



Original Research Article

Eating and learning about food at school and on campus: Farm to Cafeteria Canada (F2CC) in Metro Vancouver

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Abstract

Food is an interdisciplinary topic that transverses different areas of knowledge, allowing it to be used as a pedagogical resource in numerous teaching-learning processes and environments. This paper seeks to contribute to debates on the relationship between public procurement and food pedagogies in schools and universities. I explore the Farm to Cafeteria Canada (F2CC) network in Metro Vancouver, British Columbia, which beyond institutional procurement recognises food as a pedagogical resource at schools and on campus. My research is based on eighteen site visits, qualitative document analysis, and nine semi-structured interviews conducted with institutional administrators associated with F2CC in Metro Vancouver. This paper demonstrates that integrating food into the curriculum informs and legitimizes applied measures, such as food procurement. In this way, students not only learn about food, but also participate *in* and benefit *from* good food practices furthered by Farm to Cafeteria initiatives.

Keywords: Teaching-learning; Farm to Cafeteria Canada; school food; campus food; Metro Vancouver

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DOI: 10.15353/cfs-rcea.v8i4.460

ISSN: 2292-3071

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Introduction

In recent years, several initiatives carried out by social movements (Desmarais, 2015; Levkoe, 2014), producer and consumer groups (Albrecht & Smithers, 2018; Rosol, 2020; Rosol & Barbosa Jr., 2021), and even progressive governments (Wittman, 2015), have contributed to the expansion of discussions on the relationship between food, sustainability, and social justice. In this context, teaching-learning practices that focus on food gain greater significance, moving towards what has been called the “pedagogical turn” (Flowers & Swan, 2012) in food studies. The “pedagogical turn” seeks to promote food literacy beyond schools, recognising students not only as “food consumers”, but also as full-fledged “food citizens” (Classens & Sytsma, 2020). I seek to engage with and contribute to ongoing critical food literacy debates by asking: in what ways and to what extent can school- and university-based food initiatives contribute towards creating effective conditions for student-citizens to engage with food system transformation? I answer this question by assessing the ways in which schools and universities have included food in their curriculum and policies, namely institutional food procurement. Institutional food procurement can contribute to transformations in food systems by determining not only the way in which food is purchased, but also the type of product, producer, and agricultural model that is prioritized (Swensson & Tartanac, 2020). In short, I investigate the relationship between food curriculum and food procurement policy in educational institutions to appraise both applied learning and concrete actions.

I explore the Farm to Cafeteria Canada (F2CC) network in Metro Vancouver, British Columbia, which I argue here, beyond institutional procurement, recognizes food as a pedagogical resource in schools and on campus. F2CC is a pan-Canadian organization that seeks to contribute towards increased consumption of local and healthy food by Canadian public institutions (F2CC, 2018a). Three axes direct F2CC’s activities: Farm to School (F2S), Farm to Campus (F2C), and Farm to Healthcare (F2H). These three axes are variations of the Farm to School concept and practice, which seek to build direct, or at least closer, linkages between farms and schools. These three axes occur in Metro Vancouver and all of them directly relate to schools and universities’ teaching-learning process. F2S has been developed in dozens of schools through actions that range from practical activities in school gardens to fostering the local economy through institutional procurement. F2C and F2H take place at University of British Columbia’s (UBC) campus through UBC Farm.

This article is divided into five parts, in addition to this introduction and the final considerations. First, I review the literature on the relationship between schools, university campuses, and food policies. Second, I present the methodological procedures, outlining the relevance of qualitative research, eighteen site visits, and interviews carried out in Metro Vancouver. Third, I briefly characterize the F2CC network by situating it historically. Fourth, I discuss how Metro Vancouver schools and UBC incorporated the F2CC network. Fifth, and finally, I analyze how the actions developed by the F2CC network in Metro Vancouver can

contribute to discussions on the role of schools and universities in contemporary food policies and food pedagogies.

Teaching-learning practices and food systems transformation

As it is essential to life, food discloses how we organize ourselves in society (Belasco, 2008). “What we eat” and “how we eat” are essential to our ontology. Food guarantees our biological development as individuals, produces and is produced by cultures, has political and economic repercussions, and is linked to the ways in which different groups live alongside ecosystems. Therefore, any teaching-learning process that is based on materiality, should consider food as a powerful pedagogical tool.

The act of eating itself is pedagogical (Sumner, 2008). When educational processes account for food pedagogies, eating can become a transformative experience with the potential to contribute to sustainability and inclusion in formal or informal education. In formal education, food can be incorporated through the curriculum itself, which allows educational institutions to approach food as part of the set of skills that students must develop. In turn, informal education is developed through daily practices such as social movement organizing, work, leisure, and others. In these cases, food—given its importance in the lives of individuals and the societies in which they participate—can also be understood as a resource that helps in the production of “new” knowledge or in the reformulation of “old” knowledge. Reflecting on the relationship between food and formal and informal teaching-learning processes allows us to consider that teachers develop pedagogical activities, but so do politicians, activists, doctors, tourists, athletes, and all those “who think we don’t know enough about food and what to do with it” (Swan & Flowers, 2015, p. 148).

In recent years, due to the growing contradictions in food systems (e.g., the paradox between hunger and obesity, high rates of poverty among family farmers, and increasing rural exodus), several initiatives have sought to change the way we relate to food. These initiatives include local farmers’ markets, urban gardens, consumer groups, food policy councils, and agrarian reform initiatives. Though these initiatives propose divergent models for society, they all provide opportunities to address food through informal education. Both those who lead and those who benefit from these initiatives participate in a collective process of reflection on food systems.

At the same time, within the scope of formal education, a wide range of proposals have sought to establish new food practices in school and campus communities. In these cases, food is incorporated through specific topics, such as courses and disciplines, as well as, being related to content from different areas of knowledge. These proposals are diverse in terms of their revolutionary or reformist potential (see Holt Giménez & Shattuck, 2011), but they converge on

the objective of working with food as a structural component of curriculum and by questioning the organization of food policies.

An example of a proposal with revolutionary potential is the Schools *of* and *for* the Countryside, implemented in disputed areas (*acampamentos*) or in agrarian reform settlements with the presence of the Landless Workers' Movement (MST) in Brazil (Tarlau, 2013). The Schools *of* and *for* the Countryside criticize the Brazilian school curriculum, regarding it as being excessively based on urban values. For this reason, they work with Education in Countryside, which incorporates both Education *for* the Countryside (traditional perspective of teaching in Brazilian rural schools) and Education *by* the Countryside (the perspective of social movements that positions rural peoples as protagonists of their own learning process) (Barbosa, 2016). In these cases, food is positioned as a pedagogical resource to overcome the “urban bias” of official curriculum, building a teaching-learning process relevant to the people of the countryside (*povos do campo*). The training centres of the Latin American Coordination of Rural Organizations (CLOC), which represents *La Via Campesina* in Latin America (Meek et al., 2019), has a similar revolutionary objective. In these spaces, teaching-learning processes are enacted through disputes over food policies between the agribusiness and peasantry development models (Barbosa Jr., & Coca, 2015).

Among the proposals with potential for reform, one of the actions with the greatest impact has been farm-to-school programs. In the United States the National Farm to School Network was formed in 2007 with the aim of bringing communities fresh and healthy food, supporting local producers by modifying procurement policies, and implementing educational actions in schools and daycare centres. Currently, this network involves 42,587 schools (42 percent of the national total), reaches 23.6 million students, and engages more than 20,000 practitioners and supporters (National Farm to School Network, 2020).

Food is also the main component of some reform actions developed in the so-called global South, where fighting hunger is the primary objective. An example of this is the Nigerian National Home-Grown School Meal Program, launched through a pilot project in 2004 with the purpose of guaranteeing students' access to food, especially local products (Adekunle & Christiana, 2016). According to research by Adekunle and Christiana (2016), in the Nigerian state of Osun, such programs have been important to fight hunger and to improve students' academic performance.

The great diversity of initiatives that seek to modify the way we relate to food through formal education has gained much academic attention in recent years. Through the F2CC network case, I explore how schools and universities can contribute to food systems transformation through changes in thinking (teaching-learning process) and actions (public food purchases). Thus, the F2CC network is evaluated as an example of the confluence between formal and informal education in the search for food systems transformation.

Research design and methodology

This article presents the outcome of research on public institutional food procurement and educational institutions that I have been carrying out since 2013, which has resulted in several works (Coca, 2016; Coca & Barbosa Jr, 2016; 2018). During a one-year internship as a Visiting International Research Student at UBC, from November 2014 to October 2015, I analyzed the role of the F2CC network in increasing the consumption of local foods, with food sovereignty as a theoretical-methodological lens. Through this experience, I was able to better assess the challenges of implementing decentralized food policies, as is characteristic of Canada (self-citation). This research contributed to my doctoral thesis, defended in August 2016 at São Paulo State University (Unesp), Brazil, where I discussed institutional procurement of food from family farming in Brazil and Canada (self-citation).

Two factors led me to choose Metro Vancouver as a research site. First, the Metro Vancouver metropolitan region stands out as one of the most active in the promotion of Farm to Cafeteria activities (Vancity & PHABC, 2013), accounting for all three F2CC operation axes: F2S, F2C and F2H. I believed that by studying this region, I would be able to comprehensively assess the F2CC network's main axis. The second factor was my interest in understanding the role of UBC Farm in promoting sustainable campus food systems, given that my internship took place at the Institute for Resources, Environment, and Sustainability (IRES) (see Coca, 2016; Coca & Barbosa Jr, 2016), which has a close relationship with UBC Farm. Specifically, through UBC Farm I was able to work with the F2C and F2H axes.

My research began by carrying out a comprehensive bibliographic and document review on initiatives that sought to promote healthy eating in the global North. I consulted bibliographic sources in journals listed in the UBC library database, ResearchGate, Google Scholar, and Academia. After an initial literature review, I separated the sources that I considered relevant to the research and filed them in the bibliographic referencing software Mendeley for further analysis. Then, during fieldwork, I carried out eighteen site visits in schools with Farm to Cafeteria activities in the Metro Vancouver school district, as well as at the UBC Farm, community gardens, local farmers' markets, and the headquarters of NGOs linked to the F2CC network. The fieldwork was documented through notes and photographs. During some of these visits, in addition to participant observation, I also conducted semi-structured interviews with institutional representatives responsible for implementing Farm to Cafeteria. There were nine interviews in total, where I addressed topics such as: the organization's objectives, their relationship with the F2CC network, their conception of local food, and their pedagogical strategies. These interviews were transcribed and later analyzed using the ATLAS.ti software.

The F2CC network

The F2CC network emerged in 2011 as a proposal of the McConnell Foundation (2020, first paragraph) a private organization “that develops and applies innovative approaches to social, cultural, economic, and environmental challenges by granting and investing, capacity building, convening, and co-creation with grantees, partners, and the public.” The McConnell Foundation seeks to organize several initiatives developed in Canada with the aim of promoting institutional procurement of locally grown food and to subsidize the creation of a network through which these activities could be connected. To this end, in 2011 the McConnell Foundation offered the Public Health Association of British Columbia (PHABC) and the Alberta Public Health Association (APHA) a sum of \$175,000,000 to fund the creation of the F2CC network (McConnell Foundation, 2020).

In 2013, as one of F2CC’s first activities, the network initiated research using a survey entitled “Local foods: Canadian schools, campuses, and healthcare facilities speak up”. This research aimed to identify the benefits, barriers, needs, and strategies associated with Farm to Cafeteria activities in Canada and possible activities that could expand them. We had a total of 239 participants, of which 144 represented schools, 36 represented universities, and 59 represented hospitals. The results showed that: i) local food was an integral part of the menus in 92 percent of universities, 76 percent of schools, and 66 percent of hospitals; ii) educational activities on local food were carried out in 90 percent of schools, 86 percent of academic units, and 38 percent of hospitals; iii) local food policies or contracts existed in 33 percent of hospitals, 29 percent of academic units, and 14 percent of schools; iv) 63 percent of schools, 81 percent of academic units, and 58 percent of hospitals showed interest in expanding their activities to promote local foods (F2CC, 2013).

Informed by the research findings, F2CC (2012, fifth paragraph) prepared the “Strategic Plan (2013 to 2016): a living document”, where it defines itself as “a national network that promotes, supports, and links farm to cafeteria programs, policy, and practice from coast to coast. Farm to Cafeteria Canada is comprised of diverse regional and sub-regional agencies who are already working to bridge the gap between farm and tray. Together we have developed a strategy to link and further the Farm to Cafeteria movement in Canada.” Furthermore, with the objective of increasing access to healthy, local, and sustainably grown food, the F2CC network established that its mission would unfold in actions that include reducing the distance between the production and consumption of food, prioritizing food produced through sustainable methods, incentivizing public institutions to procure local food, defending and disseminating local food culture, (F2CC, 2012). The document foresaw this happening through the F2S, F2C, and F2H axes.

In under ten years, the F2CC network has become one of the main voices and articulators of movements for change in Canadian food practices. This is exemplified in the way it has financed specific programs. In 2016, F2CC and the Whole Kids Foundation funded actions in fifty schools and four regional training sections in the provinces of British Columbia and

Ontario. In 2018, a new round of funding benefited thirty-three schools and ten regional training sections in the provinces of British Columbia, Ontario, Québec, New Brunswick, and Newfoundland and Labrador (F2CC, 2018b). Healthy eating events are another important F2CC network national articulation strategy. The “Farm to School Month”, which takes place in October, aligns with the activities of the US National Farm to School Network. During this month, schools associated with the F2CC network are encouraged to promote activities to celebrate food (F2CC 2020). Another prominent event took place in May 2019, when in partnership with PHABC, the F2CC network held a national conference in Victoria, British Columbia, which was attended by 450 participants (F2CC 2019).

The F2CC network’s reach was evident with the launch of the “Canada’s School Food Map”, in early 2016. This map/repository/database reports Farm to Cafeteria activities in 1244 teaching units, reaching at least 885,349 students (F2CC, 2021). Québec, British Columbia, Alberta, and Manitoba concentrate most of the initiatives in the map (F2CC 2021). In such a way, the F2CC network has consolidated itself as a national leader in the movement to implement food practices aimed at sustainability and social justice, with formal education spaces being one of the principal means for this to occur.

The F2CC network, institutional food procurement and teaching-learning processes in Metro Vancouver

This section presents the results of my research on the F2CC network in Metro Vancouver. First, I highlight some elements of the Metro Vancouver food system, which reinforce the understanding that even in countries with advanced capitalism, such as Canada, there are problems that prevent the convergence between food, sustainability, and social justice. Then, I demonstrate how F2S has developed through efforts that are internal and external to schools, recognizing the teaching units as important elements of the local food system. Lastly, I focus on UBC, where F2C and F2H initiatives are carried out. These examples provide evidence to my argument, which is that the food systems transformation carried out by the F2CC network, although limited to specific realities, considers new ways of thinking and practice.

The Vancouver metropolitan area was created in 1967 and has twenty-three local authorities (twenty-one counties, an Indigenous territory, and an electoral area) over an area of 2,877.36 km² (Metro Vancouver, 2021). Metro Vancouver has the third largest population among Canadian metropolitan regions, with 2,463,431 inhabitants, behind Toronto (5,928,040 inhabitants) and Montréal (4,098,927 inhabitants) (Statista, 2020). Among its administrative authorities, Vancouver has the largest population, with 631,468, followed by Surrey (517,887) and Burnaby (232,755) (Statistics Canada, 2017).

Since 2011, when the F2CC network was formed, Metro Vancouver has actively engaged with a strategy that aims to modify food practices (PHABC, 2012). The first milestone in

PHABC's proposal of incorporating Farm to Cafeteria actions in Metro Vancouver was to implement, from January 2007 to March 2010, the Farm to School Salad Bar program in some communities belonging to northern health area (PHABC 2012). According Interviewee 01 (June 2015, Farm to School BC), the proposal utilized funding from the BC Healthy Living Alliance and was inspired by projects that were being developed in other parts of Canada with the support of FoodShare, a food justice agency based in Toronto. Initially, in 2007, six Farm to School Salad Bar pilot projects were planned to be implemented in schools within the northern health area. However, due to budgetary restrictions, this proposal was only implemented at Dragon Lake Elementary School in Quesnel, reaching about 230 students. After this initial trial, the Farm to School Salad Bar was implemented in sixteen other schools during the 2008 to 2009 school year (PHABC, 2012).

During the period in which the Farm to School Salad Bar was implemented, some factors contributed to the F2S network becoming consolidated in British Columbia, among which are: i) the creation of an advisory committee, formed by representatives of more than thirty governmental and non-governmental entities; ii) the construction of a webpage to publicize the network's activities; iii) promotional actions to publicize the proposal, such as the donation of more than 5,000 packages with materials related to Farm to School British Columbia (F2S BC); iv) the elaboration of the document "A Fresh Crunch in School Lunch: BC's Farm to School Salad Bar Guide", which started to serve as a reference for schools interested in joining this program; ; v) workshops to implement the Farm to School Salad Bar; and vi) the event "Farm To School: growing the next generation", with more than 125 participants. Thus in 2011, PHABC, which had already taken the lead in implementing the F2S BC network, was also charged with organizing the F2CC network on a national scale alongside APHA. Since then, Metro Vancouver has concentrated its actions on the F2CC network's three axes, seeking to enact food systems transformation through the teaching-learning process and institutional food procurement.

F2S: external articulations and internal transformations

Canada is the only G8 member-country that does not have a national school meal program (Hernandez et al., 2018). This dire fact becomes more worrying in the case of British Columbia where in 2019, 19.1 percent of children lived in poverty (First Call: BC Child and Youth Advocacy Coalition, 2020). Metro Vancouver has fifteen school boards that receive annual grants to manage school meal programs from the provincial government through CommunityLINK (Learning Includes Nutrition and Knowledge) (Vancouver School Board, 2018). Even so, in Metro Vancouver, healthy eating practices in schools are limited. In the city of Vancouver alone, it is estimated that more than two thousand elementary school and secondary school students do not have the financial means to eat at school (Bramham, 2015). This makes fostering new food policies and practices in schools even more important. To

contribute towards overcoming this problem, the F2CC network has worked mainly through NGOs in Metro Vancouver schools.

Activities carried out so far bring together other elements of the local food system with projects directly aimed at changing the school community's food practices. Learning Labs, which constitute a “process designed to build or strengthen a community of practice in their efforts to scale up a particular activity” (F2CC, 2014, first paragraph) is one of the means through which the network has sought to articulate schools with other elements of the local agri-food system (Granzow & Beckie, 2019). During fieldwork, I was able to attend a Learning Lab promoted in partnership between F2S BC and the NGO FarmFolk CityFolk, through which proposals were made to the Vancouver School Board. The Learning Labs' objectives included increasing the consumption of local products, developing food guides for schools, and training teams to provide healthy food to the school community.

This Learning Lab sought to decrease dependence on large food supply companies, like Sysco, and the influence they exert in Metro Vancouver schools, or else to create mechanisms that would allow these suppliers to provide more local products. The premise being that large food suppliers have great potential to contribute to institutionalizing Farm to School projects (Izumi et al., 2010). Therefore, this proposal enacts F2CC network's efforts of applying top-down and bottom-up strategies. Interviewee 02 (June 2015, FarmFolk CityFolk), explains that: “from the ‘top-down’ we have to work within the existing contracts. So, there are large contracts, with large distributors, that will go on for the next five years, so we have to analyze how much of that food coming in is from BC and if there is an opportunity to buy more local. So that means that the schools—and this is from the ‘bottom-up’—could buy the food not offered by Sysco, from the local producers”. This Learning Lab ended in 2016 and subsequently, FarmFolk CityFolk received funding from the McConnel Foundation and Vancity to implement some of the proposals that were raised by schools and other members of the local agri-food system (Farm Folk City Folk, 2021).

Another way in which the F2CC network is active in schools is through food literacy (Powell & Wittman, 2018). One of the most emblematic examples is Project Chef, which aims to work within the school's curriculum as a possibility to encourage the adoption of healthy eating practices (Powell & Wittman, 2018). As highlighted by the Project Chef founder in an interview, as its main food literacy strategy, the program runs four to five two-hour classes with children from elementary schools in Metro Vancouver over a five-day period (Interviewee 03, July 2015, Project Chef). The main objective is to help students acquire knowledge and skills related to food consumption. For this, schools that host the project are asked to offer a basic structure that contains a sink inside the classroom and easy access to a refrigerator. Seven food preparation stands are set up in each classroom, each with a cook-top, an electric frying pan and a shelf with products. In one of the stands is the head teacher, who first demonstrates how the meal is prepared so that afterwards, the students, divided into six groups, have the opportunity to make the meal themselves. Parents and community members are invited to collaborate as facilitators within the classroom. In the end, students and the school community are encouraged to share and

enjoy the food they have prepared together. In this way, after learning how to cook food, students are also motivated to celebrate food itself. As Interviewee 03 (July 2015, Project Chef), described: “We teach them about where food comes from, what food tastes like—what real food, wholesome food tastes like—how they can prepare it themselves and how to share it around the table. And then beyond that we teach them how to compost, so we look at food education using cooking as the vehicle to teach it. So, we teach knowledge about food, we teach skills about how to prepare it, and clean up”.

School gardens are another educational practice that combines food and curriculum in Farm to Cafeteria actions in Metro Vancouver. These spaces contribute to the cognitive, affective, behavioral, and sociable components of the teaching-learning process (Passy et al., 2010). The NGO Fresh Roots, for example, runs gardens in schools like Vancouver Technical Secondary School, David Thompson Secondary School, and Queen Alexandra Elementary School. In addition to the products grown onsite being used in school meals, Fresh Roots also sells gardens products to grocery stores, restaurants, and mobile outlets. School gardens and marketing the resulting products offer educational opportunities through which teachers can teach the curriculum (Coca & Barbosa Jr., 2018; Barbosa Jr. & Coca, in press).

These initiatives indicate how the actions articulated by the F2CC network in Metro Vancouver have contributed to the implementation of Prescribed Learning Outcomes (PLOs), which provide guidelines for teaching in public schools in British Columbia from Kindergarten to Grade twelve. In British Columbia, schools offer students the opportunity to learn all the PLOs content, however, they are given the freedom achieve this goal in different ways. For example, it is possible to relate food to topics such as domestic education, the biological cycle, or agriculture. The way this happens depends on the policies adopted at school and, mainly, on the disposition of educators. Interviewee 04 (August 2015, Teacher and member of the BC Food Systems Network), recounts: “It [food] fits everywhere, right? In British Columbia, teachers have a lot of autonomy. There are learning outcomes that I have to meet, how I meet them is totally up to me. ‘What does the plant need?’ I can give [the student] a worksheet that tells them ‘sun’ and ‘water’...or I can take them outside in the garden. As a teacher, this is my choice”.

Therefore, in Metro Vancouver, F2S actions are structured external and internal to schools. Proposals are developed to strengthen links between the school community with other elements of the local agri-food system, while offering food literacy actions to students. This indicates that schools are seen not only as recipients of food policies, but as active participants in the construction of food pedagogies at the local scale.

For these reasons, the work the F2CC network develops in schools follows a path similar to other F2S policies developed in North America, in articulating food procurement and food literacy (Powell & Wittman, 2017). While aiming to carryout sustainable food procurement practices, they also develop students’ knowledge and skills.

F2C and F2H through UBC

Universities and colleges can also contribute to changing food practices through both their purchasing power as well as their teaching, research, and extension activities (Berg et al., 2014). In Metro Vancouver, I observed this through UBC's activities, specifically F2C and F2H initiatives. The UBC Vancouver campus community is made up of 65,658 people, with 44,442 undergraduate students, 9,984 graduate students, 4,975 professors and 9,959 employees (UBC, 2018).

Most of the university's food policies are managed by UBC Food Services. In addition, UBC has some policy provisions that allow the University to procure local products. "UBC's Sustainability Academic Strategy" positions sustainability as an objective for the different types of activities that are developed inside the university's campuses, also highlighting how the production, procurement, and commercialization of food can contribute towards this goal (UBC 2009). More specifically, the "UBC Sustainable Campus Food Guide" provides guidance for students, teachers, and staff to contribute to UBC's production of an agri-food system that meets the needs of the present generation without compromising future generations (UBC, 2013). About 53 percent of the food procured by UBC Food Services is grown or processed within 250 km from campus, and in the last decade there has been a 100 percent increase in the acquisition of organic apples and eggs generated by local cage-free chickens (Young Agrarians, 2014). These factors contributed to UBC being the first university, in 2012, to receive the Golden Carrot award from the F2CC network in recognition of the University's excellence in promoting Farm to Cafeteria actions.

A central element in the promotion of Farm to Cafeteria actions at the University is UBC Farm, a twenty-four hectare farm on campus associated with the Faculty of Land and Food Systems, administered by the Centre for Sustainable Food Systems, and used by multiple UBC programs. In addition to the production of honey, eggs, and animal raising in the open-pasture system, more than 200 species of fruits, vegetables, and herbs are cultivated at UBC Farm through a hands-on-learning model (Young Agrarians, 2014). This experimental farm is considered to be organic, as it develops its production in accordance with the requirements of the British Columbia Certified Organic Management Standards and the North Okanagan Organic Association, in addition to being inspected annually by an Environmental Health Officer (Young Agrarians, 2014).

UBC Farm has been involved in Farm to Cafeteria activities since 2003, selling part of its production to food marketing vendors located on UBC's Vancouver campus (Young Agrarians, 2014). Interviewee 05 (June 2015, UBC Farm), explained that the first customer was the Sage Bistro restaurant, which specializes in fine foods. In that first year, approximately \$1,100 of UBC Farm products were sold. UBC Farm entered into Farm to Cafeteria actions primarily through the sale of high value products aimed at a limited consumer niche (Young Agrarians, 2014). In 2006, in another one-off action, UBC Farm also started supplying beets and squash for pizzas at the Pie R Squared snack bar, located at the Student Union Building. It was only in 2007

that UBC Farm more closely associated with Farm to Cafeteria, becoming a reference for other Universities in Canada. That year, chef Steve Golob, who oversaw the meals served at Vanier Hall, established a partnership with UBC Farm so that the meals prepared there were composed predominantly of healthy and locally sourced foods (Interviewee 05, June 2015, UBC Farm). As a result, the approximately 2,500 students who ate at Vanier Hall daily, paying C\$5.90 per meal on average, started to contribute to the maintenance and expansion of UBC Farm (Young Agrarians, 2014). From then on, UBC Farm underwent a restructuring process in order to expand its production scale to supply not only Farm to Cafeteria projects, but also other marketing channels.

Over time UBC Farm's relationship with the institutional food market has become broader and more complex. Among these changes, I highlight the prioritization of other types of products, in addition to those intended for niche markets and the acquisition of refrigerators to be able to sell products during the off-season. UBC Farm earns \$25,000 annually in sales made to UBC Food Services alone. Its customers are comprised of nine restaurants or cafeterias located on-campus and fifteen off-campus (Interviewee 05, June 2015, UBC Farm). As such, the relationship between UBC Farm and Farm to Cafeteria projects began with Farm to Campus activities. Over time, UBC Farm expanded sales to UBC Hospital, which is managed by Vancouver Coastal Health.

Food consumption at UBC Hospital is managed by the multinational company Sodexo, which uses Gordon Food Services as its main source of product acquisition. Through the pilot project "Farm to Healthcare," financed by the bank Vancity, it was established that during the 2015 to 2016 biennium, this distributor would give preference to products grown by UBC Farm as a way to promote the university's agri-food system (Sine et al., 2014). The potential impact of healthy eating on the recovery process of hospital patients was one of the main motivations for F2H initiatives.

However, there are additional challenges to commercializing with hospitals: "it is more challenging in that the food safety standards are more rigorous as well generally hospitals have lower budgets and their food service provision is a lot less flexible" (Interviewee 05, June 2015, UBC Farm). This is because, in Canada, hospitals adopt the Hazard Analysis Critical Control Point (HACCP), which is recommended by the Codex Alimentarius Commission of the United Nations (UN) (Sine et al., 2014). This set of standards refers not only to the final product, but also to its production process. Attending HACCP guidelines has been a major obstacle for UBC Farm to consolidate itself as a supplier of food for UBC Hospital (Sine et al., 2014).

In addition to contributing to the adoption of sustainable food marketing practices, UBC Farm also functions as a space for pedagogical practices. This supports my argument that the F2CC network simultaneously operates through the relationships between food producers and consumers, and in creating educational opportunities based on food policies. The pedagogical activities at UBC Farm include guided tours, collaborative courses, engaged classes, and case studies for the development of critical thinking and food skills. These activities take place through courses at UBC itself (e.g., Introduction to Soil Science, Sustainable Agriculture and

Food Systems, Applied Plant Breeding, Social Entrepreneurship, and Horticultural Techniques) along with other universities and schools in British Columbia (UBC, 2021).

The F2CC network in Metro Vancouver and food pedagogies

The F2CC network in Metro Vancouver uses food as a component of the teaching-learning process in schools and universities. This is done by integrating food into the curriculum and through institutional procurement, which are advanced through a focus on sustainability and social justice.

The evidence that I have provided demonstrates that in Metro Vancouver, the F2CC network carries out activities that involve multiple groups including government, NGOs, teachers, parents, and other civil society groups. In schools, universities, colleges, and hospitals, the F2CC network creates external collaborations, articulations, and internal reorganizations for the implementation of fair and sustainable food policies. Externally, it establishes partnerships with the purpose of increasing the consumption of locally produced food. For this, Learning Labs are the main strategy, however, there are also other types of collaborations with producers or consumers that contribute to Farm to Cafeteria activities. Internally, the school and other academic teaching spaces develop their curriculum through food literacy activities that rely on diverse pedagogical practices aimed at building new food practices such as hands-on-learning. By reflecting on these collective experiences, we can better understand pedagogies through inclusion, complexity, and interdisciplinarity.

In Table 1, I summarize the main findings of my research into F2CC network's initiatives. With this, I exemplify two aspects through which the F2CC network inserts food in the teaching-learning process to contribute towards food systems transformation. The first occurs by directly adding food to the curriculum (i.e., what ought to be addressed in class). The second is indirect, in that it seeks to guide the procurement, in some cases even the production, and the consumption of food in educational units towards social justice and sustainability. I find that both of F2CC network's efforts offer insights into the actuality and possibilities of food pedagogies.

Table 1: Overview of F2CC network’s efforts to inserts of food in teaching-learning process

		Applied learning	“Concrete actions”
Axis		Changing how we think about food	Changing food policies
Schools	F2S	<ul style="list-style-type: none"> - Integration of food into the curriculum; - School gardens as “open-air laboratories”; - Hands-on-learning resources. 	<ul style="list-style-type: none"> - Learning Labs; - School gardens.
	F2C	<ul style="list-style-type: none"> - Integration of food into the curriculum; - Experimental farm with organic production methods; - Hands-on-learning resources. 	<ul style="list-style-type: none"> - Incentive for snack bars and restaurants located on campuses to make purchases with social and environmental criteria; - Updating of internal regulation, making it possible to increase the consumption of local foods.
UBC	F2H	<ul style="list-style-type: none"> - Integration of food into the curriculum; - Dialogue with experimental farm activities. 	<ul style="list-style-type: none"> - Attempt to adapt the food produced organically and locally to the Hazard Analysis Critical Control Point; - Seeks to reduce the preponderance of large corporations in the supply of food to hospitals.

The F2CC network case exemplifies the growing use of food as a dynamic part of the teaching-learning process, not only for children but also for teenagers and adults (Flowers & Swan, 2012). Such experiences become prominent when discussing the production of sustainable food systems through the lens of inclusion, ensuring food is accessible in the quantity, quality, and frequency required by a diversity of ethnicities, genders, origins, and generations (Alkon & Guthman, 2017; Kimura, 2011; Sumner, 2008).

Food pedagogies fostered by the F2CC network seek to promote sustainable and healthy food practices, which involves the production and consumption of food. Production is handled especially through hands-on-learning resources, such as school gardens or an experimental farm at UBC. These food production spaces can contribute towards a “pedagogy of autonomy” (Freire, 1996) to the extent that learning experiences stimulate students’ curiosity, allowing them to reflect materiality by questioning food practices and in turn, transforming them. In this way, school gardens and UBC’s experimental farm allow students to develop new skills and knowledge that leads them to learn how food is produced and question the conditions in which this occurs. To foster a pedagogy that leads to autonomy, food consumption is targeted through spaces and activities such as cooking classes, community kitchens, cafés, and restaurants. The main idea set forth by these examples is that food choices are part of our lives as citizens, generating not only individual but also collective repercussions.

Metro Vancouver’s F2CC network’s interdisciplinary approach draws attention to the incorporation of food as a pedagogical resource in curriculum activities. Food is one of the elements that allow us to better understand the lives of individuals and societies as they produce and reproduce through the transformation of nature.

Therefore, pedagogical strategies that reflect on people and the world through food practices and policies border different areas of knowledge. As such, food pedagogies inspire the production of integrated knowledge and skills, going beyond the positivist compartmentalization of knowledge. Therefore, although it is not intended to generate structural changes in the organization of agri-food systems, the F2CC network has been a key driver for the adoption of new food consumption habits in public institutions.

Final considerations

In this paper, I highlighted how the combination of applied learning and concrete actions in Metro Vancouver contributed towards food systems transformation. In schools, this is done through the contribution of NGOs that promote actions such as Learning Labs, food literacy, and school gardens. At UBC, the UBC Farm plays a key role, which is a space for hands-on learning, but also has links to other elements of the local agri-food system, especially through the sale of organic food. Irrespective to the diversity in mandates and activities, all the institutions studied produce informal education, given that they develop actions that go beyond the curriculum, especially by integrating other subjects and reaching other institutions in the community. I conclude by indicating that the F2CC network offers an example of how schools and universities can contribute towards fair and sustainable food systems through didactic activities related to the curriculum and, also, through concrete policy, such as institutional procurement. These two dynamics are informed by each other, in a co-constitutive relation that together shape food pedagogies enacted through shared reflexivity, institutional practice, and an active student body. In drawing attention to this, I point to the fact that students are not only recipients of food policies, but are a concrete part of their production and can contribute to the transformation processes (see Aguayo & Morris, 2020).

Acknowledgements: I am grateful to my interviewees who shared their ideas and experiences with me. I thank Bernardo Mançano Fernandes and Hannah Wittman for supervising the research, and Ricardo Barbosa, Jr. for feedback on earlier drafts of this paper. The research was supported by the São Paulo Research Foundation (FAPESP, call 2014/13417-0).

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