



VIEWPOINT

## Promoting an interdisciplinary food literacy framework to cultivate critical citizenship

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### ABSTRACT

The goal of this viewpoint is to promote an integrated and holistic framework for food literacy on college campuses. We propose that a framework to promote an effective understanding of food should encompass social, political, scientific, and personal dimensions; integrating these elements into university curricula and campus culture can empower students to become more engaged food citizens, with implications for their own food choices, and also for the broader food system. Emerging findings show that curricular interventions designed to educate about food system-environment connections can motivate students to reduce red meat and increase vegetable consumption. This viewpoint also lays the foundation for future studies to quantify the impact of increased knowledge on food choices, which can ultimately impact the health and wellbeing of both people and the planet.

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### Introduction

Interdisciplinary approaches to promote an effective understanding of food are urgently needed. Food is an integral part of our daily lives, as well as our culture and society; what we eat impacts our health, our environment, and our communities. Yet, navigating the world of food choices has become increasingly complex and challenging. Food—and its role in the social, political, and personal realms of our lives—continues to evolve with the increasing industrialization of the food system, advances in science and technology, and expanding knowledge of chronic disease etiology. Food-based topics are popularized and sensationalized in the media, and our lives are flooded with information and advertising. The omnipresence of social media provides a platform for even greater diversity of voices and viewpoints, as well as misleading and inaccurate information. Technologies, such as genetically modified organisms (GMOs), are rapidly evolving and increasingly used in agriculture and marketing. Recent findings reveal that the scientific literature has been tainted by conflicts of interest<sup>1</sup>.

This evolving high-speed information environment makes it increasingly complex for individuals to make informed choices about food: Is it better to eat food low in fat or sugar? How do I eat healthfully on a budget? Should I buy a tomato that is organically grown in Mexico or locally grown

with conventional farming methods in California? Who is harvesting and distributing the produce that I eat? Can I trust food labels? How do I understand the relative impact of food waste? These questions are especially pertinent for college students, many of whom are making independent decisions about what food to eat and buy for the first time.<sup>2</sup> The college years comprise a formative period when students are solidifying their values and behaviors that will guide their choices over the coming decades.<sup>3</sup>

To date, a major focus of food literacy efforts has been to increase knowledge of nutrition and build practical skills in food management, selection, and preparation.<sup>4–7</sup> Such efforts are important for college students who may have been subject to the current era of culinary “de-skilling”—characterized by fewer home-cooked meals, reduced inter-generational transfer of skills, and the dwindling of home economics courses.<sup>8,9</sup> Improving practical food skills can be valuable for building students’ capacity to prepare their own meals, leading to lower food costs and improved nutrition.<sup>10,11</sup> But individual food choices may also be informed by critical evaluation of other aspects of food literacy, such as considering where food comes from and how it is produced and marketed.<sup>12</sup> A growing body of work on food literacy moves beyond the historical focus on nutrition knowledge and skills to include broader and deeper engagement with food systems.<sup>13,14</sup> While food literacy must include basic levels of functional and interactive literacy to

understand and apply information, critical food literacy involves active reflection and consideration of information within a broader social context.<sup>15</sup> Importantly, critical food literacy is conceptualized as a form of citizenship that extends beyond the individual to facilitate social change; it reflects the dynamic interplay between people and their environments, suggesting that effective engagement with food issues may empower individuals to improve their own diets, and also contribute to broader changes in the food system.<sup>15–17</sup>

To empower students to become critical food citizens, we were interested in formulating a framework that captured the multidisciplinary dimensions of critical food literacy. To define a framework that would be effective for a college campus, we formed a working group under the auspices of the University of California President Napolitano's Global Food Initiative<sup>18</sup> and gathered input from experts in the fields of public health, science, education, nutrition, and journalism. Members of our group included scholars, advocates, policy makers, and practitioners who have contributed to the knowledge base and societal reflections on the social, political, and scientific aspects of food. Our workgroup benefited from the ecosystem of the University of California, bringing in perspectives from faculty, staff, and students who interact in a living-learning environment; importantly, this provided input on diverse college students of varying ages, races, genders, disciplines, and socio-economic status.

Bringing together these varied perspectives from different disciplines, we propose that more effective engagement with food can be accomplished by promoting a comprehensive framework for food literacy, which fosters:

... an understanding, appreciation, and stewardship of the **social** (culture, ethnicity, history, etc.), **political** (policy, economics, etc.), **scientific** (nutrition, environment, etc.), and **personal** (deliciousness, cooking, etc.) dimensions of food within one's local and global communities.

We propose that such an interdisciplinary understanding of food should enable individuals to align their own values with their food choices and make informed decisions about the foods they buy and consume. In addition, we suggest that fostering this critical and holistic approach to food literacy should have broader implications for the food system and societal wellbeing. Importantly, this broader framework should appeal to a more diverse cross-section of college students by tapping into their understanding, appreciation, and responsible stewardship of social, political, scientific, and/or personal dimensions of food. These four dimensions of food literacy are woven into the fabric of every aspect of how we “digest” our food—both in our minds and bodies. These factors can also influence how we eat, where we eat, when we eat, and with whom we eat. Together, these four dimensions provide a more dynamic connection to food literacy that bridges different realms of our relationships with food.

### **Social dimension**

Food is an integral part of culture. Like a language, food enables students to connect with one another and bond over a shared experience. Food also provides an effective medium to

share and preserve cultural traditions and ethnically diverse cuisines. Eating a home-cooked meal from an unfamiliar cuisine can build cultural competency and also shed light on family, immigration, assimilation, legacies of oppression, and colonialism.<sup>19–21</sup> Being “food literate” in social contexts means learning about different cultures, bridging gaps between conflicting ideals and values, and deepening respect for diversity.<sup>22–24</sup> Knowledge of the cultural, ethnic, or historical context of food—a vibrant and rich dimension of diverse cultural traditions—could add meaning, character, and value to eating and cooking. In today's high-paced information environment that is characterized by rising rates of loneliness and anxiety,<sup>25</sup> meals provide a time to foster interpersonal connections and social engagement.<sup>26</sup> Social connectivity can improve overall health and wellbeing.<sup>27</sup> We propose that college students will benefit from retraining cell phone connection habits to achieve the benefits of social interactions for their health and wellbeing.

### **Political dimension**

Politics can both inform and obscure the importance of various facets of the food supply chain, from farming and agriculture to dietary guidelines and food safety. Policies can drive behavior change, as in the case of placing taxes on certain foods or beverages, such as alcohol or sugar-sweetened beverages.<sup>28,29</sup> Implementing food handling and safety policies are essential for protecting public health. Unfortunately, political and economic machinations allow large food corporations to dominate the food landscape by monopolizing markets and influencing nutrition research.<sup>1,30,31</sup> To change these financially- and power-driven contexts requires an educated population who is literate in the political and economic underpinnings of our food system. Communities, corporations, and institutions can take a leadership role, for example, by establishing nutrition assistance and school food programs, identifying better food sourcing choices, and shedding light on how farm subsidies affect the food supply. Though these efforts may take time, each small step to engage local constituents and policy makers helps to shift the prevailing culture and facilitate a change in the political and economic structures that shape food policy.

### **Scientific dimension**

Scientific research on food and nutrition is constantly evolving. Food literacy requires an ability to assess the strengths and limitations of new and relevant information. Breakthroughs in science and technology shape what we farm and harvest, the ingredients with which we cook, how we cook, how our bodies digest food, and how we label food. Knowledge of scientific aspects of food has contributed to the development of plant-based meat and dairy alternatives,<sup>32</sup> which provide more environmentally sustainable food options. Cheaper methods for DNA sequencing have enabled more detailed characterizations of fish species along the food supply chain,<sup>33</sup> resulting in greater transparency for consumers. Political and financial interests often trump

scientific evidence in the process of establishing national food guidelines,<sup>34</sup> thus complicating the dissemination of evidence-based findings and fostering the need for critical thinking about food choices. With the urgent need to address climate change, food literacy requires a deeper knowledge of the environmental impact of our existing and emerging food-based practices.<sup>9,35</sup>

### Personal dimension

The personal dimension of our food literacy framework promotes engaging individuals with food through emotional, sensory, and tangible experiences. The enjoyment of finding, preparing, tasting, or sharing delicious food provides a gateway to explore how political, social, and scientific forces shape the food we eat and flavors we taste. Recognizing the important role of personal connections and intimacy with food encourages more critical engagement and mindful eating.<sup>36</sup> Building on findings that establish a link between the enjoyment of cooking and diet quality,<sup>11</sup> the quest for “deliciousness”—or the delight that results from immersing the self in the beauty of flavor—could inspire healthier, more economical, and more sustainable food choices. The personal dimension of food may also be significant for students with unhealthy relationships to food and struggles with diet quality and food-related stresses. Though navigating the personal dimension is complex, engaging with food literacy on a personal level can expand, or open new, connections to other dimensions of food. Offering classes in cooking and mindful eating, providing access to food counselors, or simply connecting food experiences to existing course concepts have potential to strengthen the personal dimension of food. For example, discussing varieties of locally grown apples and how their flavor can be impacted by terroir inspired students in an undergraduate science class to explore these products at the local farmer’s market.

### Towards a broader vision of food literacy

The college years are a formative time when diverse perspectives and ideologies are fostered and students are beginning to discuss difficult or controversial topics and make independent choices reflecting their evolving values, attitudes, and behaviors. Food literacy is an essential life skill, and integrating multidisciplinary perspectives into existing undergraduate and graduate curriculum can have positive effects on student food choices that are better for the health of people and the planet.<sup>37</sup> A broader understanding of food should equip students to participate in important discourse revolving around health, climate change, farmworker exploitation,<sup>38</sup> and even food insecurity—an issue that disproportionately affects college students.<sup>39,40</sup> It will also be crucial to convey how consumer preferences and advocacy can drive larger-scale changes in food industry practices and product offerings.<sup>41,42</sup>

Training the next generation in a broader, interdisciplinary approach to food literacy means populating the fields of energy, water, and food with leaders who are knowledgeable

about the interconnectivity of the food system. A more food literate world could have profound implications: sustainable food production and reduced food waste would relieve demands on the environment; greater transparency in how food is produced would improve life quality for food workers; improved nutrition would result in lower health care costs and medical burdens; a greater enjoyment of food would enhance the wellbeing of individuals and communities; and increased understanding of the role of individual choices in the food system would empower individuals to be agents of positive social change through food. Although food may seem like a small “piece of the pie,” we believe the accessibility, ubiquity, and transformative power of food can make it an ideal gateway for the next generation of thought leaders to better understand—and question—broader societal issues, but more importantly, navigate their roles as critical citizens of our planet.

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