



United Nations Economic Commission for Europe Steering Committee on Education for Sustainable Development

9th meeting, 3 and 4 April 2014

Information Paper 3

Working Group on 'Introducing ESD to Teacher Education': Outcomes^{*}

Prepared by the Secretariat and the Chair of the electronic working group on teacher education

^{*} This document was not formally edited.

Executive summary

This report summarizes the discussion of the electronic working group on the embedding of Education for Sustainable Development (ESD) into teacher education, which is one of the priority action areas of the UNECE Strategy for Education for Sustainable Development (ESD) for implementation phase III (2011-2015). Members of the working group were asked to reflect upon ESD teacher education initiatives in place in their respective countries and to identify progress, key challenges and opportunities for future developments.

Firstly, participants agreed that ESD needs to be extended rather than introduced across teacher education programs in the different countries. Almost all countries represented in the working group have a national initiative in teacher education for sustainable development but these are weakly resourced or positioned. This has meant that most teacher education offerings do not reflect sustainability concerns or competences. Numerous promising initiatives were identified, but participants agreed that truly transformative teacher education for sustainable development is not yet an ambition in any of the countries.

Secondly, considering the challenges for introducing ESD into teacher education, participants stated that one of the most severe problems was the lack of compatibility between an ESD vision of education and existing education structures and processes. Transdisciplinarity, holistic learning approaches and learner agency promoted by ESD are often in conflict with dominant learning environments and teacher education systems.

Thirdly, considering the resulting recommendations, participants highlighted the importance of leadership and mentoring for truly transformative ESD. In terms of tools to achieve this, participants named research networks, online resources and workshops as particularly effective methods. Lastly, participants presented example initiatives from Canada, Cyprus, Estonia, France, Germany, Ireland, the Netherlands, the United Kingdom as well as the COPERNICUS project.

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1. Introduction

At the 7th Steering Committee meeting of the UNECE Strategy for ESD, member States agreed upon three priority action areas (ECE/CEP/AC.13/2012/2 para. 32):

- a) to ensure that there was an ESD school plan in every school by 2015;
- b) to promote the introduction of ESD into teacher education; and
- c) to reorient technical and vocational education and training (TVET) in support of sustainable development and the transition to a green economy.

In 2012 electronic working groups on the priority action areas were established by the Steering Committee, in order to bring together expertise of members and observers of the UNECE Steering Committee for ESD and to work virtually on recommendations for specific actions to advance the priority action areas.

In 2013, the second electronic session on priority action area (b) *to promote the introduction of ESD into teacher education* was held between 9th September 2013 and 2nd October 2013.

The discussion was chaired by Professor Daniella Tilbury, Member of the UNECE Expert Group on Competences, and supported by the UNECE Secretariat. A full list of participating members is provided in Annex II. On the basis of the input given by the group, the Secretariat drafted this report. The outcome of the discussion and a number of recommendations will aim at informing the discussions at the 9th Steering Committee on ESD, meeting which is held on 3 and 4 April 2014.

2. Teacher Education for Sustainable Development

The UNECE Strategy for Education for Sustainable Development (ESD) (CEP/AC.13/2005/3/Rev.1) interprets teacher education as a process that involves new and practising educators in learning and the development of their teaching practice. Educators can come from formal, further or higher education as well as from informal or non-formal education circles (para. 54).

It understands ESD as a process that ‘develops and strengthens the capacity of individuals, groups, communities, organizations and countries to make judgements and choices in favour of sustainable development. It can promote a shift in people’s mindsets and in so doing enable them to make our world safer, healthier and more prosperous, thereby improving the quality of life. Education for sustainable development can provide critical reflection and greater awareness and empowerment so that new visions and concepts can be explored and new methods and tools developed.” (CEP/AC.13/2005/3/Rev.1; vision statement)

The working group drew upon these definitions but also upon the UNECE ESD Competences, as outlined in the *Learning for the future report* (ECE/CEP/AC.13/2011/6) that can be used to support the professional development of educators in this area.

3. Summary of key arguments presented during the discussion

ESD extension rather than introduction

The first part of the discussion on promoting the introduction of ESD into teacher education was concerned with the question of whether ESD needed to be introduced into, or rather extended across teacher education programs. Furthermore, participants were asked to identify good practices of ESD teacher education already in place in the different countries of the UNECE region, which could be up-scaled.

Overall, a great number of initiatives and training materials available for ESD teacher education in the UNECE region were presented, which led to the prevailing opinion that ESD needed to be extended rather than introduced across teacher education programs. Example initiatives include the introduction of “Learning for Sustainability” to teacher professional standards in Scotland/United Kingdom, compulsory training courses for principals, teachers and school inspectors in Cyprus, undergraduate and post graduate courses in sustainability education in Canada, as well as a large scale EU-funded project on ESD teacher education in Estonia. Despite these examples none of the discussed countries, with the exception of Cyprus, structurally integrates ESD into pre and in-service teacher education. Thus, the group concluded that there was a need to integrate ESD into teacher education and moreover rethink the underlying assumptions and frameworks that inform teacher education.

Truly transformative teacher education for ESD has not yet been achieved

During the second part of the discussion on promoting the introduction of ESD into teacher education, participants were asked to point out (a) how transformative the presented initiatives were, (b) whether they focused on integrating sustainability concerns into teacher education practice, and (c) if they were challenging the existing frameworks. Furthermore, it was discussed (d) which of these initiatives were backed with systemic support, such as capacity building programs for teacher educators.

Concerning question (a), there was wide agreement that in none of the countries under analysis truly transformative teacher ESD had yet been achieved. This was found to be the case, since truly transformative initiatives were argued to imply rethinking the educational system and assumptions to align with ESD. Nevertheless, with regards to question (b) a range of promising and successful ESD teacher programs had been implemented in the UNECE region. Examples of initiatives that were challenging the existing frameworks (c) included the ESD teachers training courses in Cyprus and the Sustainability and Education Academy in Canada. It was furthermore discussed that transformative teacher education for ESD should create synergies between pre and in-service education, and be embedded in a whole school approach to ESD. With regards to question (d) it was pointed out that systemic support for ESD initiatives would have to include political commitment, policy frameworks and official guidelines that support ESD, as well as commitment by education leaders. Countries that were able to create significant systemic support for their ESD initiatives included Cyprus, Canada, the Netherlands and Estonia.

ESD requires political support, leadership and an exchange of ideas

During the third part of the discussion on promoting the introduction of ESD into teacher education, the necessary strategies and efforts to support champions and widen the engagement for deeper change towards ESD in teacher education were discussed. This part of the discussion aimed at generating tangible recommendations for the Steering Committee in order for UNECE member states to up-scale their own teacher education efforts.

Participants brought forward a number of recommendations on expanding teacher education for ESD. It was argued for fostering political support and leadership for ESD, which could be manifested in requirements for teacher certifications, professional standards and other ministerial dictates. Moreover, it was stated that coherent and transformative teacher education programs should be made a priority, and measured against the impact they have upon teacher practices. It was argued that ESD could be combined with other high priority themes, such as Quality Education, Literacy and Numeracy. Finally, participants mentioned that networks on reorienting teacher education towards ESD should be supported and connected within and beyond the UNECE region. Key recommendations from this part of the discussion have been summarised in section 5.

4. Main Challenges

The first challenge identified in the discussion was the lack of a consistent national vision, policy and leadership in some of the discussed countries. The changing research agenda and policies governing higher education were argued to pull the topic of ESD in contradictory directions, which increased the possibility of co-option. Thus, in order for changes within teacher education institutions (TEIs) to happen, ESD would first have to be integrated into the requirements for teacher certifications on a political level.

Another key challenge mentioned was that teachers were still being prepared for school climates that may not support ESD. An international review carried out in 2002, for example, argued that the type of knowledge dispensed is heavily weighted toward facts and the instructional format is teacher centred². This highlights the necessity to single out those characteristics of teacher education which actually impact teacher practice. At the same time, it was argued that providing pre-service ESD education for teachers does not guarantee the application of what was learned in the classroom.

Finally, it was brought forward that a key challenge for the implementation of ESD at universities, were the communication gaps within the faculties and the silo-ing within faculties of education in particular. It was argued that there existed competing interests and priorities within faculties, funding challenges, and a lack of professional development opportunities. Responses to alternative approaches were often ignored due to congested curriculums and priorities in other areas. ESD was still seen by some to be primarily an individual faculty member commitment rather than a faculty-wide response.

² Mintrop, 2002: p. 76-77

Moreover, some faculties had been reluctant to introduce ESD because of fundamental criticisms of the concept and its implementation by some academics³.

Alongside these overarching challenges, a number of country-specific problems were pointed out. For example, in the Netherlands it had become increasingly difficult for teachers to work on ESD, since as of 2015 they would only be permitted to give classes in their own strict subject – therewith making subject-integration even more difficult in practice. In countries such as Canada and Germany education is a federal or even provincial responsibility, which leads to the absence of a national policy and great differences within the countries.

5. Key Recommendations

Fostering political support and leadership

Participants argued that teacher ESD becomes more effective where there is support for it - for example at the level of the ministry, the local board of education, as well as at schools and universities. Fostering political support and leadership for ESD could be manifested in requirements for teacher certifications, hiring practices, professional standards and other ministerial dictates.

Recommendation: UNECE Steering Committee continues to make teacher education for sustainable development visible in UNECE's strategic policy documents, such as in a future UNECE implementation framework for ESD, and reaffirms the importance of generating political support and leadership for teacher education for sustainable development on national level, incl. through national ESD action plans for and other relevant policy documents.

Context specific and locally mandated professional development programmes

Considering the curriculum it was argued that the UNECE should be guided by a locally mandated curriculum when developing a professional development program. Collaborating with curriculum consultants from the ministry of education and school district would ensure that ESD is perceived as a valid concern while having a local flavour. In a greater context the curriculum should prepare its students to become responsible citizens and encourage active and authentic engagement as well as critical thinking. Yet, this can only be achieved if the curriculum was grounded in the knowledge of child and adolescent development, learning, social contexts and subject matter pedagogy, and taught in the context of practice.

Participants furthermore highlighted that ESD, and the teacher education required to support it, must be transformative in terms of both pedagogy and curriculum. In order for ESD to be transformative it was argued to require a shift away from the “transmission model” of education toward a more holistic approach, exceeding the frames of the traditional courses. Moreover, in order for transformative initiatives to be successful, a common, clear and coherent vision of good teaching needed to permeate it, which should lead to well defined standards of practice and performance. The program should be conceptually coherent rather than a mishmash of activities and challenge existing teacher education frameworks. Finally, it was stated that the program should give participants sufficient time to

³ For an overview of critiques see: Sue L. T. McGregor, “Alternative Communications About Sustainability Education”, Sustainability 2013, 5, p. 3562-3580.

appropriate ideas during the sessions and to adapt them once back in their classrooms. Thus, the program should not be a one-shot workshop, but should rather span a period of several years building participants' knowledge and competencies from simple awareness, to engagement, and finally to commitment.

Recommendation: UNECE Steering promotes the development of context specific and locally mandated professional development programmes for teachers in ESD. The programme should build competence and capability and not just awareness or understanding.

Promotion of national mentoring programmes

On a more general level, participants underlined the necessity for teachers to be involved in the development of reforms, since real transformation could only take place if there is true commitment by teachers as well. Several participants underlined the importance of mentoring for supporting the integration of ESD into teacher education, as mentors can play an invaluable role by reinforcing ideas in context. A three-year in-service professional development research project on enhancing literacy practices in science classrooms⁴ confirmed the critical importance of this component for the appropriation of strategies by participants. The newly established EU Lifelong Learning Programme financed project UE4SD programme will be developing mentoring and professional development schemes for educators building upon the UNECE ESD competences.

Recommendation: UNECE Steering Committee promote investment in national mentoring programmes and support international efforts that adopt these approaches.

Development of ESD research and capacity building networks for teacher educators

Moreover, several participants argued that building research networks would be crucial in supporting the goal of building capacity within the educational system, beyond the level of individual champions. These networks could include stakeholders from various sectors, such as governments, NGOs, industry and schools. These networks could similarly lead to the creation of a professional learning community amongst participants who share similar concerns and experiences and who can work together to resolve implementation issues. This exchange could either take place face-to-face or on a virtual level, as online resources and social media were argued to play a key role in organizing and maintaining sustainability learning communities. For example, teachers could take advantage of online ESD resources when they are connected to the curriculum mandated in their respective jurisdictions⁵.

Recommendations: UNECE Steering Committee promote the development of ESD research and capacity building networks for teacher educators.

⁴ Professional development research project on enhancing literacy practices in science classrooms carried out by Leonard Rivard.

⁵ Examples include networks of practice, open-space "Education Camps" and the website Resources for Rethinking www.r4r.ca.

Promotion of multi-stakeholder engagement in the development of teacher education programmes

Furthermore, some working group members recommended a greater engagement of the private sector in ESD. Industry and business could be very powerful partners in moving a particular agenda forward and have increasingly demonstrated an interest in educational matters. Sustainability issues and greening the economy were also more and more on corporate agendas. Thus, creating linkages among the different sectors and across jurisdictions might help move the ESD agenda forward.

Recommendation: UNECE Steering Committee should reaffirm the role of partnerships in embedding sustainability in teacher education and promote multi-stakeholder engagement in the development of teacher education programmes.

Encouragement of national workshops on ESD for teacher educators

Finally, it was stated that workshops were an effective tool for teaching and exchanging information on ESD. In general, workshops should aim to exemplify ESD content and pedagogy, and involve participants cognitively and affectively. Considering their length, it was argued that half or full-day workshops on their own are not very effective and that they should rather be carried out over several days.

Recommendation: UNECE Steering Committee should encourage member states to develop national workshops on ESD for teacher educators.

ANNEX I: COUNTRY EXPERIENCES

Note: Experiences from countries were informally shared by the group members and represent some of the group members view. They are not part of the national implementation reporting carried out under the Strategy.

Canada

In Canada, there is modest but promising progress toward reorienting teacher education to address ESD. The ministry of education has identified ESD as one of six priority action areas along with others such as numeracy and literacy. Moreover, a recent survey⁶ on the inclusion of ESD into teacher education in Canadian faculties of education, demonstrated that the majority of faculties are making considerable efforts. While there persist significant differences in the scope of approaches, faculties generally aim toward integrating ESD or ESD-like principles into their pre-service programs. There are a number of promising practices abound in the more than sixty teacher-education programs in Canada, out of which only a few are presented here.

In 2011, the University of Winnipeg launched a new Post Baccalaureate Diploma in Education for Sustainability. The program uses a hybrid online/on campus model, intended to make it accessible to all teachers throughout the province. Another innovative initiative is the Sustainable Happiness course which has become one of the most popular courses in the education program at Cape Breton University. The University of British Columbia has started discussions around the idea of a minor in sustainability education which would be administered by the faculty of education. In order to fulfil the course, students would take sustainability classes tailored to their studies as well as electives in other faculties. The Simon Fraser University recently started an integrated sustainability education model which has 32 students doing a minor in environmental/sustainability education using a summer institute as part of their programs. In the Canadian province of Manitoba an ESD Leadership Council was established in 2012, consisting of senior-level representatives from various educational sector groups, faculties of education and government departments. Its aim is to assist with the development and implementation of a three-year provincial Education for Sustainable Development Action Plan. Infusing ESD pedagogy into Teacher Education and integrating ESD into curricula and learning are two of the goals stated in the action plan⁷.

Cyprus

The topic of ESD teacher education has been increasingly given priority over the last few years in Cyprus. This is closely related to the on-going educational reform in the country which constitutes to the official introduction of ESD into the educational system. Consequently, the Cyprus Pedagogical Institute and other coordinating bodies are offering various courses on ESD – both optional and obligatory ones. These courses cover a number of different aspects and elements of ESD and concern diverse key stakeholder, such as principals, teachers of all educational levels and school inspectors. For example, the training course for newly appointed school principals of primary and secondary schools include an introduction to the basic principles and aspects of ESD, the concept of sustainable

⁶ Conducted by the International Institute for Sustainable Development (IISD), the ESD Steering Committee of the Council of Ministers of Education of Canada (CMEC) and LSF.

⁷ Action plan can be found at: http://www.edu.gov.mb.ca/k12/esd/pdfs/leadership_council.pdf

schools and the planning and implementation of ESD school plans. For teachers, courses include aspects on the implementation of the National Curriculum on ESD in their schools, the planning of their school's ESD School plan and an exchange of ideas with other teachers through a number of local networks. Apart from the mandatory educational and training programs offered by the Cyprus Pedagogical Institute, optional teacher education and training courses for ESD are offered. These empirical, interactive and experiential seminars are organized in various areas such as environmental education centres and museums.

Estonia

In Estonia there exists a National Curriculum with basic principles and structures for education, which provides the basis for all Estonian school curricula. These school curricula must specify how they include cross-curricular topics, such as the environment and sustainable development into their classes. More specifically, school curricula need to explain how they will structure the learning environment, how the topics of environment and sustainable development will be introduced into all core subjects and which optional subjects students can choose. Additionally, methods to encourage students to carry out creative work within these topics and take part in national and international projects have to be developed. Lastly, the school is encouraged to collaborate with regional institutions and enterprises, educational and cultural institutions as well as civic associations.

Alongside the national curriculum, the Estonian ministry of the environment and the environmental board have implemented the "Environmental education development program". The program aims to develop formal in-service training programs, focusing on the integration of the topics of sustainable development and environment for university-lecturers and teachers of all levels. Furthermore, the program aims to develop methodological materials and teacher-toolkits. The program is co-financed by the European Union Social Fund and will be launched at the end of 2013.

France

The recent replacement of the Instituts Universitaires de Formation des Maîtres (IUFM) by the École supérieure du professorat et de l'éducation (ESPE) has radically changed the situation of teacher education in France. ESPEs are integrated into universities, involve academic and practitioner trainers and built their own training plans, even if a national framework exists. At the same time there have been changes in the legislative environment - the "guidance and rebuilding of the school" explicitly refers to ESD and aims to introduce children to environmental issues. Similarly, the recently released Competency Framework also includes an explicit reference to ESD, highlighting the implementation of cross educations, including "health education, citizenship education, education for sustainable development and the arts and cultural education". Despite these recent advances, ESD is still relatively marginalized in France with regards to institutional support and mainly left to activist teachers and trainers.

Germany

Generally, ESD education is dealt with by the ministry of education and culture in Germany. However, due to the federally structured approach towards education in the country, the 16 states each have different education and schools systems with different standards for higher education, teacher trainings and schools. Thus, university faculties and even individual professors have a say in the implementation of ESD measures. While there exist a number of public and private institutes of teacher training in the different states, it is up to each individual school to decide whether or not to take part in the programs offered. In the city of Nuremberg for example, there is an Institute for Teacher Training, which includes a centre for environmental projects and education.

Ireland

Similarly to other countries, an integrated and transformative approach to ESD does not exist in Ireland. However, there are elements of transformation at the level of individual teacher educators and curriculum. Currently, the lower second-level education is being reformed in Ireland, which leads to fewer compulsory subjects, the end of uniform state-wide testing and a greater focus on local interests and needs, as well as the quality of learning. However, this change is not coming about because of the importance of ESD but rather due to concern that the current model of lower second-level education was leading to students being ill prepared for university and entrepreneurship. At the same time this transformation process is contested, as many teachers currently also work as state examiners and may lose income due to the end of state-wide exams. Moreover, some subjects will no longer be compulsory, which is seen to threaten the careers of teachers qualified in those subjects. Lastly, teachers who have long been acceptors of curriculum are now being asked to be local curriculum developers - a challenge that many feel ill equipped for.

Apart from this reform there has been a long running project to integrate ESD into teacher education in Ireland called the Ubuntu project⁸. It includes an action research approach in the context of a network or community of teacher education practitioners. This allows teacher educators to develop their own practice rather than having developments imposed, and ensures a degree of normalisation of ESD. However, when ESD is normalised as part of a curriculum, it may not appear as a specific module but may instead be infused across a range of modules. While this could be an improvement educationally, funders may prefer a less integrated approach which is easier to account for.

Netherlands

Although there are no existing teacher education frameworks and curricula which truly support sustainable development in the Netherlands, there exists some formal national programs. Until 2011 a temporal national program called Sustainable Higher Education (in Dutch: Duurzaam Hoger Onderwijs, DHO) was coordinated and financed by the ministries of education and agriculture. As part of this program there have been diverse initiatives such as teacher education programs and the use of new teaching materials. While the DHO-office does not exist anymore, its results could certainly be used and up-scaled.

⁸ For more information see: www.ubuntu.ie

Moreover, there exists a community of 20 schools in primary, secondary and further education which functions as a spearhead group for about 240 linked schools in the greater region. These schools are aiming to leave the transmission model of teaching behind and introduce ESD step by step to strengthen the learning process of other disciplines. The schools base their classroom-learning on themes such as biodiversity as well as food and energy, and similarly introduce themes such as philosophy, politics, environmental pressure and landscaping discussions. Teachers regularly meet in cross-school-groups of about 12-15 people to debate, develop and exchange practice and options on ESD.

Scotland

In August 2013, the General Teaching Council for Scotland as the independent professional body which promotes and regulates the teaching profession in the country, revised their professional standards to include the theme of Learning for Sustainability. The General Teaching Council established that “Learning for sustainability is a whole-school commitment that helps the school and its wider community develop the knowledge, skills, attitudes, values and practices needed to take decisions which are compatible with a sustainable future in a just and equitable world”. While it might be too early to tell what kind of impact the integration of sustainability into GTCS professional standards will have on TEIs in Scotland, it is a promising model. How these standards will be put into practice needs to be monitored over the coming years.

COPERNICUS

One example of an international program on ESD is COPERNICUS, a 3 year-project which is entitled “University Educators for Sustainable Development” (UESD). It aims to bring together 55 higher education institutions, organisations and associations in 34 countries in Europe and beyond. The program supports university educators regardless of their courses or specialisation and helps them to re-orient their academic practice and research towards sustainability. The project involves partners from most UNECE countries in Europe⁹ and will use the UNECE ESD Competence Framework as a key document to frame the research and activities planned. Project outcomes include a mapping of opportunities for university educators to develop ESD competences through professional development, a publication and online platform of resources to support changes to curriculum development and academic provision in universities. Moreover, the program aims to lead to the framing and trial of a European academy for ESD and provide guidance to universities on how to support the development of ESD competences of teaching staff. The University of Gloucestershire and the COPERNICUS Alliance has been awarded about 600.000 Euro by the European Commission to lead this international project and has officially started on 1st October 2013.

⁹ A map of partners is accessible online at:
<https://mapengine.google.com/map/viewer?mid=zf4INE1dLRAI.k9egU6ZqZCYk>

ANNEX II: Membership of Group

Members of the electronic working group on the introduction of ESD into teacher education:

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Mula, Ingrid	Copernicus Alliance of European Universities
Rivard, Leonard	Université de Saint-Boniface, Canada
Tormey, Roland	École Polytechnique de Lausanne, Switzerland
Tilbury, Daniella	University of Gloucestershire, UK (Chair)
Zachariou, Aravella	Cyprus, Focal Point