Teaching and learning for a sustainable future



A multimedia teacher education programme



Teaching and Learning for a Sustainable Future was developed by UNESCO in its function as task manager for chapter 36 of Agenda 21 in response to a recommendation of the United Nations Commission on Sustainable Development. This programme is a contribution by UNESCO to the World Summit on Sustainable Development, Johannesburg 2002.

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Additional copies of the CDROM are available free of charge from:
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7 Place de Fontenoy,
75352 Paris 07 SP, France.
Also available at:
www.unesco.org/education/tlsf

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Prepared for UNESCO by Griffith University, Australia.

Foreword



Educating for a sustainable future is a formidable challenge. How can we better understand the complexity of the world around us? How are the problems of our world interconnected, and what does that imply for their solution? What kind of world do we want for the future, within the limits of our Earth's life support systems? How can we reconcile the requirements of economy, society, and the environment?

Such questions, of course, are not new and, in its capacity as the specialized agency for education within the United Nations system, UNESCO has addressed them over a period of many years. However, as Task Manager for Chapter 36 of Agenda 21, UNESCO has been grappling with these questions with renewed vigour. The new vision of education for a sustainable future places education at the heart of the quest to solve the problems threatening our future. Education – in all its forms and at all levels – is seen not only as an end in itself but also as one of the most powerful instruments for bringing about the changes required to achieve sustainable development. Teachers, of course, are vital actors in this process and consequently have been given special attention.

Teacher education is a priority for UNESCO and, indeed, for the international community as a whole. Within its special work programme on education, the United Nations Commission on Sustainable Development invited UNESCO to make a significant effort to help teachers worldwide not only to understand sustainable development concepts and issues but also to learn how to cope with interdisciplinary, values-laden subjects in established curricula.

Teaching and Learning for a Sustainable Future is UNESCO's response to that challenge, and a major contribution to the United Nations World Summit on Sustainable Development (Johannesburg, September 2002). By making the programme available as both a web site and a CDROM, UNESCO hopes to reach as many teachers as possible across the world. The programme can be used as it is, or adapted to local, national or regional needs. Many translations and adaptations are already foreseen.

I wish to thank all those individuals and institutions whose collaboration with UNESCO has been vital for producing this programme. Special thanks, however, must go to Dr. John Fien at Griffith University (Australia). With his team, he contributed first class expertise and experience in sustainable development approaches and issues, teacher education, and the optimum use of ICTs for teaching and learning purposes.

I commend this programme to you as a fine example of how an interdisciplinary approach helps to develop fresh insights and understanding.



Koïchiro Matsuura
Director-General, UNESCO

Introduction

Education is critical for promoting sustainable development and improving the capacity of people to address environment and development issues.

Agenda 21: UN Conference on Environment and Development, 1992, Chapter 36.

Teaching and Learning for a Sustainable Future is a multimedia teacher education programme published by UNESCO. Its 25 modules provide around 100 hours of highly interactive activities designed to enhance the teacher's understanding of sustainable development and related themes. It also develops practical skills for integrating sustainable development themes into the school curriculum, and for using the teaching methods best suited to the knowledge, values and citizenship objectives of educating for a sustainable future.

UNESCO, and the international community in general, believes that we need to foster – through education – the values, behaviour and lifestyles required for a sustainable future. Indeed, sustainable development is not so much a destination as a process of learning how to think in terms of 'forever'. Sustainable development "meets the needs of present generations without compromising the ability of future generations to satisfy their needs". Thus it involves learning how to make decisions that consider the long-term future of the economy, ecology and equity of all communities. Building the capacity for such futures-oriented thinking is a key task of education.

Teaching and Learning for a Sustainable Future is rooted in a new vision of education, a vision that helps students better understand the world in which they live, addressing the complexity and interconnectedness of problems such as poverty, wasteful consumption, environmental degradation, urban decay, population growth, health, conflict and the violation of human rights that threaten our future. The programme assists teachers to empower young people to face such local and global problems with hope and confidence.

This vision of education requires a holistic, interdisciplinary approach. It also requires us to reorient education systems, policies and practices in order to empower everyone, young and old, to make decisions and act in culturally appropriate and locally relevant ways to redress the problems that threaten our common future. Teaching and Learning for a Sustainable Future enable teachers to plan learning experiences that empower their students to develop and evaluate alternative visions of a sustainable future and to work creatively with others to help bring their visions into effect.

There are over 60 million teachers in the world – and each one is a key agent for bringing about the changes in lifestyles and systems we need. For this reason, innovative teacher education is an important part of educating for a sustainable future. The multimedia format of Teaching and Learning for a Sustainable Future means that it can be accessed and used in a great many ways by teachers, student teachers, teacher educators, curriculum developers, education policy makers and authors of educational materials.

Objectives and content

Education seeks to provide intellectual enlightenment and spiritual emancipation in the search for a better existence for all life on earth. . . The sustainability transition is in effect a social and political revolution that hopefully can take place through peace and understanding. This is the challenge for the next generation.

Source: O'Riordan, T. (1994) Education for the sustainability transition, Annual Review of Environmental Education, 8, p. 8.

Objectives

- To develop an appreciation of the scope and purpose of educating for a sustainable future.
- To clarify concepts and themes related to sustainable development and how they can be integrated in all subject areas across the school curriculum.
- To enhance skills for integrating issues of sustainability into a range of school subjects and classroom topics.
- To enhance skills for using a wide range of interactive and learner-centred teaching and learning strategies that underpin the knowledge, critical thinking, values and citizenship objectives implicit in reorienting education towards sustainable development.
- To encourage wider awareness of available Information and Communication Technologies (ICTs), of the potential of multimedia-based approaches to education and professional development and of the Internet as a rich source of educational materials.
- To enhance skills in computer literacy and multimedia education.

Content

Curriculum Rationale

1. Exploring global realities
2. Understanding sustainable development
3. A futures perspective in the curriculum
4. Reorienting education for a sustainable future
5. Accepting the challenge

Teaching about Sustainability Across the Curriculum

6. Sustainable futures across the curriculum
7. Citizenship education
8. Health education
9. Consumer education

Interdisciplinary Curriculum Themes

10. Culture and religion for a sustainable future
11. Indigenous knowledge and sustainability
12. Women and sustainable development
13. Population and development
14. Understanding world hunger
15. Sustainable agriculture
16. Sustainable tourism
17. Sustainable communities

Teaching and Learning Strategies

18. Experiential learning
19. Story-telling
20. Values education
21. Enquiry learning
22. Appropriate assessment
23. Future problem solving
24. Learning outside the classroom
25. Community problem solving

A demonstration project

Teaching and Learning for a Sustainable Future has been developed by UNESCO as a demonstration project to illustrate:

1. Ways of meeting the professional development needs of educating for a sustainable future. For example:

- How interdisciplinary approaches can be applied in education in order to better understand the interconnectedness of life and the complexity of the problems of the planet.
- How to combine training about sustainable development issues with training in how to teach about them.
- How to deal with the values laden nature of sustainable development issues in an educationally worthwhile and professionally ethical manner.
- How to encourage reflection (via a learning journal) as a key aspect of on-going professional development.

2. The potential of international collaboration in providing resources for teacher professional development. For example:

- How an international organisation such as UNESCO can establish a collaborative framework for the planning, development, trial, revision, distribution and adaptation of educational materials in a way that provides for wide international consultation and input, flexibility of design, ongoing evaluation and review, and wide institutional, national and international support.
- How the various parts and diverse expertise of a large organisation such as UNESCO can contribute to an interdisciplinary project.
- How the resources of numerous international organisations – within the United Nations family, international agencies, ministries of education, teachers' unions and non-governmental organisations – can be integrated into a successful and resource-rich partnership for educational change.

3. The potential uses and benefits of multimedia technologies in pre- and in-service teacher education. For example:

- How multimedia approaches can be used to provide professional development experiences for a wide range of educators at various phases of their professional career.
- How a professional development resource may be prepared to allow maximum flexibility for individual and small group use.
- How such flexibility can allow for the use of the multimedia resource for both independent study and use as part of a tertiary course.
- How capacity building in the use of Information and Communication Technology (ICT) can be enhanced as a 'by-product' of professional development in other fields.
- How the scale of impact of a programme may be maximised for a large audience (60 million teachers) through the effective use of ICT and innovative multimedia design.

The development process

Teaching and Learning for a Sustainable Future is a response by UNESCO to the priority given to reorienting teacher education by the United Nations Commission on Sustainable Development.

The programme has been developed by UNESCO in its function as task manager for Chapter 36 of Agenda 21, and as a contribution of UNESCO to the 2002 World Summit on Sustainable Development.

In preparing the programme, extensive consultation took place between UNESCO and teacher educators in many parts of the world. The Centre for Innovation and Research in Environmental Education at Griffith University, Australia, prepared the original drafts of the materials using resources from UNESCO and other organisations as starting points.

An international reference group and over 50 Programme Specialists within UNESCO advised on the text and pedagogical approaches to ensure the programme was educationally sound, up-to-date, fair in its treatment of issues, and culturally appropriate for use in international settings. Version 1 was published in January 2001. An extensive international evaluation by several hundred teachers and educators, sustainable development experts and multimedia specialists identified many valuable features in Version 1 as well as areas where improvements could be made. These suggestions were integrated into Version 2 of the programme.

> *"There is a dire need in this country to educate children and adults about the issues involved in learning about a sustainable future. The programme should be introduced in all countries. The programme is brilliant and its use will be a favour to humankind."*
>
> PAKISTAN

> *"I have been grappling with these issues for many years. It was wonderful to see that it has all been pulled together in such a broad, systematic, inspiring and practical way."*
>
> SOUTH AFRICA

> *"An impressive piece of work that brings together a lot of disparate sources into one place. Quite easy to navigate and attractively designed... a significant and important resource."*
>
> UNITED KINGDOM

> *"All the modules are relevant to our circumstances. The programme provides great insight into population, environment and development issues. I intend to incorporate it into our teacher education programme in my university. Very interactive and exciting. It also enhanced my computer literacy skills."*
>
> NIGERIA

> *"My perspective has been expanded and challenged. I have gained a more global view. The themes are very interesting, attractive and enjoyable to study because they combine practical activities and concrete examples from the field."*
>
> CANADA

A multimedia learning experience

Multimedia-based learning is becoming increasingly popular. While it has limitations, and certainly should not be seen as a substitute for face to face interaction, it does have numerous advantages for teacher education.

For example, the information contained on the Internet is unlimited and evolving. It is up to date, inexpensive to obtain, and searchable. It also reflects the views of many authors and sources of information.

Multimedia professional education can also be highly interactive and engaging through the use of animation, audio and video files, games and on-line discussions. All these can be undertaken at any time and at any place and without the need for an outside workshop facilitator.

Teaching and Learning for a Sustainable Future incorporates these benefits of multimedia education. It also demonstrates the principles of effective teaching and learning that are a necessary part of reorienting education towards a sustainable future. That is, the type of professional development experiences in Teaching and Learning for a Sustainable Future seeks to ensure that the 'medium' for learning is a part of the 'message'.

In order to achieve this goal, the learning experiences in Teaching and Learning for a Sustainable Future reflect three principles of effective professional development:

Academic Rigour Teaching and Learning for a Sustainable Future incorporates up-to-date knowledge about key issues related to global realities and sustainable development themes from many disciplines. Since it has been produced by an international body (UNESCO), the programme has been developed through extensive consultation, review and evaluation and is as free as possible from cultural or other biases. Links to numerous Internet sites also provide multiple perspectives on topics and can enhance access to information and critical thinking.

Experiential Learning All the modules in Teaching and Learning for a Sustainable Future are based upon an experiential learning process that invites teachers to: analyse and interpret information in a variety of forms (e.g. text, tables, diagrams, computer games, and linked WWW-sites); review new knowledge in the light of current understandings; develop skills in a wide variety of teaching and learning strategies; and adapt new ideas and skills to practical educational tasks.

Reflection Reflection is integral to the professional development experiences in Teaching and Learning for a Sustainable Future. A deepening appreciation of education for a sustainable future is encouraged by the use of a 'Learning Journal' in every module. Answering questions in the 'Learning Journal' is a practical way of learning. It also provides a record of what has been learnt, ideas and plans for applying these ideas in local situations, and opportunities for on-going professional reflection. Some questions in the Learning Journal may also be used as starting points for student learning material.

Key design features

Teaching and Learning for a Sustainable Future is very easy to use and no prior knowledge or computer skills are required.

The programme can also be used in a very flexible way. Key design features include:

Relevant for diverse audiences The programme has been designed for use in both pre-service and in-service teacher education, as well as by curriculum developers, education policy makers and authors of educational materials.

Available in several formats The programme is available in two formats – on the Internet at www.unesco.org/education/tlsf and as a CDROM. The CDROM contains the entire website, complete with over 500 Internet links that can be accessed directly from the CDROM (via an Internet connection). Separate PDF files of every module are also provided, allowing the programme to be printed and used in 'hard copy' format – although, of course, the multimedia interactions will not work in this format.

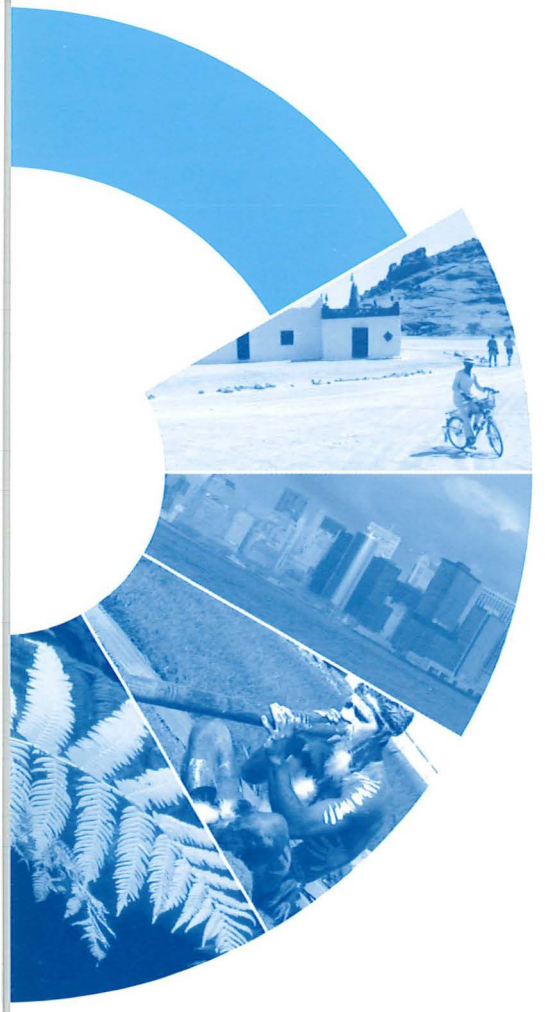
Choice of topics Teaching and Learning for a Sustainable Future contains 25 topics (called modules) organised in 4 thematic sections. While the modules are cross-linked, they are designed to be self contained. The modules can be studied in any order to suit the interests and needs of users.

Range of activities and learning styles Each of the modules contains 5 to 7 'activities', each one usually requiring between 30 and 40 minutes to complete. A personal Learning Journal allows busy users to 'save' their work after one or two activities and come back to the module when they have more time. Long passages of text have been kept to a minimum and are mostly located in pop-up boxes where they can be printed and read when convenient. Most time is spent answering questions, doing exercises, working through problems, games, etc. Great care has been given to providing information in a variety of forms (e.g. text, tables, diagrams, audio-files and linked Internet-sites). The activities require users to analyse and interpret this information and to apply the ideas learnt to local curriculum and teaching contexts. The Learning Journal allows users to summarise questions, answers and reflections and save them in a word processing programme.

Simplicity of design and ease of use A simple visual design, based on an attractive range of colours and icons, makes the programme easy to use. The programme can operate on a computer with relatively simple hardware specifications. No prior knowledge or skills is required. Clear instructions guide users step by step through the programme. In addition, the programme is free of the large files and complex graphics that increase download time and cost of Internet access.

Adaptable An 'open architecture' (i.e. technical structure) was used to create the computer files in Teaching and Learning for a Sustainable Future. For this reason, the programme can be easily translated or adapted with a minimum of technical expertise and a basic webpage creation application. See page 12 for suggestions on adapting the programme to different educational and cultural contexts.

Using the programme



Teaching and Learning for a Sustainable Future can be used independently by teachers or in formal teacher education courses - at both pre-service and in-service levels.

Independent Learning

The multimedia format of Teaching and Learning for a Sustainable Future encourages independent learning for individual and small group professional development. Teachers, curriculum developers, education policy makers, authors and designers of educational materials and teacher educators can all use Teaching and Learning for a Sustainable Future either from the Internet or CDROM and can study modules and activities whenever they want, either at work or at home.

Through personalised Learning Journals, different users can work from a single CDROM or Internet-linked computer. Since each user has a personalised Learning Journal, work remains confidential. This is because the Learning Journal, when opened, is automatically downloaded onto the hard drive of the computer or onto a floppy disk, and saved as a word processing file. Learning Journal files can also be printed out, completed by hand, and stored as a set of paper files in a folder.

Because of the multimedia format of Teaching and Learning for a Sustainable Future, teachers no longer have to wait for a workshop or training seminar to be organised in their schools or districts. This is often a problem for some teachers, especially for those in remote locations. Furthermore, the modules and activities can be studied in any order - either alone or in small staff room or study groups. The resulting sense of independence and responsibility can bring a new professionalism to teaching and thus help raise the status of teachers.

Opportunities in Teacher Education Courses

Professors, lecturers and others responsible for developing teacher education curricula will find many opportunities for using Teaching and Learning for a Sustainable Future in their courses. For example as:

- A stand-alone course on Teaching and Learning for a Sustainable Future
- A selection of modules integrated into a stand-alone course on a specific education topic
- A selection of modules integrated into other courses on specific education topics as enrichment material.

In all of these cases, Teaching and Learning for a Sustainable Future can be studied on-line or from the CDROM – in class-time, as pre- or post-class activities, or as a full e-learning experience.

Each module in Teaching and Learning for a Sustainable Future takes approximately 4 hours to complete. This provides 100 hours on learning, the amount of time students could generally be expected to study in a 10-14 week term or semester course. However, selections and groupings of modules can be made to suit local decisions about term/semester length, the balance of in-class contact versus independent study in a course, assessment requirements, etc.

Moreover, the programme is available free of charge. Teacher education institutions can load a copy of Teaching and Learning for a Sustainable Future on a local server (to reduce access and download time for staff and students) and duplicate copies of the CDROM for free distribution to their students. All that is required is a request for permission from UNESCO, acknowledgment of UNESCO as the source, and using the copies for non-profit educational purposes only.

National and regional adaptations and translations of Teaching and Learning for a Sustainable Future are encouraged. Teacher education institutions are invited to work collaboratively and with relevant Ministries of Education to help facilitate these changes.

Some of the ways in which Teaching and Learning for a Sustainable Future can be used are illustrated in five sample course designs in the 'Getting Started' section of the programme.

Adapting and translating the programme

UNESCO is aware that no single teacher education programme can suit the needs of all potential users.

That is why Teaching and Learning for a Sustainable Future has been designed and developed so as to facilitate translation into other languages as well as adaptation (i.e. changing the programme) to respond to regional, national, or local needs.

UNESCO is ready to work with government ministries, regional organisations, teacher education institutions and others responsible for the professional development of teachers to help facilitate these changes.

Once an adaptation and/or translation of the programme has been completed, the 'open architecture' used to create the files in Teaching and Learning for a Sustainable Future allows it to be reprogrammed with basic webpage creation and graphic design applications. The Technical Guidelines (below) provide multimedia programmers with the information they need to introduce the desired changes to the files in the programme.

Possibilities for Adaptation

Different kinds of adaptation of the programme are possible, from minor wording changes in the webpages and learning journals, to major changes to the number and sequence of activities and modules.

Basic, relatively straightforward adaptations involve changes to the webpages (including pop-up boxes) and learning journals.

The types of text changes that could be considered include, but are not limited to:

- Replacing the international range of examples and case studies with national or local examples, making the programme more relevant to the circumstances of users.
- Replacing the examples of education policies provided in some modules with local or national policy initiatives.
- Keeping the existing case studies and policy examples in order to maintain the global focus of the programme but supplementing them with national examples to increase the local relevance of the programme.
- Changing the learning journal questions e.g. by deleting some, adding others, etc.
- Adding sample answers to additional learning journal questions.
- Changing/adding Internet links and data to keep the programme current in terms of statistics and trends in sustainable development and/or education policy.
- Deleting an entire activity from a module or adding an additional one.

Changes such as these can be made by a person skilled in the use of a webpage creation programme.

More extensive adaptations could include:

- Changing the name of a module.
- Adding or deleting entire module/s and/or theme/s.
- Changing the text or operation of an interaction.

Changes such as these require the skills of a multimedia programmer and a graphic designer.

Resources required

Two sets of resources are necessary for adapting and/or translating the programme:

- The PDF files of the programme. These can be downloaded from the CDROM or website using the free Adobe Acrobat application.
- A CDROM containing all the source files for the programme. This is available from: UNESCO, Educating for a Sustainable Future 7 Place de Fontenoy, 75352 Paris 07 SP, France.

Steps in Adapting the Programme (without translation)

The first step is to print out the PDF files for each module. This printout becomes the master document upon which all text and other changes can be made.

Normally, a team of educators would be involved in deciding on the changes to be made. The team would determine the nature of the adaptations to be made, collect relevant local materials and insert these into the print-out of the modules.

Many changes can be marked on the print-out by hand. Extensive changes should be prepared as a text file in a word processing programme.

After the team has prepared the desired changes, the edited master document and any text files can then be passed to a person with knowledge of html or how to use an html authoring programme – or to a multimedia programming and graphic design team or company – to make the changes in the source files.

Major adaptations such as deleting or adding new themes/modules or changes to interactions and navigational structure require the skills of a professional multimedia programmer A graphic designer will also be required to make any associated graphic changes. The Technical Guidelines provide advice on making these kinds of changes.

Steps in Adapting and Translating the Programme

Translating the programme can be a relatively major task. It may be undertaken either in-house or by a specialised web/multimedia translation company.

Specialist web and multimedia translation companies have been established in many countries. They provide a complete translation, graphic design and multimedia programming service. If the translation of the programme is managed by such a company, it is advisable to agree in advance upon a suitable process for also making any of the basic or major adaptations outlined above, if such changes are to be made.

The advantage of an in-house translation is that adaptations (i.e. changes to the programme) may be made at an early stage to ensure that the text and activities are culturally and educationally appropriate before multimedia programming begins. Such an adaptation and translation process involves the following steps:

- Print out the PDF files for each module directly from the web or CDROM – ensuring that the URL is printed on each page and that the same URL is attached to the translation of all pages. This is necessary to ensure that the original English languages pages and the translated pages can be matched up and provided to multimedia programmers to prevent mix-ups.
- Decide whether the programme will be:
  1) translated in full and then adapted, or
  2) adaptations are made to the English language print– out and then translated.

This decision needs to be made at a local level, and will be influenced by factors such as the preferred working styles and language and translation skills of the team of educators working on the project.

- Prepare a separate text file (i.e. word processing file) of each adapted/translated page (with URL attached).
- Translate all the pages in the interactions and graphics.
- After the adaptation/translation has been completed, provide all the text files (with URLs attached) to a (bilingual if possible) multimedia programmer to enter into the source files. A graphic designer will also be needed to adjust graphic images to suit the length of any translated words/text.

Technical Guidelines

These technical guidelines provide background information on the multimedia design and development of Teaching and Learning for a Sustainable Future. They have been prepared to assistIT and multimedia specialists involved in adaptations and translations.

The programme has been designed to work best by using a specific hardware and software configuration. The minimum hardware specifications: A Pentium 200 MHz MMX computer or a Macintosh PowerPC with: 32 Mb RAM; SVGA monitor, capable of 800x600 resolution in 16– bit true colour; 16 bit stereo sound card and speakers; modem or network card; and a 16x CDROM drive.

The software that was used included: Macromedia Dreamweaver (webpages); Adobe Photoshop 3 and Macromedia Flash 4 (graphics) and Macromedia Director 7.5 and javascript (interactions).

A CDROM containing the style sheets and all source files for the programme is available from: UNESCO: Educating for a Sustainable Future, 7 Place de Fontenoy, 75352 Paris 07 SP, France.

The programming of Teaching and Learning for a Sustainable Future involves five elements: navigation structure, webpages, learning journal, graphics and interactions. Each of these may be adapted and/or translated.

Navigation structure: The programme utilises a frame– based navigational structure to facilitate movement between modules and activities and multiple access points to information. Navigation is principally via a left– hand navigation 'bar' and top– of– page 'banners' for each module. These have been developed as graphics and linked as image maps with the left– hand navigation bar and top– of– page banners using dynamic html. Changing the names or sequence of modules will involve editing the graphic images and navigational programming. Source files are available on request.

Deleting an entire activity from a module, or adding an additional activity, will require a change to the internal navigation structure of drop down navigation boxes and 'previous' and 'next' navigation icons. Adding or deleting a module(s) and/or a theme(s) will require changes to the navigational structure of the programme (e.g. to the left– hand navigation bars and top– of– page banners) as well as changes to appropriate graphic images.

Webpages: The main screen webpages can be edited with an html authoring programme such as Dreamweaver. The stylesheet for the specific layout of the text and icons (which is available with the source files) makes the addition and deletion of text relatively straightforward. The addition or deletion of activities will require changes to the internal

navigation structure of drop down navigation boxes and 'previous' and 'next' navigation icons. The visual 'web', 'interaction', 'journal' and other icons are graphic images developed in Photoshop.

Learning journal: Learning journal questions are presented in the webpages of most activities. They are also presented as master rich text format (rtf) files that may be downloaded and printed. These are can be edited within a word processing programme.

Graphics: The graphics have been designed using Adobe Photoshop. Any changes (whether they are textual or graphical) require change to the original source files. Changing the name of a module will require changes to the graphic image for the theme page and the top– of– page banners for the module.

Interactions: Changing the text or operation of an interaction will require changes in the javascript programming. Changes to interactions may be undertaken from the source files using Macromedia Director. A graphic designer will be needed to make any associated graphic changes.

A rigorous multi-platform testing process is recommended before committing resources to the final pressing of a CD. It is important to check for problems in both Netscape and Internet Explorer browsers and in both PC and Mac computing environments. Testing may involve a manual check of every internal and hypertext link to ensure that all are active and direct the user to the desired location. This is particularly important in the themes, modules and activities where changes have been made.

"In my country, more and more people are paying much attention to sustainable development, but there is a need for more materials and resources. So this programme will be very helpful, especially in pre-service teacher training."

CHINA

"Very timely. It is a highly informative and richly referenced. It is also user-friendly and the instructions are clear. Hence, there was no difficulty in using and learning from the package. It combines graphics, sound and text, with web connections. A good learning experience."

INDIA

"Most enlightening and well researched. Sources and references are excellent. I want to involve some of my colleagues and integrate it into our courses."

USA

"As schoolteachers, we can say that this programme is very valuable and complete. We discovered a lot of innovations, new teaching methods and new methods of presentation of information that were not known to us before."

UZBEKISTAN

"The depth and interdisciplinary design of the program, as well as the possibilities for widespread dissemination, will place it as a landmark work toward focus, learning, and internalization of the values required for sustainable living."

COSTA RICA

Teaching and learning for a sustainable future

Education is critical for promoting sustainable development and improving the capacity of people to address environment and development issues.

Agenda 21, UN Conference on Environment and Development, 1992, Chapter 36.

Teaching and Learning for a Sustainable Future is a multimedia teacher education programme published by UNESCO. Its 25 modules provide around 100 hours of highly interactive activities for use in pre-service teacher education courses as well as the in-service education of teachers and other educational professionals.

The world's 60 million teachers are key agents for bringing about the changes needed for a sustainable future.

Pressing global realities demand that we foster – through education – the values, behaviour and lifestyles required for a sustainable future. Teaching and Learning for a Sustainable Future is rooted in a new vision of education, a vision that helps students better understand the world in which they live, and to address the complexity and interconnectedness of problems such as poverty, wasteful consumption, environmental degradation, urban decay, population growth, health, conflict and the violation of human rights that threaten our future.

A programme that empowers young people to face local and global problems with hope and confidence.

Teaching and Learning for a Sustainable Future will enable teachers to plan learning experiences that respond to student concerns about such issues by developing and evaluating alternative visions of a sustainable future and working creatively with others to help bring their visions into effect.

The programme has been especially prepared to assist teachers deal with the interdisciplinary, values-laden and sometimes controversial nature of these issues in innovative and professionally ethical ways.

Studying the programme will also enhance the computer literacy of teachers and build their skills in multimedia-based teaching.



United Nations Educational, Scientific and Cultural Organisation
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