International Network Of Institutions Of Teacher Education:
Five Years Of Work On Reorienting Teacher Education To Address Sustainability
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Abstract

In 1998, the United Nations Commission on Sustainable Development work program on Education for Sustainable Development called for UNESCO to develop guidelines for reorienting teacher training to address sustainability. UNESCO passed this responsibility to the UNITWIN / UNESCO Chair at York University in Toronto, Canada. Charles Hopkins, UNESCO Chair, established an International Network of 30 teacher-education institutions from 28 countries willing to change curriculums, programs, practices, and policies to address sustainability in locally relevant and culturally appropriate ways. Participants kept track of their efforts in journals, chronicling successes and failures. The Network met every two years to discuss their efforts and exchange ideas.

After three years, the Chair and Secretariat sent network members a survey requesting information about what worked, what did not work, insights, and recommendations for other institutions of teacher education. The responses were synthesized in *Guidelines and Recommendations for Reorienting Teacher Education to Address Sustainability* published by UNESCO. This document makes recommendations in a number of areas including:
1. Ministerial and national level involvement
2. Community and regional/provincial involvement
3. Changes within institutions of higher education, including faculties of education
4. Funding and other resources
5. Partnerships
6. Research
7. Communications
8. Information Technology Opportunities

Introduction[1]

Educating for a more sustainable future in its broadest sense includes improving quality basic education, reorienting education to address sustainability, improving public awareness, and providing training to many sectors of society. This document focuses on one aspect of

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[1] Note—The text of this paper contains excerpts from a document for which I was the lead writer:
Hopkins, Charles, Rosalyn McKeown, and the International Network. 2005. "Guidelines and Recommendation for Reorienting Teacher Education to Address Sustainability." *Education for Sustainable Development in Action Technical Paper no. 2*. Paris: UNESCO. Rather than using quotes extensively, I noted the page number from where paragraphs originated.

education—teacher education—especially the role of institutions of teacher education in reorienting teacher education to address sustainability. (p. 11)

Institutions of teacher education fulfill vital roles in the global education community; they have the potential to bring changes within educational systems that will shape the knowledge and skills of future generations. Often, education is described as the great hope for creating a more sustainable future; teacher-education institutions serve as key change agents in transforming education and society, so such a future is possible. Not only do teacher-education institutions educate new teachers, they update the knowledge and skills of in-service teachers, create teacher-education curriculum, provide professional development for practicing teachers, contribute to textbooks, consult with local schools, and often provide expert opinion to regional and national ministries of education. Institutions of teacher education also perform similar services for school principals who have significant impact on what occurs in schools. Because of this broad influence in curriculum design and implementation, as well as policy setting within educational institutions, faculty members of teacher-education institutions are perfectly poised to promote education for sustainable development (ESD). By working with the administrations and faculties of teacher education institutions, governments can bring about systematic, economically effective change. (p. 10 – 11)

History of This Project and Document

During the 1990s, UNESCO identified teacher-education institutions and teacher educators as key change agents in reorienting education to address sustainability. In 1997 UNESCO held a Teacher Education Consultation in Thessaloniki, Greece in conjunction with the Environment and Society: Education and Public Awareness for Sustainability conference. Twenty-one participants from institution of teacher education from nine nations attended the meeting to discuss paths forward to reorient teacher education to address sustainability. Subsequently, in 1998 the United Nations (UN) Commission on Sustainable Development (CSD) work program on Education for Sustainable Development called for UNESCO to develop guidelines for reorienting teacher training to address sustainability. In order to accomplish this task, UNESCO and York University, Toronto, Canada agreed to establish a UNITWIN / UNESCO Chair in 1999 to provide advice to UNESCO and institutions of teacher education. UNESCO passed the task of developing guidelines for the reorientation of teacher education to the UNESCO Chair at York. As a result, one of the long-term goals of the UNESCO Chair is to develop guidelines and recommendations for reorienting teacher education and associated realms of pedagogy, curriculum, and other related issues. (p. 12)

To write the guidelines, the Chair established an international network of more than 30 teacher-education institutions in as many countries. Educators at these institutions worked collaboratively to identify various ways of achieving this goal. The UNESCO Chair has convened three meetings of the International Network. The first took place in Canada in October 2000, the second in South Africa in September 2002, and the third in Sweden in 2004. At the first meeting, the Chair used the *Education for Sustainable Development Toolkit* (McKeown, Hopkins, and Rizzi, 2000) to create a common understanding of ESD. The Chair also adopted the *Toolkit* as the official document of the Chair and the International Network. At the first meeting, the participants explored ways to move forward with reorienting teacher education to

address sustainability. In general, each institution decided upon its own avenues for experimentation, based on the contexts of its community and nation. At subsequent meetings and in reports, participants shared their efforts related to reorienting teacher education to address sustainability. The group also developed and agreed on a format to document their efforts. The Chair and Secretariat distilled the experiences and wisdom from the efforts reported by the instituions into the guidelines. (p. 12)

Institutional Members of the International Network

The institutional members of the International Network on reorienting teacher education to address sustainability are:

Argentina, National University of Rosario - Argentina
Australia, Griffith University
Barbados, Erdiston Teacher's Training College
Brazil, Federal University of Parana
Canada, York University
China, Beijing Normal University
Czech Republic, Charles University and University of J.E. Purkyne
Denmark, N. Zahles College of Education
Germany, Freie University Berlin and University of Duisburg-Essen
Hungary, University of Debrecen
India, National Council for Teacher Education and Jamia Millia Islamia
Jamaica, Mico Teachers' College and University of West Indies
Korea, Ewha Womans University
Latvia, Daugavpils University
Lesotho, National University of Lesotho
New Zealand, Christchurch College of Education
Nicaragua, University of the Autonomous Region of the Caribbean Coast of Nicaragua
Pakistan, University of the Punjab
Peru, Pontificia Catholic University of Peru
Russia, Rostov State University
South Africa, Rhodes University
Spain, University of Girona
Sweden, University of Uppsala
Taiwan, National Taiwan Normal University
United Kingdom, Scotland, University of Edinburgh
United Kingdom, England, University of Bath
United States of America, Florida Gulf Coast University
Vietnam, National Institute for Educational Science and Ministry of Education and Training
Zambia, University of Zambia
In addition, University of Tennessee served as secretariat for the project.

Initiatives Taken by the International Network

The responses to the surveys showed that members of the International Network undertook many types of initiatives in their efforts to reorient teacher education to address sustainability in their home institutions, provinces, nations, and internationally. Their efforts affected curriculums, programs, practices, and policies within their institutions in locally relevant and culturally appropriate ways. Their activities stimulated the growth of regional, national, and international networks. They used a wide variety of forums available to teacher educators (e.g., conferences and journals) to advocate for ESD. Members kept track of their efforts in journals, chronicling their efforts, successes, and failures. (p. 17)

Please note that members of the International Network received no funding from the Chair or any other international organizations to support their activities to reorient teacher education to address sustainability. We knew the successes of well-funded pilot programs would not be replicated; however, success stemming from personal initiative and allocation of resources internal to an institution would be believable and replicable. (p. 17)

Working within their spheres of influence, members of the International Network created and implemented one or more the following types of activities related to ESD at their own institutions.

Curricular / Program Development

- Developed graduate level programs at Masters' and doctoral levels in ESD.

- Developed a compulsory ESD course for masters' programs in geography and environmental education.

- Established advanced certificate programs in ESD.

- Established distance education courses in ESD.

- Established an environmental education concentration in the College of Education's Masters' Degree in Curriculum and Instruction.

- Established short in-service courses for teachers.

- Reviewed and revised existing courses to address sustainability.

- Infused ESD into all math, science, geography, and technology courses.

- Infused ESD into other disciplines at undergraduate and graduate level programs such as agriculture, population education, and consumer education.

- Initiated programs with Women's Studies, Women in Society, Women in Agriculture, and Women's Literacy.

- Devised an ESD project using literature and language arts at the secondary school level to address male youth violence and to deliver skills in conflict resolution.

- Launched an Aboriginal Studies program with a focus on ESD and traditional ecological knowledge.

- Assisted in infusing the concepts of sustainability into dissertations and graduate research as an option.

- Pursued research projects in ESD

Institutional Change

- Formed Institutes and Centers for Sustainability Education.

- Formed institution-wide ESD committees and discussion groups.

- Launched a Cyber-Environment Education Institute.

- Developed ESD internships for students from other countries.

- Established an interfaculty research institute on innovation and sustainability.

Faculty Professional Development

- Pursued European Union funding for faculty training in ESD.

- Developed interfaculty exchanges related to ESD among universities.

- Established a national ESD professional development consortium.

- Held institution-wide, national, and international conferences and workshops on ESD.

- Launched an international peer reviewed journal on ESD.

- Initiated practical and theoretical research projects leading to publication of articles and books.

Networking

- Formed four international regional networks of faculties of education related to ESD and reorienting teacher education, which involved approximately 70 faculties.

- Established an ESD link with schools in another country.

- Developed a regional strategy for ESD.

- Established a language-based ESD network in Europe and the Americas in English, Portuguese, and Spanish.

Partnerships/Community Service

- Formed partnerships with local / regional government and nongovernmental organizations (NGOs).

- Developed recognition programs for schools and institutions that promote ESD (e.g., green school movement).

- Formed Sustainable Business Partnerships to promote ESD.

- Undertook research on infusing ESD into teacher education on a national level.

- Engaged geographic information systems and other information technology approaches to monitor community sustainability issues.

- Developed community-based off-campus teacher education projects within the inner city to improve the delivery of schooling to undereducated youth.

- Formed regional ESD curriculum-writing teams.

- Developed link between the faculty of education and the school of business to co-develop professional development programs on ESD for senior level education administrators.

- Produced manuals, texts, Web sites, and other sustainability teaching resources for elementary and secondary schools.

- Translated key ESD materials, including the *Education for Sustainable Development Toolkit* Web site, into local languages.

Promotion of ESD

- Raised the level of awareness of ESD through many activities by writing journal articles and popular press materials; giving media interviews, lectures, and presentations at conferences; contacting academics and educators in many disciplines; and speaking with higher-education administrators around the world.

- Delivered copies of Agenda 21 to all faculty members in the six largest regional universities.

- Designed programs to model ESD practices within an institution.

- Produced sustainability demonstration sites that address energy conservation, organic agriculture, wastewater treatment, etc.

- Participated in a national committee to rewrite teacher education certification requirements.

- Use the Earth Charter as a framework for the development of presentations and workshops. (p. 17 – 28)

Examples of Activities from Asia and the Pacific

The lists above are decontextualized .   The following are short descriptions of some of the activities undertaken by International Network members of the Asia-Pacific Region.

Department of Women's Studies and Sustainable Development

It is now internationally recognized that women are not only equal with men, but many times even more powerful as partners of ecosystem management. Their empowerment and knowledge of natural resources and sustainable development are important to preserving this planet. In a country like Pakistan, women have been working without realistic valuation of their work and work places. They are deprived of many basic human rights, including the right to education. With a low level of literacy and awareness, such women are unable to fulfill their roles effectively and contribute positively to sustainable development.

The Department of Women's Studies (DWS) at the University of the Punjab established its master's degree to act as a catalyst for sustainable development by preparing properly educated men and women who: know the complementarity of the genders, believe in the economic and social empowerment of women, and can actively engage in sustainable development. The program, which focuses on women's roles inside and outside the home, draws

faculty and professionals from various multidisciplinary fields, as health sciences, business administration, law, environmental programs, and small industries. DWS students work as interns in nearly 30 different organizations. Graduates of the program are employed by governmental, nongovernmental, and civil society organizations engaged in multifaceted tasks that lead to a more sustainable society. The DWS program impacts not only the students, but also the professionals who come in contact with them.

<div align="right">
University of the Punjab, Pakistan
Dr. Munawar Mirza (p. 20)
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National Workshop on ESD and Teacher Education Leads to Local Changes

The first initiative of India's Institute of Advanced Studies in Education (IASE) at Jamia Millia Islamia was to organize a national workshop on ESD, to create awareness about sustainable development among faculty members. Through other IASE workshops and meetings, faculty members identified a broad course content for reorienting teacher education to address sustainable development. The broad areas identified included: concept of sustainable development, education for sustainable development, consumer education, population education, sustainable agriculture, environmental conservation, resource management, impact of technology on the environment, and women's education and sustainability. These topics have been incorporated in some optional papers as well as in some teaching subjects of the Bachelor of Education (B.Ed.) degree.

IASE also organized an in-service program for teacher educators from other institutions around Delhi. Subject experts from other departments of the university as well as other local universities served as resource persons.

The following changes were incorporated at the B.Ed. level beginning with the 2002-2003 session.
- IASE increased links with other universities and NGOs in Delhi and provided opportunities for deeper interaction with people involved in similar disciplines.
- Objectives for institutionalizing of the revised curriculum were achieved on time.
- IASE organized in-service programs for Delhi teachers on sustainable development.
- Craft instructors started using handmade papers and reusing or recycling waste products.
- Student teachers are undertaking projects based on environmental problems in their communities.

<div align="right">
Jamia Millia Islamia, India
Professor Zeenat Kidwai (p. 55-56)
</div>

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National Professional Development Program

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In New Zealand ESD has been addressed through the concept of environmental education and learning and education for sustainability. Also, ESD is identified as a policy strategy in many national and local government, business, and private sector documents.

The Christchurch College of Education was the successful tender for the national environmental education (EE) professional development contract from the Ministry of

Education. The professional development program involved three key initiatives. Firstly, it provided funding for the training of 75 national facilitators in seventeen different regions throughout NZ. A special Maori EE training program added another 18 Maori facilitators. The second initiative involved the national facilitators delivering regional training programs to teachers. The regional training programs provided a detailed exploration of the EE Guidelines for NZ Schools. The professional development approach encouraged teachers to use innovative ways to address ESD/EE within their current school programs and it also challenged participants to consider alternative ways of designing new school programs that focus on ESD/EE. The third initiative identified teachers and schools that were committed to ESD/EE and provided additional support and assistance for the school to become a pilot school. The focus of the pilot schools was to establish a number of regional 'enviro schools' or 'model schools' that could demonstrate a balanced curriculum approach to achieving education for a sustainable future. Many of the national pilot schools are now part of a national Enviro-Schools program.

Christchurch College of Education, New Zealand
Professor Barry Law (p. 36)

Reorienting Social Science and Geography Teacher Preparation Courses

Many participants in the International Network advise others in faculties of education to begin working "within your own sphere of influence" and to initially change the things "within the areas that are under your individual authority." This vignette from Griffith University in Australia illustrates the successful reorienting of teacher education courses that prepare future secondary school social science and geography teachers. Reorienting these courses attempts to achieve two specific outcomes.

The first outcome is enhanced awareness of ecological sustainability, including personal behaviors and actions, both on the part of student teachers and the students whom they will teach. This effort has focused on such specific strategies as calculating personal ecological footprints, auditing personal energy consumption patterns, setting goals for reducing these, and monitoring progress toward attaining these goals. In addition, the students learn strategies to (1) create ecologically sustainable schools through suitable practices and (2) help creating sustainable communities through participating in community-based groups.

The second outcome is enhanced awareness and use of support structures for social science and geography teachers, including a variety of environmental education centers as well as Web-based information. This has involved extensive visits to the environmental education centers followed by on-campus workshops. The workshops concentrate on how student teachers can use these centers as part of the school curriculum and the appropriate use of Web sites to complete assessment tasks on issues related to the sustainability of Australian river, coastal, bushland, and urban systems.

Course evaluations of these outcomes and strategies indicate that the student teachers have an enhanced levels of environmental sensitivity as well as increased confidence that they will apply these strategies in their teaching careers.

Griffith University, Australia

A Cyber Multimedia Environmental Institute

Ewha Multimedia Environment Institute (EMEI)was established in 2001 with the financial aid of the Ministry of Environment and Ewha Women's University. This institute, a first for Korea, has five parts: Cyber Environmental Education Teacher Institute, Cyber Environmental Study Material Center, Cyber Environmental Policy Education Institute, Cyber Environmental Experience Study Center, and the Cyber Natural History Museum. Each part has a special program, and each part operates on an e-learning system.

Since the institute's opening, about a thousand customers per year visit the institute. Because financial aid from the government and the university has decreased every year, it is difficult to upgrade the program every year, requiring many financial resources. Nevertheless, this program has brought sustainability to thousands of online students.

Ewha Women's University, Korea
Professor Woun Sik Choi (p. 22)

Establishing a Sustainable Campus

Since 2004, faculty members and students have launched a series of efforts to convert an old administration building and the adjacent school garden into a Sustainable Campus (SC) at National Taiwan Normal University (NTNU). The facilities create a platform for first-hand teaching and learning experience for addressing sustainability. The SC, which was sponsored by the Ministry of Education, Department of Interior, and NTNU, has gradually become the demonstration base for many types of university courses. Moreover, NTNU's Graduate Institute of Environmental Education has developed ESD teaching materials and interpretive media for neighboring grade-school students, teachers and community residents. The major efforts on the SC include:

1. **Rainwater Harvesting and Black Water Treatment and Recycling System**
   a. A rainwater harvesting system collects rainwater from the roof of the administration building and is used for flushing toilets in the building. The rainwater systems drastically reduces the amount of water used from the city water-supply system
   b. Black water (sewage) is treated first by a septic tank and next by a specially designed and constructed wetland. The treated water is used to irrigate the SC garden
2. **Increasing Biodiversity**
   a. By establishing a constructed wetland and aquatic pond, habitat was diversified both aquatically and terrestrially, which attracted more flora and fauna to the SC.
   b. By creating a rooftop garden, also called a green roof the SC now has a vegetable garden. The garden is a demonstration site for organic farming methods. It also links farming with urban life. The green roof can reduces the building's consumption of electricity for air-conditioning during summer.
3. **Energy Conservation Systems**

a. By installing a solar photo-voltaic panel and a solar hot-water system on the rooftop to generate electricity and hot water for the building, the SC campus reduced their energy consumption from the grid.
b. By design and installed sun-shelf, which blocks the direct sunlight and reflects natural light into the rooms of the building, the SC has decreased energy demand for indoor lighting.
4. **Environmental Education and Interpretation System**
a. The SC is now open to all the facilities across all disciplines at NTNU as a platform for their courses and for demonstrating possible means of sustainable living.
b. By developing and installing interpretive media (including eight pieces of interpretive panels, one self-guided trail brochure, and a poster), visitors, both the public and school students gain insight and interest in the site and learn about sustainability.
c. In addition the SC has an educational packet available for primary school teachers and students. The packet includes four well-designed ESD teaching modules, which use the SC as the basis for teaching.

National Taiwan Normal University, Taiwan
Dr. Tzuchau Chang
Dr. Ju Chou (p. 44 – 45)

Book Series: Education for Sustainable Development

In order to lay a foundation to promote the development and adoption of ESD in China, scholars and teachers from several institutions wrote and published a series of books that introduces—for the first time in China—ESD concepts, main principles, international developments, practices, projects, and evaluation. The series on ESD is published by China Geological Press and includes seven books:
Panorama of Education for Sustainable Development
Green University and Education for Sustainable Development
Practice of Education for Sustainable Development
Research Projects and International Comparison of Education for Sustainable
Development Evaluation of Education for Sustainable Development
Handbook of Teacher Training on Education for Sustainable Development
Education for Sustainable Development Toolkit (translated works)

With one exception, the authors are from Beijing Normal University, Beijing Academy of Education Sciences, Beijing Education Committee, and Tianjing Education Committee. The *Education for Sustainable Development Toolkit* was written by Dr. Rosalyn McKeown of University of Tennessee and was translated by Wang Min, Wei Dongying, and others from Beijing Normal University. Professor Wang Min also served as editor-in-chief of the series.

Beijing Normal University, China
Professor Wang Min (p. 46 – 47)

Methodology for Creating the Guidelines

Survey

In order to capture the efforts of those involved in reorienting teacher education to address sustainability, the Chair sent a survey to members of the International Network in February 2004 requesting return by mid-March. The survey requested that participants respond to the following.

- Make a list here of every initiative that you attempted since you joined the network. Sort the list into an order of most successful to least successful.

- For each initiative, make brief notes on [1] what the main outcomes were, and [2] on why you think it was successful / or unsuccessful.

- Within your own work, what were the key things that you could change directly? Why was this? What was it that enabled you to make change happen? How significant was this change?

- What could you influence, indirectly, although not change yourself? Why was this? What was it that enabled you to influence things? How significant was this change?

- Where you had no influence, why was this? How significant was this?

- Were there systemic limitations (either national or institutional) to reorienting teacher education that were beyond your power to change?

- What issues did you face at your institution during the project? (For example, administration change; financial cutbacks; new strategic plans; re-focusing of national priorities etc.) List these, and comment how these helped / hindered your work. If you were able to get round particular problems, explain how.

- On the basis of what you've written here (and your experience in the Project) please distill the important lessons you have learned into recommendations about reorienting teacher education.

Analyzing the Survey Responses

The Chair and Secretariat read all of the surveys, noting variety and major recurring themes. The themes became the structure for the forthcoming document. For the section on recommendations, the Chair and Secretariat used a sorting technique to categorize the recommendations. Each recommendation was printed on a separate strip of paper and sorted. Similar strips were piled together. Piles with related themes were combined. The sorting technique resulted in the following major categories for the recommendations.
1. Ministerial and national level involvement
2. Community and regional/provincial involvement
3. Changes within institutions of higher education, including faculties of education,

students, and individual faculty members.
4. Funding and other resources
5. Partnerships
6. Research
7. Communications
8. Information Technology Opportunities

Vetting and Editing

At the May 2004 meeting of the International Network in Goteburg, Sweden, the participants edited the first draft of the guidelines, which had been distributed by email. Small groups also wrote the preface and created a plan to present the document to UNESCO and for its general distribution. The Chair and Secretariat solicited editorial comments of the group. A second draft, which incorporated comments and changes form the May meeting, was circulated to the group for comment in September2004.

The Chair also requested that members of the Network write short vignettes describing their efforts to reorient teacher education to address sustainability. These vignettes illustrate the prose of the *Guidelines* and give context to the generic descriptions.

Selected Recommendations Relating to Institutions of Teacher Education: Practical Activities to Reorient Teacher Education to Address Sustainability

Reorienting teacher education to address sustainability will require efforts in many arenas and from the local to national scales. This section of the document lists recommendations, which stemmed from real-life experience on reorienting teacher education to address sustainability. These recommendations are the collective advice given by practitioners, who work in faculties of education, on how to move forward to reorient education to address sustainability. The recommendations address a number of themes and scales—personal to national—and concern curriculum, programs, policy, and practices all associated with teacher education. The following are not the musings of people who simply imagine how to move forward, but they are pieces of wisdom garnered through the experimentation and hard work of teacher educators, who bridge theory and practice. (p. 33)

1. Recommendations on ministerial and national involvement:

    Work with ministries of education to make ESD a mandatory part of elementary and secondary education at national and provincial levels.

    Work with ministries of education to revise teacher education and certification requirements to include ESD and to align these revisions to correspond to the ESD components of elementary and secondary education. (p. 34)

2. Recommendations on community and regional/provincial involvement

    Make use of community resources (e.g., NGOs, institutions, clubs, religious organizations, government agencies, businesses, etc.) in the teacher education program,

both within and outside the classroom, to teach about local sustainability issues, efforts to address these issues, sustainable practices, and sustainable businesses.

Establish new models of professional development in ESD that draw together essential skills, cross-curricular approaches, and action-based learning models so that student teachers and in-service teachers can work on projects that are relevant and important to their communities' future well-being. (p.37)

3. Recommendations on change within institutions of higher education (IHEs)

A. Across IHEs

Promote reorienting education as a viable avenue for research and teaching in higher education institutions. (p. 39)

B. Faculties of Education

Provide educational opportunities to ensure that every member of the faculty of education understands the need for ESD, how it is relevant to teacher education in both improving quality basic education and reorienting existing education, and how each faculty member can contribute to the overall effort. (p. 41)

C. Engaging pre-service and in-service teachers.

Require interdisciplinary coursework on sustainability for student teachers and make materials available for student teachers on local and global sustainability issues. (p.43)

D. Individual faculty member

Begin by working within your own sphere of influence; change the things within the areas that are under your individual authority. (p. 48)

4. Recommendations on funding and other resources

Work with ministries of education to redirect existing funding to address ESD. (p.49)

5. Recommendations on partnerships

Strengthen partnerships between teacher-education institutions and elementary and secondary schools, and such educational organizations as museums, outdoor education sites, and nature centers. (p. 50)

6. Recommendations on research

Create a research agenda to address important questions, such as the effectiveness of faculty efforts to reorient education to address sustainability. (p. 51)

7. Recommendations on communications

Document successful ESD programs that have reoriented teacher education to address sustainability. Publish and disseminate this work. (p. 54)

8. Recommendations on information technology opportunities

Study the use of ICT to match student preferred learning styles and modalities (e.g., especially students from oral-based cultures whose preferred learning modality is listening, not reading). (p. 57)

The full set of recommendation can be found *Guidelines and Recommendations for Reorienting Teacher Education to Address Sustainability* are available on the WWW at http://unesdoc.unesco.org/images/0014/001433/143370E.pdf.

Next Steps

The Chair and International Network members meet again 29 and 30 May 2006 in Helsinki. At this meeting the Network members will:

(1) Develop recommendations for the distribution of the recently published *Guidelines and Recommendation for Reorienting Teacher Education to Address Sustainability*,

(2) Create a plan to engage additional faculties of education in reorienting teacher education to address sustainability, including developing regional ESD teacher education networks associated with the International Network of Teacher Education Institutions, and

(3) Develop a list of products and tools related to advocacy and capacity building for reorienting teacher education for sustainable development.

Members of the Network are planning to establish a number of regional teacher-education networks which will not only provide a forum for teacher educators to share their expertise, but also support efforts to reorient teacher education to address sustainability. The concept of regional networks was first discussed at the meeting in South Africa in 2002. Regional networks have been piloted and established in Canada, Eastern Europe, the Caribbean, and Southern Africa. Others (e.g., Pakistan) are in the planning phase. Together, these regional networks comprise more than 70 institutions of teacher education working to assist one another in developing and implementing ESD teacher education projects.

At the Setting the State for a Strategic Research Agenda for the UNDESD workshop held in Paris 20 – 22 February, the participants repeatedly mentioned that the education community needs case studies of good practice in ESD. The Chair is going to prepare a collection of case studies on reorienting teacher education to address sustainability. UNESCO plans to publish the collection of case studies.

The Chair, Secretariat, International Network, and emerging regional networks are committed to promoting and improving reorienting teacher education to address sustainability. They will be active in a variety of ways to accomplish their goals.

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