

Food literacy competencies: A conceptual framework for youth transitioning to adulthood

Joyce Slater¹  | Thomas Falkenberg² | Jessica Rutherford¹ | Sarah Colatruglio¹

¹Department of Food and Human Nutritional Sciences, University of Manitoba, Winnipeg, Manitoba, Canada

²Faculty of Education, University of Manitoba, Winnipeg, Manitoba, Canada

Correspondence

Joyce Slater, Department of Food and Human Nutritional Sciences, University of Manitoba, 209 Human Ecology Building, Winnipeg, Manitoba R3T 2N2 Canada.
Email: joyce.slater@umanitoba.ca

Funding information

Heart and Stroke Foundation of Canada; Employees of Sobeys Inc. – Safeway Operations

Abstract

Objective: The modern foodscape has changed dramatically in recent decades in terms of where, what, how and with whom we eat. This has been facilitated by a transition from traditional, healthy and basic foods prepared in the home to ultra-processed, unhealthy foods requiring little planning and preparation prior to consuming. Consequently, many youth lack the food literacy (knowledge, skills and critical perspectives) necessary to be well and minimize their risk of obesity and chronic diseases, in the context of a complex food system. The specific dimensions of these knowledge, skills and dispositions, however, are unknown. This study identified critical food literacy competencies required by youth as they transition to independent adulthood. **Design:** This study employed a Delphi methodology to achieve consensus statements on critical food literacy competencies within a framework encompassing cognitive, psychomotor and affective dimensions. **Participants:** A panel of 41 experts including dietitians, teachers and college/university students participated in in-depth interviews. **Analysis:** Results were thematically analysed and incorporated into two subsequent surveys completed by panel members. Rater agreement was set at 75% agreeing/strongly agreeing with survey items. A panel subgroup further delineated results into competency statements. **Results:** Within the themes of “confidence and empowerment,” “joy and meaning” and “sustainable and equitable food systems,” 16 broad competency areas, and 59 specific competencies were identified. These were assembled into a Food Literacy Framework. **Conclusion:** Results can be used to support food and nutrition education in community settings as well as the formal school system, and to advocate for resources to support food literacy education programmes.

1 | INTRODUCTION

Promoting food literacy among Canadian adolescents is a critically important strategy to protect them against the deleterious impacts of modern food systems as they transition to adulthood. Food skills programmes, where they exist, tend to have a narrow focus on food preparation, which is insufficient to provide a robust foundation with which to face the complexity of today's food environment. Proliferation of these programmes, uninformed by a reflective assessment of the food and nutrition competencies required to achieve

health and well-being, is a lost opportunity at this critical juncture in the evolution of our foodscape. As background, highlights of this evolution are presented.

The modern foodscape has changed dramatically in recent decades in terms of where, what, how and with whom we eat. This “nutrition transition” from traditional, healthy and basic foods prepared in the home to calorie-dense, “ultra-processed” foods has taken place over several decades in developed countries, and is rapidly occurring in those with emerging economies (Imamura et al., 2015; Monteiro, Moubarac, Cannon, Ng, & Popkin, 2013; Popkin,

2009). Ultraprocessed foods include take-away fast food, ready-to-eat meals and snacks and sugar-sweetened beverages. They are typically “shelf-stable” packaged foods containing high concentrations of fat, oils, salt and sugar along with “food substances” such as emulsifiers, flavour, colours and other additives (Martínez Steele et al., 2016). Almost 60% of calories consumed in the United States (Martínez Steele et al., 2016), and 62% of calories consumed in Canada (Monteiro et al., 2013) come from ultraprocessed foods. This transition has been facilitated in part by expanding global food markets, multinational food corporations, aggressive marketing, lifestyles, social norms and employment structures.

At the same time, food-related health problems are increasing, potentially threatening future productivity of the workforce (Organization for Economic Cooperation & Development, 2010). Chief among these is the rise in obesity in global populations, which has been attributed primarily to overconsumption of calorie-dense processed foods (Ebersole et al., 2008; Moubarac et al., 2014; Slater et al., 2009; Swinburn et al., 2011). Overweight and obesity in youth are of particular concern. In Canada 32% (males) and 27% (females) of 12–19-year olds, and 47% (males) and 39% (females) of 20–29-year olds were overweight or obese in 2011 (Roberts, Shields, de Groh, Aziz, & Gilbert, 2012). During the same period in the United States, 21% of adolescents aged 12–19 years were obese (Ogden, Carroll, Fryar, & Flegal, 2015).

In North America, children are not meeting dietary guidelines. Seventy per cent of Canadian children aged 4–8 do not consume a minimum of five daily servings of fruits and vegetables; more than 37% of children aged 4–9 do not consume enough milk products; and one in five exceeds their energy needs (Garriguet, 2007). In the United States, children have low healthy eating index scores due to high consumption of sodium, refined grains and empty calories (Banfield, Liu, Davis, Chang, & Frazier-Wood, 2016). In Canada and the United States, 60% and 62% of daily calories, respectively, come from ultraprocessed foods (Moubarac et al., 2014; Steele et al., 2016). The poor diet of children and youth, coupled with high rates of overweight and obesity, put them at elevated future risk for future physical and mental health issues (Lobstein et al., 2015; Popkin et al., 2012; Reilly & Kelly, 2011). However, while the risks associated with poor diet and obesity are significant, there are also compelling sociocultural impacts resulting from contemporary food and dietary patterns.

The shift to ultraprocessed food has seen a concurrent decline in time spent on food-related activities such as family meals, meal planning and cooking (Laska, Larson, Neumark-Sztainer, & Story, 2011; Pelletier & Laska, 2012; Slater & Mudryj, 2016), and a “deskilling” with respect to food and nutrition (Engler-Stringer, 2010; Jaffe & Gertler, 2006). These trends have been attributed in part to higher rates of employment in women and decreased opportunities for food skill development within home and school settings (Ronto, Ball, Pendergast, & Harris, 2017b; Slater, 2013). A decline in regular family meals, along with greater frequency of out-of-home food consumption are also contributors to widespread reduction in fundamental food knowledge and skills (Berger,

Larson, Bauer, & Neumark-Sztainer, 2011; Lu, Huet, & Dube, 2011). While evidence suggests that family meals can have a positive impact on diet quality and child socialization (Dwyer, Oh, Patrick, & Hennessy, 2015; Larson, Branscomb, & Wiley, 2006; Vaitkeviciute, Ball, & Harris, 2015; Woodruff & Hanning, 2008), busy lifestyles and competing demands reduce time available for food preparation, family meals and transfer of knowledge within the family (Laska et al., 2011; Pelletier & Laska, 2012). This knowledge concerns not just food preparation and nutrition but also encompasses important familial and culturally important foods and food ways which contribute to cohesiveness and identity (Moisio, Arnould, & Price, 2004).

The impact of a growing ultraprocessed food supply and culinary deskilling, amid numerous “healthy eating” messages, have created confusion for citizens who must navigate the complex modern foodscape (Escott-Stump, 2011; King et al., 2012). These trends have led to a call to invest in building fundamental food and nutrition knowledge and skills in the population (Colatruglio & Slater, 2016; Lichtenstein & Ludwig, 2010; Pendergast & Dewhurst, 2012; Slater, 2013). Existing studies indicate that early in-home food experiences have a positive impact on food skills (Laska et al., 2011), and increased diet quality is associated with greater frequency of cooking and the use of more complex steps when preparing meals (Larson, Story, Eisenberg, & Neumark-Sztainer, 2006; Moubarac et al., 2013; Thorpe, Kestin, Riddell, Keast, & McNaughton, 2014). Of particular concern is the need for sufficient food skills in youth, which can be acquired through formal school education, such as home economics classes (Lichtenstein & Ludwig, 2010). Evidence suggests home economics education is associated with long-lasting learning of food knowledge (Worsley, Wang, Yeatman, Byrne, & Wijayarathne, 2015). Fordyce-Voorham has conducted important work identifying essential food skills for school-based healthy eating programmes (Fordyce-Voorham, 2011). Home economics, however, has diminished in importance, or been dropped altogether in many jurisdictions (Slater, 2013; Smith, 2011). Where school-based food and nutrition programmes exist they tend to be focused on food consumption and health at the individual level (Anderson & Falkenberg, 2016) or on cooking and food preparation skills (Brooks & Begley, 2014). Further, the narrow focus on food skills may be insufficient to help students prepare to navigate the complex foodscape, which includes a myriad of messages regarding body image, weight loss and nutrition along with an environment which persistently and ubiquitously encourages consumption of unhealthy foods (Swinburn et al., 2011).

Food literacy has emerged as a broader concept which may confer protective benefits in the context of the modern foodscape (Colatruglio & Slater, 2016; Cullen, Hatch, Martin, Higgins, & Sheppard, 2015; Krause, Sommerhalder, Beer-Borst, & Abel, 2016; Slater, 2013; Sumner, 2015; Vidgen & Gallegos, 2010). Vidgen and Gallegos have examined the components of food literacy from the perspective of young adults, focusing on the day-to-day experiences of feeding themselves, as well as food experts’ understanding of the term “food literacy” (Vidgen & Gallegos, 2014).

Consequently, they define food literacy as “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, 2014, p. 55). Cullen’s “Food Literacy Framework for Action” places food literacy within the context of community food security, emphasizing social, cultural and environmental experiences with food (Cullen et al., 2015). The Conference Board of Canada has identified “food literacy” as an important area for examination of its role in addressing concerns of population food “deskilling” and improving health and disease prevention (Howard & Brichta, 2013). These and other food literacy definitions and models have been put forth, with varying levels of detail and complexity (Smith, 2009; Velardo, 2015). However, these definitions are lacking the specific competencies that are required to achieve food literacy. Moreover, a review of adolescent food literacy programmes by Brooks and Begley revealed that most were focused on cooking/food preparation skills and few used a theoretical basis for their development (Brooks & Begley, 2014). Therefore, this study aimed to bridge the gap between food skills programming and food literacy theory by developing food literacy competencies within a conceptual framework.

The purpose of this exploratory study was twofold: first, to identify a broad scope of critical and foundational food literacy competencies required by youth as they transition to independent adulthood so they can successfully navigate complex food environments, develop positive relationships with food, reduce risk of obesity and chronic disease and enhance well-being; and second to incorporate the competencies into a “food literacy framework” for young adults. Results of the study will be used to guide food literacy theory development, educational program development and to advocate for resources and training for evidence-based food literacy educational programmes.

1.1 | Theoretical Foundation

The study was informed by theoretical understandings from health literacy, food literacy and well-being. These included Nutbeam’s three levels of health literacy, which include but move beyond knowledge transfer (functional) to development of personal skills (interactive), and personal and community empowerment (critical) as educational goals (Nutbeam, 2000). Slater has adapted this as a useful and comprehensive lens through which to view food literacy capacity, beyond (but including) food/nutrition knowledge (functional food literacy) and cooking/food skills (interactive food literacy) to include cultural and spiritual aspects of food as well as critical awareness of food issues and food systems (critical food literacy) (Slater, 2013). Benn’s model of food levels was also used to illustrate the complexity of food, encompassing culture (meals and diet) and nature (foods and nutrients) (Benn, 2014). The authors also drew upon the concept

of “well-being” to ensure that food literacy was seen as more than about disease prevention to include “to live well, to live a good life, to live happily” (Falkenberg, 2014, p. 78). These theoretical underpinnings were integrated into three distinct but overlapping domains of food literacy through which the inquiry was conducted: Confidence and Empowerment with Food; Joy and Meaning through Food; and Equitable and Sustainable Food Systems.

2 | METHODS

2.1 | Delphi Method

Delphi is a structured group communication method for soliciting diverse expert opinions about complex problems or novel ideas through the use of a series of survey questionnaires, controlled feedback and rigorous analytical methods (Grisham, 2009). Food literacy is an emerging, transdisciplinary concept and understanding how it should be constructed for youth is complex; therefore, it is not sufficiently evolved to employ experimental research methods. Vidgen and Gallegos utilized the Delphi method for examining Australian food experts’ understanding of the term “food literacy” (Vidgen & Gallegos, 2014). For our study, a three-round Delphi technique incorporating in-depth interviews was used with food and nutrition experts to achieve consensus on the most critical food literacy competencies required by youth to prepare them for independent adult living. Figure 1 shows an overview of the research process.

2.2 | Study Participants

A total of 41 food and nutrition experts residing in urban and rural communities in a Canadian province participated in the study (Table 1). Dietitians were chosen because of their expertise in food and nutrition; teachers for their expertise in teaching theoretical and applied food and nutrition to youth; and nutrition/culinary students for their knowledge of food and nutrition, and proximity in age to the study’s target population. Participants were recruited through local professional dietetics and teacher organizations, through the culinary arts programme administration office and through the nutritional sciences student organization. Approval for the study was received from the Human Research Ethics Board at the University of Manitoba.

2.3 | Data Collection and Analysis

Round 1: Round one of data collection involved a semi-structured, in-depth telephone interview with participants. Interviews averaged 45 minutes, were audio-recorded and transcribed verbatim. Basic demographic data was collected from panel members (age, sex, region, area of work or study). Prior to interviews, panel members were provided with definitions of “food literacy” and “well-being”

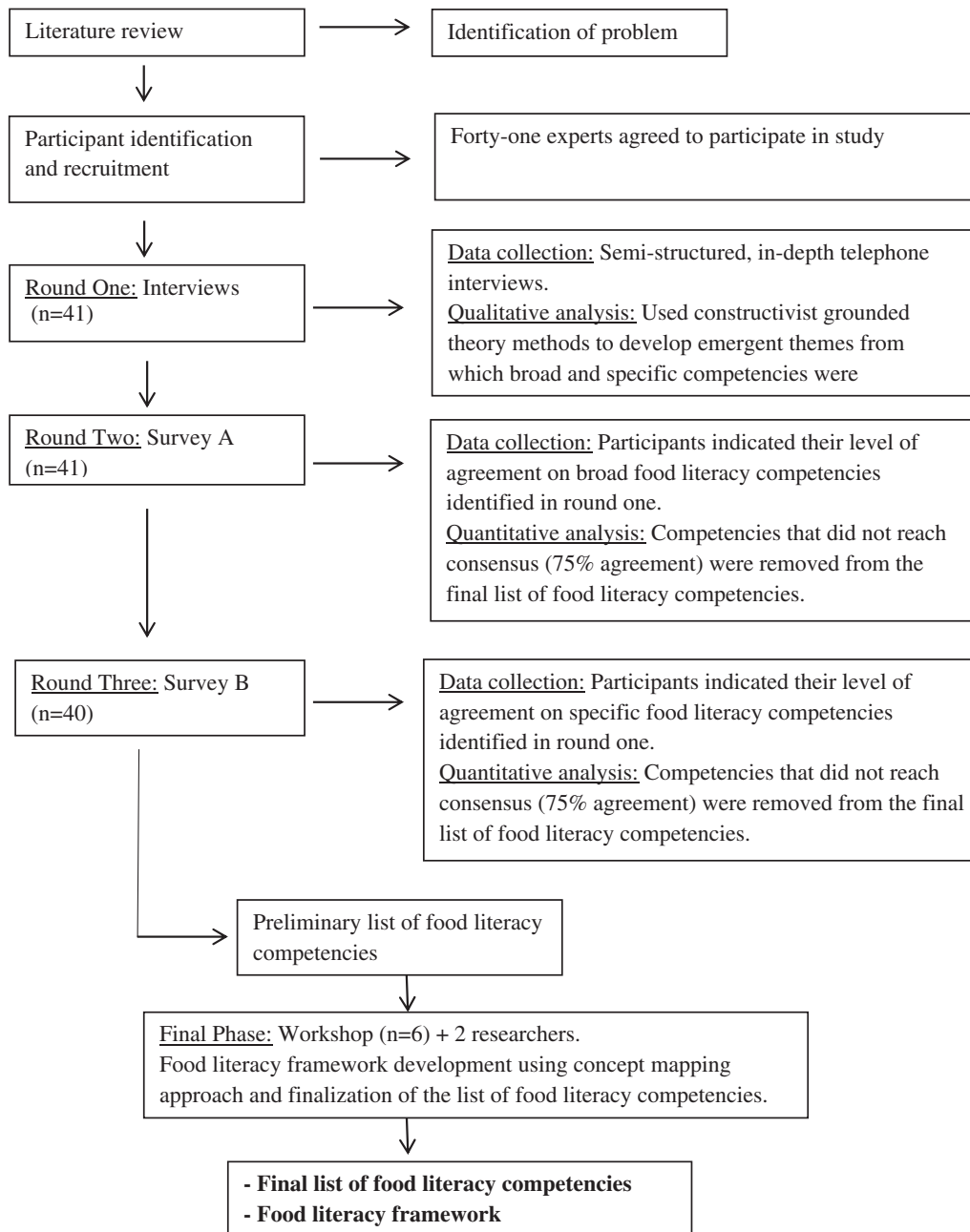


FIGURE 1 Schematic overview of the research design and Delphi process

along with a schematic showing the complexity of food (Benn, 2014) and corresponding definitions of functional, interactive and critical food literacy (Slater, 2013). Guiding interview questions were open-ended and focused on three domains derived from the theoretical framework (Table 2).

Round 1 data were coded and analysed thematically for emergent themes using a constant comparison method within each of the 3 domains, meaning codes emerged from the data and were not pre-determined (Charmaz, 2006). Round one yielded 22 broad themes under the 3 domains. Data were further analysed within broad themes for specific subthemes ($n = 81$). Coding was undertaken by one research team member and checked for agreement by other members. Areas of question or disagreement were discussed until a

consensus was reached for the theme. The broad themes and sub-themes were reworded for consistency and then used to create the food literacy competencies in Surveys A and B, which were administered in Rounds 2 and 3 via an online platform. All 41 participants completed interviews.

Round 2 of data collection involved panel members completing an online survey (Survey A) in which they were asked to indicate their level of agreement with each of the 22 broad competencies from Round 1, using a 5-point Likert scale, regarding whether youth should have the respective competency as they enter independent living. Survey A had a 100% response rate.

Round 2 data analysis used descriptive statistics to evaluate consensus agreement, defined as a minimum of 75% of participants

TABLE 1 Characteristics of participants (n = 41)

Characteristic	Participants (n)
Sex	
Male	7
Female	34
Age	
20–29	14
30–39	7
40–49	10
50–59	8
60+	2
Location	
Urban	30
Rural	11
Occupation	
Home Economics Teacher	9
Social Sciences Teacher	5
Physical Education Teacher	5
Dietitian	9
Senior Nutritional Sciences Student	9
Senior Culinary Student	4

TABLE 2 Guiding interview questions

In preparation for the interview questions, think about what food literacy can and should mean if we want food literacy to contribute to youth's well-being
Think of youth moving out on their own; what capabilities do they need, to have confidence and to feel empowered to make positive decisions around food for themselves and other?
What food and nutrition capabilities do they require to have food be a joyful and meaningful part of their lives, and those around them?
What skills and knowledge would this youth need as they enter adulthood in order to understand and support to a fair and sustainable food system?

indicating “agree” or “strongly agree. Agreement was reached on 18 broad competencies, for which there were 73 associated specific competencies. The broad competencies for which there was not agreement, and corresponding specific competencies, were removed.

Round 3 of data collection involved panel members completing an online survey (Survey B) in which they were asked to indicate on a 5-point Likert scale their level of agreement with the 73 specific competencies established after Round 2 regarding whether youth should have the respective competency as they enter independent living. Survey B had a 97.56% response rate.

Round 3 data analysis used the same analytical process described in Round 2. Agreement was achieved on 64 specific competencies.

The final phase of this study was a half-day workshop to refine results with the two lead researchers. One participant from each

occupational group was chosen based on interest and availability. The workshop used a modified Concept Mapping approach, which is a structured process focused on a construct of interest, involving input from a group of participants and which produces an interpretable graphical view of their ideas and concepts and how these are interrelated (Taylor & Littleton-Kearney, 2011). Using the broad and specific food literacy competencies generated using the Delphi method, the group provided feedback on the competency list and emerging food literacy framework. Two of the 18 broad competencies and five of the specific competencies were collapsed.

3 | RESULTS

The workshop resulted in consensus on a list of 59 food literacy competencies for youth categorized within 16 broader competency areas. With some minor wording changes made to improve clarity and readability, the results were clustered into the three domains: (1) Functional Competencies: Confidence and Empowerment with Food; (2) Relational Competencies: Joy and Meaning through Food; and (3) Systems Competencies: Equity and Sustainability for Food Systems within the framework, “Food literacy competencies for young adults” (Figure 2).

4 | DISCUSSION

This study revealed a broad scope of food literacy competencies required by youth as they transition to independent living. These are integrated within a comprehensive framework that emphasizes functional, relational and systems competencies and reflect the complexity of food (Benn, 2014) through including basic knowledge of food, nutrients, food safety; food skills; emotional and cultural aspects; and critical perspectives on food systems. Clearly, youth require much more than basic nutrition knowledge and food skills in order to navigate the complex food environment and enhance their well-being.

“Confidence and Empowerment with Food” highlighted the need for knowledge of food, nutrition and food safety along with an array of food planning, budgeting and preparation skills. The emphasis here is congruent with the attention that “food skills” education has received as a means of preventing obesity and chronic disease (Howard & Brichta, 2013; Larson, Branscomb et al., 2006; Lichtenstein & Ludwig, 2010; Thorpe et al., 2014). Food skills are also an area perceived to be in deficit as opportunities to develop food skills are diminishing in the face of growing convenience food markets (Monteiro et al., 2013) and decreased opportunities to learn food skills both at home and school (Pendergast & Dewhurst, 2012; Ronto et al., 2017b).

That more than half the competencies reside in this domain is not surprising, as the dominant approach to food and nutrition in contemporary society is through what Scrinis terms “nutritionism” (Scrinis, 2008). “Nutritionism” refers to the prevailing discourse of

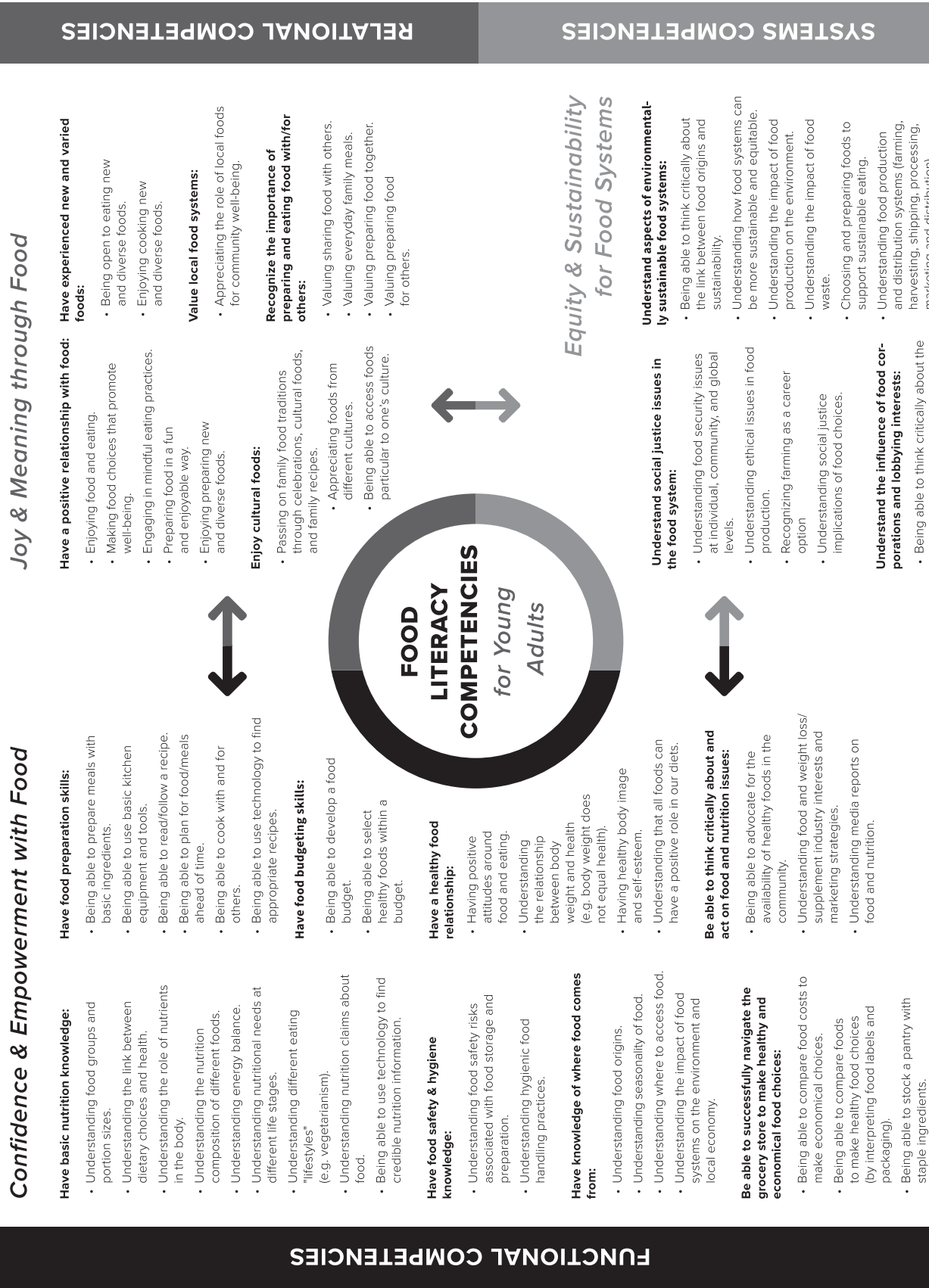


FIGURE 2 Food literacy competencies for young adults

nutrition science, government health agencies and the food and weight loss industries whereby they “encourage us to think of foods in terms of their nutrient composition, to make the connection between particular nutrients and bodily health, and to construct ‘nutritionally balanced’ diets on this basis” (Scrinis, 2008). He further argues that this dominant focus on nutrients and disease prevention in fact undermines and replaces other ways of engaging with food and of contextualizing the relationship between food and the body. Many of these “other ways” are encapsulated in this study’s “Joy and Meaning through Food”.

“Joy and Meaning through Food” included emotional and cultural competencies, emphasizing positive relationships with food. These competencies are critically important in light of poor body image in youth, and perceptions of the end goal of “healthy eating” as weight loss/management (Woodgate & Leach, 2010). In addition, societal trends towards “mindless” and decontextualized eating further remove people from the positive sociocultural aspects of food (Ogden et al., 2013; Warde, 1999). Sharing food with significant others slows eating and offer opportunities for enhancing food experiences, socialization and passing on family norms and traditions. Connections to traditional and culturally important foods have also been identified as important for cultural identity and preservation (D’Sylva & Beagan, 2011; Johnson et al., 2011; Moio et al., 2004). This aspect of food literacy contributes greatly towards achievement of well-being through food choices and related decisions (McMahon, Williams, & Tapsell, 2010).

The systems competencies identified under “Equitable and Sustainable Food Systems” make clear the need to engage with, and understand, factors that activate and influence food systems, including social justice issues, environmental issues, and the role of corporate interests. An emerging literature purports that good nutrition must consider the impact of food production on social and physical environments (Lang, 2009; Palumbo, 2016; Slater & Yeudall, 2015). Sumner has incorporated these concepts into her conceptualization of food literacy (Sumner, 2015); however, this domain has been neglected in the dominant food literacy discourse, which focuses more on development of “food skills” (Brooks & Begley, 2014; Fordyce-Voorham, 2011).

The diversity of the competencies in this framework support a more comprehensive concept of well-being that gives consideration to a range of human functioning relevant to living a flourishing life (Falkenberg, 2014; Wolbert, de Ruyter, & Schinkel, 2015), including enjoying life, finding meaning and purpose in life, being mentally and physically well and living in a supportive social structure (Prilleltensky & Prilleltensky, 2007; Ryan & Deci, 2001). Our study suggests that food education experts consider being food literate (having developed the identified competencies to a sufficient degree) important for living a flourishing life. This view is especially important when considering the development of health promotion strategies to improve nutrition and food well-being, beyond reductionist notions of lifestyle education for obesity prevention.

4.1 | Framework: Food Literacy Competencies for Young Adults

The holistic nature of the “Food Literacy Competencies for Young Adults” framework illustrates the interconnectedness of the competencies, similar to three legs of the proverbial stool, which will collapse should one be removed. The framework broadens our understanding of the antecedents required for youth to not only cope in our complex modern foodscape, but to change it for the better through critical analysis and subsequent actions. The competencies, and framework, are consistent with the recent emergence of food-based dietary guidelines such as the Dietary Guidelines for the Brazilian Population (Secretariat of Health Care Primary Health Care Department, 2014). In addition to providing guidance on choosing healthy foods, they also advocate for a dietary pattern that incorporates traditional cuisines based on whole foods; emphasize the need to develop cooking skills; and encourage taking time to eat, especially with others. Brazil’s guidelines also account for the impact of food choice/production on social justice and environmental integrity.

The “Food Literacy Competencies for Young Adults” framework challenges an often narrow understanding of food literacy in school curricula (Anderson & Falkenberg, 2016) and reflects the urging for a more comprehensive approach to food and nutrition education. Smith argues that focusing on food-based education rather than nutrition may have more positive impact on behaviour change (Smith, 2009). Pendergast and Dewhurst state that a “comprehensive portfolio of interventions is needed to cover the full landscape of food literacy education; otherwise partners operating on one element (such as human health, environmental health or the food system) might undermine positive actions elsewhere” (Pendergast & Dewhurst, 2012, p. 13). Both identify home economics educators as uniquely positioned to lead the development of school-based food literacy programmes.

The main strengths of this study are that it used a diverse panel of experts, had an excellent response rate and resulted in a conceptual framework to assist educators, programme planners and policy makers to develop educational strategies. The competencies framework provides new thinking about a more relevant and expert-supported food literacy concept and a practical tool for planning and implementing programmes, advocacy and evaluation.

There are some limitations, including that the experts were all located in one province of one country and may not reflect consensus perspectives outside this jurisdiction. Future studies should be conducted in other regions/countries with additional experts, and build on these findings by identifying specific learning outcomes and evaluation strategies for measuring food literacy. Further, more work is needed to show links between food skills and health outcomes. This is important to ensure that food literacy, as a critical health promotion tool, is evidence-based and does not take on a “moralistic” dimension whereby it is imbued with inherent qualities that are not empirically

supported (Bowen, Elliott, & Brenton, 2014; Coveney, Begley, & Gallegos, 2012).

Finally, while not a limitation per se, it is important to see food literacy for what it is intended, i.e., a form of *literacy*: the outcome of educational goals intended to inform, develop personal skills and contribute to personal and community empowerment, and social change (Nutbeam, 2000). Where food literacy will fail as an emancipatory health promotion tool is when it is decontextualized from unjust societal processes such as social and health inequity, and unhealthy food environments (Ronto et al., 2017a). As Doris Gillis states, valourizing food literacy as THE determinant of food choice separates people from their environments, and reinforces the ideology of individual responsibility for health behaviours, and therefore health outcomes (Gillis, 2016, p. 94). In other words, food literacy must be placed alongside efforts to shore up Vidgen and Gallegos' "scaffolding" to protect diet quality for individuals and populations over time (Vidgen & Gallegos, 2014).

5 | CONCLUSIONS

This is the first study to move beyond the provision of a definition of food literacy to identify a set of competencies required by youth as they transition to independent adulthood. The results move towards a consensus on the constituent components of cooking and food skills that McGowan and colleagues have identified as lacking (McGowan et al., 2017). The holistic framework presented clearly indicates that a broad scope of knowledge, attitudes and skills are necessary to navigate the modern foodscape, beyond (but including) basic nutrition knowledge and "knowing how to cook." These study results also indicate that cognitive, theoretical and applied learning opportunities are all necessary to build food literacy. To date, however, there has been little attention paid to ensuring that youth are equipped with the attributes necessary to make them food literate. School-based food and nutrition education, such as home economics courses, has diminished in many jurisdictions (Pendergast & Dewhurst, 2012; Slater, 2013), and other subject areas may not be mandated to include nutrition-related content. Community-based food programmes are growing in many regions but have sporadic funding and lack a theoretical basis from which to build their programmes. The "Food Literacy Competencies for Young Adults" framework can be used to inform curriculum development, including cross-curricular programming. It can also be used by programme planners in community-based organizations to advocate for, and promote food literacy. This study also provides an important, evidence-informed body of knowledge on which to base future food literacy research.

The competencies identified in the Framework and the broader perspective on food literacy underpinning our study envision food literate youth as agents of change and critical citizens who question what they are eating, how they eat and how food impacts their overall well-being, other people's well-being and the well-being of our ecology.

ACKNOWLEDGEMENTS

This research was generously funded by the Heart and Stroke Foundation and Employees of Sobeys Inc.—Safeway Operations. The authors would like to thank the study participants for their time and contributions to the research.

ORCID

Joyce Slater  <http://orcid.org/0000-0003-1881-0004>

REFERENCES

- Anderson, H., & Falkenberg, T. (2016). The role and status of food and nutrition literacy in Canadian school curricula. *Alberta Journal of Educational Research*, 62, 87–109.
- Banfield, E. C., Liu, Y., Davis, J. S., Chang, S., & Frazier-Wood, A. C. (2016). Poor adherence to US dietary guidelines for children and adolescents in the National Health and Nutrition Examination Survey population. *Journal of the Academy of Nutrition and Dietetics*, 116, 21–27.
- Benn, J. (2014). Food, nutrition or cooking literacy - A review of concepts and competencies regarding food education. *International Journal of Home Economics*, 7, 13–35.
- Berge, J. M., Larson, N., Bauer, K. W., & Neumark-Sztainer, D. (2011). Are parents of young children practicing healthy nutrition and physical activity behaviors? *Pediatrics*, 127(5), 881–887.
- Bowen, S., Elliott, S., & Brenton, J. (2014). The joy of cooking? *Contexts*, 13, 20–25.
- Brooks, N., & Begley, A. (2014). Adolescent food literacy programmes: A review of the literature. *Nutrition & Dietetics*, 71(3), 158–171.
- Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. London, UK: Sage Publications.
- Colatruglio, S., & Slater, J. (2016). Challenges to acquiring and utilizing food literacy: Perceptions of young Canadian adults. *Canadian Food Studies*, 3, 96–118.
- Coveney, J., Begley, A., & Gallegos, D. (2012). "Savoir fare": Are cooking skills a new morality? *Australian Journal of Adult Learning*, 52, 617–642.
- Cullen, T., Hatch, J., Martin, W., Higgins, J. W., & Sheppard, R. (2015). Food literacy: Definition and framework for action. *Canadian Journal of Dietetic Practice and Research*, 76, 140–145.
- D'Sylva, A., & Beagan, B. L. (2011). "Food is culture, but it's also power": The role of food in ethnic and gender identity construction among Goan Canadian women. *Journal of Gender Studies*, 20(3), 279–289.
- Dwyer, L., Oh, A., Patrick, H., & Hennessy, E. (2015). Promoting family meals: A review of existing interventions and opportunities for future research. *Adolescent Health, Medicine and Therapeutics*, 22, 115–131.
- Ebersole, K. E., Dugas, L. R., Durazo-Arvizu, R. A., Adeyemo, A. A., Tayo, B. O., Omatode, O. O., ... Luke, A. H. (2008). Energy expenditure and adiposity in Nigerian and African-American women. *Obesity*, 16, 2148–2154.
- Engler-Stringer, R. (2010). Food, cooking skills, and health: A literature review. *Canadian Journal of Dietetic Practice and Research*, 71, 141–145.
- Escott-Stump, S. A. (2011). Our nutrition literacy challenge: Making the 2010 dietary guidelines relevant for consumers. *Journal of the American Dietetic Association*, 111, 979.
- Falkenberg, T. (2014). Making sense of Western approaches to well-being for an educational context. In F. Deer, T. Falkenberg, B. McMillan, & L. Sims (Eds.), *Sustainable well-being: Concepts, issues, and educational practices* (pp. 77–94). Winnipeg, MB: ESWB Press. [WWW document]. Retrieved September 28, 2016, from <https://www.eswb-press.org/publications.html>

- Fordyce-Voorham, S. (2011). Identification of essential food skills for skill-based healthful eating programs in secondary schools. *Journal of Nutrition Education and Behavior*, 43, 116–122.
- Garriguet, D. (2007). Canadians' eating habits. *Health Reports*, 18, 17–32.
- Gillis, D. (2016). Using a health literacy frame to conceptualize food literacy. In H. Vidgen (Ed.), *Food literacy: Key concepts for health and education* (p. 94). Oxon, UK: Routledge.
- Grisham, T. (2009). The Delphi technique: A method for testing complex and multifaceted topics. *International Journal of Managing Projects in Business*, 2, 112–130.
- Howard, A., & Brichta, J. (2013). *Improving food literacy in Canada*, Ottawa, ON. [WWW document]. Retrieved August 14, 2016, from <http://www.conferenceboard.ca/e-library/abstract.aspx?did=5727>
- Imamura, F., Micha, R., Khatibzadeh, S., Fahimi, S., Shi, P., Powles, J., & Mozaffarian, D. (2015). Dietary quality among men and women in 187 countries in 1990 and 2010: A systematic assessment. *The Lancet Global Health*, 3, e132–e142. [https://doi.org/10.1016/S2214-109X\(14\)70381-X](https://doi.org/10.1016/S2214-109X(14)70381-X)
- Jaffe, J., & Gertler, M. (2006). Victual vicissitudes, consumer deskilling and the transformation of food systems. *Agriculture and Human Values*, 23, 143–162.
- Johnson, C. M., Sharkey, J. R., Dean, W. R., Alex McIntosh, W., & Kubena, K. S. (2011). It's who I am and what we eat: Mothers' food-related identities in family food choice. *Appetite*, 57(1), 220–228.
- King, L., Watson, W. L., Chapman, K., Kelly, B., Louie, J. C. Y., Hughes, C., ... Gill, T. P. (2012). Do we provide meaningful guidance for healthful eating? An investigation into consumers' interpretation of frequency consumption terms. *Journal of Nutrition Education and Behavior*, 44, 459–463.
- Krause, C., Sommerhalder, K., Beer-Borst, S., & Abel, T. (2016). Just a subtle difference? Findings from a systematic review on definitions of nutrition literacy and food literacy. *Health Promotion International*, daw084. <https://doi.org/10.1093/heapro/daw084>
- Lang, T. (2009). Reshaping the food system for ecological public health. *Journal of Hunger & Environmental Nutrition*, 4(3–4), 315–335.
- Larson, R. W., Branscomb, K. R., & Wiley, A. R. (2006). Forms and functions of family mealtimes: Multidisciplinary perspectives. *New Directions for Child and Adolescent Development*, 111, 1–15.
- Larson, N. I., Story, M., Eisenberg, M. E., & Neumark-Sztainer, D. (2006). Food preparation and purchasing roles among adolescents: Associations with sociodemographic characteristics and diet quality. *Journal of the American Dietetic Association*, 106, 211–218.
- Laska, M. N., Larson, N. I., Neumark-Sztainer, D., & Story, M. (2011). Does involvement in food preparation track from adolescence to young adulthood and is it associated with better dietary quality? Findings from a 10-year longitudinal study. *Public Health Nutrition*, 15(07), 1150–1158.
- Lichtenstein, A. H., & Ludwig, D. S. (2010). Bring back home economics education. *JAMA - Journal of the American Medical Association*, 303(18), 1857–1858.
- Lobstein, T., Jackson-Leach, R., Moodie, M. L., Hall, K. D., Gortmaker, S. L., Swinburn, B. A., ... McPherson, K. (2015). Child and adolescent obesity: Part of a bigger picture. *The Lancet*, 385, 2510–2520.
- Lu, J., Huet, C., & Dube, L. (2011). Emotional reinforcement as a protective factor for healthy eating in home settings. *The American Journal of Clinical Nutrition*, 94(1), 254–261.
- Martínez Steele, E., Baraldi, L. G., Louzada, M. L. D. C., Moubarac, J.-C., Mozaffarian, D., & Monteiro, C. A. (2016). Ultra-processed foods and added sugars in the US diet: Evidence from a nationally representative cross-sectional study. *British Medical Journal Open*, 6, e009892. <https://doi.org/10.1136/bmjopen-2015-009892>
- McGowan, L., Caraher, M., Raats, M., Lavelle, F., Hollywood, L., McDowell, D., ... Dean, M. (2017). Domestic cooking and food skills: A review. *Critical Reviews in Food Science and Nutrition*, 57, 2412–2431.
- McMahon, A.-T., Williams, P., & Tapsell, L. (2010). Reviewing the meanings of wellness and well-being and their implications for food choice. *Perspectives in Public Health*, 130(6), 282–286. Retrieved from <http://rsh.sagepub.com/cgi/doi/10.1177/1757913910384046>
- Moisio, R., Arnould, E. J., & Price, L. L. (2004). Between mothers and markets: Constructing family identity through homemade food. *Journal of Consumer Culture*, 4, 361–384.
- Monteiro, C. A., Moubarac, J.-C., Cannon, G., Ng, S. W., & Popkin, B. (2013). Ultra-processed products are becoming dominant in the global food system. *Obesity Reviews*, 14(S2), 21–28.
- Moubarac, J. C., Batal, M., Martins, A. P. B., Claro, R., Levy, R. B., Cannon, G., & Monteiro, C. (2014). Processed and ultra-processed food products: Consumption trends in Canada from 1938 to 2011. *Canadian Journal of Dietetic Practice and Research*, 75, 15–21.
- Moubarac, J. C., Martins, A. P. B., Claro, R. M., Levy, R. B., Cannon, G., & Monteiro, C. A. (2013). Consumption of ultra-processed foods and likely impact on human health: Evidence from Canada. *Public Health Nutrition*, 16, 2240–2248.
- Nutbeam, D. (2000). Health literacy as a public health goal: A challenge for contemporary health education and communication strategies into the 21st century. *Health Promotion International*, 15, 259–267.
- Ogden, C. L., Carroll, M. D., Fryar, C. D., & Flegal, K. M. (2015). *Prevalence of obesity among adults and youth: United States, 2011–2014*. NCHS Data Brief (219) (pp. 1–8). [WWW document]. Retrieved August 18, 2016, from <https://www.ncbi.nlm.nih.gov/pubmed/26633046>
- Ogden, J., Coop, N., Cousins, C., Crump, R., Field, L., Hughes, S., & Woodger, N. (2013). Distraction, the desire to eat and food intake: Towards an expanded model of mindless eating. *Appetite*, 62, 119–126.
- Organization for Economic Cooperation and Development. (2010). *Obesity and the economics of prevention: Fit not fat - Canada key facts*. [WWW document]. Retrieved August 18, 2016, from <https://www.oecd.org/els/health-systems/obesityandtheeconomicsofpreventionfitnotfat-canadakeyfacts.htm>
- Palumbo, R. (2016). The effects of food literacy on sustainability of well-being. *Agriculture and Agricultural Science Procedia*, 8, 99–106.
- Pelletier, J. E., & Laska, M. N. (2012). Balancing healthy meals and busy lives: Associations between work, school, and family responsibilities and perceived time constraints among young adults. *Journal of Nutrition Education and Behavior*, 44, 481–489.
- Pendergast, D., & Dewhurst, Y. (2012). Home economics and food literacy: An international investigation. *International Journal of Home Economics*, 5, 245–263.
- Popkin, B. M. (2009). Global changes in diet and activity patterns as drivers of the nutrition transition. *Nestlé Nutrition Workshop Series. Paediatric programme*, 63, 1–14.
- Popkin, B. M., Adair, L. S., & Ng, S. W. (2012). Global nutrition transition and the pandemic of obesity in developing countries. *Nutrition Reviews*, 70, 3–21.
- Prilleltensky, I., & Prilleltensky, O. (2007). Webs of well-being: The interdependence of personal, relational, organizational and communal well-being. In G. Haworth & J. Hart (Eds.), *Well-being: Individual, community and social perspectives* (pp. 57–74). London, UK: Palgrave MacMillan.
- Reilly, J., & Kelly, J. (2011). Long-term impact of overweight and obesity in childhood and adolescence on morbidity and premature mortality in adulthood: Systematic review. *Pediatric Review*, 35, 891–898.
- Roberts, K. C., Shields, M., de Groh, M., Aziz, A., & Gilbert, J. A. (2012). Overweight and obesity in children and adolescents: Results from the 2009 to 2011 Canadian Health Measures Survey. *Health Reports*, 23, 37–41.
- Ronto, R., Ball, L., Pendergast, D., & Harris, N. (2017a). Environmental factors of food literacy in Australian high schools: Views of home economics teachers. *International Journal of Consumer Studies*, 41, 19–27.

- Ronto, R., Ball, L., Pendergast, D., & Harris, N. (2017b). What is the status of food literacy in Australian high schools? Perceptions of home economics teachers. *Appetite*, *108*, 326–334.
- Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, *52*, 141–166.
- Scrini, G. (2008). On the Ideology of nutritionism. *Gastronomica*, *8*, 39–48.
- Secretariat of Health Care Primary Health Care Department. (2014). *Dietary guidelines for the Brazilian population*. [WWW document]. Retrieved August 14, 2016, from http://bvsms.saude.gov.br/bvs/publicacoes/dietary_guidelines_brazilian_population.pdf
- Slater, J. (2013). Is cooking dead? The state of home economics food and nutrition education in a Canadian province. *International Journal of Consumer Studies*, *37*, 617–624.
- Slater, J., Green, C. G., Sevenhuysen, G., Edginton, B., O'Neil, J., & Heasman, M. (2009). The growing Canadian energy gap: More the can than the couch? *Public Health Nutrition*, *12*(11), 2216–2224.
- Slater, J., & Mudryj, A. (2016). Nurturing future generations: Household food practices of Canadian children and family meal participation. *Canadian Journal of Dietetic Practice and Research*, *77*(3), 113–118.
- Slater, J., & Yeudall, F. (2015). Sustainable livelihoods for food and nutrition security in Canada: A conceptual framework for public health research, policy, and practice. *Journal of Hunger & Environmental Nutrition*, *10*(1), 1–21.
- Smith, M. G. (2009). Food or nutrition literacy? What concept should guide home economics education. *International Journal of Home Economics*, *2*, 48–64.
- Smith, M. G. (2011). *What is the work of a Home Economics teacher in the public schools of British Columbia? How is it changing?* THESA Inquiry Report (February) (pp. 1–41). [WWW document]. Retrieved September 18, 2016, from https://s3.amazonaws.com/zanran_storage/bctf.ca/ContentPages/2510939693.pdf
- Steele, E. M., Baraldi, L. G., da Costa Louzada, M. L., Moubarac, J. C., Mozaffarian, D., & Monteiro, C. A. (2016). Ultra-processed foods and added sugars in the US diet: Evidence from a nationally representative cross-sectional study. *British Medical Journal Open*, *6*, e009892. <https://doi.org/10.1136/bmjopen-2015-009892>
- Sumner, J. (2015). Reading the world: Food literacy and the potential for food system transformation. *Studies in the Education of Adults*, *47*, 128–141.
- Swinburn, B. A., Sacks, G., Hall, K. D., McPherson, K., Finegood, D. T., Moodie, M. L., & Gortmaker, S. L. (2011). The global obesity pandemic: Shaped by global drivers and local environments. *The Lancet*, *378*, 804–814.
- Taylor, L. A., & Littleton-Kearney, M. (2011). Concept mapping: A distinctive educational approach to foster critical thinking. *Nurse Educator*, *36*, 84–88.
- Thorpe, M. G., Kestin, M., Riddell, L. J., Keast, R. S. J., & McNaughton, S. A. (2014). Diet quality in young adults and its association with food-related behaviours. *Public Health Nutrition*, *17*, 1767–1775.
- Vaitkeviciute, R., Ball, L. E., & Harris, N. (2015). The relationship between food literacy and dietary intake in adolescents: A systematic review. *Public Health Nutrition*, *18*, 649–658.
- Velardo, S. (2015). The nuances of health literacy, nutrition literacy, and food literacy. *Journal of Nutrition Education and Behavior*, *47*(4), 385–389.
- Vidgen, H. A., & Gallegos, D. (2010). Food literacy: Time for a new term or just another buzzword? *Journal of the Home Economics Institute of Australia*, *17*, 2–8.
- Vidgen, H. A., & Gallegos, D. (2014). Defining food literacy and its components. *Appetite*, *76*, 50–59.
- Warde, A. (1999). Convenience food: Space and timing. *British Food Journal*, *101*(7), 518–527.
- Wolbert, L., de Ruyter, D. J., & Schinkel, A. (2015). Formal criteria for the concept of human flourishing: The first step in defending flourishing as an ideal aim of education. *Ethics and Education*, *10*(1), 118–129.
- Woodgate, R. L., & Leach, J. (2010). Youth's perspectives on the determinants of health. *Qualitative Health Research*, *20*, 1173–1182.
- Woodruff, S. J., & Hanning, R. M. (2008). A Review of family meal influence on adolescents' dietary intake. *Canadian Journal of Dietetic Practice and Research*, *69*, 14–22.
- Worsley, A., Wang, W. C., Yeatman, H., Byrne, S., & Wijayaratne, P. (2015). Does school health and home economics education influence adults' food knowledge? *Health Promotion International*, *31*, 925–935.

How to cite this article: Slater J, Falkenberg T, Rutherford J, Colatruglio S. Food literacy competencies: A conceptual framework for youth transitioning to adulthood. *Int J Consum Stud*. 2018;42:547–556. <https://doi.org/10.1111/ijcs.12471>