Chapter 11 Re-Visioning Teacher Education for Sustainability in Atlantic Canada



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Résumé Ce chapitre donne un apercu historique des initiatives en éducation au développement durable en Nouvelle Écosse. Il se fonde essentiellement sur le principe que, pour promouvoir les valeurs du développement durable, il ne suffit pas d'enseigner des notions liées à l'écologie et à la viabilité, il faut aussi se concentrer sur un apprentissage et un enseignement qui sont relationnels en soi. Les institutions responsables de la formation des enseignants sont au cœur des efforts visant à promouvoir l'éducation au développement durable. Ce chapitre décrit les défis qu'a présentés, pour une institution de la Nouvelle-Écosse, la volonté de réorienter la formation des maîtres vers l'enseignement au développement durable. Il va de soi que, pour modifier l'orientation d'un programme de formation, il faut donner au corps professoral et au personnel enseignant le temps nécessaire pour explorer et analyser les dimensions sociales, économiques et environnementales impliquées par ce virage. Grâce au dialogue et à la réflexion, il a été établi que les efforts qui favorisent l'acquisition des compétences, des connaissances, des attitudes et des croyances nécessaires pour former les futurs enseignants aux valeurs du développement durable passent nécessairement par des critères relationnels. L'éthique de la sollicitude de Nel Noddings, l'interprétation de la relation pédagogique de Max van Manen, ainsi que le concept de bonheur durable de Catherine O'Brien, fournissent aux didacticiens et aux institutions de formation des maîtres de meilleures pistes pour structurer les occasions d'apprentissage et réorienter les curriculums de façon à favoriser, chez les futurs enseignants, les valeurs liées au développement durable.

Atlantic Canada has been shaped by a tenuous relationship with the living landscape. From the destruction of the largest living biomass on the planet—the northern cod off Newfoundland and Labrador—to the social upheaval resulting from generations of unsustainable, exploitative, extractive industrial practices in Nova

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Scotia and New Brunswick, the region struggles to find a sustainable way forward in the twenty-first century. This chapter provides a brief historical overview of initiatives to educate for sustainability in the province of Nova Scotia. The central premise of this chapter, however, is that teaching for the values of sustainability cannot simply be teaching "about" sustainability; it must be about teaching and learning that is, at its heart, relational. Teacher education —specifically, institutions responsible for teacher education—is central to any effort to educate for a sustainable future. While there have been efforts to reorient teacher education for the values of sustainability (Hopkins and McKeown 2005), such efforts will only be successful if there is a clear understanding of how people best learn such values. The chapter will describe the efforts and challenges resulting from one Nova Scotia teacher education institution's commitment to reorient teacher education for sustainability. It explores the ways in which Noddings's (1984, 2002) care theory, van Manen's (1991, 2002) interpretation of the pedagogic relation, and O'Brien's (2012, 2013) concept of sustainable happiness offer teacher educators a deeper understanding of how to structure learning opportunities to foster the values of sustainability in preservice teacher education.

Canada has played a significant role in education for sustainable development before the publication of Gro Harlem Brundtland's watershed report in 1987 (Hart 1990; Hopkins 2013a). For example, Canada was present in the planning meetings that would lead to the Earth Summit in 1992, and, a few months after the Rio Summit, Canada hosted the first international Education for Sustainable Development (ESD) conference in the world (Hopkins 2013a). In the early 1990s, as governments were becoming involved in sustainable development, non-governmental organisations (NGOs) were also organising. In Canada, the group Learning for a Sustainable Future (LSF) was launched nationally. LSF was designed as a joint initiative to bring together the private sector and federal and provincial governments with supporters of ESD.

In 2002, the United Nations (UN) declared 2005–2014 as the UN Decade of Education for Sustainable Development (DESD). In 2005, at a meeting of high-ranking education and environment ministers, held in Vilnius, Lithuania, Canada gave its support for the DESD (Council of Ministers of Education, Canada [CMEC] 2010, p. 6). The goal of the Vilnius meeting was to set out strategies that included objectives to (a) equip educators with the competencies to include ESD in their teaching, (b) ensure that adequate tools and resources for ESD were accessible, and (c) strengthen cooperation on ESD at all levels. In 2009, the CMEC attended the UNESCO World Conference on ESD and signed the resulting *Bonn Declaration*, which specifically focused on teacher education by committing to:

Reorient curriculum and teacher education programmes to integrate ESD into both preservice and in-service programmes. Support teacher education institutions, teachers and professors to network, develop, and research sound pedagogical practice. Specifically support teachers to develop ESD strategies that can work with large class sizes, and to evaluate ESD learning processes. (UNESCO 2009, p. 4)

Post-DESD planning has occurred to ensure ESD commitments continued after the Millennium Development Goals expired in 2015 (UNESCO 2014a, b, 2015a, b, 2016a, b; United Nations General Assembly 2015).

11.1 Education for Sustainable Development in Nova Scotia

Hopkins (2013a) outlines the particular challenges specific to the Canadian context in adhering to and implementing international ESD commitments. In the early 1990s, federal leadership for ESD was given to Environment Canada, which, according to Hopkins (2013a), "unfortunately perpetrated the notion of ESD as the same as EE" (p. 28). The second major challenge for a national ESD strategy is the structure of the education system in Canada, which lacks a national ministry of education. The exclusive responsibility for matters pertaining to education rests with the 13 provincial and territorial governments. Implementing ESD policy and strategy across a huge country with disparate provincial ministries has severely curtailed meaningful, widespread ESD adoption across Canada (Hopkins 2013a, p. 24).

Nova Scotia has been involved in sustainability education initiatives since the early 1990s. In 1991, the presidents of 33 universities from 10 countries on five continents met in Halifax to examine the role of universities regarding the environment and development. They were joined by a number of senior representatives from business, the banking community, governments, and NGOs. The *Halifax Declaration* (1991) was released at the conclusion of this conference. It stated, among other things, that "The voice of the university be clear and uncompromising in its ongoing commitment to the principle and practice of sustainable development within the university, and at the local, national and global levels" (para. 3). However, the response to adopting ESD as a core element of the public school system reflects the challenges described by Hopkins (2013b), in that Nova Scotia's Ministry of Education made early and modest steps to integrate ESD into the provincial curriculum. In progress reports and responses to UNESCO questionnaires (CMEC 2014), many provinces, including Nova Scotia, reported activities that are described by Hopkins (2013b) as being in the beginning stages of an ESD adoption trajectory.

Nova Scotia government internal strategic planning documents lay out commitments characteristic of early adopters at the beginning of a trajectory leading to full implementation. For example, the Nova Scotia Department of Education's (2009) *Annual Accountability Report, Fiscal Year 2009–2010* states:

The department has evaluated and listed a number of ESD tools and resources in the Authorized Learning Resources list. ESD outcomes are addressed in various curricula at all grade levels. Plans for a Nova Scotia ESD website are in development. The department provided *Green Technology for Exploring Technology 10* summer institute in 2009. The

¹ See transcript of the declaration at http://www.iau-hesd.net/sites/default/files/documents/rfl_727_halifax_2001.pdf

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department has planned summer institutes and other workshops to be provided in 2010–11. (p. 17)

These initiatives are in line with a teaching "about" sustainability approach, which is also characteristic of early adopters. In 2016, while the plan for the development of an ESD website has not been realised, ESD according to the Department of Education "permeates several subject areas. Science, Social Studies, English Language Arts, Health Education, and Technology Education tend to have more outcomes related to ESD. Other subjects have ESD embedded in their outcomes" (S. Taylor-Foley, personal communication, July 6, 2015). The Government of Nova Scotia is committed to LEED (Leadership in Energy and Environmental Design) gold certification in the building of new schools. However, altogether, the province has not moved beyond modest steps to integrate ESD learning outcomes and has not pursued systemic, province-wide ESD adoption such as that pursued by the province of Manitoba (Buckler and MacDiarmid 2013).

ESD in the Nova Scotia public school system depends, as it does in many other jurisdictions, on the commitment and passion of teachers, parents, and communities dedicated to education for sustainability. Some rural schools are becoming community centres, supporting the viability of small towns, while school gardens and entrepreneurial ventures are appearing and producing local, healthy food as the result of authentic, project-based learning. Despite these developments, the systemic support that comes with province-wide policy is not yet in place. The lack of a provincial vision for ESD means, for example, that schools are unable to get the fresh food they grow to the cafeteria because of restrictive contracts signed by corporations managing food services.

In 2015, Nova Scotia undertook an extensive review of its public education system. As a result of the review, New Essential Graduation Competencies now provide a future vision for K–12 education in the province. The competencies include Creativity and Innovation, Citizenship, Personal and Career Development, Critical Thinking, Communication, and Technological Fluency. The language of the six competencies in many ways reflects the principles of ESD. For example, for the competency of Citizenship:

Learners are expected to contribute to the quality and sustainability of their environment, communities, and society. They analyze cultural, economic, environmental, and social issues, make decisions, make judgments, solve problems, and act as stewards in a local, national, and global context. (Council of Atlantic Ministers of Education and Training 2015, para. 9)

While the language is hopeful, decisions by the Department of Education in reforming the Kindergarten to Grade 3 curriculum do not seem to bode well for real commitment to ESD in the province. Addressing the concern for raising test scores and increasing accountability, the Minister of Education is committed to "fundamental changes to improve and *modernize* [emphasis added] the education system for the first time in a generation" (Nova Scotia Department of Education and Early Childhood Development 2015, p. 5). The modernisation referred to by the Minister means that the K–3 curriculum will focus on Math and Literacy, which are deemed

to be core subjects. One may argue this approach constricts the breadth of the curriculum and reflects typical neoliberal education approaches primarily concerned with accountability, standardisation, and achievement scores (Van Heertum and Torres 2011). While the plan to integrate the teaching of other subjects into Math and Literacy aligns with integrative, interdisciplinary approaches of ESD, the K–12 curriculum will be severely constricted in the coming years without an accompanying vision and a theoretical framework to support professional development designed to effectively prepare teachers to implement integrative, project-based learning in the classroom.

In Nova Scotia, the promotion and implementation of ESD has primarily been taken up by an organisation called Sustainability Education in Nova Scotia for Everyone (SENSE). This group represents a network of governmental, non-governmental, community, and industry groups. SENSE's current status and level of activity is difficult to ascertain as it currently does not have a web presence and its contact information is difficult to find. Efficiency Nova Scotia, an independent non-profit organisation funded by the province's electrical utility, provides financial support for Green Schools Nova Scotia:

Efficiency Nova Scotia, Green Schools teaches students about energy efficiency and helps schools reduce their environmental footprint. We work with the whole school—students, staff, parents, and community members—to strengthen positive efforts already underway and help establish new leadership in schools that are ready to go green. (Andrea P. 2014, para. 2)

The focus of Green Schools Nova Scotia is on largely environmental issues and energy conservation, and, significantly, it does not explicitly reference ESD. Environmental education that makes direct links to the health, well-being, and economic prosperity of communities in Nova Scotia instead has fallen to long-standing donor-funded NGOs, such as the Ecology Action Centre, based in Halifax, and the Atlantic Coastal Action Program (ACAP) in Cape Breton.

11.2 Teacher Education and ESD

In 1998, realising that teachers were crucial to the success of any effort to use education to promote sustainability, efforts were initiated by UNESCO to reorient teacher education. A UNESCO Chair on Reorienting Teacher Education to Address Sustainability was established at York University in Toronto, and an international network of 30 teacher education institutions in 28 countries began planning to move the initiative forward. It is not surprising that faculties of education and teacher educators are identified as "key change agents in reorienting education to address sustainability" (Hopkins and McKeown 2005, p. 12). Teachers, and the education and preparation teachers receive, are critical to any effort to use education, specifically schooling, to foster more sustainable societies.

The unique challenges faced by Atlantic Canada regarding teacher education and ESD are related to shifting demographics and a reliance on strained non-renewables (including mining, fishing, and oil and gas). For decades there have been calls for bold, creative responses to these challenges. A recent call came in the aptly named report, Now or Never: An Urgent Call to Action for Nova Scotians (Ivany et al. 2014). The report unabashedly insists that "there is a crisis, and it does threaten the basic economic and demographic viability of our province, most dramatically our rural regions" (Ivany et al. 2014, p. vii). The report calls on Nova Scotians to have the "courage", "imagination", and "determination" needed to reshape the province's future. While it is an economic document that recommends solutions largely driven by business and investment, the report does recognise a role for education, primarily entrepreneurial education. Although the Now or Never report does not reference ESD, its authors speak directly to the need for an educated citizenry able to meet the existing challenges. The values, skills, knowledge, and beliefs required to transform the province means that people need to be fully invested in the places they live they need to understand their rich history and culture, as well as respect and use with restraint the living ecosystems on which everything else depends.

While the *Now or Never* report is one start of the conversation, the province needs to take further steps. Sustainability will require people who can problemsolve, are creative and innovative, and are community-minded and motivated through direct inquiry-based learning that is authentic, is meaningful, and has a benefit for the community. Nova Scotia needs learning that values participatory, collaborative approaches that break down the barriers that block interdisciplinary connections and that encourages systems-thinking and local solutions to local problems. In other words, the principles of education for sustainability must be fully integrated at all levels of the public education system.

In Nova Scotia, top-down, policy-supported leadership on ESD is largely absent. NGOs wax and wane on the availability of funding. Industry-funded initiatives, such as Green Schools Nova Scotia (2015), are primarily environmental programmes aimed at energy conservation, and they lack the full vision and mandate required to reshape education. Despite this, there are local, school-based, teacher-and community-led initiatives that reflect the principles of ESD. They are flexible, are creative, and foster a sense of personal responsibility for place and planet. There are projects all over the province that encourage respecting and preserving our histories, valuing culture and community, caring for others and the environment, and taking real action for viable, sustainable communities in which people can live well. Teacher education institutions have an important role in supporting this work by reorienting teacher education for the values of sustainability.

11.3 Reorienting Preservice Teacher Education: Cape Breton University

In 2012, the CMEC, in partnership with LSF and the International Institute for Sustainable Development (IISD), surveyed Canadian teacher education institutions (TEIs) to "gain a better understanding of how they are incorporating ESD into their pre-service programmes, research, and other activities" (CMEC 2012, p. 1). Of the five TEIs in Nova Scotia, four were invited to respond to the survey. Of the four invited, two responded. While a full discussion of the research is beyond the scope of this chapter, it was reported that across Canada, "There is modest but promising progress toward reorienting teacher education to address education for sustainable development" (CMEC 2012, p. 2). At the time of the CMEC survey in 2012, Cape Breton University (CBU) was preparing to make education for sustainability a core focus in its preservice teacher education programme. The CBU reorientation was based largely on theoretical and conceptual frameworks related to the values-driven and normative undertaking that is ESD. In other words, faculty and staff were engaged in the necessary hard work of "decid[ing] which themes to emphasize within their curricula, programmes, practices, and policies to ensure that teachereducation programmes fit the environmental, social, and economic conditions and goals of their communities, regions, and nations" (Hopkins and McKeown 2005,

In the early phase of the reorientation to ESD, faculty and staff engaged in discussions that questioned how teacher education might be reoriented for the values of sustainability. It was believed such a reorientation could only be undertaken with a clear understanding of what constitutes these values and how people best "learn" these values. In outlining the specific values of sustainable development, the ESD Toolkit (McKeown 2002) refers to the Earth Charter as a reference point, recognising that values taught in school need to reflect:

The larger values of the society that surrounds the school ... a full range of values influenced by local traditions, aboriginal groups, ethnic populations, immigrants, religions, media and pop culture will be revealed, inventoried and considered for relation to and inclusion in ESD. (p. 23)

Being located in Unama'ki, the ancestral homeland of the Mi'kmaq people, aboriginal values, teachings, and education should be central to the reorientation process in Nova Scotia. Additionally, the *Earth Charter* sets out four basic values, or commitments, and 16 key principles that flow out of the basic values. The four broad commitments are (a) respect and care for the community of life; (b) ecological integrity; (c) social and economic justice; and (d) democracy, nonviolence, and peace (Earth Charter International 2016).

The document *Guidelines and Recommendations for Reorienting Teacher Education to Address Sustainability* (Hopkins and McKeown 2005) provided further guidance for the CBU reorientation. The document offers recommendations on change within institutions of higher education and within faculties of education, including recommendations on funding, research, partnerships, and communication.

These are worthwhile suggestions, but when designing transformational teaching practices to influence *values*, the "recommendations on change related to engaging pre-service and in-service teachers" (Hopkins and McKeown 2005, p. 43) were especially significant. It is recommended that teacher educators request preservice teachers to:

Analyze the mandated curriculum they will be teaching to identify themes related to sustainability and provide student teachers with opportunities to explore their own values and attitudes towards local sustainability problems while encouraging critical thinking and decision making that influence personal lifestyle and economic choices. (p. 44)

If preservice teachers in turn are to teach for the values of sustainability, they must be encouraged to question whether education, in its current form, may be an obstacle to realising sustainable communities. These communities can only be fostered within an educational framework that is "visionary and transformative and must clearly go beyond the conventional educational outlooks we have cultivated over the past several centuries" (O'Sullivan 1999, p. 4). For example, instead of simply analysing the mandated curriculum for themes that support the values of sustainability, preservice teachers must also be encouraged to inquire into how curriculum guides, textbooks, classroom practices, and teacher beliefs, as the main conveyors of curriculum in the classroom, may become tools in the perpetuation of values in conflict with values of sustainability. Textbooks (including novels), digital resources, current classroom practices, and teacher beliefs in public schools and in TEIs require critical reflection to determine embedded cultural assumptions that may or may not support educating for the values of sustainability.

While these key recommendations allow teacher educators and preservice teachers the opportunity to be critical as they access the personal and the experiential, they do not go far enough. The attainment of the values of sustainability is not commensurate with the knowledge we possess. Critical pedagogy (Kahn 2010) addresses the underlying structures responsible for the current crises, which students should be engaged in deconstructing and unpacking. Education in socio-political analysis is clearly important, yet the ability to critique must include building not only a knowledge base around these issues but also a deeper sensibility for the losses we have experienced from being separated from each other and from nature because of cultural ideologies predicated on competition, individualism, aggression, and consumerism (Howard 2011, 2012). Although this critique is necessary, we must, as Doerr (2004) argues, be moved from "I know to I care" (pp. 30–31).

11.4 Care, Pedagogy, and Sustainable Happiness

Reorienting a teacher education programme requires time for faculty and staff to explore and theorise the relationships and issues among social, economic, and environmental dimensions of sustainable development. These processes of inquiry and critical dialogue are crucial. Imposing the concept of sustainable development on

others contravenes the basic ESD tenet of collaborative knowledge building and supportive ways to identify and build on shared values. For such a critical discourse to take place, it was important to make sustainable development an open question for examination in the socio-political and socio-ecological contexts within which we work. Through dialogue and reflection, it was determined that efforts to foster in preservice teachers the requisite skills, knowledge, attitudes, and beliefs to teach for the values of sustainable development must be firmly grounded in the relational. The work of Noddings (1984, 2002) in care theory helped us to better understand how the values of sustainability may best be attained by preservice teachers and to identify the types of learning tasks best suited to accomplishing this goal. We drew on van Manen's (1991, 2002) phenomenological interpretation of pedagogy as it offered a deeper sense of how to structure learning opportunities in faculties of education. As well, O'Brien's (2012, 2013) concept of sustainable happiness provided a framework by which the faculty and staff could challenge long-held and often unexamined assumptions and behaviours. We could then use this awareness to lead initial teachers in understanding the interrelatedness of the environment, society, and economy and have this interrelatedness be evident in their teaching and their lives as community members. An appreciation of how interrelatedness plays out on the campus and in daily life is a first step.

Noddings's (2002) work on care theory posits that values cannot be taught directly but are "defined situationally and relationally" (p. 2). Central to Noddings's work are her components of values education: modeling, dialogue, practice, and confirmation (pp. 15-20). Noddings believes that, as carers, we attend because we want to, that "we love the ones who address us or have sufficient positive regard for them or the request is so consonant with ordinary life that no inner conflict occurs" (p. 13). In describing this encounter as one of "natural caring", the I must is an expression of desire, not a recognition of duty. Noddings's first component, modeling the values of sustainability as a way of being in the world, allows teacher educators and institutions to communicate the values, as they are lived, in the classroom. Teacher educators who are committed to interdisciplinary course work, who support participatory learning, who seek ways to incorporate shared decision-making, and who provide opportunities for initial teachers to reflect on their own values and explore issues around local sustainability create powerful opportunities to foster the values of sustainability. Van Manen (1991) calls this the living out of a relational commitment to students and "the possibility of a new pedagogy" (p. 3); this new pedagogy requires us to "stand in a relationship of thoughtfulness and openness to young people rather than being governed by traditional beliefs, discarded values, old rules and fixed impositions" (p. 3).

Noddings's (2002) second component of care theory is *dialogue*, which is described as open ended, involving careful listening and attending, and as "the most fundamental component of the care model" (p. 16). Dialogue is also at the heart of van Manen's (1991) interpretation of the "pedagogical relation" (p. 83). Attending to the other—to thoughts, feelings, memories, and experiences as they come out of conversation or out of response to reading and viewing—may serve as a space to deepen student teachers' understandings of their place in the world. Dialogue will

inevitably involve questions that require knowledge, reasoning, and even debate. It is important, however, that we not close off further questioning with "answers". The efforts to reorient education for the values of sustainability will require *un*learning and *re*learning. It calls for developing awareness that how we relate to the world is socially constructed and that education is a major purveyor of hegemonic practices and beliefs.

11.5 Concluding Thoughts

In many ways, CBU is just beginning to reorient preservice teacher education, and it has taken important first steps. All preservice teachers at CBU must take a course in Sustainability Education, EDUC 4114: Teaching and Learning for a Sustainable Future (see Root 2014). This course is designed to allow students to acquire knowledge of theory related to Education for Sustainability (EfS) and to consider the complexities of its pedagogical implementation. The terms Education for Sustainability (EfS) and Education for Sustainable Development (ESD) are used interchangeably in Canada (McKeown and Nolet 2013). The term preferred by CBU faculty and staff was EfS, as it avoids the contention sometimes associated with the word "development". In the core course, EDUC 4114, students are introduced to societal perspectives related to systems thinking, globalisation, and how historical events have influenced the development of the scholarship and practice of EfS. The course focuses on the competencies for educators in EfS and provides preservice teachers with opportunities to build practical strategies to implement a holistic approach to learning. Students learn from the experiences of teachers, schools, students, and community organisations that have implemented EfS to organise the learning environment. In addition to theory and the scholarship of sustainability, students are engaged in experiential learning activities ranging from creating art in the natural environment to participating in urban neighbourhood adventures designed to introduce strategies for place-based learning (Root 2014).

Preservice teachers also have the opportunity to take a popular elective course, EDUC 4104 Sustainable Happiness (see O'Brien 2010). Through lectures, group work, readings, and assignments, students investigate the applications of positive psychology in their lives, in society, and in the environment. Through the practice of "happiness skills" to increase happiness literacy, students examine the social messages related to happiness and well-being that influence values, beliefs, behaviour, and life choices (O'Brien 2010). In addition to these courses, ESD principles and practices are integrated throughout each course in the B.Ed. programme. As well, students can complete an Aboriginal Education Option that focuses on language preservation and Mi'kmaw education models, teachings, and cultural practices. Work continues on professional development for sessional instructors and on the creation of a graduate programme in Sustainability, Creativity, and Innovation. Faculty research agendas are growing to include questions related to sustainability

education. As sustainability is an evolving process, so too is the journey to reorient a teacher education programme.

The future prosperity and well-being of Atlantic Canadian communities requires a critical consciousness of our challenges. It also calls for the creativity and investment of those who are committed to living here and living well. A different definition of wealth and prosperity is needed. Halting the mass exodus of young people out of rural communities requires a progressive definition of community. In many ways, it means revitalising values that have fallen by the wayside in the rush to modernity—values that have allowed people to survive and thrive here for hundreds of years. Communities are dynamic, and they create a context for interdependence. They teach the skills of leadership and the power of local action. Communities are about knowing a place and about seeing the connections and networks that exist between the local and the global. Schools are central to the community ecosystem. ESD allows us to think about how our schools enable or inhibit the natural development of community.

Teachers are community leaders and understanding how to reshape our communities and live well in our places is essentially an educational challenge. However, for the foreseeable future in this region, reshaping our communities for different values will remain largely a grassroots endeavour. We are in need of teachers who believe that a revised form of education can play a transformational role in cultivating a cultural shift towards a more sustainable way of living, thereby providing us with a clearer sense of a way forward. As the eco-theologian Thomas Berry put it, we are in need of a new story—a story that places education at the heart, where the focus is on the practicalities of community renewal and regeneration and on the creation of start-ups to meet real needs. Teachers with the right preparation can be at the centre of this shift and see it as a time of creative innovation and opportunity.

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