



Education for Sustainable Development as Part of the Initial Training of Teachers in the UK

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I INTRODUCTION

Training teachers has been seen as one of the best ways to embed Education for Sustainable Development (ESD) within the educational system. However, despite calls to re-orientate education towards sustainable development, progress in many countries has been slow. There have been notable exceptions, such as in Scotland, Sweden, and some provinces in Canada. All too often, however, themes of sustainability have been seen as just another body of knowledge that needs to be included (often in the

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natural sciences) and not as an opportunity to re-think the social purpose of education or to promote different pedagogical approaches (Scoffham, 2013; Swedish Council for Higher Education, 2021; Vaughter et al., 2016). Education for Sustainable Development, by definition, poses questions about the purpose of education and how subjects and themes should be taught.

This chapter aims to address these issues by focusing on how initial teacher education (ITE) has responded to the need to address sustainable development, by reviewing policies and practices in the United Kingdom (UK), with a particular focus on opportunities and obstacles within one university. The chapter addresses the enthusiastic participation of teacher educators and the extent to which teacher education programs are constrained by national curriculum priorities. It concludes by recognizing that, increasingly, the demand for greater inclusion of sustainability themes within initial teacher training programs has come not from teachers or administrators, but from students themselves, and that the enhanced profile of sustainability, and particularly climate change, has been driven largely by the wider society.

2 EDUCATION FOR SUSTAINABLE DEVELOPMENT AS PART OF INTERNATIONAL POLICIES AND RESEARCH

The concept of Education for Sustainable Development (ESD), or related terms such as education for sustainability, sustainable learning, or sustainable education, has, over the past two decades, become an important part of international educational policymaking, research, and practice. This growth in international interest has been helped considerably by the UN Decade on Education for Sustainable Development from 2005 to 2014 (Chalkey et al., 2010; Firth & Smith, 2017).

Since then, UNESCO has continued to promote sustainable development (alongside global citizenship and quality education), as one of the three main elements of its education strategy. The Sustainable Development Goals, particularly Target 4.7, have also helped to keep sustainability at the top of UNESCO's educational agenda:

By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global

citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development. (UNDP, 2016)

Alongside these international commitments, there has been a growing body of research on the ways in which ESD is being increasingly mentioned within teacher education research. This includes recent literature which indicates a growth in the integration of ESD into education programs (Murillo-Vargas et al., 2021). There have been numerous studies that indicate the growth of ESD in the primary curriculum (Álvarez et al., 2019; Cebrián & Junyent, 2015; Martínez et al., 2020, Muñoz et al., 2020). There have also been studies that have been conducted on undergraduate (Akça, 2019; Manasia et al., 2020; Soysal & Ok, 2022) and post-graduate programs (Ortega et al., 2020; Varetska et al., 2019) that have focused on research on sustainability competencies of students or student teachers.

Several studies indicate that student teachers show positive attitudes towards sustainable development (Akça, 2019; Andersson et al., 2013; Cebrián & Junyent, 2015; Soysal & Ok, 2021). Additionally, other studies demonstrate the influence that the perceptions of teachers and ESD competencies have on the preparation of students for the future (Anyolo et al., 2018; Bulut & Çakmak, 2018; Pegalajar-Palomino et al., 2021).

The incorporation of ESD into teacher education is also highlighted in broader research studies. ESD is recognized as a key factor for training responsible citizens (Albareda et al., 2018). Higher education is also considered as key to training prospective teachers to aid in transforming society (Bourn & Soysal, 2021; Cortese, 2003; Leal Filho, 2011; Pegalajar-Palomino et al., 2021). The UNESCO report, "Progress in ESD and Education for Global Citizenship," also emphasizes the importance of ESD in teacher education for the creation of sustainable societies (2018). However, the findings of this report indicate that the integration of ESD into global pre-service and in-service teacher education programs are insufficient (UNESCO, 2018).

While studies highlight the importance of developing a training course for ESD integration and its positive effects on teachers (Andersson et al., 2013; Merritt et al., 2019; Solís et al., 2019; Vega et al., 2015), a study by Dahl (2019) on seven teacher-education programs in Europe indicated that student teachers felt less prepared to teach sustainable development through add-on ESD courses. As a result, Dahl emphasized the importance of developing an integrated model for ESD in initial teacher

education (ITE) programs, focusing on course content, values, and ethics, as well as the pedagogy and didactics of the programs.

As teacher education programs in Europe increasingly focused on teaching about sustainable development, Solís et al. (2019) emphasized the importance of the reorientation of teacher education programs in order to integrate ESD into the curricula. García et al. (2020) indicated the shortcomings of a content based ESD approach, stating that teachers are knowledgeable about sustainable development, but there is an increasing need for a focus on teaching strategies for ESD in higher education.

There is some evidence that this focus is gaining recognition. Evans and Ferreira (2020) indicated the importance of sustainability pedagogies in teaching the topics of sustainability such as climate change, bio-diversity loss, and social inequality. The need to consider ESD as a distinctive pedagogy is evidenced in a variety of studies. This suggests that traditional approaches to education, such as lecturing and demonstrations, limit the capacity of individuals to think and act sustainably (Segalàs et al., 2010; Sterling, 2012). There is, therefore, a need to consider more transformative approaches, such as active learning, participatory education, and experiential learning in teaching sustainability (Bourn & Soysal, 2021). An example of this has been Sipos et al.'s (2008) "Head, Hands and Hearth" approach which brings together all the cognitive, behavioural, and affective domains to create transformative learning experiences through the use of role-playing, simulations, case studies, and critical reading activities.

There are a number of studies that have reported the integration of ESD into higher education in different countries (Azman et al., 2010; Blass et al., 2010; Milutinović & Nikolić, 2014; Vaughter et al., 2016). For instance, in Australia, the national curriculum from Preparatory Year to Year 10 aims to help students live more sustainably, and furthermore, sustainability is recognized as a strategic priority (Evans et al., 2021). In teacher education, service learning is considered as a way to promote multicultural and inclusive pedagogies and a way to help students understand social justice issues (Boyle-Baise, 1998; Evans et al., 2021). While some universities have a sustainability framework and sustainability and social research groups, there are other universities that align their mission, values, and strategic objectives with sustainability objectives.

In Sweden, ESD is a part of government policy with the aim that sustainability is integrated into all levels of education. For Initial Teacher

Education (ITE), ESD is among the qualification descriptors in the Qualifications Ordinance of the Swedish Higher Education Act and all universities are responsible for promoting ESD (Swedish Council for Higher Education, 2021).

A similar goal can be seen in Scotland where, since curriculum reforms in 2005, Learning for Sustainability (LfS), has been a major feature of the ITE curriculum. There is, however, some debate as to whether sustainability is still seen as an add-on rather than being fully embedded in the curriculum (Nicol et al., 2019, p. 27, as cited in Evans et al., 2021).

In Ireland, there is a focus on the environmental, economic, and social dimensions of sustainability in both research and in teaching. Pre-service teachers explore the concepts of education, diversity, and social justice in the Professional Graduate Diploma in Education (PDGE) curriculum (Evans et al., 2021). In Canada, there is an ESD policy for K-12 education in some provinces. As for ITE, there are some regional studies led by teacher educators and in accordance with the UNESCO Chair on Reorienting Teacher Education for Sustainability (Evans et al., 2021). Canadian universities and other higher education institutions are working on embedding sustainability into their planning frameworks; however, these are mostly limited to environmental mandates (Aikens et al., 2016; Vaughter et al., 2016 as cited in Franco et al., 2018). It has also been documented that, while there is a focus in America, Asia, and the Pacific on integrating ESD into the curriculum, Europe has focused more on environmental aspects of ESD. In Africa, social sustainability is perceived as the major priority in higher education (Franco et al., 2018).

A review of policies and research has shown that there are significant differences and debates about the extent to which ESD policy and practice has been implemented in higher education institutions. What is still under-researched is the extent to which there is an alignment of policy, curriculum, and practice within the global sustainability agenda (Franco et al., 2018). There are also other areas which need further research. These include: sustainability in a wide variety of disciplines, the limited training available that is designed to promote sustainability integration into the curriculum, the lack of a collaborative approach for students and teachers to become involved in sustainability issues, lack of content, and insufficient time (Barth & Rieckmann, 2015; Franco et al., 2018). What the evidence suggests is that in many countries, there is a lack of effective collaboration among key stakeholders towards common strategic goals. There is also a need to identify the extent to which policies and initiatives

should be driven by governments in response to demands by teachers and students. England provides a good context in which to explore and assess some of these challenges and issues.

3 RESEARCH ON INITIAL TEACHER EDUCATION IN THE UK

A study by Perry et al. (2019) that researched initial teacher education (ITE) in the UK suggested:

Published research with any explicit discussion of the curriculum for initial teacher education proved hard to find. Much of the research in initial teacher education covers issues such as the balance of theory and practice; the roles of universities, schools, and mentors; the professional practices and identities of initial teacher educators; and the impact of adherence or otherwise to professional standards.

Further, they suggested that where there was some research on the ITE curriculum, it tended to focus on negative points such as failings and missed opportunities. Other studies have also noted the negative external factors that influence ITE, such as an over-emphasis on standards, assessment, effectiveness, and accountability (Philpott, 2014). In England, compared to the rest of the UK, there has also been an emphasis on subject-based knowledge (Field, 2012).

Researchers and academics engaged in teacher education have suggested that, in addition to subject-based knowledge and skills to deal with behaviour and assessment, student teachers need to know about pedagogical approaches to teaching their own subjects (Murray & Kosnik, 2011). Bourn (2012) emphasized the potential of some subjects like science, religious education, foreign languages, and mathematics to integrate global dimensions and ESD-related themes, skills, and values. There is also a need, he said, to make a distinction between subject knowledge and pedagogical subject knowledge for the integration of global learning and sustainable development into each subject. It is important to recognize global learning and sustainable development as a pedagogical approach for the construction and application of knowledge within a subject, in order to integrate different perspectives and critical reflections.

According to the Sustainability Skills Survey (NUS, 2016), there is a high demand among UK students for having ESD-related content in their

courses at universities. As universities in the UK operate in a competitive environment, the needs of students are prioritized and courses are developed accordingly (Fiselier et al., 2017). Another trend in higher education institutions in the UK is the People and Planet University League table that encourages universities to focus on ESD in their curricula (Fiselier et al., 2017). In this way, each university is allowed to choose its own method to integrate ESD into their programs. Many universities provide undergraduate training and some teach postgraduate courses in ESD. There are also some universities that provide co-curricular and extra-curricular activities which focus on ESD.

Studies on institutions in the UK that integrate ESD into the curriculum document several approaches (Fiselier et al., 2017). While some of them have a top-down approach that requires all of the programs to integrate ESD into their curriculum, there are others that leave this matter to the discretion of academicians. Barth and Timm (2011) call out the types of integration as “the inclusion of sustainability related topics to courses, adoption of new learning approaches, development of independent courses and integration of ESD into existing curriculum” (as cited in Fiselier et al., 2017, p. 396).

There are some barriers to the integration of ESD into the curriculum, such as how to engage staff in ESD, a lack of information about sustainability concepts and environmental issues, or how to link ESD with their disciplines. Staff might also find working across disciplines difficult (Thomas, 2004, as cited in Fiselier et al., 2017). On the other hand, there are success factors, including institution-wide people support, high-level institutional support and funding, QAA (Quality Assurance Agency), and HEA (Higher Education Academy) guidance supporting ESD commitment (Fiselier et al., 2017). Indicators of success include the active engagement of staff, the use of curriculum materials, and the field of ESD being recognized strategically across the university with appropriate funding and research resources provided (Cotton, 2006; de la Harpe & Thomas, 2009; Fiselier et al., 2017).

4 CHANGING VIEWS OF AND SUPPORT FOR ESD WITHIN EDUCATION IN THE UK

Education for sustainable development was recognized as a cross-curricular theme in schools before 2010, with appreciable interest and support of teacher educators. This encouraged teacher educators to further promote

and support teacher education aimed at bringing broader social purposes to education. Numerous initiatives were undertaken by the Labour government of the time, including the Sustainable Development Education Panel policy initiatives, the Sustainable Schools Programme, and a series of publications published by the Department of Education, the Qualifications and Curriculum Authority (QCA), and the Office for Standards in Education, Children's Services and Skills (OFSTED). While many actively engaged teacher educators were enthusiastic about these initiatives, the process of integrating them was rather top-down, and little consideration was given to upskilling the profession of teachers and teacher educators. One of the few teacher educator resources produced was a series of online courses and models of good practice, but their impact was minimal as they only became available after the change of government in 2010 which had a very different view of ESD within the curriculum (Bourn et al., 2017).

A comprehensive study was conducted by the UK Teacher Education Network for Education for Sustainable Development and Global Citizenship (TEESNet) regarding the approach of teacher educators to ESD and Global Citizenship (ESDGC) in their courses. The aim of the study was to establish the pattern of teacher education provision for ESD and global citizenship across the UK. As a result, it was found that there were different ways of covering ESDGC across and within institutions. In particular, they found that ESD was not being embedded into the individual programs. For that reason, it was recommended to incorporate comprehensive ESDGC into teacher education programs (Hunt et al., 2011).

The report indicated the ways in which ESD is covered in ITE programs across the UK:

- ESD was understood in different ways within ITE institutions and within the individuals in an institution. Also, regarding the definition and use of ESD, coherence between institutions was limited.
- ESD was covered in a variety of ways in different institutions. Mostly, it was not embedded into the institutional provision, but instead was included in only a few subjects, mostly sciences and geography.
- There was a lack of comprehensive co-ordination of ESD within many ITE institutions. ESD was often ad-hoc or driven by individuals with limited support. External support and funding encouraged better integration and more coordinated approaches to ESD.

- Most ITE institutions received the support of external bodies, such as NGOs, on ESD for teaching sessions and in providing resources. Most providers did not cooperate with other ITE providers in the provision of ESD, nor did they have strong international links around ESD.
- The barriers most cited in the integration of ESD into ITE were a lack of time and of funding, limited staff involvement, and a lack of tutor expertise.

Hunt and McGough (2012) provided support for teacher educators to embed global dimensions and sustainable development in postgraduate courses. They presented models of integration, related pedagogy, and resources to teacher educators; they also provided subject-specific guidance with detailed examples and specific resources for ESD.

In 2014, the steering group of the TEESNet published a report presenting case studies on how to bring ESD into the curriculum in different subject areas and an audit for evaluating ESD in teacher education, in order to guide teacher educators and student teachers in how to embed ESD into the teacher education curriculum (Belgeonne et al., 2014).

Since 2014, there have been few policy documents on ESD, but in 2021, Advance Higher Education (Advance HE) and QAA published a document titled “ESD Development Guidance” for the purpose of guiding UK higher education institutions in incorporating ESD into their curriculum and emphasizing the importance of the role of the higher education sector in addressing sustainability issues. They made ESD a part of strategic priorities and policies, integrating ESD into existing courses or validating new courses; making ESD central to staff and student induction processes; articulating ESD within quality improvement processes; and emphasizing staff development to support ESD (Advanced Higher Education, 2021). With the help of academic experts and business and student committees, they aimed to provide students with “the skills necessary to develop values and take actions to transition society towards a sustainable future” giving help in curriculum design and teaching, learning and assessment approaches (Advanced Higher Education, 2021).

Finally, in November 2021, in response to the growing demands to raise the profile of sustainability within schools, the Department for Education published a draft strategy that, while highlighting climate

change, also proposed that teachers and schools cover these areas in their curriculum. The focus of this strategy is, however, on climate education within the natural sciences and an emphasis on knowledge and facts (DFE, 2021). The strategy also makes no reference to sustainability being part of the core framework for teacher training.

5 EXAMPLE OF ENGAGEMENT WITH SUSTAINABILITY IN A UNIVERSITY TEACHER EDUCATION PROGRAM IN THE UK

The initial training of teachers in the UK is heavily regulated and the spaces and opportunities to introduce broader social themes into courses is limited. This is due in part to the limited amount of time teacher educators have with student teachers outside of classroom observations, and the influence of a subject-based curriculum. This has meant that bringing sustainability themes into the classroom, apart from within subjects such as the natural sciences or geography, has been limited. A consequence of this has been that there have been more references to sustainability themes either in undergraduate education programs or as one-off activities within specific courses (Bourn & Soysal, 2021).

One university in London, however, has aimed to address these challenges by developing a strategy that aims to bring sustainability themes across a range of courses. This has included debates on environmental justice, encouraging inter-disciplinary initiatives between subject tutors, and linking initial teacher training to an ongoing program of professional development. In addition, optional initiatives, such as a free online course on sustainable development, are being planned. A feature of these initiatives was the desire to move beyond seeing sustainable development as just a body of knowledge to seeing it as a way of encouraging debate among student teachers about the whole purpose of their profession and its relationship to societal needs. A specific example of this was a course for all student teachers that directly addressed the concerns of the Black Lives Matters movement, and in which the concept of environmental justice was introduced. The course outlined themes such as the linkages between discrimination, social conditions, and the environment. Evidence from this one institution suggested that there was more space and opportunity for ESD within the initial training of primary school teachers than there was for the training of secondary teachers in that primary school education is

less focused on subjects. For example, the team responsible for training initial primary school teachers established a special online platform covering what teachers can do both in the classroom and outside of it with a particular focus on climate justice.

Other initiatives for initial secondary school teachers included demonstrating ways in which sustainability themes are relevant to all subject areas—in the arts as well as the sciences. A particular focus here was to develop a mentoring scheme for beginning teachers in response to the challenges they may encounter in the classroom and the extent to which sustainable development can be seen as a complex issue.

Another example of the way in which ESD can be seen as more than an additional body of knowledge is the way in which the ESD is being addressed within the institution in the initial training of Religious Education student teachers. While this subject area has more flexibility in terms of content than, say, geography and the natural sciences, courses have consciously linked sustainability themes to spiritual matters, considering how different religions regard the environment and the earth. One specific way this has been done has been through the use of the Earth Charter, an initiative that has the support of UNESCO and which aims to bring together the themes of the environment, development, human rights, and peace.

6 SECURING CHANGE WITHIN TEACHER EDUCATION BODIES

These examples suggest that, despite the obstacles that might exist, there is a desire on the part of many teacher educators and students to not only give higher prominence to sustainable development within teacher education courses but also provide an opportunity to re-think its aims and purposes. This interest is supported and encouraged by the literature and research in the field. The following suggestions point to how much more can be done to promote sustainability themes within teacher education.

First, the *motivation and enthusiasm* of teacher educators and teachers need to be better utilized. Numerous studies have demonstrated the value and importance of compassion for teachers and teacher educators, belief in social justice, and support for the environment (Birdsall, 2013; Borg et al., 2014; Burmeister & Eilks, 2013; Corney & Reid, 2007; Jaspas, 2008; Jones et al., 2008; Nickel, 2007; Summers et al., 2003; Ull et al., 2014; Yang et al., 2010). Individual efforts can often have a limited impact,

reflected in specific modules and courses, unless they are related to broader institutional support (Montemurro et al., 2014, in Canada; Wisely et al., 2010, in Scotland; Scoffham, 2013, in England).

Related to the points above is ensuring that there are ways to address *competing priorities*. Teacher education has always been faced with the challenge of a very crowded curriculum, and themes such as ESD all too often end up in the margins or as optional extras of a programme. This means that leadership from within the institution is necessary to prioritize ESD as essential to the training of teachers.

In order to take forward the engagement in ESD, there needs to be space within the teacher education curriculum to consider distinctive *pedagogical approaches*. There is an inevitable tension within ESD over what should be the main elements of the approach to teaching and learning. Some educators have emphasized explicit knowledge and close attention to use of textbooks (Bajaj, 2012; Darling-Hammond & Liebermann, 2012; Griffin, 2012; Kithuka, 2015); others have suggested a more transformative approach to learning (Bourn & Soysal, 2021; McKeown & Hopkins, 2010; Sterling, 2001).

There is a need for debates about ESD to more directly address the international policy initiatives around *skills and competencies*. The focus on teacher competencies has become an increasingly influential part of the discourse, including within a number of new initiatives in Europe and North America (Barth et al., 2007; Besong & Holland, 2015; Sims & Falkenberg, 2013; Lasen et al., 2015; Mischo, 2015; Soysal & Ok, 2022; Varga et al., 2007).

There is a need for institutions to *support teacher educators to undertake research and gather evidence from their own courses* on how ESD might become an integral component of their teaching and learning. For instance, the study of Firth and Winter (2007) indicated how Post Graduate Certificate of Education (PGCE) student teachers could be trained about sustainable development in geography courses in the UK. Ferreira et al. (2007) studied professional development models of sustainable development in initial teacher education in Australia indicating that initial teacher training is a strategic opportunity for the teaching of sustainable development. These examples could easily be replicated across universities elsewhere.

Finally, there is a need for teacher education institutions to recognize the *value of extracurricular activities* as part of the learning process around ESD. Poeck et al. (2019) suggest that if we want our students to understand sustainability problems deeply and to find solutions to these

problems, ESD should be designed beyond traditional schooling practices in order to include learning about problems of local sustainability and demonstrating the social relevance of teaching and learning.

Moving ESD forward within teacher education thus poses some bigger questions about the purpose and role of education in general, the motivations and enthusiasms of both teacher educators and the student teachers, and the external forces that can influence change.

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