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Beginning Scottish geography teachers' perceptions of education for sustainable development

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Abstract

At the start of the 21st century the global pace of change and challenge continues unabated (Cullingford and Gunn, 2005). Increasingly individuals need to be equipped with the skills to manage and navigate uncertain futures (Irving, 1999). The Scottish Government's [SG] ambitions are high: *Our aim is that by* **2014** *people in Scotland will have developed the* **knowledge***,* **understanding***,* **skills and values to live more sustainable lives** *(Scottish Executive [SE], 2006)*. Cobb, Darling-Hammond and Murangi (1995) cited in Cobb (1999) refer to the pivotal role that education plays in relation to national development. Renewed government support for Education for Sustainable Development [ESD] has been evident in recent curriculum reform - *The Executive will ensure that the new Curriculum for Excellence* [CfE] *integrates education for sustainable development across subject areas* (Sustainable Development Education Liaison Group, 22-23rd August 2006). Few would query the importance and relevance of ESD, however, school approaches remain piece-meal and unco-ordinated (Sustainable Development Education Liaison Group [SDLG], 2006).

March 2005 saw the launch of the United Nation's Decade of Education for Sustainable Development [UNDESD] which emphasised the role of education as a vehicle for change and the pivotal role of Initial Teacher Education [ITE] (UNESCO, 2005). Research by Glasgow University into the professional culture of Scottish teachers identified the crucial role of beginning teachers in relation to the implementation and success of CfE (Hulme et al., 2008). Lavery (Grant and Borradaile, 2007) also highlighted the foundational role that ITE has to play in establishing and developing ESD in Scottish schools. This is, therefore, an apposite time to examine the perceptions of beginning Scottish Geography teachers in relation to ESD.

The International Development Education Association of Scotland [IDEAS] comprises a network of over 40 organisations and individuals involved in

Development Education and Education for Global Citizenship. This research project into beginning Geography teachers' attitudes to ESD is one of 12 in Scotland contributing to the IDEAS initiative *Taking a Global Approach to Initial Teacher Education*. Qualitative and quantitative questionnaire data was gathered from a group of 42 secondary Geography students from four of Scotland's seven ITE establishments. Beginning teachers' views were explored within three areas: defining ESD, ESD and ITE, and ESD and CfE.

The research findings provide a current Scottish case study exploring new Geography teachers' views, attitudes and experiences of ESD. Results suggest that new teachers consider ESD to be an important issue which should be embedded within CfE and across all subjects. A lack of confidence relating to defining and delivering ESD was identified. Beginning teachers would welcome more guidance on ESD issues throughout their ITE course, greater provision of appropriate resources and more precisely determined curriculum content and coverage advice. They are keen to engage in authentic collaborative continuous professional development opportunities with their prospective colleagues.

The results of this study have implications for ITE in Scotland and will be of interest to international audiences.

International context

At the start of the 21st century the global pace of change and challenge continues unabated (Cullingford and Gunn, 2005). Headlines relating to climate change, resource depletion and the consequences of disproportional wealth distribution reflect the rising global and political prominence of issues relating to sustainable development [SD]. The importance of ESD in helping individuals navigate increasingly uncertain futures is progressively part of the political agenda (Bourn and Wade, 2008). However, translating political rhetoric into meaningful policy and policy into practice remain challenging. An international study (Learning and Teaching Scotland [LTS], 2005) examining sustainable development education [SDE] in 10 countries reported:

a great deal of good practice …but … also a need to appreciate and signpost
the embryonic and fragile nature of the position of SDE (pp. 49).

The launch of the UNDESD in 2005 has instigated several key policy documents linked to SD and ESD within the UK (Department for Environment, Food and Rural Affairs [DEFRA], 2005a; DEFRA 2005b) and Scotland (SE, 2005a; SE, 2006). The strategic role of education as a vehicle for change and the pivotal role of ITE has been emphasised (UNESCO, 2005). This paper will provide a current Scottish case study exploring beginning Geography teachers' views, attitudes and experiences of ESD.

Scottish education context

McNaughton (2007) provides a recent summary of the Scottish policy context linked to ESD in the formal education sector - identifying three phases – *emergence, stagnation and re-emergence*. *Learning for Life* (Scottish Office Environment Department, 1993) was a comprehensive and timely response to the United Nations Conference on Environment and Development [UNCED] Earth Summit in Rio which signalled the *emergence* of a structured and phased approach to ESD in Scotland. However, translating policy to practice proved problematic resulting in a piecemeal approach to ESD in schools. A *stagnant* period followed which saw the dissolution of the Scottish Environment Education Council in 1999. ESD seemed low on the new Scottish Parliament's agenda and was mainly subsumed under citizenship with Eco-schools largely fulfilling the ESD requirement in schools. Scotland's newest curriculum initiative, CfE (SE, 2004) signalled a policy change away from a traditional, knowledge-driven curriculum towards a more skill-based, flexible and creative system. The SG also indicated their commitment to ensuring:

that the new Curriculum for Excellence integrates education for sustainable
development across subject areas (SE, 2005a, pp. 68).

ESD is specifically mentioned in four of the eight curricular areas - Social Studies, Science, Health and Well Being and Technologies covering topics such as climate change, food production, transport development, recycling, resource selection and

renewable energy. Could CfE herald the *re-emergence* of ESD? Lavery (SDELG, 2006) states that policy and practice have lacked coherence and direction to date, but suggests that CfE knits well with ESD.   A recent publication by HMIe (2009) noted that:

> *most schools have been increasing their emphasis on sustainable development education, through eco-activities and recycling. Only half have reviewed the extent to which the curriculum promotes sustainable development education on a coherent and sustained basis (pp. 7).*

While ambitions are high at governmental level, concerns have been raised around the lack of consultation and clear rationale linked to the values which underpin CfE (Gillies, 2006). Curriculum architecture, too subject focused approaches and an assessment centred curriculum have been identified as challenges (McCraken, The Sunday Herald, 2008; MacIver, Teaching Scotland, 2007; Priestley, 2005). Changing departmental structures in some Local Education Authorities [LEA] leading to a lack of subject specialist guidance and management of curricular change have also been identified as practitioner concerns (Cairns, TESS, 2004; Henderson, TESS, 2006; Buie, TESS, 2007; SSTA, 2008). The Teachers' Agreement Communications Team (SE and Convention of Scottish Local Authorities, 2006) provided a more optimistic view of the restructuring process, concluding that communications within schools with faculty structures had generally improved and collegiality was promoting sharing of knowledge and practice. As a result of considerable lobbying relating to the above concerns, the Cabinet Secretary delayed implementation of CfE until 2010 (SG, 2008). This move has been welcomed by the majority of stakeholders as creating time for unresolved issues relating to content, assessment and staff development. (McCraken, The Sunday Herald, 2008) However, the OECD Report (2007) warns that Scotland's six-year lead up to curricular change, compared to countries like Finland that have undergone three reforms in 19 years, could lead to a loss of momentum, enthusiasm and commitment amongst practitioners (pp. 121).

Several of the changes and challenges shaping Scottish Education have been outlined. Priestley (2005) highlights the power that schools and practitioners have to

mediate change. New teachers have been singled out as 'catalysts' of curriculum change linked to the implementation and delivery of CfE (Hulme et al., 2008). It is, therefore, an apposite time to consider new teachers' opinions linked to ESD.

Qualitative and quantitative questionnaire data was gathered from a group of 42 secondary Geography students from four of Scotland's seven ITE establishments. They represent 60% of new Scottish Geography teachers entering their induction year in August 2009. Their views will be explored in relation to three areas: defining ESD, ESD and ITE, and ESD and CfE. Each of these headings will be considered briefly.

Defining SD and ESD

SD is a difficult to define, open to multiple interpretations (Scott and Gough, 2003) and continually evolving. One of the most frequently used definitions is proposed by the World Commission on Environment and Development:

> *Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs* (WCED, 1987p. 43).

While a host of meanings abound, and are largely encouraged (Scott and Oulton, 1999), there is a growing consensus that SD must be conceptualised at least in terms of three overlapping dimensions: environment, society, and economy. (Summers et al., 2004).

Students were asked to identify key words they associated with the term SD. As Geography teachers – the majority of words reflected this background. Five terms dominated and accounted for almost 50% of responses. *Environment* and *Green* appeared most frequently followed by *Renewable, Eco* and *Future*. The economic dimension of SD was also evident in some student responses, for example, *economy* and *industrialisation*. *Future generations* and *responsibility* reflected the social aspect. The varied list highlights the breadth and multi-faceted nature of SD and the challenges associated with agreeing upon a clear definition. 19 out of 42 students stated that they found SD difficult to define.

In 2005 the UK produced a shared framework entitled *One future – different paths* (DEFRA, 2005a) to be used as the basis for each country to develop their own SD strategies. Their definition of SD reflects the three overlapping dimensions:

Living within environmental limits and ensuring a strong, healthy and just society by achieving a sustainable economy, promoting good governance and using sound science responsibly.

(DEFRA, 2005a p. 8)

85% of students felt that this definition of SD was acceptable.   A minority were suspicious of the political agenda and choice of wording. Questions such as who sets the limit were posed? Others felt that the tone lacked urgency and suggested a continuation of the status quo.

It doesn't recognise the present predicament and the need for radical changes required. It represents a position of no real change.
(Student 7)

Speaking at the UNESCO World Conference on Education for Sustainable Development (2009) Graça Machel summarised the importance of ESD:

In tackling the current global economic crisis, we have an opportunity to build a new world order, not simply tinker at the edges of a failed system or recreate the corrupt systems that have imploded on us. And education has a crucial role to play in restructuring. We know that education is key to individual growth as well as social, economic and political development.

A range of views and perspectives exist relating to ESD (Sterling, 2001; Scott and Gough, 2003; Hicks, 2001; Morgan, 2000). However, the SE defines SDE as developing knowledge, skills and attitudes based on six principles of SD:

Interdependence, Diversity, Carrying capacity, Rights and Responsibilities Equity and Justice, Uncertainty and Precaution
(SE, 2006, pp. 2-3)

80% of students found this definition useful. The six headings were viewed as wide ranging and helpful when planning programmes and selecting topics, whilst still allowing autonomy linked to delivery. The headings were thought to promote inter-

disciplinary working. A minority of students commented on the difficult vocabulary and felt that the headings needed clarification and were inaccessible to pupils.

Not very detailed, just fancy words, needs explained and elaborated upon in order to be able to develop a planned programme of ESD (Student 4).

Students were able to provide a range of topics that might be covered as part of an ESD programme. *Climate change* (17) and *renewable energy* (11) were the most frequently identified issues associated with ESD. Other significant groupings were observed for *Environment*, *Environmental impact*, *Environmental consequences* (9) and *Farming/Farming Practice* (6). Students viewed Geography as playing a central role within ESD programmes and most were clear of the benefits of inter-disciplinary working and delivery.

Education for sustainable development and initial teacher education in Scotland

The structure of Scottish ITE will now be outlined and the place of ESD in relation to this framework. Scottish secondary ITE has been dominated by the one-year model to a greater extent than most other European countries (Eurydice, 2002). Only one of the seven ITE providers in Scotland, the University of Stirling, offers a combined degree in Education and Geography. Despite, numerous discussions and alterations, the fundamental shape and purpose of secondary ITE programmes in Scotland have undergone little major change. For example, progressively from the early 1990s all teacher-training establishments became affiliated with universities. Rather than re-energising programmes, the main results have been tensions in relation to teaching hours and school visits versus research demands (Nixon, Cope, McNally, Rodriques, & Stephen, 2000). Similarly, changes in the outcomes of ITE, towards competences and then standards, which occurred in the late 1980s and early 1990s, left Scottish ITE establishments with considerable freedom over the design, delivery and assessment of the training programme (Christie, 2008). Whilst the structure of teacher training programmes is determined by the GTCS, teacher education institutions can be as innovative and flexible as they wish, so long as their programmes comply with the national guidelines issued from time to time by the First Minister, who is accountable to Scotland's Parliament for the quality of education in

Scotland. Guidelines for teachers published by the Scottish Office Education and Industry Department (Scottish Office Education and Industry Department, 1998) state that teachers should be knowledgeable, competent and able to contribute to ESD, however, the extent and mode of coverage is left to individual teacher education institutions to determine. The SE and GTCS believe that it is through the acquisition of The Standard for Initial Teacher Education [SITE] (GTCS, 2006b) and the Standard for Full Registration [SFR] benchmarks (GTCS, 2006a) that students will develop the necessary skills and abilities to provide a high quality of teaching for all pupils. ESD is not a key benchmark heading but is referred to twice in the SITE under the expected features for benchmark 1.1.2 and 3.3.

1.1.2 Have knowledge and understanding of, for example, sustainable development, equal opportunities, additional support needs, citizenship, international education, education for work, enterprise (pp. 17).

3.3 Know about environmental issues and be able to contribute to education for sustainable development (pp. 25).

As with any public sector activity, government and its agencies have scrutinised teacher preparation. ESD was briefly mentioned in the two most recent reports:

A Scoping Review of ITE (HMIE, 2003) indicated that beginning teachers'

Views on education for sustainable development were relatively polarised, with 44% of probationers suggesting that ITE had provided some understanding and a similar proportion (45%) claiming that ITE had not provided any understanding at all (pp. 20).

The follow up review stated that whilst ITE establishments were largely equipping students successfully to meet the needs of 21st Century pupils, they did not feel well prepared in relation to ESD (SE, 2005b, pp.4). The report concluded that too many expectations were being placed on ITE and that courses did not have the capacity to respond positively to all the demands for greater emphasis on subjects such as ESD, concluding that ITE was *only the initial phase in a continuum of teacher education* (SE, 2005b, pp. 7). An international report indicated that Scottish ITE (OECD, 2007) *training remained too subject-centred and too little focussed on the challenges of diversity and inclusiveness* (pp. 40) and lacked *cross-professional training* (pp. 89).

A current HMIe aspect review is focusing on preparation within teacher education to deliver Curriculum for Excellence. It will be interesting to see if ESD features in the interim report scheduled for mid 2009.

If we are to ensure that ITE supports learning that incorporates a global dimension and prepares young people to contribute to the sustainable development of society, the way teachers are trained and the extent to which they feel prepared to meet this challenge must be examined. The IDEAS network launched a 3 year project in 2007 entitled *Taking a Global Approach to ITE* which seeks to foster an active and growing network of teacher educators, engaged with global issues, who are developing and promoting quality teaching and learning approaches for Global Citizenship/Sustainable Development throughout all ITE courses. This small scale piece of research will contribute to this larger body of knowledge.

The initial findings from this study suggest that this sample of new Geography teachers do not feel well equipped to deliver ESD. 40% of students felt that ITE had not prepared them for teaching ESD and 60% requested more ESD in ITE preparation. There were a significant number of neutral responses - 38% and 36% respectively. 52% lacked awareness of resources available to support teaching ESD.

30 students indicated that they had not observed/taught any aspects of ESD during ITE school placements. Given the relevance and wide range of topics encompassed within ESD and commonly taught in Geography classrooms in Scottish secondary schools this result seems questionable. This may be because the term ESD was not specifically linked to the topic; and students had earlier identified a long list of ESD issues such as climate change, land use conflict and development issues associated with this area. A minority of students provided some examples of good practice they had observed linked to ESD. For example, a climate change week within a school, an environmental based first year unit and successful inter-disciplinary project involving Geography and Art.

Almost half of the beginning Geography teachers indicated a lack of confidence if asked to teach ESD and 7 considered it a difficult subject to teach. They requested

greater guidance in relation to exploring key topics, suitable teaching and learning strategies and ideas for delivering ESD lessons. They considered that ESD should be accorded a higher priority in the ITE course; more opportunities for inter-disciplinary working would be welcomed as well as time to share placement experiences. Resources such as websites, which provided up to date information on initiatives and included examples of good practice relating to discrete and inter-disciplinary ESD strategies, were requested. Conferences and continuous professional development opportunities were also seen as beneficial.

Education for Sustainable Development and Curriculum for Excellence

There was overwhelming support for the Government's intention to promote a planned programme of ESD in Scottish schools. 76% of students agreed that CfE was a good vehicle for delivering ESD. They indicated that the inter-disciplinary nature of ESD and contemporary content was in line with CfE and the four capacities linked with many aspects of ESD such as responsible citizens and respect for others. However, some concerns were noted in relation to the vague nature of the outcomes which could result in multiple interpretations.

All students indicated that more than one subject area should deliver ESD, 6 students felt that all departments within a secondary school had a valuable contribution to make. Subjects that were viewed as best equipped to deliver ESD were: Geography, Biology, Modern Studies, Personal and Social Education, Home Economics and Business Studies. Collectively, these subject areas reflect the three key areas associated with ESD – economy, environment and society. It was surprising given the strong focus on literacy and numeracy within ITE and schools that students largely overlooked these areas.

All students stated that ESD should be embedded in the secondary curriculum. They view ESD as an inter-disciplinary topic and 36 students felt that ESD was well suited to inter-disciplinary working. Most believe that primary and secondary schools can play a valuable part in the delivery of ESD - 83% indicated that it was suited to primary and secondary stages. However, only 45% felt it should be delivered from nursery, this runs counter to agreed policy on ESD and the 3-18 philosophy advanced by CfE.

Conclusion

Our data indicates that beginning Geography teachers view ESD as an important issue which should be embedded within the new Scottish curriculum and experienced by all pupils. CfE is viewed optimistically and presents a valuable opportunity for enhanced inter-disciplinary working designed to promote ESD. However, there was little evidence these new teachers would act as 'catalysts of change' (Hulme et al., 2008). Instead greater direction from ITE and schools was requested, linked to learning and teaching strategies, clearly identified resources and CPD support. The new teachers are demonstrably receptive to ESD related issues and ideas. A lack of confidence has been highlighted in relation to defining and delivering SD/ESD. This lack of confidence may be eased if key stakeholders – policy makers, HMIE, ITE and LEAs, displayed greater collective responsibility and commitment to ESD. ITE has a responsibility to model good practice and create more opportunities for inter-disciplinary working.

> *Sustainable development education is not about transmitting a set of answers to pupils, but about engaging them in learning and in activities that will allow them to develop the skills and explore the issues in ways that will enable them to make up their own minds on some of the issues which will shape the world.*
> *(Sustainable Development Education Liaison Group, 22-23rd August 2006, p. 3)*

The same is true for ITE – it is not only about meeting the SITE but engaging students in challenging, meaningful debate and discussion. It should provide opportunities for students to:

- *investigate and interrogate the discourse of ESD*
- *develop a critical and holistic understanding of ESD*
- *reflect on and analyse their own views of ESD*
- *apply this understanding to planning, using and evaluating classroom materials (which meet curriculum requirements) in ESD*
- *rethink ways of teaching geography that take account of complex social and political issues*
- *move from promoting transmissive learning to promoting critical and creative transformative learning (Smith, 2007).*

A more joined up approach is required if ESD is to become embedded within the Scottish curriculum. ITE is only the first phase in teacher development (HMIE, 2003) and there is clearly potential for CPD linking CfE and ESD. This could provide a valuable opportunity for schools and ITE to work together to create partnerships that would support and sustain teachers.

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