

FEATURE ARTICLE**Teacher Education for Sustainable Development in Scotland**

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Introduction

In the Spring 2001 issue of *Environmental Education*, Charles Hopkins outlined the work of UNESCO in 'Re-Orienting Teacher Education to Address Sustainability'. In this article he mentioned the involvement of the involvement of Scotland through the University of Edinburgh, and England through the University of Bath. Whilst neither organisation would claim to be the sole proponent of Education for Sustainable Development (ESD) both have made a significant commitment to addressing this issue and are involved in the UNESCO project (Hopkins, 2001). The purpose of this article is to outline the status of ESD in Scotland and discuss the constraints, implications and opportunities for teacher education. We further discuss the response of our own institution to this issue.

The purpose of the project undertaken by UNESCO on behalf of the United Nations (UN) is to 're-orient teacher education to address sustainability'. Moray House Institute, which is now the Faculty of Education of the University of Edinburgh, is one of the primary locations for teacher education and associated disciplines in Scotland. It has been involved in the project since 1997 and was one of the original ten teacher education institutions in the world to make a commitment.

The following report sets out the UK context for the project, its significance for the University of Edinburgh and other teacher education institutes in the UK. It also proposes several research projects and developments for the Faculty of Education.

National Policy on Sustainable Development in Scotland

In the UK there is a clear government commitment to sustainable development and several key documents explicate that policy. Sustainable development is a matter of widespread public discussion and the Deputy Prime Minister of the UK has responsibility for the policy and its implementation. Whilst this is an indication of the political profile of the issue in the UK, there are particular circumstances which relate to the situation in Scotland.

In July 1999 a Scottish Parliament convened in Edinburgh for the first time in almost 300 years. Whilst Scotland remains a part of the UK a wide range of responsibilities and powers have been devolved to this parliament, which include a number of policy areas central to education for sustainable development. These include environment, education, transport and health. However some important policy areas such as energy and some fiscal measures are not devolved and this gives the parliament less room for manoeuvre.

As a signatory to Agenda 21 the UK government and hence Scotland is committed to its principles. These

have been identified in Scotland through publications such as 'Down to Earth: A Scottish Perspective on Sustainable Development' (1999), which endorses the social, economic and educational aspects of sustainable development; and through the publication of the report of The Secretary of State for Scotland's Advisory Group on Education for Sustainable Development which focuses specifically on education.

In February 2000 the Scottish Parliament passed a motion committing itself to placing sustainable development at the core of its work and in August 2000 the Scottish Minister for the Environment published a draft comprehensive environmental strategy. Although given credit by commentators for its attempt to open up discussion on sustainability issues, it was roundly criticised for a 'business as usual' approach and a lack of practical ideas. This is not to suggest that until now there has been no policy on sustainable development, rather that it has been piecemeal rather than integrated. Consequently the general public has largely remained unaware of public policy in this area.

In March 2001 the Scottish Minister for the Environment announced his retirement and the First Minister decided to spread the work of the ministry through other departments in the parliament. Whilst this may be seen as an attempt to integrate environmental policy most commentators fear that the lack of profile will be detrimental to both environmental and ESD policy.

Education and National Sustainable Development Policy

There is no explicit linkage between the educational system and the national sustainable development policy, and although in general terms the importance of education for the success of the policy is recognised, there is no mention of its role in the August 2000 draft environmental strategy. Although aspects of education for sustainable development are to be found in a number of places in curricular guidance in Scotland these neither permeate the curriculum nor are they gathered together into a single integrated ESD theme. Although individuals in schools and higher education institutions are committed to ESD the lack of policy direction leaves the area vulnerable.

Teacher education has no explicit recognition in the national sustainable development policy. However, in numerous policy statements the importance of education is fully acknowledged in enabling government policies to be realised.

The true drivers of educational policy in Scotland are standards and inclusion. There is concern that the educational achievements of school students in Scotland are not as high as they might be and

consequently there is a publicly stated government commitment to raising standards of achievement in schools. The first Bill to be passed by Scotland's parliament was concerned with raising educational standards: targets are being set and education authorities and schools are expected to evolve and monitor the implementation of clear policies concerned with the enhancement of standards. The standards being invoked relate to literacy, numeracy and performance in national end-of-school examinations.

Following recent pay and conditions negotiations between teacher unions and the Scottish parliament there have been significant improvements in these conditions. As part of the 'package' additional expectations relating to in-service training etc have been written into teachers' contracts, again with the intention of raising national standards of achievement.

The commitment to raise standards is taken to extend to the whole of the school population and not just to the most able students. There is a powerful government commitment to removing the obstacles that impede educational progress and which prevent young people from taking full advantage of the educational opportunities provided. Whilst extensive provision also exists for informal education, similar national themes are pursued and there appears to be little emphasis on ESD.

Structure of the Educational System at National Level

It has been said that education in Scotland is a partnership between central government, local government, and schools. It is the purpose of central government to determine the nature of educational provision, to prescribe the conditions under which education is provided, and to determine the resources that will be allocated to sustain it. It is the function of education authorities, of which there are 32 in Scotland, to ensure that appropriate provision is made for education in their area and to ensure that it is in line with national requirements. It is the responsibility of schools to deliver to students in a particular locality an appropriate education in line with the national guidelines as mediated by education authorities.

Whilst there is no national curriculum prescribed by statute, there is nevertheless a national framework which is universally acknowledged to constitute an appropriate curriculum (5-14 Guidelines). That curricular framework in the primary school covers the following: language studies; mathematics; expressive arts; environmental studies; and religious and moral education. In the secondary school the curriculum framework covers: language, mathematics, social studies, science, technology, physical education, and religious and moral education. These areas of study are not legally binding on schools: nevertheless, there is a strong professional consensus that these represent the major domains of human enquiry and reflection, into which all pupils as a matter of right, are entitled to be initiated.

National standards of achievement are established by ensuring that there is a single examining body - The

Scottish Qualifications Authority - which sets on an annual basis examinations that are taken by all pupils at age 16 and again at age 17/18. Performance in these end-of-school examinations provides the basis for entrance to higher education.

Teacher Education in Scotland

In Scotland teacher education is based in six centres, all of them with a very considerable tradition of specialist work. The largest and oldest of these centres, at Edinburgh and at Glasgow, trace their roots to the early years of the nineteenth century. Five of the centres were for many years independent bodies which formed together a separate sector of higher education in Scotland. However, partly in response to intensifying financial pressures, and partly in response to the need to enhance the quality of their work, these teacher education centres are now all formally part of universities as departments or faculties and confer university degrees and other awards to those who successfully complete their studies. Each centre offers a full range of training opportunities for work in primary schools and in secondary schools, although there are some areas of specialist provision with, for example, physical education training and further education training being restricted to certain institutions.

All programmes of teacher education in Scotland have to comply with national guidelines which are issued from time to time by the Secretary of State/First Minister, who is responsible to Scotland's Parliament for the quality of education in Scotland. These guidelines are intended to reflect a professional consensus on the skills and understandings and other capacities teachers need to acquire if they are to contribute effectively to the work of the schools.

Another significant feature of teacher education programmes in Scotland is that they are all required to be accredited by the General Teaching Council for Scotland. That body, the majority of whose membership comprises practising teachers, has been the voice of the teaching profession in Scotland since 1965. It, in effect, controls entry to the teaching profession in Scotland and therefore is entitled to satisfy itself that programmes offered in the various centres are in line with professional expectations and with the changing needs of schools, as well as being sufficiently rigorous to earn university awards.

Whilst programmes are required to demonstrate that they are compatible with the national guidelines before they can be taught, there is scope for variation between institutions on the nature of the curriculum they provide. Nevertheless, embedded in the guidelines is a set of competencies based on a functional analysis of teaching. Every aspect of a teacher education programme has to demonstrate how it fosters the competencies, and in granting a teaching qualification an institution is affirming that students have demonstrated the required competencies.

Education for sustainable development forms part of the guidelines for teachers in Scotland. These include two specific references to teachers being knowledgeable about sustainable development and competent to

contribute to ESD. Although Environmental Studies is one of the areas listed for study, this is an umbrella term for a range of subjects which are taught between the ages of 5 and 14 and which, in broad terms, deal with knowledge about the environment rather than ESD. 'Education for Sustainable Development' is listed as an option which teacher education institutions may make available. Therefore it is left to the individual teacher education institutions to determine how much emphasis is to be given to 'Education for Sustainable Development', either as a separate programme or as part of 'Environmental Studies'.

In Scotland a strong partnership has developed between the teacher education institutions (TEI) and teachers in schools. Indeed, all aspects of initial teacher education involve close collaboration between TEI staff and school-teachers. It is inconceivable that an aspect of a teacher education programme would be found to be incompatible with the curriculum of a school.

Structure of Teacher Certification

Teaching qualifications in Scotland are of three types: Teaching Qualification (Primary), Teaching Qualification (Secondary), and Teaching Qualification (Further Education). The national guidelines stipulate the length of each qualification and its general content. There are two routes into primary or secondary education: a student may take a four-year degree leading to a Bachelor of Education resulting in a qualification to teach in a primary or a secondary school (the concurrent route); or a teacher may, first of all, complete a degree programme and subsequently take a one-year programme of professional education (the PGCE - a consecutive route). As has been made clear, the national guidelines ensure that the national government controls to a very significant extent the content of initial teacher education.

To date, there is no requirement for the periodic re-certification of teachers. Nevertheless, as part of the recent settlement on pay and conditions of teachers the government is committed to the development of a framework for continuing professional development for teachers. That will consist of a number of standards as follows:

Initial Teacher Education Standard (Status on successful completion of teacher training)

Fully Registered Teacher Standard (Traditionally, after qualifying and after two years' of successful experience as a teacher, teachers are registered with the General Teaching Council for Scotland. However, following the McCrone Report, from 2003 probation will be reduced to one year and will be seen as an integral part of a programme of professional development.)

Chartered Teacher/Advanced Professional Teacher Standard (A scale for Chartered Teacher is being introduced which will enable a teacher who reaches the top of the Standard scale to embark on a programme lasting a further six years and culminating in this new award. Progress along the scale will involve increases in salary.)

The Standard for Headship (Achievable upon successful completion of appropriate further training)

It has been proposed but not yet fully endorsed that in the years ahead, in order for a teacher to retain his/her registration status with the General Teaching Council, certain professional development activities will have been undertaken.

It will be apparent from the above that the structure of programmes is determined by the regulatory bodies and so teacher education institutions can be as innovative and flexible as they wish, so long as their programmes are fully compatible with the national guidelines. All programmes are subject to regular review, at least every five years and opportunity is normally taken of these review periods to introduce changes. The room for manoeuvre is limited but the certification system could create greater opportunities for ESD if the guidelines were modified to make that compulsory.

Teacher Education Programmes at Pre-Service and In-Service Levels

As noted above, there are two categories of teacher: those entering to undertake a four-year programme must complete courses which the guidelines require. This severely limits the extent to which students can take programmes from other parts of their university. On the other hand, those who first of all complete a degree programme before embarking on a teacher education programme will have had ample opportunity to sample a range of university studies prior to their professional training, but in the course of their professional training their work is sharply focused.

ESD components take different forms in different teacher education institutes. In some, there is a fully fledged programme of Education for Sustainable Development; in others this forms part of a wider programme on Environmental Studies. It is for the teacher education institution to determine the most appropriate approach.

For example, at the Faculty of Education, University of Edinburgh, the aspects of ESD noted above are included in the general training of teachers. However, there are several programmes and courses which have a particular emphasis. The BEd (Primary Education) programme includes a first-year residential fieldwork week with an ESD element and a further option course with an ESD element in the fourth year. The PGCE students (of geography) have two fieldwork weekends with the emphasis as above, and an assessed part of their course which specifically addresses the role of geography in teaching for a sustainable future. The Faculty of Education also runs programmes of outdoor education which have a strong ESD element. These include a Postgraduate Diploma/MSc (Outdoor Education) and a BSc (Outdoor Education with Environmental Studies).

As a result of a conference on the environment in teacher education in 1995 all teacher education institutions in Scotland committed themselves to the development of the BEd (Primary Education) course noted above. The application of the course and its key

elements has been variable and whilst only one has adopted the full module (Strathclyde), others have included relevant sections into their programmes whilst others have chosen a permeation model.

The Learning for Life Group and Other Developments

For some time in Scotland attempts have been made to mobilise professional support for ESD. Following the publication of the Learning for Life report (1993), whose major theme was sustainable development, a 'Learning for Life Group' was convened. This continues to meet regularly (2 or 3 times a year) and consists of representatives from all of Scotland's teacher education institutions, together with representatives of a wide range of environmental agencies. Professor John Smyth, whose committee was responsible for Learning for Life, is also a member of that group. The group recently prepared a document explaining the place of ESD in Scottish Teacher Education Institutions (available from the authors).

That group has developed resource materials for use in initial teacher education programmes, and has also developed a significant resource compilation for serving teachers. The Learning for Life Group was a key member of a group of institutions and individuals which the European Union funded to develop an in-service programme and materials for Sustainability Education in European Primary Schools (SEEPS, 1997).

This significant project and other resources produced are not binding on institutions. They were prepared as ways of fostering collaboration, of minimising the duplication of work at a time when resources are scarce, and as a way of stimulating teacher education centres to devote more time to ESD.

The Strengths and Weaknesses of the Scottish System

Scotland is an extremely compact educational entity. It has in place well established arrangements for the management of teacher education at national level and for assuring the quality of that provision at the various approval levels through which programmes have to move before they can run. The Learning for Life inter-institutional group has undertaken a great deal of work, generating resources at pre-service and in-service levels. The co-operation between Teacher Education and the environmental agencies has enabled bids to be made to the Scottish Higher Education Funding Council and to European funding agencies to develop resources to support initial teacher education programmes and programmes of continuing professional development for teachers in the field of ESD.

The key weakness of the Scottish system is that there is insufficient commitment at national level to support a decisive advance in ESD. Besides, the teacher education curriculum is under such pressure that ESD has been given less priority than it deserves. The central weakness is that no matter how much goodwill there may be in the teacher education sector to make substantial provision for ESD, the fact that so many other requirements are stipulated makes extended

provision in ESD in present circumstances extremely difficult.

UNESCO

The United Nations has a number of agencies which take responsibility for aspects of its general work. These include well known organisations such as the World Health Organisation (WHO) and the Food and Agriculture Organisation (FAO). UNESCO exists to secure 'the right of everyone to education, without which science, culture and communication cannot move forward' (UNESCO, 1999: 1). It is a highly decentralised organisation, having around 80 offices world-wide and its headquarters in Paris. It has a range of stated objectives which include assisting countries to ensure the smooth running of educational, scientific and cultural institutions; aiding in drawing up pertinent national policies; strengthening institutional research; and facilitating contacts and the creation of networks.

UNESCO and Education for Sustainable Development

The 1992 United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro resulted in the agreement of participating nations (including the UK) on a number of environmental issues which all would address. A central commitment was the adoption of Agenda 21 (UN, 1992), an action plan for progress. The importance of education to this plan is indicated in its presence as a theme in all chapters of the document, a chapter devoted to it (Chapter 36) and its frequency of use. In the document 'education' appeared only second in frequency to the word 'government' (Smyth *et al.* 1997: 173).

At Rio, in addition to Agenda 21, a commitment was made to draft and subsequently ratify a 'Convention on Climate Change' a 'Convention on Biological Diversity', and to establish a 'Commission for Sustainable Development' (CSD). This was as a result of awareness that each of the UN agencies (WHO, FAO etc) has a 'sustainability' remit, but that 'sustainability' requires integrated action. The purpose of the CSD is to ensure that 'sustainable development' is a core element of the work of each of the UN organisations.

Under Agenda 21 one of the four priorities identified was 'Education, Public Awareness and Training for Sustainability'. The task manager for this process and conducting the educational work of the CSD is UNESCO. One of its key responsibilities is teacher education, which it sees as one of the most significant areas for action. Hence the task of 're-orienting teacher education to address sustainability' is a direct result of decisions taken by governments at Rio. In order to co-ordinate the work UNESCO has appointed a Chair and Secretariat. Further background to the project is outlined by Hopkins (2001).

Scottish University Involvement in UNESCO

Due in part to the commitment of certain individuals and to a number of initiatives and other circumstances, Scotland has, for some years enjoyed a reputation for its commitment to 'environmental education' and

'education for sustainable development'. A number of notable individuals and agencies (including governmental and non-governmental organisations [NGOs]) have produced significant reports (e.g. Learning for Life [Smyth, 1993]), teaching approaches and resources which have led to Scottish efforts being recognised as pioneering the field.

Perhaps as a result of this reputation a representative of Moray House Institute (now the Faculty of Education) was invited to a UNESCO meeting in Thessaloniki in Greece in 1997. There were ten universities/teacher education institutes from around the world present at that preliminary meeting, at which participants made a commitment to reconvene two or three years later to discuss progress and begin the process of writing guidelines for ESD in teacher education (UNESCO, 1997). The meeting in Toronto was the venue for this event, which is described in detail by Hopkins (2001).

The Work of the Toronto Conference

All participating institutions attending the conference agreed subsequent actions, the principles of which are described by Hopkins (2001:9) and summarised below. Whilst each institution is free to decide on its own actions there is a commitment to short and long term objectives of the UNESCO project. The Short Term objective is 'to undertake research and experimentation on different approaches to reorienting teacher education towards sustainability, using a common research framework to allow comparison of results'. The Long Term objective is 'to develop suggestions and guidelines for reorienting teacher education and associated realms of pedagogy, curriculum and evaluation'.

Implications and Proposals for the University of Edinburgh

It is clear from the outline of teacher education in Scotland that room for manoeuvre is limited. However, within such constraints the Faculty of Education of the University of Edinburgh is now committed to a number of projects designed to satisfy the above commitments. The following are a selection of the most significant:

Project 1 - BEd (Primary Education): To undertake an audit of the Environmental Studies course to see whether the ESD element can be enhanced. Within the Year 4 Option on Science, 'Technology and the Environment' is being developed for delivery in 2001/2002. The ESD element would provide a useful case study for other teacher education institutes.

Project 2 - Faculty Education Courses: To review the curriculum of these courses to indicate where ESD can be strengthened.

Project 3 - BSc (Outdoor Education with Environmental Studies): To inculcate best practice from the field of ESD into this undergraduate programme.

Project 4 - Postgraduate Study: To enhance provision for ESD in the existing Postgraduate Diploma and MSc in Outdoor Education, and extend provision through the Postgraduate Certificate in Environmental Education.

Project 5 - Centre for Outdoor and Sustainability Education: To establish a locus whereby existing expertise in the faculty and the rest of the university will be co-ordinated and enhanced.

Project 6 - Sustainability and Environmental Advisory Committee: To continue to raise the profile of ESD through this university committee.

Project 7 - Website: To update and modify the faculty website 'Educating for a Sustainable Future'. This has been achieved in a collaborative project with Manchester Metropolitan University. The URL is:

<http://www.education.ed.ac.uk/esf>

Project 8 - Collaboration within the UK: To work with the 'Learning for Life Group' in Scotland to ensure that information is shared and collaborative projects are developed. To work with other UK teacher education institutes towards these common goals.

Concluding Comments

There can be little doubt that ESD is finally moving up the political agenda and must eventually become an imperative for the work of teacher education institutes. Whilst there are real reasons why significant change is at present very difficult to achieve, we believe the above are some ways of effecting this change at an institutional level and thereby having positive effect on our students and in reorienting teacher education to address sustainability.

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