

# Sustainability Learning Pathways in the UBC Teacher Education Program: Destination Cohort

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## **Abstract**

*With the recent and dramatic changes to our K-12 curriculum in British Columbia (B.C.), there is an essential need for pre-service teacher education to lead the transformation of practice in our schools and communities. Education with sustainability as a core foundation is also gaining traction in B.C. and around the world. At the University of British Columbia (UBC), we initiated the Sustainability Learning Pathways in Teacher Education Project to explore possible pathways for the growth of sustainability in our education system. The project has culminated in a new Education for Sustainability teacher education cohort at UBC that launched in September 2018. In this paper, we share the story, consider the challenges, and imagine the possibilities as we work to transform teacher education with sustainability in mind.*

## **Résumé**

*En Colombie-Britannique, les programmes scolaires de la maternelle à la 12e année ont récemment fait l'objet d'une grande refonte; dans ce contexte, il est primordial que la formation des futurs enseignants soit aux premières lignes de la transformation des pratiques dans nos écoles et nos collectivités. Le développement durable comme fer de lance de l'éducation gagne aussi la faveur en Colombie-Britannique et ailleurs dans le monde. À la University of British Columbia (UBC), nous avons lancé le projet « Sustainability Learning Pathways in Teacher Education » (parcours d'éducation au développement durable dans la formation des enseignants) pour explorer différentes manières de faire plus de place au développement durable dans notre système d'éducation. Le projet a débouché sur l'inscription d'une nouvelle cohorte à l'UBC en septembre 2018. Le présent article raconte l'histoire de ce projet, examine les défis à relever et imagine les possibilités qui permettront de placer le développement durable au cœur de la formation des enseignants.*

**Keywords:** education for sustainability, pre-service teacher education, sustainability learning pathways, educational transformation, environmental and sustainability education, place-based learning

**Mots-clés :** éducation au développement durable, formation des futurs enseignants, parcours d'éducation au développement durable, transformation de l'enseignement, éducation à l'environnement et au développement durable, éducation axée sur les réalités locales

## Introduction and Purposes

When I received the announcement about a new cohort starting in September at UBC called Education for Sustainability, I literally cried. I felt like it was meant to be, my timing in applying to this program couldn't have been any better. This was the cohort I had been waiting for. (Education for Sustainability Cohort Applicant, 2018)

The opportunities to transform pre-service teacher education, where the formal process of becoming a teacher begins, are vast and exciting. In British Columbia (B.C.), our K–12 education system is changing dramatically. Over the past decade, we have completely redesigned our K–12 curriculum to align with changes to education occurring globally. In the meantime, the hard work of transforming the educational practices in our classrooms and communities, through professional development (Pro-D), mentorship, collaboration, and other means, continues. Our work in this project is premised on the assertion that teacher education must contribute to the global social movement of sustainability. To aid this process in B.C.'s education system, we launched the Sustainability Learning Pathways in Teacher Education at the University of British Columbia (UBC) Project. This project responds to the growing need to develop sustainability learning pathways (SLPs) in teacher education.

Our main objective for this paper is to consider the successes, challenges and lessons learned from an exploratory case study of the priority pathway of establishing a new teacher education cohort focussed on Education for Sustainability (EFS) in UBC Teacher Education. According to Yin (2003), an exploratory case study is one that aims to develop research questions or determine the feasibility of a desired approach. The cohort launched in September 2018, and this case study describes the cohort's design and genesis as well as other potential pathways for infusing sustainability in teacher education. It also outlines the activities, outcomes, and impacts of the SLPs in Teacher Education at UBC Project to date.

Based on our research, design, and implementation efforts so far, we offer principles, concepts, approaches, and lessons learned that help inform ways to wrestle with the complexity of EFS in teacher education. We seek to inspire the transformation of teacher education programs toward more place-based, community-connected, and collaborative approaches and processes among participants and course facilitators. Adaptive, rather than prescriptive, we endeavour to recommend pathways-inspired approaches responsive to the shifting perspectives of pre-service teachers and universities related to EFS, thus allowing for the ongoing co-development of the movement.

We begin our case study with historical background and context, and then summarize the pathways framework and process that led to the approval of a new EFS B.Ed. cohort at UBC. The paper explores successes, challenges, and lessons learned before identifying some next steps. Ultimately, this process

represents an awakening as we seek to activate sustainability learning pathways in teacher education, supported by those entering the field: “I believe that Education for Sustainability goes beyond ‘waking up’ to what the world needs, and into action” (EFS Cohort Member, 2018).

## Background and Context

Invigorated by the Decade of Education for Sustainable Development (2005–2014), the United Nations Educational Scientific and Cultural Organization (UNESCO) reaffirmed the importance of sustainability through its 17 Sustainable Development Goals (SDGs), one of which is dedicated to “Quality Education” (UNESCO, 2014). UNESCO estimates that 69 million new teachers will be needed worldwide in the coming years (UNESCO, 2016). These teachers, evidenced by the quote below, will have a profound impact on K–12 education if we prioritize sustainability:

Society is facing a variety of environmental challenges, and the biggest barrier to overcome is creating behaviour change within society itself. I hope to inspire the next generation by helping them to become informed and responsible citizens, who care deeply about their world and want to make it a better place. (EFS Cohort Member, 2018)

Internationally, the Efs literature (see Sipos, Battisti, & Grimm, 2008; Mezirow, 2009; Cranton & Taylor, 2012; Alvarez-Garcia, Sureda-Negre, & Comas-Forgas, 2015; Evans, Stevenson, Lasen, Ferreira, & Davis, 2017; Harmin, Barrett, & Hoessler, 2018) is coalescing around Efs as a crucial driver for transformative learning and social change toward a sustainable future. UNESCO states that education provides the opportunity “to learn the values, behaviour, and lifestyles required for a sustainable future and for positive societal transformation” (UNESCO, 2015, p. 3). Formal education is particularly important in providing “a place to explore, extend and deepen human understanding in ways which are simultaneous, rigorous, ethical and illimitable” (Rieckmann, 2012, p. 128; see also McCoshan & Martin, 2012). Transformative learning is often cited as critical in empowering individuals to adapt their world views (Sipos et al., 2008), develop an awareness of normalized (but unsustainable) habits, and disrupt these habits by striking out in novel ways (Moore, 2005; Rieckmann, 2012). It supports lifelong learning and working with other parts of society to create a culture of “curricular, pedagogical, policy, and institutional changes [which] are necessary to produce meaningful, transformative behavioral change in the wake of complex . . . challenges” (Glasser & Hirsh, 2016, p. 121). As voiced by the teacher candidate below, transformative learning also relates to recognizing the need to fashion social institutions that are made amenable to constant reform through learning, connections, engagement, and dialogue:

Sustainability, to me, is about creating learning environments with connections to where we live, the people around us, and the society in which we exist. I am interested in how sustainability can be brought into the classroom in a variety of ways that will demonstrate the interconnectedness of humans and the natural world, and that we all have an important role in sustaining these connections. (EfS Cohort Member, 2018)

Even though teacher education in Canada is a provincial/territorial jurisdiction and is therefore highly contextual, the Council of Ministers of Education of Canada (2012) states that “There is modest but promising progress toward reorienting teacher education to address education for sustainable development” (p. 3). Into this context of potential change emerged the National Roundtable on Environmental and Sustainability Education (ESE) in Pre-Service Teacher Education and its seminal conference in 2016 that brought together researchers and teacher educators. A National Action Plan resulted (Karrow, Bell, DiGiuseppe, Elliott, & Inwood, 2018), as did a formal partnership between the Roundtable and the Canadian Network for Environmental Education and Communication (EECOM). This multi-sectoral partnership takes the form of a Standing Committee on Environmental and Sustainability Education in Teacher Education (ESE-TE), which focusses its efforts at research and advocacy.

In British Columbia, K–12 education has included a significant focus on environment and sustainability for decades. In 1971, the British Columbia Teachers’ Federation (BCTF) set up a Task Force on environmental education (EE). It recommended an interdisciplinary, developmental, and community-based approach (BCTF, 1971, 1972). This was followed, in 1991, by a special report that suggested “the need to allow teachers to develop exciting programs that integrate goals of several subject areas” (BCTF, 1991, p. 44). A provincial resource and framework for relating EE to existing curricula, *Environmental Concepts in the Classroom*, was published in 1995. It called for the integration of environmental concepts into K–12 education (BC Ministry of Education, 1995).

Two decades later, the 1995 document was revisited and posited a new framework for environmental learning in B.C. Entitled *Environmental Learning and Experience (ELE): An Interdisciplinary Guide for Teachers* (BC Ministry of Education, 2007), this document was informed by advances in research as well as by the Kyoto Protocol, Montreal and Johannesburg Summits on Sustainable Development, and the proclamation of the United Nations Decade of Education for Sustainable Development (UNDESD) from 2005–2014.

More recently (2012–17), B.C. has completed a comprehensive redesign—indeed, transformation—of its provincial K–12 curriculum. Notably, the new curriculum contains an enhanced focus on place, sustainability, Indigeneity, and transdisciplinarity, thus putting greater emphasis on place-based, community-connected, and inquiry-based learning. According to the BC Ministry of Education, “educated citizens understand the importance of learning about the environment” (BC Ministry of Education, 2016, n.p.). Further, through this new

curriculum, students are expected to “develop awareness and take responsibility for their social, physical, and natural environments by working independently and collaboratively for the benefit of others, communities, and the environment” (BC Ministry of Education, 2015, n.p.). Importantly, this is articulated as the “ability to initiate positive, sustainable change for others and the environment, to analyze complex social or environmental issues from multiple perspectives” (BC Ministry of Education, 2015, n.p.).

The new B.C. Science Curriculum takes a place-based approach to learning, where students:

develop place-based knowledge about the area in which they live, learning about and building on First Peoples knowledge and other traditional knowledge of the area. This provides a basis for an intuitive relationship with and respect for the natural world; connections to their ecosystem and community; and a sense of relatedness that encourages lifelong harmony with nature (BC Ministry of Education, 2016, n.p.).

There are also strong and specific foundations for sustainability in the redesigned B.C. curriculum, from a focus on sustainable resources and practices in the elementary grades to sustainable systems in secondary sciences. Two new courses were also developed for senior secondary, entitled Environmental Science 11 and 12, both of which have a deep focus on sustainability.

With the transformation of the curriculum comes the need for Pro-D, resources, and support to implement these changes. Teacher education must also transform in its practices and institutions to help model and enact this transformation. By late 2015, we began looking closely at the Teacher Education Program at UBC and considering what learning pathways, including a teacher education cohort, might exist or be developed to support the broad demand for and infusion of sustainability and, ultimately, the transformation of the program and K–12 education in B.C.

## Theoretical Framework, Methodology, and Limitations

In light of the complexity involved in transforming educational practices and institutional structures and processes that perpetuate them, our project was grounded in a pathways framework. Specifically, we set out to explore and enact sustainability learning pathways in teacher education at UBC. An SLP is a collection of sustainability-oriented courses, activities, or experiences that students pursue as part of their disciplinary major or program of studies. Pathways may be embedded within existing programs or offered as a separate entity, such as a minor (Marcus, Coops, Ellis, & Robinson, 2015).

Building on the work of Marcus et al. (2015) at UBC, we identified the following pathways as most frequently encountered in post-secondary education programs:

1. Cohort: a group in the same program and clustered around a core programmatic focus
2. Core Course: course(s) that students are required to complete for a degree
3. Elective Course: an optional course that meets the criteria for any program
4. Pro-D Activities: offerings for students, faculty, mentors, and other interested community members
5. Practica: experiential learning opportunities in schools and community settings where students work with other mentors
6. Minor, Certificate, or Diploma: a focused program of less depth than a major (generally 3–5 courses)

This paper provides an exploratory case study on those pathways we have pursued to date that documents the process and progress of our work related to SLPs in teacher education at UBC. We adopt the notion that a case study enables researchers to circumscribe the main entity for which data are being collected (VanWynsberghe & Khan, 2007). Used here to signal a conceptual focus on immersive pathways in teacher Efs, our case provides “instances in action,” which is also important to the research because it encourages triangulation within and across cases, potentially advancing theory, generating new typologies (George & Bennett, 2005), and constructing working hypotheses (Kenny & Grotelueschen, 1984; George & Bennett, 2005).

As the authors are deeply embedded in the case in question, we recognize our bias toward more favourable reflections on the process and pathways implemented thus far, while attempting to fully embrace the challenges we have encountered. We acknowledge that a fulsome evaluation of project outcomes and lessons learned—the focus of our research in the coming months—will be enormously valuable.

### Sustainability Learning Pathways in Teacher Education Project at UBC Project

Our story picks up in 2016, with a proposal to the University Sustainability Initiative (USI) for funding to support a research endeavour entitled *Sustainability Learning Pathways in Teacher Education at UBC*. The USI’s Pathway Grant Program was designed with the goal of developing new undergraduate sustainability pathways at UBC; our project was accepted.

The project sought to explore, design, pilot, and evaluate SLPs in the Teacher Education Program at UBC. Specific goals of the project included:

1. Identify one or more SLP(s) to positively impact Efs and teacher education at UBC and beyond.
2. Catalyze engagement, dialogue, and collaboration within the Faculty of

Education, participating departments, and community partners regarding these SLP(s).

3. Develop, pilot, and evaluate one or more SLP(s).

With over 800 students, UBC's Teacher Education Program is the largest in Western Canada. The development of one or more SLPs in the program had the potential to rapidly improve the infusion of sustainability in B.C. education, support implementation of the new B.C. curriculum related to sustainability and other priorities, and increase collaboration through the Faculty of Education's research and program offerings.

The Sustainability Learning Pathways in Teacher Education at UBC Project was designed as having three phases: Phase 1 – Making the Case; Phase 2 – Shaping the Case; Phase 3 – Piloting and Evaluation. As implementation of the pilot year of the EfS Cohort was delayed until 2018–19, this paper focuses primarily on the key activities and highlights of the first two phases of the project.

### *Phase 1 – Making the Case*

The project began with a research phase, notably an environmental scan of teacher education programs across Canada and beyond. To gather an initial sense of current SLPs in teacher education programs at UBC and across Canada, we scanned selected university programs for their presence in teacher education programs, using key search terms such as Sustainability Education, Environmental Education, Outdoor Education, and Place-Based Education. Note that this scan was based on a website analysis of program marketing and was not intended to be exhaustive; rather, it endeavoured to find relative areas of strength and leadership to inform UBC's planning. The findings summarized the presence and extent of sustainability learning pathways in various teacher education programs.

The scan and subsequent engagement of internal and external stakeholders discussed below led to the identification of pathways with the most potential to impact teacher education at UBC. These pathways included professional development events and activities, a cohort in the Teacher Education Program, an extended practicum, and the community field experience. Anecdotally, our administrators reacted strongly to our demonstrating that UBC was not currently a leader in sustainability education, particularly in teacher education and were very receptive to our findings. They too valued and deemed feasible a teacher education cohort as well as new course offerings, Pro-D activities, and enhanced teacher education practica.

Compared to other pathways, as evidenced in the quote below, the cohort model has a gravitas that is attributable to its intrinsically social character. The cohort forms one of the first and closest circles for gaining the skills associated with teaching. Much more than a mere cluster of people brought together

for a program, the cohort is designed to purposefully enable the instantiation of public pedagogical approaches, including place-based and community-connected experiential opportunities. As one cohort member explained:

I chose the Education for Sustainability cohort because my most memorable and impactful learning experiences have been through experiential and active participation. Through my professional experience, I have observed how learning environments which connect people to one another and places, can support the development of a healthy community. (EFS Cohort Member, 2018)

### *Phase 2 – Shaping the Case*

The research and engagement process continued in 2017 with the planning, design, and pilot implementation of selected SLPs, including several Pro-D events and offerings in the Faculty of Education and in the community. We also brought forward an application for an Education for Sustainability cohort in teacher education. This cohort application had to be accepted by various committees and departments in the Faculty of Education.

### *Piloting Professional Development Pathways*

Various SLP Pro-D activities supported by the project were designed and implemented in 2017. In May, we attended the Canadian Network for Environmental Education and Communication's conference in Wolfville, Nova Scotia. There, we convened an interactive presentation for post-secondary and K–12 educators from across Canada that shared the results of our scan, explored pathways at our respective institutions, and envisioned approaches to expanding pathways through collaboration among researchers and teacher educators in Canada.

Importantly, our work at this event led to an invitation for our team to join the Standing Committee for Environment and Sustainability Education in Teacher Education (ESE–TE). One of us had already participated in the National Roundtable of the ESE–TE, and the union seemed mutually beneficial. Joining this growing circle of widely respected post-secondary and community educators focussed on EfS in teacher education provided academic credibility to our efforts at UBC and presented the opportunity to collaborate nationally to learn about and promote sustainability in education. For example, we became aware of the DEEPER guide (Inwood & Jagger, 2014) as well as the Trent University Indigenous and Environmental Education course in their Teacher Education Program.

In October 2017, our team designed and implemented an innovative, half-day Pro-D event, Sustainability and Place-Based Learning: Priorities, Possibilities and Practice, for over 225 teacher candidates at UBC Vancouver. This mandatory event was built into the curriculum of the program (through a core course), and we supplied a preparatory reading list. Participants from virtually all elementary cohorts explored sustainability education and place-based learning in their emerging practice, including a technology-supported,



experiential exploration of the UBC campus. Participant evaluations of the session were extremely positive, with one individual declaring, “What an amazing experience. It was so lovely to explore campus, making connections to sustainability in a contextual way. Loved it!” Another participant also confirmed its value: “I actually learned a lot about the importance of implementing sustainability in classrooms and across the curriculum” (October 2017 Event Participants).

In December 2017, SLP team members convened four experiential Pro-D workshops that we delivered at two UBC Teacher Education conferences. These workshops engaged close to 100 elementary and secondary teacher candidates at UBC, as well as teachers from local school districts, in learning about sustainability, place, and related topics. They were deemed hugely valuable by participants. For example:

Most useful session so far in the program. Place-based learning naturally brings together theory and practice. It was a great, hands-on approach to experiencing place-based education (for sustainability) and it was a great way to open our eyes to the vast resources for learning here on campus. (Workshop Participants, 2017)

To support our Pro-D events and activities, a teacher resource package was provided to participants with lists of organizations and other resources for implementing sustainability in practice. By creating the resource package, we intended to demonstrate that doing sustainability through place-based approaches, such as was modelled in the workshops themselves, could be easy, collaborative, and highly engaging.

### *Application for an Education for Sustainability Cohort*

Building on the positive momentum of our Pro-D pathways implementation and extensive engagement and consultation with leaders in the Faculty of Education and prospective school district and community partners, we developed an application for a new teacher education cohort at UBC Vancouver. This application was accepted in the spring of 2017, but institutional processes delayed the pilot of this priority pathway for one year. Promotion of the new EfS Cohort began in spring 2018, and the inaugural program year launched in September 2018.

Our cohort team collaborated to develop the following overall goals and priorities for the EfS Cohort:

The Education for Sustainability cohort supports, informs and inspires teacher candidates, and their students and mentors, to develop deeper knowledge, understanding and competencies related to education for sustainability. Core aims of the cohort also include development of an ethic of stewardship and care for people, place and planet, formation of deep connectedness to the environment and the systems that sustain us, and cultivation of healthier, thriving communities.

Grounded in ecopedagogy through inquiry, collaboration and action, the cohort enacts the B.C. curriculum with a focus on place-based, experiential and community-connected approaches to learning. (UBC Teacher Education website <https://teach.educ.ubc.ca/education-for-sustainability-new-cohort/>)

The summer of 2018 featured an intense series of design and development meetings as our cohort team and partners collaborated to create guiding frameworks, instructional strategies, course plans, readings lists, and other foundations for our pilot year. Importantly, this process engaged all four departments in the Faculty of Education, each of which contributes courses to the Teacher Education Program and, therefore, needed to support the cohort by aligning these courses with the overall vision of sustainability.

Strong interest in the cohort by successful program applicants, who provided preferences for the cohort to which they wished to be enrolled, led to a full complement of 35 teacher candidates joining the EfS Cohort for their program in our pilot year. As voiced in the quotes, EfS appeared to resonate as a calling for at least some program applicants:

Sustainability is at the center of my values and at the very core of my life. I cannot think of a better job, than sharing my passion for sustainability with youth. I want children to understand that the status quo is not immutable, that it has been created by (a small group of) people, and can be re-imagined and re-created by them. (EfS Cohort Member, 2018)

Another one agreed, stating that, “Education for sustainability is my calling. I desire to connect people to this land and to the environment, and I’m excited to be learning from and with people who want the same” (EfS Cohort Member, 2018).

### *Growing Community Partnerships*

Relationships built over years of collaboration with our school district partners, including Surrey, North Vancouver, Burnaby, and West Vancouver, have been a key success factor in building a successful teacher education cohort. We are also actively growing partnerships with a wide variety of community partners, notably through the Classrooms to Communities (C2C) Education Network, that share a commitment to EfS in teacher education. These partners are excited to be supporting the pilot year. Notably, all of our partner school districts have a strong commitment, in policies and practices, to sustainability at a systems and classroom level. It should be mentioned that cohorts typically work with one or two districts, but there was extensive interest among local school districts, and so we developed formal partnerships with four districts. Beyond our alignments with the new provincial curriculum, we were also confident that there was broad recognition of the global sustainability movement and the important role that EfS can play in teacher education. This interest in EfS and community connections also appeared to be strong in our cohort participants: “I am interested in

place, but I am mostly interested in sustainable communities. I see schools as a basis for community and wonder how we, as teachers, can support community development” (EfS Cohort Member, 2018).

A few further words should be shared regarding our school district relationships. As mentioned earlier, we consulted with a variety of districts on the feasibility of a cohort partnership. Indeed, two of these districts provided letters of support for our application. However, the cohort team was already highly regarded in these districts from a teacher, community, and government perspective. It is not a stretch to understand these relationships as legitimating factors for support from both the districts and the university. Noteworthy is the fact that building relationships is one of the recognized interpersonal competencies for a sustainability practitioner (Wiek, Withycombe, & Redman, 2011; Rieckmann, 2012).

## Successes, Challenges, and Lessons Learned

The *Sustainability Learning Pathways in Teacher Education at UBC* initiative has been remarkably successful to date in meeting the goals envisioned for the project. There have also been challenges, as with any ambitious project in a university context, and a range of lessons learned that can inform future endeavours of this kind.

### *Making the Case*

The previously mentioned environmental scan provided some introductory data that also motivated senior leaders in the Faculty of Education at UBC. The scan findings are not exhaustive, however, and it would require ongoing research and engagement to sustain their currency and deepen the analysis. It is recommended this process be continued and, with resources, more primary data sought. Our participation in the previously mentioned ESE–TE Standing Committee makes it possible to explore emerging trends and hear about institutional innovations, and perhaps primary data could be collected more easily. Indeed, mapping the networks of practice related to EfS in our institutions, provincially and across Canada, is highly recommended as we continue to build a community of EfS research and practice.

### *Engagement, Consultation, and Collaboration*

The engagement and consultation process, designed to identify and build support for SLPs at UBC—including the cohort pathway—has been successful to date, but the work continues. The success is a combination of increased awareness and support for sustainability in the Faculty of Education, especially among the Dean, Associate Deans, Directors, colleagues, community partners, and teacher candidates. It has been important to demonstrate student demand and

other support through Pro-D events, and it has been especially strategic to link our work with the new B.C. curriculum and school districts, as well as with provincial networks with a long history of sustained work in environmental and sustainability education.

The emergence of inter-departmental politics in the UBC Faculty of Education was an expected challenge in the process, particularly regarding the approval of a new cohort in teacher education. Many faculty members believe their fields of interest are “cohort-worthy,” and the committees that govern teacher education are sensitive to balancing ongoing support with new entries. As the UBC Teacher Education Program is shared by four departments, collaboration can sometimes be challenging (UBC Faculty of Education, 2018). We attempted to demonstrate support and collaboration by submitting our application from two departments. Future success is predicated on continued faculty and university-level communication and collaboration, and evidence of success and organizational learning. As such, our connection to the USI continues to be a priority. On a positive note, there appears to be a shared interest among many faculty members across departments at UBC for sustainability, and this bodes well for deeper collaboration in the years ahead.

Beyond UBC, the project has also led to increased engagement and relationship building with post-secondary educators across Canada, including the ESE-TE Standing Committee. As this special volume attests, this national network is growing in representation and influence, and the SLPs at UBC Project has provided a key Western Canada perspective, narrative on sustainability in teacher education, and potential influence on EfS practices more broadly that will continue to grow for years to come, given appropriate institutional support.

### *Pro-D Pathways*

As explained previously, our Pro-D activities have been very successful and have demonstrated the growing demand for SLPs in teacher education at UBC and across Canada. The challenge now is to sustain momentum and support for these kinds of activities, as Pro-D has the potential to engage a wider audience at UBC, in our partner school districts, and across B.C. and Canada. Funding, as always, is critically needed to sustain and grow these activities. Our team intends to continue sharing our project with a national audience, which recently included the 2018 Research Roundtable on Environmental and Sustainability Education in Teacher Education. The spring of 2019 also saw us facilitating invited presentations on this topic in Germany, England, and Scotland, and our work will be featured at the 2019 C2C Conference at UBC Vancouver.

### *The EfS Cohort's Pilot Year, Related Pathways and Potential Impacts*

The new EfS Cohort in teacher education at UBC is the most significant outcome of the project. It has the potential not only to impact K-12 and teacher education

in B.C. and across Canada but also to influence sustainability in education more broadly in the coming years. With a keen focus on sustainability education that attracted strong interest and a full complement of teacher candidates in its inaugural year, the EfS Cohort will support its members (and all of the mentors, colleagues, and students they work with) to champion sustainability in their practice.

We now plan to leverage additional pathways in our program, notably the Extended Practicum and Community Field Experience (and all their related partnerships) as well as additional Pro-D pathways in collaboration with the Faculty of Education, school districts, and community partners. These pathways are integral to the EfS Cohort, and we seek to grow collaboration with teachers and organizations that share a commitment to sustainability. Doing so challenges us to effectively document, evaluate, and report on the cohort's pilot year about these interconnected pathways, especially as we aspire to maximize the impact of our project and funding.

**Extended practicum.** All teacher candidates in the program participate in a 10-week, school-based practicum. This practicum ideally places teacher candidates with mentors in school districts who share a commitment to sustainability and helps UBC and the USI to build relationships with this network of supportive educators. This is a significant challenge, as mentors with such a background, let alone a passion for sustainability, are not currently widespread in our schools and communities. Research tells us that a lack of alignment between the intentions of a teacher candidate and the beliefs and practices of their mentors can be hugely detrimental to the development of EfS practices in novice teachers (Ormond et al., 2014).

To counter this, we plan to increase awareness, engagement, and collaboration among our teacher candidates, school-based mentors, and community partners with a strong focus on sustainability education through cohort activities, enhanced outreach, and targeted engagement. With appropriate resources and support, we can intentionally build a strong community of aligned mentors and model how the extended practicum can be optimized around sustainability as a core priority.

**Community field experience.** Another pathway that the EfS Cohort activates is the Community Field Experience (CFE), a required three-week, community-based practicum for all teacher candidates. Having just finished their extended practicum in schools, cohort members share their newly-refined EfS ideas, understandings, and competencies with the community-based educators and organizations involved. As such, the opportunity for modelling EfS is extended to these informal educators and community partners. Here, as well, it can be challenging for teacher candidates who find themselves in a placement that is not supportive of their intentions to deepen their experiences and practices related to EfS.

Our team also intends to pursue focussed outreach and engagement activities to influence the CFE aspect of the cohort experience by enhancing the program's connections with this community-based opportunity, ensuring

that more sustainability-related organizations are available to host EfS Cohort teacher candidates for their CFE. We aim to establish lasting relationships with aligned organizations that enhance the CFE experience through a rich focus on sustainability. Funding and the ongoing support of the community and Teacher Education Program at UBC will be critical to building and strengthening these relationships.

**Enhanced Pro-D activities.** A variety of enhanced and extended Pro-D activities, both internally at UBC and with our school districts and other partners, are made possible by the EfS Cohort. Our activation of Pro-D SLPs in 2017 affirmed the need for such offerings, and the cohort has enabled us to broaden the reach of such events and activities to include mentors, colleagues and other interested educators, and EfS Cohort alumni. In 2018–19, we held several Pro-D opportunities in collaboration with our partner school districts and community supporters.

In the coming years, we intend to provide Pro-D activities focussed on sustainability, place, and experiential learning with the broader community of teacher candidates at UBC, partner school districts, and community organizations to further “institutionalize” these activities locally and regionally. With the support of provincial partners, including the BC Ministry of Education, we aim to expand these activities at a provincial scale. The greatest challenges, as with much of our work, will be to secure sustained funding and nurture strong partnerships necessary for these vital Pro-D activities.

**Evaluating and reporting.** As we reflect on the pilot year of the EfS Cohort, it is imperative that we continue to effectively document, evaluate, and share the successes, challenges, and impacts of the cohort and associated pathways (Phase 3 of our project). Effective evaluation will be critical to demonstrating the power of a pathways approach at UBC and in other faculties and institutions, and to influencing EfS practices in B.C. schools and communities.

At the time of writing, a variety of formative and summative strategies are being employed to evaluate the cohort and other pathways in implementation. We are documenting and sharing the cohort’s activities, while more formal evaluation methods (e.g., pre- and post-surveys, teacher candidates’ reflections and projects, course and program evaluations, interviews) are being employed in a comprehensive evaluation strategy. Participant quotes and testimonials, such as those shared in this paper, are being gathered with permission from cohort members. A final report and other artifacts will then be developed to communicate and celebrate the successes, challenges, and lessons learned from the pilot year of the EfS Cohort and related pathways. For now, we are deeply gratified by the initial reflections, such as the one voiced here, of our inaugural cohort members:

This cohort has so far proven to be an incredibly valuable and important learning experience for me. I feel like this cohort speaks to a part of who I want to be as a teacher and is providing the tools and learning on how to get there. Thank you! (EfS Cohort Member, 2018)

## Conclusion and Next Steps

Education in B.C., across Canada, and around the globe is transforming. Pedagogies and learning experiences that focus on place, community, and sustainability are at the heart of this transformation. Teacher education is particularly essential to transforming education and enacting a vision of thriving, sustainable communities. This exploratory case study argues for the transformational potential of teacher education in the broader area of education for sustainability.

While the process of applying for approval of a new cohort has been an exercise in ongoing relationship building and the navigation of university politics, there were, as noted above, some key synergies involved. These included a new provincial curriculum, established collaborative relationships, aligned mandates, and a maturing sustainability movement with numerous provincial leaders across education sectors. We believe the outcome of a cohort, focussed strongly on EfS, is one that all parties can rally around to help transform teacher education at UBC, and elsewhere.

The cohort also opens up significant potential to influence additional, related pathways, including enhancing the extended practicum and community field experience elements of the program and expanding Pro-D activities to influence other cohorts, colleagues, and partners. To leverage these opportunities, we must continue to monitor, evaluate, and evolve the program as we reflect on our learning. In its inaugural year, we have had only a small amount of funding to sponsor community-based field experiences. Our community partners have graciously provided complimentary venues, facilitation, and transportation. We are currently convincing administrators in the Faculty of Education and partners that funding for such core program elements and Pro-D offerings is critical to sustaining the vision and long-term impacts of the cohort. So far, we have won sympathy but little funding.

As the transformation of K–12 education continues in B.C. and around the world, so too must teacher education continue to evolve. As evidenced in the quote below, our new EfS teacher education cohort at UBC resonates with those moving into the profession to help transform our practices. As the model grows, we will continue to collaboratively build on its guiding frameworks, enhance its practices, overcome its challenges, and maximize its potential. Working together with colleagues and supporters across Canada and beyond, we are excited to pursue this and other promising pathways toward transforming K–12 and teacher education with sustainability in mind.

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## Notes on Contributors

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