachers, the authors encouraged its modification for middle and secondary school teachers. Sample (2006) adapted the scale and used it to assess middle school teachers’ knowledge and ability to teach nutrition. The study concluded that family and consumer sciences teachers were more confident regarding their nutrition knowledge and spent more time teaching nutrition than health and physical education teachers.

Performance-based assessments are designed to demonstrate that teacher candidates “can actually use the knowledge they have about teaching and their content specialty” (Miller, 1996, p. 54). Over the years, teacher education programs have used portfolios as a tool for performance based assessment (Anderson & DeMeulle, 1998; Pecheone, Pigg, Chung, & Souviney, 2005; Stone, 1998). Teacher candidates can use portfolios to document knowledge and skills that they have learned related to Standard 4: Food, Nutrition, and Wellness. In addition, the portfolio serves as a record of the experiences in which they have participated that demonstrate mastery of the Standard.

Conclusion

A planned sequential curriculum that emphasizes nutrition fundamentals is necessary to enable middle and secondary school students to change nutritional behaviors and improve overall health. Family and consumer sciences teachers can provide the planned curriculum, with appropriate individual learning experiences. However, family and consumer sciences teachers need appropriate and adequate coursework and related experiences to prepare them to teach nutrition related content. By addressing the nutrition content standard recommended by the *National Standards for Teachers of Family and Consumer Sciences* (NATEFACS, 2004), teacher education programs can ensure that their graduates make a significant impact on the nutritional health of future generations.

Resources

Textbooks, the Internet, journals, magazines, and materials from public agencies and nutrition-related organizations are recommended sources of instructional resources (Cullen, Ley, & Burge, 2000; Ellis & Henroid, 2005; Yahnke & Wissman, 2000). More specifically, the texts utilized in undergraduate food and nutrition courses are great resources for beginning family and consumer sciences teachers. In addition, the Internet provides easy access to information and resources, and professional journals serve as the main source of new research, ideas, and knowledge. The resources related to the Nutrition, Food, and Wellness Standard include, but are not limited to, those annotated below.

Books

Chamberlain, V. M., & Cummings, M. N. (2003). *Creative instructional methods for family and consumer sciences, nutrition and wellness*. New York: Glencoe-McGraw Hill.

This textbook developed by family and consumer sciences educators can be utilized in an educational methods course. The content focuses on instructional methods for family and consumer sciences topics, generally, and food and nutrition topics, specifically.

Family, Career and Community Leaders of America (FCCLA). (n.d.) *Student body*. Available at <http://www.fcclainc.org/content/student-body>

This national program developed by FCCLA is a peer-education program that focuses on nutrition and encourages adolescents to be physically fit. The manual provides information on incorporating the program into the family and consumer sciences classroom and FCCLA chapter.

Thompson, J., & Manore, M. (2007). *Nutrition for life*. San Francisco: Pearson Education.

This text focuses on basic nutritional science, such as nutrient function and chemical classification. Case studies, nutrition label activities, and a special Healthwatch segment are features of the newest edition to the text.

Thompson, J., & Manore, M. (2006). *Nutrition: An applied approach*. San Francisco: Pearson Education.

This basic nutrition textbook offers introductory and basic nutritional principles for non-majors. Through special book features, common misconceptions about nutrition are

addressed, as well as an emphasis on the relationship between nutrition and individual health and daily living.

Internet Sites

AAFCS Directory of Online Resources

Web Link: <http://www.aafcs.org>

This index of Web sites provides links in each of the following areas related to Standard 4: food production and services, food science, and nutrition and wellness. The Web sites range from government, educational, and commercial sites with information and resources for educators and students.

International Food Information Council (IFIC) Foundation

Web Link: <http://ific.org>

The goal of the foundation is to communicate science-based information on food safety, nutrition, and health to consumers. The Web site provides access to print materials and resources that can be utilized by family and consumer sciences teachers to gain up-to-date information and research to prepare accurate and appropriate teaching materials.

Journals and Newsletters

Great Ideas! In Teaching Nutrition

This newsletter is published by Addison Wesley and Benjamin Cummings, divisions of Pearson Publishing, as a service to nutrition educators and is available at their Web site (<http://www.aw-bc.com/greatideas>). The resource is filled with innovative teaching and assessment activities that promote active learning, critical thinking, and Internet tools. The activities are developed and submitted by nutrition educators on four year university and community college campuses.

Food Insight: Current Topics in Food Safety and Nutrition

This newsletter is published throughout the year by the International Food Information Council (IFIC). It provides up-to-date information and research on topics relevant to family and consumer sciences teachers. The newsletter is free to nutrition educators and can be ordered from the IFIC Web site (<http://ific.org>).

Journal of Food Science Education

The peer reviewed journal published by the Institute of Food Technologists aims to improve food science education at the elementary, middle, secondary, undergraduate, and graduate levels. The journal, available online at <http://www.blackwell-synergy.com/loi/jfse>, provides book reviews, scholarly research articles, and classroom techniques related to food science education.

Journal of Nutrition Education and Behavior

The peer reviewed journal is published by the Society for Nutrition Education and features scholarly research articles, reviews of educational materials, and educational “gems” that provide ideas, resources, and activities for teaching nutrition.

Journal of the American Dietetic Association

The professional journal for dietetics professionals provides scholarly research articles and abstracts, as well as information for practitioners working with a variety of audiences.

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