

EDUCATION FOR SUSTAINABLE DEVELOPMENT IN LIGHT OF RIO +20: CHALLENGES AND OPPORTUNITIES ARISING FROM THE REFORM OF THE B.ED. DEGREE PROGRAMME IN IRELAND

Anne M. Dolan

Introduction

The United Nations Conference on Sustainable Development (UNCSD) Rio+20, hosted in Rio de Janeiro on 20-22 June 2012 was attended by approximately 50,000 people. Its slogan was ‘The Future We Want’. While the level of successful outcomes delivered by the conference is debatable, it nevertheless provided an important opportunity to highlight some of the critical challenges facing the global community today in terms of sustainable development. There is widespread consensus in the literature that education has a key role to play in our attempts to realise ecologically sustainable economic development (Taylor et al., 2003). Calls for more action from education have increased in the light of mounting anxiety over environmental problems.

Education for sustainable development (ESD) is defined as a ‘concept that encompasses a new vision of education that seeks to empower people of all ages to be responsible for creating and enjoying a sustainable future’ (UNESCO, 2002: 7). ESD is applicable to all education sectors including initial teacher education. From September 2012, initial teacher education in Ireland was offered as a radically different four year B.Ed. Degree Programme. This reform of initial teacher education offers immense potential for teacher educators to re-imagine their programmes in light of a range of guiding paradigms and theoretical frameworks including Education for Sustainable Development. This paper looks at ESD in the context of the RIO +20 conference, its relationship with development education, the reforms which are taking place in initial primary teacher education and concludes with a number of recommendations for incorporating ESD as a core part of initial teacher education.

The Context of the Rio +20 Conference

Internationally, reactions to the Rio +20 conference have been largely negative (McDonald, 2011). The lack of political commitment made at the conference was symbolised by the absence of world leaders such as David Cameron, Angela Merkel and Barack Obama with the global economic crisis seemingly pushing environmental concerns further down the policy agenda. The United States and many European Countries are reluctant to adopt a leadership role in sustainability in the context of their own national problems including poverty, increasing unemployment and economic insecurity. Significantly, environmental issues and sustainable development have hardly featured at all in the 2012 US Presidential campaign. On the other hand some countries are making progress toward sustainability with China, for example, becoming the world's largest renewable energy investor and Mexico recently passing a landmark climate change law. Nevertheless, our earth is facing an increasing number of sustainability and development challenges including climate change, hunger, unequal distribution of wealth and over consumption.

Climate change has been heralded as the greatest threat of this generation. From the melting polar ice caps to catastrophic weather and threatened ecosystems, not only is climate change real, scientists agree that humans are influencing climate change with our production of greenhouse gases (mainly stemming from carbon dioxide and methane). Arctic sea ice is melting at alarming rates. A recent National Aeronautics and Space Administration (NASA) study reveals that the oldest and thickest Arctic sea ice is disappearing at a faster rate than the younger and thinner ice at the edges of the Arctic ocean's floating ice cap (Hall et al., 2012). This is having a significant impact on marine mammals and other Arctic life including polar bears, walruses, ringed seals and bowhead whales and indigenous communities.

There is an increase in the number of 'climate refugees', those people becoming displaced as a direct result of climatically induced environmental disasters. Such disasters result from incremental and rapid

ecological change, resulting in increased droughts, desertification, sea level rise and the more frequent occurrence of extreme weather events such as hurricanes, cyclones, fires, mass flooding and tornadoes. This is causing mass global migration and border conflicts.

In light of these serious environmental challenges, the final agreement at Rio (UNCSD, 2012) was considered disappointing by several commentators. Kumi Naidoo, the Greenpeace Executive Director, referred to the agreement as a ‘common vision of a polluters’ charter that will cook the planet’ (McDonald, 2011). Nevertheless some aspects of the agreement are noteworthy. The concept of sustainable development was broadened to include poverty eradication and social inclusion. The agreement launched a process to establish sustainable development goals (SDGs) by 2015, to complement the UN’s millennium development goals (MDGs). It remains to be seen whether the SDGs will be treated separately from the existing MDGs or whether they will run together from 2015 onwards. Education emerged as one of the strongest and least-contested mandates out of the many policy areas that were discussed at the three-day Rio summit and its side-events, and ESD was highlighted as central to quality transformative education.

In a speech to the Rio+20 conference, Professor Jeffrey Sachs highlighted the responsibility of the education sector to ensure that the SDGs are translated into reality. He called for the SDGs to ‘decorate the walls of every primary classroom and be part of secondary and university education’ and he suggested that an entirely new way of framing development will emerge in this way (UNESCO, 2012).

Education for Sustainable Development, Development Education and Primary Education

The proposals relating to the development of Sustainable Development Goals highlight the intersection between the development and sustainability agendas. This common ground has been recognised for some time by educators working in ESD and development education. ESD aims to inform behaviour and lifestyle choices in three aspects of sustainability: economy,

environment and society. Blewitt (1998) argues that ESD has four major goals:

1. To foster clear awareness and concern about economic, social, political and ecological interdependence;
2. To provide students with opportunities to develop the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment and achieve sustainable forms of human development;
3. To encourage the emergence of responsible patterns of behaviour towards the local and global environment by individuals, communities and business; and
4. To nurture a sense of intergenerational solidarity recognising sustainability principles as key to people's improved quality of life.

This interpretation implies an integration of the complementary disciplines of ESD and development education. ESD is about action at personal, local, regional, national and international levels informed by values and attitudes which appreciate the simple fact that our survival is directly linked to the health of our planet.

Development education (DE) aims to increase awareness and understanding of a rapidly changing, interdependent and unequal world (Irish Aid, 2006). Indeed ESD and DE have a broad common platform of philosophical frameworks, issues, methodological approaches and a commitment to action. Notwithstanding their separate identities in terms of their core mission, they cannot achieve their educational aspirations in isolation. While tensions have been recognised between the two adjectival educations (Hogan and Tormey, 2008), there has been much evidence of collaboration and co-operation between ESD and DE. Hopkins (2012: 34) highlights the commonality between the two areas as follows: 'just as development education is one part of ESD, ESD is also just one part of

development education'. Nevertheless, while recognising the common agendas of both, there is a need for even more dynamic alliances and cross-fertilisation between ecological sustainability, equality and justice issues.

The primary curriculum for the Republic of Ireland was revised in 1999. Both development education (Ruane et al., 1999) and environmental awareness and care (rather than ESD) are on the primary curriculum and both perspectives can be taught as cross-curricular themes or through dedicated curricular topics. 'Environmental Awareness and Care' features as a strand unit on the primary school curriculum as part of the Science and Geography curricula. However, the language of the curriculum focuses more on awareness and care rather than sustainability and responsibilities. Nevertheless, several schools are involved in a range of innovative environmental and development education programmes and projects. Over 80 percent of schools participate in the Green Schools Programme which is run by An Taisce and the Department of Environment, Community and Local Government. Notwithstanding the excellent practice of many schools, ESD lies in the hands of committed principals and teachers and remains on the periphery of the primary school curriculum.

This marginal status is also shared with DE. However, in the new B.Ed. Degree Programme, DE will now be part of the mandatory programme for every student teacher in Ireland. The process of integrating development education into formal education has made significant progress through the Irish Aid funded Development and Intercultural Education (DICE) programme. This implicitly suggests that every student teacher will encounter some ESD through this initiative. However, unless those delivering the development education programme interpret DE from a sustainability perspective, student teachers may only study ESD in superficial terms. Hence, advocates of ESD have much to learn from the DICE experience. As the two have so much in common there is an argument to be made for ESD sector representatives holding discussions with DICE to ensure that every development module is delivered through a sustainability lens and vice versa. Moreover, policy makers with an interest in integrating

ESD into initial teacher education would do well to study the DICE model as a successful model of negotiation with initial primary teacher education in Ireland.

ESD and Teacher Education

The UN General Assembly has proclaimed the Decade of Education for Sustainable Development for the period 2005-2014. Recognising that teacher education colleges are well positioned as key change agents, UNESCO published a set of guidelines for reorienting teacher education towards sustainability (UNESCO, 2005). Despite an increase in environmental discussions and initiatives, the overall achievements of the UN Decade so far remain unclear. On the basis of anecdotal evidence collected by the author, few student teachers are aware of the strategic focus of this decade. This lack of awareness of ESD was also corroborated by an all-Ireland research study (Waldron et al., 2009). The study which examined student teachers' experience of and attitudes to the teaching of primary History, Geography and Science demonstrated that environmental awareness was not seen as relevant to good teaching in Geography and Science for the majority of student teachers. This suggests at the very least that teacher education programmes should be more explicit in developing student teachers' commitment to ESD in their courses.

Teachers and teacher education have the potential to make the ethos and aspirations of Education for Sustainable Development ESD a reality. By influencing the lives of millions of learners in a multitude of ways, teachers help shape learners' worldviews, economic potential and attitudes towards others in their local and global communities. Teachers also have the potential to influence young people's participation in community decision-making and interaction with their environment. More than 70 million teachers in the world (UNESCO, 2010) have enormous potential to bring about major changes in society and to create a more sustainable future (McKeown, 2012). While the potential of teachers and teacher educators is undisputable, the question remains why is there not a stronger focus on ESD in colleges of education?

Contemporary society has witnessed unprecedented developments in the science and technology sectors, unrecognisable advances in the Information and Communication Technology (ICT) sector, rapid economic development in certain parts of the world and a growth in concerns about sustainable development. However, initial teacher education has not kept pace with the rapidly changing circumstances in our society today. Feiman-Nemser (2001: 1049), who is quite critical of traditional initial teacher education programmes, calls for more powerful learning opportunities for teachers. She argues that initial teacher education as it is currently constructed - 'a collection of unrelated courses and field experiences' - is incapable of providing serious and sustained professional learning for student teachers. The radical nature of reforms needed by teacher education have also been highlighted by Fullan et al. (1998: 68) who state that 'we are dealing with a reform proposal so profound that the teaching profession itself, along with the culture of schools and schools of education, will have to undergo total transformation in order for substantial progress to be made'. While the education system is undeniably resistant to change, the ESD sector is also at fault in not advancing its cause as it has not engaged strategically with the key players in education. According to Hopkins (2012: 28) one of the great failings of the first Rio Earth Summit (1992) was the failure to engage with the world's Ministries of Education, so much so that 'ESD was seen largely as an optional add-on and not their primary concern'. Hopkins argues that the formal sector largely turned its back on ESD. With the reforms that are underway in teacher education in Ireland, there is a danger that this may continue to be the case.

ESD and National Policy

According to the Irish government's 'Framework Document on Sustainability' (Department of the Environment, Community and Local Government 2012: 78) a strategy for ESD will be formulated in 2012. The framework document will commit the Department of Education and Skills to publishing a strategy document in 2012 which will:

“[P]rovide the policy framework for the development of knowledge, skills and values to encourage individuals, businesses and organisations to take action in support of a sustainable and just society, care for the environment and responsible global citizenship”.

This strategy will provide the policy framework for the development of knowledge, skills and values to encourage individuals, businesses and organisations to take action in support of a sustainable and just society, care for the environment, and responsible global citizenship. The strategy on ESD will have four key objectives:

- Embed ESD at every level of the education system;
- Promote public awareness of ESD;
- Promote capacity building in support of ESD;
- Promote high standards of environmental management in education institutions.

A clear commitment to integrate ESD into every level of the education system is demonstrated in this strategy. Coincidentally, initial teacher education is also being reformed, therefore the opportunity to include ESD as a core part of initial teacher education programmes has never been greater. However, in recent documents published by the Teaching Council (2011a) and the Department of Education and Skills (2011), the strategic importance of ESD as a fundamental part of initial teacher education is not acknowledged. Literacy and numeracy have been identified as major educational and political priorities. The publication *Literacy and Numeracy for Learning and Life: the National Strategy to Improve Literacy and Numeracy among Children and Young People* (DES, 2011) will have an important impact on the design and delivery of the new Bachelor of Education (B.Ed.) degree programme. Hence, it is important that numeracy and literacy are not defined in narrow instrumentalist terms but rather are

viewed in a holistic fashion to help children and adults participate in their society in local and global terms. Equally, in terms of learning to read our world and to engage with our environment, it is important for policy makers to realise the importance of *ecological literacy* (Orr, 2004) or in Peacock’s terms *ecoliteracy* (2009). Therefore the challenges remains to ensure that reforms in initial teacher education are in line with national and international policy commitments to ESD.

A New Agenda for ESD and Teacher Education

The need for a reconceptualisation of teacher education has been well documented. The question remains how this re-conceptualisation will be articulated in practice. This article proposes three aspects or goals for consideration by teacher educators in the context of the fundamental importance of ESD for all citizens. These are to: incorporate ESD as a central aspect of initial teacher education; provide opportunities for ESD to reorient teacher education programmes towards sustainability; and work towards more holistic teacher education provision with the assistance of ESD. Each of these goals is considered in turn below.

Incorporate ESD as a central aspect of Initial Teacher Education

The first priority is to ensure that ESD has a very strong presence on every initial teacher education programme. However, simply including more ESD in teacher education is not enough. In the first instance it is important to consider what kind of ESD will be offered and how ESD will inform the very nature of the teacher education programme itself. Sterling and Gray-Donald present four learning responses within ESD. These are based on the level of criticality of dominant assumptions and the degree to which they subscribe to sustainability. These four learning responses are detailed below:

	Uncritical	Critical
Non-committal	A. <i>Business as usual position.</i> Mainstream, Little or no critique of	C. <i>Liberal position.</i> Embraces need for ESD but adopts critical,

	dominant assumptions, or evidence of ESD, although growing awareness of need for some response.	sceptical line. Problematic ESD particularly position B. Favours pluralism and rationalist, liberal approach, putting prime value on educational process.
Committed	B. <i>Advocacy position</i> . Stresses urgency and need for universal ESD as self-evident, with emphasis on 'sustainability literacy' rather than educational transformation.	D. <i>Cultural change position</i> . Embraces need for ESD as implying changed cultural paradigm both in education and sustainable development interpreted from a committed but critically self-reflective stance based on an ecological relativism, (contextual relativism).

A is the *business as usual* response with little or no engagement with sustainability while there is minimal awareness. B is the *advocacy position* with an emphasis on sustainability literacy and what should happen. C is the *liberal position* which maintains that sustainability depends on a critical evaluation of all options. D is the *cultural change position* which links unsustainability to deep seated cultural assumptions. In terms of this framework, an argument could be made that every level should be incorporated during initial teacher education. This could happen through a

spiral curriculum of ESD, with first year adopting the *business as usual* approach and fourth years engaging with the *cultural change position*. On the basis of their on-going engagement with ESD, student teachers should be in a position to critique their philosophy, their education, their approach as teachers through an ESD lens by the time they complete their initial teacher education programme.

In the second instance, it is important to consider what kind of ESD competences are required. To this end the United Nations Economic Commission for Europe Steering Committee on Education for Sustainable Development has published *Learning for the Future: Competences in Education for Sustainable Development* (UNECE, 2011), which offers policy-makers recommendations on professional development spanning all sectors: teachers and educators, managers and leaders, governing and managing institutions, curriculum development and monitoring and assessment. It identifies a framework of core ESD competences for educators assembled into three categories: the holistic approach, envisioning change and achieving transformation.

Table 1. UNECE competences

	<i>Holistic approach</i>	<i>Envisioning change</i>	<i>Achieving transformation</i>
The educator understands...	The basics of systems thinking.	The root causes of unsustainable development.	Why there is a need to transform the education systems that support learning.
The educator is able to...	Work with different perspectives on dilemmas,	Facilitate the evaluation of potential consequences of	Assess learning outcomes in terms of changes and achievement

	issues, tensions and conflicts.	different decisions and actions.	in relation to SD.
The educator works with others in ways that...	Actively engage different groups across generations, cultures, places and disciplines.	Encourage notions of alternative futures.	Help learners clarify their own and others' world views through dialogue and recognise that alternative frameworks exist.
The educator is someone who...	Is inclusive of different disciplines, cultures and perspectives, including indigenous knowledge and worldviews.	Is motivated to make a positive contribution to other people and their social and natural environment, locally and globally.	Is a crucially reflective practitioner.

(Source: UNECE, 2011)

The column headings represent essential characteristics of ESD namely:

- a) A holistic approach, which seek integrative thinking and practice;
- b) Envisioning change, which explores alternative futures, learns from the past and inspires engagement in the present; and
- c) Achieving transformation which serves to change the way people learn and the systems that support learning.

The clustering of the competences is informed by the ideas of lifelong learning, specifically the ideas of Jack Delors (1996). According to Delors, lifelong learning is about learning to be, learning to do, learning to work and learning to learn. While the competences relate specifically to ESD, there are elements of commonality with the competences promoted by the Teaching Council although those of the latter are not necessarily viewed through a sustainability lens. This approach to competences demonstrates the common ground between ESD and quality teacher education programmes. However, this complete list of ESD competences has much to offer the development of quality initial teacher education. The four categories relating to the educator (1) *understands...* (2) *is able to...* (3) *works with others in ways that...* (4) *is someone who...*, could very usefully form guiding philosophical pillars, one for each year of the revised B.Ed. Degree Programme.

Provide opportunities for ESD to reorient teacher education programmes towards sustainability

The second priority is to ensure that ESD can reorient teacher education programmes to address sustainability (McKeown, 2012). This means intertwining knowledge, skills and perspectives, values and issues related to sustainability into existing curriculum and educational programmes. UNESCO published a set of guidelines for reorienting teacher education towards sustainability. This document highlights a number of challenges to integrating ESD into teacher education, all of which are relevant in an Irish context namely:

- Official national and provincial curriculum rarely mandates sustainability;
- Teacher certification guidelines do no mention sustainability;
- Lack of or inadequately trained professionals who are knowledgeable about ESD;
- Lack of or inadequate funding and material resources;

- Lack of or inadequate national, provincial and local policy to support ESD;
- Lack of or inadequate institutional climate that supports creativity, innovation and risk-taking necessary to support transformative efforts to reorient education to address sustainability;
- Lack of or inadequate reward for institutions or faculty members who understand ESD programmes (UNESCO, 2005: 31).

In the context of the B.Ed. Degree Programme, addressing this list of challenges would not only address ESD but would also contribute to the creation of a teacher education programme which could be innovative, creative and transformative.

To work towards more holistic teacher education provision with the assistance of ESD

The third priority is to realise that ESD can help teacher education programmes to be more holistic in terms of achieving a balance between left and right brain functions in education, between indoor and outdoor learning and between academic and practical education. Holism understands knowledge as something that is constructed by the context in which a person lives. Therefore, teaching students to reflect critically on how we come to know or understand information is essential. As a result, student teachers are inspired to develop critical and reflective thinking skills, encouraged to care about the world around them and provided with practical opportunities to engage with environmental issues locally, nationally and internationally there will be a greater likelihood of personal or social transformation.

However, as David Orr (2004: 8) notes:

“[E]ducation is no guarantee of decency, prudence or wisdom. Much of the same kind of education will only compound our problems. This is not an argument for ignorance but rather a statement that the worth of education must now be measured against

the standards of decency and human survival – the issues now looming so large before us in the twenty first century. It is not education but education of a certain kind that will save us”.

This ‘same kind of education’ discussed by Orr is an education which is compartmentalised, fragmented and disconnected from the natural environment. In this kind of education only certain types of intelligences are valued while ecological intelligence is absent. Ecological intelligence (Orr, 2005) allows us to comprehend systems in all their complexity, as well as the interplay between the natural and human-made worlds. Psychiatrist and writer Iain McGilchrist (2009) explains how our ‘divided brain’ has profoundly altered human behaviour, culture and society. He points out that left-sided interpretations of experience, which fragment the world into ‘bits’ to achieve certainty, substitute information for knowledge, prefer formal qualifications to practical experience, trade the concrete and real with the abstract and theoretical, reduce the role of creativity, virtualise experience itself and ultimately turn society into a machine which values precision and efficiency over quality, are characteristic of the systems in our society today. In initial teacher education, there is also evidence of over assessment, a reliance on rote learning and an over emphasis on left brain functions such as planning and organisation, logic, analytical thinking and deduction (DES, 2002). Subsequently educational functions associated with the right side functions of the brain such as intuition, imagination, emotions, feelings and creativity are awarded less time and prominence. From an ESD perspective it is important to restore some element of balance in our education programmes through the rehabilitation of right brain approaches to teaching and learning.

While a holistic approach to education is advocated in the primary school curriculum, the same cannot be said for the way teacher education has been delivered to date. Education with a holistic perspective is concerned with the development of every person’s intellectual, emotional, social, physical, artistic, creative and spiritual potentials. ESD offers a philosophical, theoretical and practical platform to engage student teachers with a more

holistic experience of education through practical engagement with issues of sustainability. This includes practical experiences such as forest schools (Knight, 2011), learning outside the classroom (Beames et al., 2012) and a range of creative approaches to education (Scoffham and Barnes, 2011).

Theorists such as Orr (2004) and Sterling (2001) believe that ESD should be holistic in its approach. This is challenging in the context of secondary education with more rigid timetables. However, the primary curriculum which supports cross-curricular approaches, thematic teaching and integration (Greenwood, 2007) provides many opportunities depending on the interest and motivation of primary school principals and teachers.

Conclusion

After a somewhat disappointing Rio+20 conference, it is important not to lose hope. The Irish government has committed the Department of Education and Skills to finalise a strategy for ESD this year. While we have learned to live unsustainably in a very short space of time (Inman and Rodgers, 2006) the challenge for educators is how to promote learning for sustainability in the interests of the future well-being of the planet and ourselves. To date ESD has been problematic because it has not been embedded as a central principle of education programmes, nor has it been mainstreamed into teacher education. ESD has not been considered in terms of its original focus to engage 'the entire education, public awareness and training systems to address the economic, social and environmental issues facing their regions both at present and in the future' (Hopkins 2012: 34).

ESD requires a holistic, integrated cross-curricular and mainstream approach if it is to enjoy success. However, the first step in achieving this is for government departments to appreciate the importance of sustainability issues and to promote cross-departmental co-operation to ensure that sustainability issues in general and ESD in particular are prioritised as a matter of urgency. In response to clear inter-departmental strategies to promote ESD as a priority educational focus, teacher educators need to present ESD through a variety of curricular areas both on and off campus.

Ideally, ESD courses should be included as part of the mandatory teacher education courses. However, the perspective and philosophy of ESD courses can also inform a range of teacher education courses in a fluid, creative manner in a way which helps address the left brain/right brain divide which currently exists in our education system.

It is important to review the provision of ESD as part of initial teacher education to date and to anticipate the kind of provision and the challenges and opportunities which exist in the new B.Ed. degree programme. Similarly, it is important to review the provision of 'Environmental Awareness and Care' as it is currently constituted in the primary curriculum. To date ESD and DE have continued to exist on the margins of formal education. However following reforms introduced in September 2012, DE is now part of the mandatory initial teacher education programme for all student teachers in Ireland. There is an important strategic opportunity here for ESD to collaborate with DE. This may involve ESD being offered through the DE modules or retaining its own identity within teacher education. Whatever the approach adopted by ESD educators it makes sense to work closely with the DE programme as together both DE and ESD have the potential to make a radical contribution to initial primary teacher education programmes.

While the provision of ESD as part of initial teacher education has been sketchy to date, there is now a real opportunity to address this lacuna. Historically, ESD was left as a 'myriad of individual initiatives and micro pieces' (Hopkins 2012: 34). There have been several calls for the mainstreaming of ESD and development education (Liddy, 2012). This article proposes three actions: to incorporate ESD as a central aspect of initial teacher education; to provide opportunities for ESD to reorient teacher education programmes towards sustainability; and to work towards more holistic teacher education provision with the assistance of ESD. Now is the time to adopt this challenge.

This raises questions about the type of curriculum which should be developed for teacher education in the twenty-first century, which can promote equality, social inclusion and sustainability. There is therefore a need to move conversations which deal with development, intercultural, sustainable development and global issues, from the periphery to the centre of teacher education programmes. DE has a guaranteed place in the new B.Ed. Degree Programme but it remains to be seen how ESD will feature in the new programme. While government policy is currently dedicated to improving literacy and numeracy it is important for policy makers to include ecoliteracy on this list of political priorities with immediate effect. This is the time for ESD and DE to collaborate in terms of reinvigorating and re-imagining initial teacher education programmes. Never has the timing been so opportune nor the opportunity so significant.

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Anne M. Dolan is a lecturer with the Department of Learning, Society and Religious Education, Mary Immaculate College, Limerick. Currently she teaches a range of methodology courses in primary geography, development and intercultural education. After working as a primary teacher for a number of years, Anne worked in the area of development studies in Ireland and abroad. She worked as a development education officer for NCDE (National Committee for Development Education), as director of the International Centre for Development Studies, NUI, Galway and as chairperson of Comhlámh, the Association of Returned Development Workers. Anne spent two years in Lesotho with the Agency for Personal

Service Overseas (APSO) working in the Lesotho College of Education (LCE) as a lecturer in development studies. She has conducted research and evaluation work for the Development Education Unit of Irish Aid, Trócaire, Comhlámh, 80:20 and the Curriculum Development Unit in Mary Immaculate College.