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Re-conceptualizing food consumption and its educational values

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Governments' policies on food and nutrition

This article discusses the effects of government and national campaigns as well as outlines trends in current research on food consumption. By analyzing the factors that influence eating habits, the authors of this article argue that food can carry certain educational values that are shaped through some learning processes that happen at social and personal levels. This argument enables the authors to suggest a conceptual model which is drawn on social constructivism to examine educational values that derive from food consumption.

To begin with, the article sketches the effects of global and national campaigns of nutritional intakes. Micronutrients play a vital role in the development of all ages. A deficiency of micronutrients such as iron, vitamins A, B, D and zinc can cause negative health issues, reduce resistance to diseases and immunity against viruses, and influence later growth. Governments across the globe have run various food programs to increase public awareness of good nutrition. Prevention of micronutrient shortages that boost the immune system is currently a top concern during the ongoing Covid-19 epidemic. Poor nutrition weakens the immune system and can jeopardize the body's ability to fight against COVID-19 infection.

Governments have deployed measures and strategies to tackle this issue of micronutrient deficiencies. For example, Vietnam's micronutrient supplementation days (June 1st and 2nd) are held to promote the idea of supplementing micronutrients. The government encourages people to diversify food types in their meals. This attempt can be seen as a long-term and sustainable strategy to enhance micronutrient shortage. Vitamin A is provided to children at commune and ward health stations. This provision decreases the vitamin A deficiency among roughly one million children under five years old in Vietnam annually.

In the US, there are several educational campaigns run at schools to promote proper food consumption. Many of these are operated by food and nutrition organizations and educational authorities. For instance, the US Government has promoted a national health promotion campaign called 5-a-Day. This program encourages young people to eat at least five portions of fruit and vegetables per day (Blom-Hoffman, Kelleher, Power, & Leff, 2004). Also in the US, the Wisconsin Farm to School Program focuses on promoting a combination of both proper nutritional intake and agricultural education activities at schools across the state of Wisconsin (Bontrager, Liebhart, McCarty, Meinen, Schoeller, Vargas, & LaRowe, 2014). This program aims to improve students' fruit and vegetable intakes to reduce obesity.

"The Cost of Hunger" program[1] in Africa supports investment in capital for sustainable development in African countries. It does so by following many measures, one of which is to provide improved nutrition by providing

[1] Please visit its website for more details: https://www.wfp.org/publications/cost-hunger-africa-series

food and medical care to children suffering from malnutrition. Similar programs can be found in developing countries in Asia such as the one called "Saving Lives, Changing Lives" run by the United Nations' (UN) World Food Program[2]. The UN's Food and Agriculture Organization has also proposed best practices to help governments ensure that food supplies are stable. Most of these programs focus on combining the roles of governments, communities, schools and individuals.

Around the world, mothers are encouraged to breastfeed their babies for the first 6 months and ideally up to 24 months old. People are taught to consume foods rich in micronutrients. Most young people are educated about the importance of vitamins A and D. These attempts have earned positive results. Take Vietnam as an example. According to Vietnam's 2020 National Nutrition Survey, micronutrient deficiency in Vietnam has improved markedly in all ages, especially among mothers and children. Vitamin A deficiency in children under 5 years of age and in breast milk has decreased appreciably from 14.2% in 2010 to 9.5% in 2020 and 18.3% in 2021. Specifically, malnutrition degraded promptly from 30.1% in 2000 to 11.5% in 2020. This rate has been reduced by almost 1% annually since 2010 (Quynh, 2021). This is good news for all of us.

Nevertheless, there are gaps among those who are malnourished in Vietnam. 38% of people living in hilly areas of Vietnam are malnourished, but it is approximately 14.9% in rural areas and 12.4% in urban areas (Quynh, 2021). This problem is highly concentrated in remote areas among the Northern ethnic minorities. Malnutrition is reported to be prevalent among children of Muong and Tay ethnicities (Quynh, 2021). Vietnam's Institute of Nutrition also reported that the obesity rate among children in Ho Chi Minh City has exceeded 50% and 41% in Ha Noi – the two largest cities in Vietnam (Thinh, 2021). This means that there is a gap in the nutritional intake of the people in different areas of Vietnam. In other words, geographical locations and ethnicities seem to influence the food consumed.

In short, these government and global food programs are aimed to increase nutrition intakes among disadvantaged groups of people. These efforts are very humane, indeed. However, little is known about if food consumption carries educational values for personal development. This is the topic where we would like to add nuance to the current understanding of food consumption. We frame our topic around the food issues in both national and international contexts. We also frame our article within the various trends of research on food and eating practices that primarily focus on influences of socio-economic, educational, geographical, cultural and ethnic factors.

Trends and foci of research on food consumption

Reviewing the current body of research on food consumption, we have found that most studies are concentrated in the fields of economics (e.g. Sans

[2] Current reports by this program can be found at: https://www.wfp.org/publications/2018-asia-and-pacific-regional-overview-food-security-and-nutrition

& Combris, 2015), sociology (e.g. Blake, Fisher, Ganter, Younginer, Orloski, Blaine, Bruton, & Davison, 2015; Fraser, Welch, Luben, Bingham, & Day, 2000; Yuan, Chen, Han, Wei, Ye, Zhang, Hong, & Fang, 2018), education (e.g. Bontrager *et al.*, 2014; Lynch, 2015; van Bussel, van Rossum, Temme, Boon, & Ocké, 2020), nutrition (e.g. Blom-Hoffman *et al.*, 2004), food safety (e.g. Samapundo, Cam, Xhaferi, & Devlieghere, 2016), and healthcare (e.g. Edwards, Stapleton, Williams, & Ball, 2015).

Because of their particular research foci, most studies tend to explore *what to eat* rather than *how to eat* and *what food can educationally mean to food consumers.* Most studies aim to explore how certain conditions (e.g. government campaigns, socio-economic status, ethnicity and the like) influence the way food is consumed. The focus of these studies is on how food is cognitively consumed under the effects of these influences. They do so by following an epistemological approach. While our article acknowledges the importance of what to eat, we also take into account the manner food is consumed and its teaching values to food consumers that they absorb from their eating habits by themselves. We take a different approach by stating that personal beliefs, values and dignity are not formed within ourselves, but they are informed by a web of our social interactions within this globalized commodity economy. How do these social webs influence the way we eat? What does our food consumption teach us? These questions are still paid scant attention to in the body of research that we have reviewed.

We have found that these extant studies have captured many socio-economic, cultural and geographical factors that influence what types of food are consumed. For example, Worsley, Blaschea, Ball, and Crawford, (2004) (see also van Bussel *et al.* 2020) have revealed that individuals' educational background influences their intake of nutritional values. Ha, Shakur and Do (2020) (see also Nguyen, 2011) have verified the differences in types of food consumed among ethnicities in various regions in Vietnam. Blom-Hoffman *et al.* (2004) have pointed out children's geographical living conditions affect the types of food they choose and/or are asked to eat. They have also emphasized the influential role of state programs in changing these children's eating habits. Lynch (2015) has discussed the influences of food brand, environmental and biological factors on kindergarten teachers' servings of food to their young students. Social lifestyles are found to affect the eating habits among old Chinese people with dementia (Yuan *et al.*, 2018).

These short notes enabled us to think about two major issues. First, the way certain types of food are consumed is often shaped by individuals' encounter with their social world. Second, while we acknowledge that our article lies in the overlapping fields of nutrition, sociology, education, development economics, healthcare, and psychology (it is interdisciplinary, indeed), we would like to know how food consumption can teach us. We believe that we are more than just what we eat! The food we eat can mean something educational to us – the values that we sometimes take for granted. The meaning of food consumption is derived ontologically from who we are

and what we want to become. We would like to add nuance to the rich body of research on food and food consumption by providing the multiple ways (which can be inter-personal) food eaters choose to follow to consume portions of food. Their eating manners are formed and reformed by their diverse interactions with others in the social world. In other words, the education values of food consumption are socially constructed.

Factors that influence the personal-social construct of food consumption

Among the plethora of research on food consumption, we can identify several trends. Most of them focus on a specific set of participants with certain socio-economic backgrounds and such biological features as age and gender in a specific geographical location. Thus, we conclude at this stage that these trends can be categorized as influencers on food consumption. Food consumption is not solely affected by individuals' perception of health benefits and personal enjoyment, but it is constructed under the effects of individuals' engagement with others in the surrounding environments and unidentified places such as the virtual world and government policy discourse. Food consumption is a personal-social construct. This argument is proven through the examples that are described below.

Fraser *et al.* (2000) conducted a sociological study and analyzed the causal relations of food consumption and risks of chronic diseases among 25,000 men and women in East Anglia, England, according to age, gender, and education. The study revealed that eating healthy behaviors are present among the well-educated group. The less well-educated older men group consume foods that are unhealthier than the other groups. Similarly, Worsley *et al.* (2004) examined the link between education and food intake and the effect of different ways of aggregating food intake among Australian men and women in different ages. They conducted a survey of 2,501 men and 2,739 women aged 18 years and over. The result of their study showed that education plays a vital role in food choice. Higher-educated groups regularly consume healthier foods than lower-educated ones.

In a similar vein, van Bussel *et al.* (2020) explored the influences of educational backgrounds on food safety practices. By surveying 2,106 Dutch individuals aged 19–69 years, their findings showed that unsafe and unhealthy food are associated with bad health effects and cancer-related diseases. Less well-educated groups tend to consume more red meat. Well-educated people eat healthy foods such as fruit and vegetables and less meat. Well-educated men consume less 3-monochloropropane-1,2-diol than women in the low educational level group, and they tend to adhere to the Dutch dietary guidelines. The women's absorption rates of methylmercury, lead, aflatoxin B1, deoxynivalenol and ochratoxin A (contaminants derived from food that contains chemicals) are reported to be higher than those of the men with low education. This study concluded that people with less education have little knowledge about dietary intake that involves environmental sustainability and food safety. Although this study does not explain the reasons for these

participants' choice of food, it implies that practices of traditions and education can affect types of food consumed.

By situating their study in both education and nutrition, Blom-Hoffman *et al.* (2004) assessed the impacts of a multi-component nutrition education program run among African American kindergarten and first-grade students at an under-resourced urban school in the US. This study examined the effectiveness of a multi-component intervention in improving students' knowledge about healthy eating and increasing their vegetable intakes at lunch. These researchers found that fruit and vegetable consumption is low among these students. This low fiber consumption leads to health risks related to these eating habits. They recommended that the U.S. Government apply a national health promotion campaign called 5-a-Day to encourage young people to consume at least five portions of fruit and vegetables per day. This study showed that while the classroom with the researchers' intervention remarkably improved the students' nutrition knowledge, but the habit of eating fruit and vegetables among the experimental students did not change much. This means that school psychologists and teachers can bring a positive contribution in the area of health promotion to increasing young people's knowledge of food, as well as implementing and evaluating state programs.

State programs seem to be effective in changing school children's eating behaviors. Like the positive effects in the 5-a-Day program mentioned above, the Wisconsin Farm to School program is found to be effective. Bontrager *et al.* (2014) examined the efficacy of this program in improving students' fruit and vegetable consumption for reducing the number of overweight students in the state. Farm to School is an educational program that combines both nutrition and agriculture education activities such as taste testing, school gardens, and cooking shows. The study surveyed 1 urban and 8 rural schools with the participation of children from grades 3 to 5 in the state of Wisconsin, the US. This program showed that the students' willingness to learn about nutritional values of fruit and vegetable consumption. The effectiveness of this program possibly improves the students' eating behaviors and reduces the rate of obesity from those with asymmetric food consumption.

Professional advice and instructions on what and how to eat also influence behavior change in food consumption. For example, Edwards *et al.* (2015) looked at the ways healthcare practitioners in a state in Australia used brief motivational interviewing techniques to modify individuals' eating habits. These techniques comprise a range of steps, ranging from raising doubt and perceptions of problems that participants associate with bad eating habits to helping them set clear goals to change. An experiment of 163 healthcare providers showed that the model contributed positively and significantly to lifestyle concerns when being applied in a directive, patient-centered approach to health behavior change.

In education, Lynch (2015) examined kindergarten teachers' talks about their food and nutrition experiences on seven Internet message boards to identify chances for kindergarten food familiarization. The data which were

collected from 7 teachers showed that healthy eating activities, mealtime, and fast food brand familiarity influence the students' food and nutrition experiences. Put another way, children's food preference is affected by social environment and their hunger, which can either enhance their self-regulation in eating the right portion of food. Their eating preference is also affected by fast food brands that can increase obesity risk. This study also discovered that allergies and family celebrations can also impede educators' ability to restrict food familiarization possibilities. As a result, nutrition education courses should increase children's knowledge with nutritious meals while also helping them create long-term good eating habits at mealtime.

Parents are found to influence children's eating behaviors and how much food they can consume per day. Blake *et al.* (2015) examined parents' understanding of portion sizes and the strategies they use to portion snacks. They interviewed 60 low-income parents living in Philadelphia and Boston in the US. The study illustrated a link between snack portion sizes and the risk of obesity among children. Children who consume many snacks are mostly from families with parents having low education and income, as well as parents who are overweight or obese. Parents play a crucial role in shaping children's dietary behaviors.

Lifestyle is believed to influence eating habits and produce various consequences. For instance, Yuan *et al.* (2018) examined the associations of modifiable lifestyle factors (substance abuse and leisure activity) with multidimensional cognitive health among the elderly in three education-specific groups. They carried out a survey of 3,230 adults over 60 years old in Xiamen, China. They determined the link of modifiable lifestyle factors with dementia. The study found that the effects of substance abuse with multi-domain cognition were not considerable. While TV watching, smartphone use, and reading improved nutritional intakes among the less-educated elderly, reading meaningfully enhanced the awareness of nutrition among the moderately educated. Similarly, in the field of nutrition, Nguyen (2011) compared the relationships between health consciousness, beliefs about food values, subjective norms, and attitudes toward organic food and the intention to purchase food among Vietnamese customers in Northern and Southern Vietnam. The study showed that these selected factors affect customers' buying decisions. Those who have high health consciousness and environmental awareness tend to buy organic food. Regional lifestyles and cultures are found to have impacts on food consumption. Geographical locations are found to influence eating habits, too. Samapundo *et al.* (2016) examined food safety knowledge and attitudes, food handling practices, microbiological quality, and nutritional elements in both developed and developing countries. The researchers analyzed the survey results obtained from 160 individuals and 71 samples of street food. They concluded that proper food hygiene and safety are associated with higher education levels, appropriate food safety training practices and the economic development of a region.

In the field of economics, Sans and Combris (2015) investigated dietary models worldwide with respect to the proportion of animal-based protein (ABP) over the period 1961–2011. They found that the most developed countries have a higher rate of ABP consumption. Meat consumption has increased over the last 50 years as a result of economic growth and urbanization. People in China and Brazil are reported to increase their ABP intake in place of plant proteins. The findings of this study confirmed that regional, religious, and cultural perspectives influence ABP consumption. India is an exception: its GDP per capita is very high, but its ABP consumption has increased only marginally.

When it comes to demographic and cultural factors, Schösler, de Boer, Boersema, & Aiking, (2015) explored the relationship between meat consumption and particular framings of masculinity. The researchers conducted a large-scale survey of young second-generation Chinese Dutch, Turkish Dutch, and native Dutch adults (aged 18–35) in the Netherlands. The study found that the Turkish group is the most traditional framings of masculinity – the idea of being "real men" (p. 152) – with the highest rate of meat consumption. This is followed by the Chinese and the native Dutch. This suggests that the ethnic groups with a higher level of traditional framings of masculinity tend to consume more meat than the others. In this sense, cultural factors such as tradition, gender, and ethnic diversity are identified as having significant influences on eating practices.

With regards to Vietnam-based studies as well as geographical locations, Ha *et al.* (2020) clarified the concern that vegetables may be poisonous or transmit disease and the impact of risk perception on vegetable consumption in Hanoi, Vietnam. By analyzing the results from a survey of 498 consumers, the study revealed that age and educational backgrounds influence the risk assessment in rural areas, while personal experience with vegetable poisonings, self-provision of vegetables, and perceived control over hazards are the rest factors in urban places. In addition, Nguyen, Thi, Do, Thuy, Huu, Do, Deurenberg, & Khouw, (2013) analyzed the effects of anthropometry, nutritional and food habits, physical exercise and blood chemistry on the lack of nutrition and mental development. The data were collected from 2,872 children from three geographical regions of Vietnam. The study showed that undernutrition is more prevalent in rural areas than in urban areas in Vietnam. The study also showed a higher rate of overweight in urban cities.

Nguyen, Dong, Phung, Vo, Chu, Pham, Duong, Lee, & Binns, (2018) determined the consumption level of food, macronutrients, and micronutrients among Vietnamese pregnant women. The survey result among 1,944 Vietnamese pregnant women's intakes showed that the recommended nutrient intakes (RNI) for total calorie consumption is met by half of the women. Rice, fruits, and vegetables are their main food sources, which allowed them to absorb 2004 kcal per day derived from proteins, fats, and carbohydrates. This amount of energy is enough for pregnant women with light physical activity. However, the RNI intakes of several key micronutrients, such as folate,

calcium, iron, and zinc, are not met. They are not for pregnant women with moderate physical activity. This calorie intake is reported to be lower than that of pregnant women in the US and Canada (2,201 kcal/day), Europe (2,197 kcal/day), and Australia and New Zealand (2,212 kcal/day). The low dietary intakes among Vietnamese pregnant women are said to link to socio-economic status, educational, regional, cultural, and seasonal factors.

After reviewing the above articles, we have categorized the numerous factors found to influence food consumption and eating habits. Our categories are: internal factors (specific issues to an individual), outside factors (influences from the environment and society in which an individual dwells), and in-between factors (choices made based on the culture and lifestyle an individual lives in). Internal factors comprise educational levels, age of schooling, types of food, food portions, personal knowledge and experiences of food consumption, and self-awareness of health risks associated with food intake. Outside factors include professionals' consultancy, instructions of food consumption provided by healthcare staff, government policies, parents' decisions over children's food consumption, influences of socio-economic development. In-between factors are examined through the effects of personal and social lifestyles and food fashions, as well as such culture-based factors as tradition, gender, and ethnicity.

Critiques of diverse theoretical frameworks

The need to investigate influencers on food consumption has urged some researchers to construct and use a variety of frameworks. Most of the models focus on an epistemological approach which emphasizes how food eaters come to know and be aware of possible benefits or risks associated with types of food. Some examples are discussed below.

Rosenstock, Strecher, and Becker (1988) proposed the Health Belief Model (HBM). Their model focuses on reasoning individuals' cognition about their health status that causes them to decide if they want to change their eating behaviors or not. It has been used to predict health-related behaviors in healthcare communication campaigns and individuals' responses to specific healthcare campaigns. There are four likelihoods in the HBM:

- Perceived susceptibility: the more individuals are aware of risks in eating, the more likely they try to avoid eating these foods.
- Perceived severity: the stronger individuals' perception of the level of health problems is, the more likely they are motivated to act to avoid those consequences.
- Perceived barriers: the stronger certain potential barriers are, the more likely they are not to practice preventative behaviors.
- Perceived benefits: the more they are aware of benefits in eating something, the more likely they tend to act towards consuming it.

This conceptual model puts a high emphasis on individual cognizance and individual-centeredness. Individuals who value the importance of changing routines (motivation) make an effort to change if they believe that their present lifestyles are threatened such as health or appearance

(environment stimulus). Behavioral changes will improve the bad consequences (value expectation). Then they are personally capable of adopting new behaviors (efficacy expectations). In other words, people opt for something to eat only if they rationally calculate its benefits are higher and costs caused by barriers.

Tavassoli, Reisi, Javadzad, Gharli Pour, Gilasi, Ghasemi, & Hafez, (2014) examined the effects of health education programs based on the original HBM to reduce the risk of colorectal adenomas leading to chronic diseases. These researchers surveyed 130 students from the city of Shahr-e-Kord in Iran. In their study, the four HBM elements including susceptibility, severity, barriers, and benefits are found to increase significantly in the students' cognition. When the students are aware of the risk of colorectal cancer, acceptable barriers, and high benefits, they eat more fruits and vegetables and change their eating behaviors. It showed that education is the key factor that can enhance students' attitude, knowledge, and behaviors for increasing social health benefits. While this model praises the importance of examining self-perception (internal factors), it fails to acknowledge the influences of the outside and in-between factors. In other words, this theoretical model refers to food consumption as merely a personal construct.

Olsen and Tuu (2017) created a conceptual model called Consideration of Future Consequences (CFC) to examine individuals' intentions and/or decisions to consume certain types of food. These researchers used this model to explore the effects of future and present consumption of convenience food among Vietnamese teens. They examined the dual function of hedonic and healthy eating values in the link between CFCs and convenience food intake for reducing a large proportion of adolescents and teens who are overweight. Their survey of 451 teenagers in the Central Region of Vietnam showed that both kinds of CFC (future and present) affect individuals' food consumption behaviors. CFC-future predicts healthy eating values better than hedonic eating values. People with a high level of CFC-future are often cautious and wary of health problems that food consumption may cause. The authors of this article acknowledge the temporality implied in this model. Our choices of food (or simply anything) can reflect our being, which is temporal indeed. For example, a person wants to eat Indian curry because he may wish to enjoy the exotic flavor of Indian curry which is not popular in his hometown. Eating this dish may quench his appetite immediately. But concurrently, other issues may be raised. He may wonder if he can buy this type of curry in his place and if eating too much foreign spices can upset his stomach. His desire to eat this curry and thought of the consequences resulting from the consumption of this food are both temporal: immediate and future.

These two models are valuable tools for researchers to look into health values of food consumption. These tools are important in educating people (especially young ones) to choose right and healthy food. Accordingly, human beings can become rational in choosing food to eat. Rationality, in this sense, can be seen as contributory to educational values derived from food

consumption. However, we are critical of several aspects emerging from the HBM and CFC models. The HBM mainly focuses on self-perception. In other words, we are aware of what we eat, and researchers can have methods to look into this awareness. We agree with this epistemological viewpoint. But we are not always rational in eating. We can sometimes choose what to eat but at other times, we cannot. For example, a proper lunch has been well-prepared by a mother who has good knowledge about nutrition and cooking methods. Her son must eat whatever is available though he may like to eat something else with his neighborhood friends in a food stall near their place. The same holds true for many students who stay on campus and survive with a fixed menu of dishes cooked by the university's canteen. In addition, people's perceptions of food are often shaped and affected by other influencers. One's perception may be shaped and conveyed by their ancestors or the living environment, which inform their habitual behaviors.

Also, cognition is inter-personal. Food choices may be affected by others in a group. Let's go back to the example of the man wanting to eat Indian curry. Our first question is: How does he know about Indian curry? Has he already experienced eating it? Have some of his friends introduced it to him? Has he seen it in advertisements or on Youtube? What we mean here is one's consideration of immediate consequences must be the result of his/her engagement in the social world. Then we ask ourselves these questions (in some way, silly, but intellectually useful): Do we always eat something and choose not to eat something else because we like it but do not like the others? Are we always capable of knowing and being aware of the "healthy eating values" (Olsen & Tuu, 2017, p. 2) that come from the food we eat? Are we always rational in what we eat and/or what to eat? The answers to these three questions may be: No, not always!

The rationality issue implied in the HBM is not always clear to the individual. We may not always be rational in making decisions over food choices. Different value-driven and personal experiences may influence what and how we eat. For example, Ms. Lan wants to eat ripe mangoes. Unfortunately, there is no such fruit for her to buy at a local market. Mangoes in her hometown are not in season yet. In general, by critiquing these two conceptual models (and there may be many more that we confess that we are not fully aware of), we have learned a very important theoretical point that can shed light on our own conceptual model: food consumption is a temporal, personal-social construct. This is also the main argument in our article.

Educational values

According to Abraham and Robinson (2018), education is considered a process of acquiring knowledge from learning in which learners are likely to grasp the absorption of the new knowledge, skills, values, beliefs, and habits. Education frequently takes place under the guidance of more knowledgeable persons (grandparents, parents, educators, and so forth). This view accords Vygotsky's article on the process of learning as a social construct. Yet, we can also educate ourselves. For example, by having studied the effects of Vitamin

C in fruits, we can learn that sour fruits such as citruses or tamarind can offer a great source of this vitamin and that we need to have a larger intake of these kinds of fruit when we are having a flu. Hence, an individual's knowledge is personally and socially constructed through a teaching and learning system that happens from both the social and personal levels.

In addition, learning may occur in both formal and informal forms of education. Any experience that has a formative influence on one's thoughts, feelings, or actions can be deemed educational. Education plays a pivotal role in shaping an individual's occupation, and the level of education helps people to earn recognition and respect in society. Undoubtedly, the higher the level of education you have, the better career you probably get. This human capital theoretical perspective is critiqued, as education is and should always be for personal enrichment (Abraham & Robinson, 2018).

Values are defined as inherent beliefs that inspire our behaviors and actions and form our worldview. There are many types of educational values. For example, they can be mentality challenge, interpersonal skill development, knowledge enhancement skill, and spatial ability development that learners can learn through playing digital games (Hong, Cheng, Hawng, Lee, & Chang, 2009). Motivation in learning can also be classified as an educational value that language learners can find by immersing themselves in acquiring the target language to use English technology and tools outside school (Brevik, 2019). The body of literature on the 21st century thinking skills also points out necessary values in education that educators need to pay attention to. These values encompass critical thinking and problem solving skills, numeracy, literacy, intercultural understanding and communication skills, and knowledge (Ananiadou & Claro, 2019; Rotherham & Willingham, 2010).

In general, educational values are likely to (re)determine who we are and who we want to be, as well as our perceptions of what is right, wrong, fair, unfair, good, and evil. These values reflect who we are and what we learn from others so that what we do accords with our perceptions of what is right or wrong for us. These are the outcomes of the personal-social learning process that enable us to learn social skills, beliefs, and attitudes in an effort to achieve personal enrichment. Educational values are considered as the core values we can gain through the educational learning process. We categorize these values into four main sets:

- Materialistic values: we can use our experiences at work or in competition to gain our wanted outcomes related to wealth, possessions, and rewards.
- Intellectual values: we approach education with the main purpose to achieve social and academic knowledge for improving our civic participation.
- Moral values: we learn how to be recognized in society. We can distinguish what is right from wrong. We learn how to respect tradition and religion based on certain social norms.

- Spiritual values: Through education and learning, we know how to find a zest for life. This is the value of understanding, appreciating and being understood.

Obtaining these values requires an individual to go through education. Here, we conclude that education is the process of learning about one's self. In this article, we postulate that this knowledge comes from multiple factors and personal learning processes.

Conceptual model: A combination of educational values, influencers and social constructivism

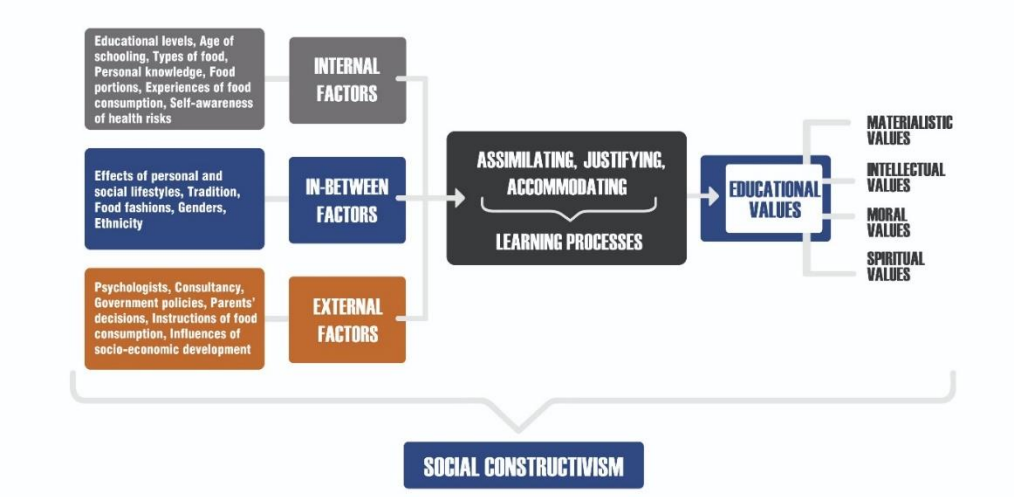
The conceptual model we introduce in this paper is framed around Vygotsky's (1978) social constructivism (see Figure 1 in this section). According to Vygotsky (1978), learning is a collaborative process that includes both social contexts and individuals' social interactions. This developmental learning process occurs when individuals absorb, justify, assimilate and accommodate new knowledge produced by the knowledge community which may include social practices, common knowledge created by traditions, or even knowledge passed down from previous generations.

Vygotsky (1978) referred to the continuous process of learning. This process first happens at a social level where individuals interact with others. Their social interactions allow them to learn knowledge produced by the community. This social learning can happen among individuals with others and/or then come inside individuals. Then they assimilate, accommodate and justify this type of knowledge by themselves, and this process happens at the individual level. Individuals can sometimes learn new things without help from others and at other times, they need guidance and encouragement from others. This is where their Zone of Proximal Development (ZPD) is formed, broken, and transformed. ZPD is the gap between their "actual developmental level" defined by their own problem-solving skills and knowledge and their "potential development" developed under guidance from the "more knowledgeable others" (Vygotsky, 1978, p. 86). These processes do not happen separately, but they are integrated into a holistic development. Instead of seeing knowledge as constructed by individual learners' responses to their encounters with the social world, Vygotsky (1978) considered the mutual effects of individuals' interactions with the surrounding world and at the same time, influences of social factors on their learning processes. New knowledge is formed through this two-way process.

The factors that Vygotsky (1978) primarily emphasized are language and culture. He viewed these two factors as the "framework through which humans experience, communicate and understand reality" (Vygotsky, 1978, p. 39). Public norms and socially accepted practices tend to play key roles in shaping individuals' formation of concepts and ideas, thus creating new knowledge. In this article, we take the issues of language and culture into consideration as well. Yet, we go further by adding other socio-economic, biological, and geographical factors as outlined earlier.

Further, one may wonder why we consider biological and personal experience factors as possible influencers on food consumption. There are two reasons for our judgment. First, as the literature review suggests, there can be different practices of food consumption among genders and ages. Second, as Vygotsky (1978) argued, learning may easily happen when learners have reached the level of their actual physical development. They are capable of solving problems and ready to learn new things. A condition that facilitates their learning of new things is the guidance or teaching of others who are more capable than they or in collaboration with others. Another condition that allows for their self-learning is through their actual ability to learn. This ability can result from their own experiences and biological features. For example, some female individuals in Vietnam do not like to eat a lot of sugary food to avoid gaining unexpected weight. Their understanding of the effect produced by their consumption of sugar may stem from their own experience and/or be shaped by knowledge by the community. Therefore, exploring the influences of the "more knowledgeable others" (Vygotsky, 1978, p. 86) and one's own personal features does not disaccord with a Vygotskian perspective, as he later confirmed that one's knowledge is not simply constructed, but it is co-constructed.

Figure 1: A conceptual model exploring educational values produced from food consumption



This conceptual model is comprised of three aspects: factors, learning processes, and educational values. The influences of factors can be explored through individuals' personal characteristics (these include their level of education, age, and gender) and experiences of food consumption and eating habits. These internal factors can be examined in relation to the effects of in-between and external factors that include social lifestyle, tradition, ethnicity, government campaigns, parents' choices and decisions over food consumption, as well as family and community's socio-economic conditions. Questions that explore these influences should be interrelated. For example, when asking about an individual's experiences of food consumption (internal

factor), researchers should use eliciting techniques to explore if his/her experiences are formed by his/her own knowledge or through his/her encounters with others (such as observation of others' food poisoning or influences of his/her family's economic condition). The key to this exploration is not to simply discover the factors, but to understand the influences of these factors on individuals' eating habits. This understanding allows researchers to discover the learning processes that happen at various scales and the educational values that are linked to the learning processes. Analysis of themes is important, but we recommend researchers read the transcripts between the lines to examine possible interrelations among these aspects (if they follow a qualitative approach) or calculate Pearson correlations to measure the relationships among the factors as well as between these factors and the educational values (if they use a quantitative approach).

By framing our study around Vygotsky's (1978) view of social constructivism of new knowledge, we look into personal, social, and inter-personal issues. This is the central argument of our article that we would like to repeat here: food consumption is a personal-social construct. This conceptual model includes three aspects: factors that influence the ways food is eaten, learning processes that happen under the effects of individuals' assimilation, accommodation and justification of their existing knowledge, and the personal enrichment of materialistic, intellectual, spiritual, and moral values. This model helps explore how individuals' engagement with the world affects the ways they form their own knowledge of the educational values that food can bring to them.

Significance of the conceptual model

We admit that our topic of investigation might not be novel in the sense that there have been many studies on the same area conducted in different settings. While these researchers have explored the socio-economic and cultural factors that shape people's eating habits (and we similarly examine the influences of these factors), the main focus of our article is on educational values of food intakes and possible effects on personal transformations. While most current studies in the global body of literature tend to explore the effects of school and state programs on nutrition, we argue that this aspect is socially constructed and inter-personal. By using a hyphen between the root *inter* and the word *personal*, we mean that the educational values of food are both socially shared and personally justified. The conceptual model presented in this article can enrich current understandings of food science and become a reference for educational authorities in teaching young people about the values of becoming. Being who we are and knowing are intertwined, and understanding who we are with what we know can help define who we want to be. This issue of becoming is related to an ontological aspect that we have discussed above.

Most research uses surveys to investigate the frequencies of food consumption (e.g. Fraser *et al.*, 2000; Worsley *et al.*, 2004), types of food consumed among various groups of different backgrounds (Ha *et al.*, 2020;

Nguyen, 2011, Nguyen *et al.*, 2013; Nguyen *et al.*, 2018), and nutrition rates (e.g. Blom-Hoffman *et al.,* 2004; van Bussel *et al.,* 2020). Other studies (e.g. Blake *et al.,* 2015; Edwards *et al.,* 2015) have employed in-depth interviews or experiments to explore the influences of socio-economic and cultural conditions on eating habits. The findings of these studies should be commended on being able to shed light on how food is socially constructed. We take a further step in arguing that who we are and what we want to become can also shape our eating practices. That means our being matters to us. It only matters to us when we are socially interacting with others. As we take a social constructivist approach, we assume that knowledge about food and its values are formed by individuals' understanding of how their being matters to them and who they want to become. In other words, although we do not deny the scientific values of the previous research produced through epistemological directions, we combine their methodological approach with our ontological focus. Examining the educational values of food consumption from a socio-ontological perspective can add a new methodological framework to the current corpus of research.

Conclusion

This article has done four tasks. First, we introduced and discussed a myriad of variables that influence food consumption by reviewing the diverse array of policies and extant research on food consumption. Second, we argued that the choice of which food to consume is made by both individuals' awareness of health benefits and their socially constructed knowledge. Accordingly, several models for studying the meaning of food consumption are critiqued as they tend to focus on just the former. In the third section, we analyzed the components of educational values. These values are intrinsically linked to individuals' awareness of who they are. They include materialistic, moral, intellectual, and spiritual values. The last section of this article has presented the theoretical framework for our study which is based on the combination of both individuals' understandings of the benefits that food can bring about to their health and the way their knowledge of food consumption is socially produced in relation to educational values.

This article has argued that the educational values of food consumption are socially constructed. There are socio-economic and cultural factors that shape students' knowledge of eating practices, allowing them to justify this type of knowledge and change it into theirs. In this way, the production of the personal knowledge of these educational values becomes a personal-social process. This methodological approach can open up a new way to explore various ways food can mean to us.

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