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FEATURE

Food Literacy: A Critical Tool in a Complex Foodscape

Joyce Slater

We live in the most complex food environment in human history. Our global food system, which rose over the course of the 20th and early 21st centuries, has had an enormous impact on what and how we eat. This arrangement, currently dominated by a small number of "agri-food" companies, has produced an abundance of inexpensive, readily available food in a seemingly endless array of "choices." The agriculture and food sector is also a major force in the global economy; in 2014, agriculture and related food industries contributed 5.7% to the total U.S. Gross Domestic Product (United States Department of Agriculture Economic Research Service, 2014), and agriculture and food manufacturing accounted for 24% of U.S. employment. Despite these economic contributions, however, this "foodscape" is having a negative impact on health and well-being. We are in the midst of an obesity epidemic fueled by dependence on highly processed, branded convenience foods that typically are energy dense and nutrient poor. Dependence on these foods also contributes to the disappearance of traditional food customs and food skills, and this undermines efforts to educate youth about food, nutrition, and cooking. Scholars, healthcare professionals, educators, and parents are increasingly concerned about the erosion of foundational food knowledge, which fuels a vicious cycle of dependence on corporate ultra-processed food. Food literacy is proposed here as a conceptual and practical means of protecting citizens, especially youth, against the negative impact of our complex foodscape.

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The Rise of Processed Foods

The last 100 years have seen the most dramatic changes to what, and how, we eat since the discovery of fire, or, to be fair, since the dawn of agriculture about 12,000 years ago. As the 20th century progressed, populations became increasingly urbanized, requiring more and different food markets. The Green Revolution, which started in the first half of the 20th century, yielded tremendously efficient and abundant ways of growing food and this

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fueled population growth. The invention of refrigeration allowed the transportation of perishable goods over great distances. Food manufacturers developed incredible new processing and preserving methods during World War II to feed soldiers and then shifted these to the post-war markets (Toops, 2010). Peacetime markets were needed to ensure the expansion and profitability of these foods, and a growing advertising industry had the North American "housewife" in its sights. One of the most enduring images crafted during this time is that of Betty Crocker, a fictitious "all-American" housewife created to sell flour but by the 1930s had progressed to more processed food products including biscuit and cake mixes (Shapiro, 2005).

Food processing boomed in the 1950s and 1960s as consumer spending increased, refrigeration and freezing went mainstream, and television (and its accompanying advertising) entered family homes. Frozen TV dinners, packaged "sides" like instant potatoes and stuffing, Cheez Whiz®, and Tang® appeared on grocery store shelves. Targeting those responsible for family meals, a 1950 *Good Housekeeping* article urged women to ". . . plan ahead, keep menus simple, and use lots of canned, packaged and frozen foods" (Agriculture and Agri-Food Canada, 2010). And fast-food restaurants went up as quickly as new roads to get to them.

Whether these easy-to-use products were a boon to housewives—who were responsible for family food—or food companies were creating a market by exaggerating the drudgery of home cooking is not clear. However, several scholars, including Katherine Parkin (2007), have convincingly argued the latter. What is clear, however, is that food had become a commodity rather than a "basic human need."

Shifting Domestic Roles and Ultra-Processed Foods

The foodscape continued to change over the next decades with more packaged foods and the rise of mass-market restaurants, all accessible to a growing middle class. Women's roles also were shifting. Although some women (especially poor women) have always worked outside the home, we went out in droves since the 1970s. But a funny thing happened when women stepped out; no one stepped into the kitchen. To be fair, time use studies show that men have taken on more domestic duties and the gender gap is closing with each new generation (Milan, Keown, & Urquijo, 2013). So it's not that the kitchen was completely empty; rather, what happened in the kitchen began to change in the 1980s and 1990s. If the 1950s and 1960s were the grand era of convenience foods, the 1980s onward represented the grand era of "ultra-processed" foods (Moubarac et al., 2013; Moubarac et al., 2014). Food manufacturers, fueled by subsidized corn and sugar, relaxed trade agreements, and new ingredient and preserving technologies flooded the grocery stores and restaurants with cheap, highly processed foods. These were very palatable, containing high levels of fat, sugar, and salt, often requiring no refrigeration or preparation, and they had numerous artificial preservatives. Consequently, we overeat them. These foods tend to have poor nutritional qualities, and are the hallmark of what Popkin calls the "nutrition transition" (Popkin, Adair, & Ng, 2012); they include things such as packaged snack foods, crackers, chips, soft drinks, frozen dinners, pastries, cookies, candies, pizza pops, frozen pizza and other entrees, and toaster waffles. So sophisticated are food manufacturers today that they employ not only the science of food ingredient technology, but psychology and "psycho-biology" wherein the orosensory and nutritional properties of food have an impact on food preferences, leading to overeating (Sclafani, 2001).

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With the expansion of ultra-processed products, today more than 20,000 new foods are introduced into the marketplace every year (United States Department of Agriculture, 2016), creating the illusion of "choice," yet the majority have the same basic ingredients: white flour, fat, oils, sugar, salt, and corn. A 2009 study showed that between 1980 and 2004 the available Canadian food supply

(the food that gets on our plates) grew by 417 calories per person per day, and that most of this growth came from four foods: white flour, shortening/oils, cheese, and soft drinks—all key components of fast and ultra-processed foods (Slater et al., 2009). The result is that now for Americans, almost 60% of calories come from ultra-processed foods (Steele et al., 2016).

Grocery stores now have entire aisles devoted to "snacks and soft drinks" and "confectionary" as well as large sections of frozen, ready-to-eat foods. These high-profit convenience foods have, as Winson states, "colonized" our supermarkets and therefore our diets (Winson, 2004). And not just supermarkets. One third of the U.S. dollar is spent on "eating out services" (United States Department of Agriculture Economic Research Service, 2015).

Food is everywhere. Gas stations now make more money from confectionary and snacks than selling gas (Biery, 2014), and most pharmacies are 7-Elevens™ in disguise. Check-out counters in non-food stores are filled with ultra-processed foods (Collier, 2015). Even many hospitals are not immune, claiming the revenue from such sales is critical (Payne, 2015). The promise of "a chicken in every pot" is now more like "a vending machine in every building" and "a Costco™ in every neighborhood." Food, however, is like money. It's not necessarily good or bad; it's what we do with it that matters, and somewhere along the way we have normalized a way of eating that is making us sick. We have a collective imagination about children and food, reinforced by media images of wholesomeness, nostalgia, and a genuine desire for the best for our kids. But ask children how many times in the past week they ate or were offered pop, juice, pizza, candy, cookies, hot dogs, or chips. And I don't just mean at home; it's also the class rewards, "fun" lunches, foods at the track meet, birthday parties, the fast-food restaurants, and convenience stores across from the school. Restaurant children's menus are awash in breaded, deep-fried, and sugary "kids' foods" (Wootan, Batada, & Marchlewicz, 2008). These are now the foods of childhood, and as a society we now believe we don't have time to make "real food," or that even if we did, kids won't eat it.

Culinary "De-Skilling"

Over the past 30 years we have cut our daily food preparation time in half, and now spend about 25 minutes per day preparing all of our food. This breaks down further into women spending 44 minutes on food work per day; men spend 17 minutes (Tumin, 2013). A multi-country study revealed that only half of families share meals 5 or more nights per week, and 14% share none (Hammons, Fiese, Hammons, & Fiese, 2011). Yet research suggests regular family meals in a positive environment benefit children's physical and mental health (Elgar et al., 2012). Many consumers now think cooking is assembling processed ingredients, or that it is simply a waste of time (Wolfson, Bleich, Smith, & Frattaroli, 2016).

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Where has all this left us? British food scholar and advocate Tim Lang states we are in the midst of a "culinary transition" to a deskilled population dependent on rationalized food production and marketing (Lang & Caraher, 2001). A recent Canadian study asked home economics teachers if children were coming into middle school foods classes with different knowledge and skills than they did 20 years ago (Slater, 2013). The overwhelming perceptions were that: (a) students had fewer skills and knowledge, and they attributed this to parents not having skills and knowledge to transfer to their kids (suggesting that deskilling is becoming intergenerational); (b) mentoring children about food takes too much time; (c) there is no need because all they are doing is assembling and heating convenience foods; and (d) more and more, families don't eat together regularly. Although Short convincingly suggests that the concept of "cooking" requires more research to understand its perceptions and roles in people's lives (Short, 2003), it is difficult to argue that people are engaging in substantive amounts of basic food preparation, given that a new study shows almost

60% of calories consumed in the United States are "ultra-processed" (Steele et al., 2016).

This is not simply a matter of "getting back to basics" in the kitchen. We live in the most complex food environment in history, which no longer consists of the local grocery store, family table, and occasional restaurant, but has food available at every conceivable place humans go. This is coupled with a barrage of "healthy eating" messages that even senior nutrition students have difficulty understanding. "Functional" foods, "ultimate weight loss," supplements, local foods, cleansing, gluten, and the colossal problem of food waste are but a few of the minefields consumers must navigate. Do most people know there are 57 names for sugar? Do they know how much they are supposed to have?

Impact on Health and Well-Being

The most apparent manifestation of the modern complex foodscape is the rapidly expanding obesity epidemic. A recent UNICEF study on child well-being in rich countries found that only three countries, including Canada and the U.S., had child obesity rates greater than 20% (UNICEF Office of Research, 2013). One in three Canadian children are now overweight or obese (Shields, 2005). The rate climbs to 60% for adults (Statistics Canada, 2012). In the United States, one third of adults and 17% of youth are now obese (Ogden, Carroll, Kit, & Flegal, 2014). Disturbingly, a new series of reports from the world's foremost medical journal, *The Lancet*, says there is no end in sight (The Lancet, 2015). What was a privileged condition for the wealthy for most of human history is now "normal." University of Guelph sociologist Tony Winson calls this "a veritable tectonic shift in the human physical condition" (Winson, 2010) and British food scholar, Tim Lang, calls it the leitmotif for the modern food age (Lang & Heasman, 2004). Lock-step with this wave of obesity is the skyrocketing rate of type 2 diabetes (World Health Organization, 2017).

In addition to poor dietary profiles, children's perceptions of food and bodies also are disturbing. A 2013 study by the British Nutrition Foundation found that one third of young grade-school children thought that pasta came from animals (British Nutrition Foundation, 2013). And too many children, girls and boys, have negative body images; children as young as age 3 are unhappy with their bodies (Tremblay, Lovsin, Zecevic, & Larivière, 2011).

Food Self-Reliance

Amidst this confusing and complex foodscape, families—once the front line of food education—are increasingly ill-equipped or unable to pass on healthy, culturally appropriate food knowledge. At the same time, the future of our school-based programs is uncertain. In large part, society has left food and nutrition education to the food companies. Food companies, whose main job is to sell food, not promote public health, re-brand their products to convince us they are healthier through the many "choices" they offer. However, as long we convince ourselves that we have no time or need to engage with food, and as long as food continues to be marketed as a commodity of convenience, even if it embodies true or imagined health benefits, we will continue to erode food self-reliance. We create a cycle of dependence that becomes further normalized with every generation. Why is this important? Because it is not just about physical health and it's not just about cooking or nutrition. It's about culture, social relationships, environmental stewardship, responsibility, self-esteem, self-efficacy, and citizenship. Food is integral to all of these.

This is not a call to the good old days of idyllic gendered domestic roles, but the truth is that as a society we have never been more food centered while at the same time so far removed from the food we eat, figuratively and literally. It is a call for a new relationship to food, one that acknowledges our shifting socio-demographic environment, honors cultural traditions and domestic work, includes all household members, and is supported by our education, health, and social institutions. It is not just about cooking but having the knowledge, tools, and support to interact with our increasingly complex food world. Our children are the crucible in which this rapidly morphing foodscape is concentrated, so we need to equip them with the tools to navigate, survive, and thrive in this complexity. It is more than exhorting people to eat fruits and vegetables, a message most can recite as the proxy for healthy eating.

Table 1. Functional, Interactive and Critical Food Literacy (Slater, 2013)

Functional food literacy	Communication of credible, evidence-based food and nutrition information, involving assessing, understanding, and evaluating information
Interactive food literacy	Development of personal skills regarding food and nutrition issues, involving decision making, goal setting and practices to enhance nutritional health and well-being
Critical food literacy	Respecting different cultural, family, and spiritual beliefs in respect to food and nutrition (including nutritional health), understanding the wider context of food production and nutritional health, and advocating for personal, family, and community changes to enhance nutritional health

We teach them about sex, how to drive safely, and obscure mathematical principles precious few will ever use. But everyone eats. How do we help citizens, not consumers, engage positively with their food systems? With respect to damage being caused to the natural environment through some food production practices and a transnational food system, this has centered on advocating for more local food systems and lower-input production methods. With respect to obesity and poor nutritional health this, has centered primarily around "re-skilling" people in activities such as cooking and food preparation and even gardening. In this context, the term *food literacy* has emerged. But is it just a re-packaging of old concepts or something more foundational?

Food Literacy

It seems clear that citizens need to engage with their food, and food systems, in a more positive way in order to foster self-reliance and well-being. Australian researchers Gallegos and Vidgen have published this definition of food literacy:

> A collection of inter-related knowledge, skills and behaviours required to plan, manage, select, prepare and eat foods to meet needs and determine food intake," as well as, "the scaffolding that empowers individuals, households, communities or nations to protect diet quality through change and support dietary resilience over time (Vidgen & Gallegos, 2012).

This author's concept of food literacy makes more explicit the need to incorporate dimensions beyond knowledge and skills around food choice and food intake to include emotional, cultural, familial, and spiritual dimensions of food, as well as understanding the dynamic relationship between food choices and our social and physical environments. Table 1 illustrates this by drawing upon Nutbeam's concept of health literacy (Nutbeam, 2000).

Why is this so important? Because at a basic level, food and food work is not the same as doing the laundry. It is not a task that can be handed off to fast-food restaurants or processed food manufacturers. Food is the very reason we have survived and thrived as a species—and not merely because we found enough to put in our mouths. Food, eating, and feeding are central to family life. They are recursive everyday practices that shape, and are shaped by, our beliefs, practices, and social interactions. Food conveys meaning to others and ourselves about who we are individually and collectively. Food choices can signify associations with certain social classes, religions and spiritual groups, ethno-cultural groups, and gender, allowing us to express our affiliations, and others to make associations about us. These foods—and food rituals—allow us to feel connected, and they are potent ways of asserting cultural identity and belonging (Visser, 1991). The trend away from use of fundamental food ingredients and traditional cuisines is of such concern that a European Parliament Resolution has been motioned on the need to protect the cultural and educational aspects of European gastronomic heritage (Committee on Culture and Education, 2014).

Moving Forward

Food literacy is an important starting point for developing new dialogue around food engagement, which moves beyond (but includes) "food skills." Food literacy can provide a foundation for programs and policies aimed at fostering positive relationships with food to promote well-being. It has the potential to be a unifying framework for

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tying together diverse food and nutrition programming, as well as research and other scholarly and applied work. New research should focus on food literacy competencies and criteria for learning outcomes, and these must be articulated and communicated to diverse audiences. These should inform programs and policies, which must be scaled up to support individuals and families through formal and non-formal educational opportunities. Family and consumer sciences/home economics professionals can be at the forefront of this movement by:

- Conducting empirically-based research to identify food literacy frameworks, competencies, and methods for measuring food literacy
- Developing educational strategies including learning outcomes and curricula
- Ensuring food literacy is inclusive, progressive, and meets the needs of today's families
- Advocating for food literacy programs and policies
- Communicating about food literacy, from grass roots to policy decision-makers

Conclusion

The concerning public health nutrition issues evident in the population's current health status, along with growing interest in food-based learning, sets the perfect stage to begin integrating food literacy into the next generation of food and nutrition research, policies, and programs. The time is right; educators, parents, and students are asking for food-based education. National health surveys are beginning to integrate food literacy-related questions (Slater & Mudryj, 2016). Extracurricular and community-based food programs such as gardens and cooking clubs are on the rise. However, these all need to be tied together through universally accessible, comprehensive food and nutrition education programs to provide our youth with the tools and environment to thrive; our complex food system and the future of the planet demand it. To deny them this is akin to throwing them in the deep end of the pool without swimming lessons. Family and consumer sciences/home economics professionals have the training, skill, foresight, and leadership to be at the front of a food literacy movement. Rather than lament the disappearance of the "good old days" let us look ahead to forge a new relationship with food.

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