METASCHOOL
Final Trainees’ Guide
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1. **Introduction**

1.1. **Scope**

This METASCHOOL project Deliverable is Final Trainees’ Guide. It arises from user needs analysis results which will be summarized in a trainee’s guide, summarizing both the case study specific aspects and the generic patterns arising from the previous work. This will be made available both as a printed document, as well as in DVD format. The report presents a guide containing a description of the participating case studies and the general characteristics/patterns that differentiate the case. For each case study, there will also be a list of relevant educational activities especially designed for this class of school environments.

1.2. **Audience**

This report is addressed to project partners and the school teachers all around Europe.

1.3. **Definitions**

ICT: Information and Communication Technologies

METADATA: Metadata is “data about data.” It can generally be thought of as information that describes, or supplements, the central data and helps its indexing and retrieval.

1.4. **Structure**

**Chapter 1:** is the introduction to the study, containing an overview of this document, providing its Scope, Audience, Structure and References.

**Chapter 2:** describes the initial concepts of the METASCHOOL project

**Chapter 3:** presents the training program that the project will follow

**Chapter 4:** is the modules structure and format

**Chapter 5:** presents the training groups and their special needs
2. **Initial Concepts**

Today’s teachers need to be prepared to provide technology-supported learning opportunities for their students. Being prepared to use technology and knowing how that technology can support student learning have become integral skills in every teacher’s professional repertoire. Teachers need to be prepared to empower students with the advantages technology can bring. Schools and classrooms, both real and virtual, must have teachers who are equipped with technology resources and skills and who can effectively teach the necessary subject matter content while incorporating technology concepts and skills.

2.1. **Definition and general characteristics-needs**

The evolution of Information and Communication Technologies (ICT) creates numerous opportunities for providing new standards of quality in educational services. The Internet is increasingly becoming one of the dominant mediums for learning, training and working, and learning resources are continuously made available online in a digital format to enable and facilitate productive online learning. Online learning resources may include online courses, best practices, simulations, online experiments, presentations, reports, textbooks, as well as other types of digital resources that can be used for teaching and learning purposes. They may cover numerous topics such as computing, business, art, engineering, technology and agriculture. They are offered by various types of organisations in different languages, at different cost rates, and aim at different learning settings. In general, the potential of digital resources that can be used to facilitate learning and training, and which are available online, is rapidly increasing (Friesen, 2001).

Digital learning resources were initially conceived as a tool to make distance education efficient, by easing teacher’s re-use of self contained chunks of educational material (referred to from now on as teaching and learning resources/objects) for course construction. They were subsequently recognised to have the potential to be helpful for education in general, since into learning resources repositories teachers may find innovative proposals to improve their educational practice (such as materials to carry out problem-based activities), as well as simple technological tools (such as Java applets for simulating complex scientific phenomena) whose implementation might be beyond their competence. However the diffusion of digital learning resources has been slowed down as a sequence of the fact that computers, despite having been introduced into schools from the eighties, are not yet deeply integrated into school activity.

Moreover, research has highlighted a number of difficulties that still hinder teachers’ appreciation and actual use of digital learning resources in school, such as the scarce information on the resources quality and the limited congruence of the metadata standards with the current indications of the learning theories. There is also a problem of context: an educational resource suitable for teaching in UK schools may be unsuitable for supporting the teaching of the National Curriculum in a school in Greece. Recent approaches to e-learning have largely focussed around the reuse of
resources to develop economies of scale and thus partially address the low usage of ICT. As Mayes and Fowler (1999) pointed out, one problem in focusing on educational resource reuse is that teachers tend to plan their ICT based activities around ‘instructivist’ learning models, which focus on single learners accessing content. Thus, it does not help bridge the gap between modern pedagogical theory and implementation. Recent developments in technology allow us to go beyond resource reuse and support implementation of recent pedagogy, in particular social-constructivist learning processes. Interoperable, networked technologies have the potential to support students’ collaborative activities, allowing them to source, create, adapt, integrate and store resources in a variety of formats. These new possibilities and affordances of e-learning tools mean that it is becoming easier to use technology to support social-constructivist methods of learning, such as collaborative learning through learning communities (Koper, 2004). These learning methods focus on the process of learning and on the learning activities students carry out in order to gain knowledge of concepts.

2.2. **Teachers needs**

The digital resources that are developed to support teaching and learning activities must be easily located and retrieved, as well as be suitably selected to meet the needs of those to whom they are delivered. But there are a number of factors constraining the development of reusable learning activities and based on sharable teaching resources:

a) Teachers frequently do not have the skills to develop activities based on a range of educational models. This results in a gap between application of pedagogy and the effective use of tools and resources. Often teachers and learners view technology in terms of how it will help them manage resources rather than supporting learning (Timmis, O’Leary et al. 2004).

b) Any inability to engage with educational taxonomies through unfamiliarity with the relevant metadata and vocabularies makes it very difficult for teachers to search for generic learning activities from various subject disciplines. Teachers would probably have to browse through resources and activities, accessing and viewing each one of them in order to understand their potential for supporting effective learning. While browsing could be an effective strategy for a single collection of a small number of activities, it would be difficult for wider searching.

c) e-learning practice is moving towards the reuse of generative resources (e.g. resources developed during learning tasks). This means that the outputs from learning activities should also be considered for reuse. However, most teachers do not have the required e-literacy skills (for example to archive activities) to allow for effective reuse of learning resources and activities.

d) Any focus on the development of ‘definitive resources’ can lead to the production of inflexible materials that do not cater for individual learning contexts. There is a need for tools that allow the teacher to customise generic components to provide a tailored learning experience (Thomas and Milligan 2004). However, there are currently few tools available to allow teachers to support
learning activity sharing and sequencing (Britain, 2004).

e) Although efforts for collecting teaching and learning resources in learning repositories have long been deployed (Tzikopoulos et al., 2007) school teachers have yet to prove their competence in taking advantage of their full potential. Partially, this is also due to the fact that only recently a complete initiative aiming at the creation of a common European virtual space for resource sharing and reusing has been deployed (and adopted by Ministries of Education around Europe): this is the Learning Resource Exchange (LRE, lre.eun.org) of the EUN. The potential from the way it interconnects various school repositories in order to facilitate the formulation of teacher communities around Europe, and the uploading, sharing and reusing of teaching and learning resources, has yet to be exploited.

2.3. The METASCHOOL Project

METASCHOOL (Towards Teacher Competence on Metadata and Online Resources) is a collaborative European project funded by the Comenius programme and focused on improving the in-service training of school teachers and school ICT staff on topics related to the organisation, sharing, use and re-use of digital learning resources that can be accessed online through learning repositories across Europe. It is a multilateral project of 24 months duration, which started in November 2008. In general, the project aims to improve teachers' practice in all areas of their work, combining ICT skills with innovations in pedagogy, curriculum, and school organization. It is also aims at teachers’ use of ICT skills and resources to improve their teaching, to collaborate with colleagues, and perhaps ultimately to become innovation leaders in their institutions.

The main output of the META-SCHOOL project is an innovative training programme on the methodological approaches on how teachers can integrate digital content available on the web with core academic content in lesson plans and increase student participation in classroom activities. In addition a portal was also developed which acts as the main “hub” of all the training resources and training scenarios. The portal serves as distributor of information giving access to large databases of educational content, organizer of suitable didactical activities.

2.4. How METASCHOOL project corresponds to teachers needs

The results of Work Package 1 on user needs and the state of the art provided a solid background to tasks in WP2 related to the METASCHOOL training framework. Deliverable Needs Analysis Report with teachers identified clear needs, while, European state of the art, considered implementation prospects, enablers and barriers in partner countries. The Needs Analysis Report included reports from workshops with teachers in Austria, the Czech Republic and Greece, revealing that the skill levels of participating teachers was probably higher than those of the average teacher in those countries, and the teachers were positive about ICT
and more motivated to learn. The most commonly used tools before training were PowerPoint, Moodle and linked repositories, Google and Google Maps. Despite being relatively e-skilled, teachers had a low knowledge of Web 2.0, metadata tagging and learning systems, although some used wikis passively, but not publishing information themselves. Nevertheless, they wanted to know more about Web 2.0, if only because it attracts their students.

In general teachers wanted to:

- Be able easily to find relevant, concrete materials on a portal about their subject prepared by professionals in their own language and with a cultural focus on their own country (videos, images, data – particularly geographical data, lesson plans);
- Use systems easily – a high priority was simplicity of use
- Have structured and relevant information
- Access scientific repositories and new information.
3. Training program

3.1. Basic principles of the training programme

The METASCHOOL training programme is designed to provide support to the teachers in Finding educational resources on the web, Classroom management and curriculum organisation, Differentiated instruction, Collaboration – Community building and Professional development. The METASCHOOL intended audience is teachers and ICT support staff both at primary and secondary schools. Through the dissemination strategy of the project’s results and outcomes were presented to the wider educational community. The school staff taking part in the training programme, was profit in several different ways:

• They participated in the development of the specialized courses and the course material and thus acquired skills in conceptualising, planning and evaluating their didactical approaches and methodology.

• They gained knowledge, skills and experiences in organising resources, tagging them with metadata, uploading them in some repository, and facilitated their sharing and exchange with other people.

• In this way, they also gained experience on the use of educational technology in the classroom, and provided interesting classroom experiences for their students.

• They gained intercultural awareness through cooperation with partners from different European countries, adding a new dimension to their teaching.

• They also had an opportunity to look beyond their everyday practical problems and get fresh input of ideas.

By the end of the training programme, it is expected that teachers’ digital competence will have increased and 21 specific learning outcomes achieved – 18 aimed at subject teachers and three at IT support staff:

1. Understand the educational benefits of the worldwide web
2. Be able to search effectively for digital learning resources
3. Understand the concept of learning objects (LOs)
4. Grasp how LOs can be used in teaching and learning
5. Be familiar with the concept of learning repositories
6. Know how different learning repositories work and what they contain
7. Understand the concept of metadata
8. Be familiar with COSMOS
9. Understand the concept of social metadata such as tags
10. Understand how Web 2.0 tools are used in education
11. Be familiar with popular Web 2.0 applications
12. Understand the concept of sharing resources
13. Be able to add metadata to learning resources and upload them to a repository
14. Appreciate the benefits of using digital resources in the classroom
15. Be able to use Organic Edunet
16. Be able to use COSMOS
17. a) Be familiar with Confolio as a teacher
18. b) Be familiar with e-portfolio
19. Be able to set up the Confolio system (ICT support)
20. Be familiar with the technical interconnection between Confolio and LRE (ICT support)
21. Be able to share resources through tags
22. Be familiar with searching school resources through the LRE portal

3.2. Methodological approach

More specifically, METASCHOOL mainly carried out the following activities:

• Adapted, developed, tested, implemented and disseminated a new training framework (including an appropriate curriculum, training activities that include good in-school practices, as well as a variety of supporting material) that supports the in-service training of (mainly) teachers and (also) ICT personnel of school staff on topics related to metadata, learning resources, and learning repositories.

• Adapted, developed, tested, implemented and disseminated strategies and best practices for organising favourite/useful learning resources into personal portfolios of digital resources, as well as setting up and using learning repositories on a school or regional level.

• Suggested and tested a variety of teaching methodologies and pedagogical strategies for using digital learning resources in the classroom, for two particular subject areas: science education and agroecology.

• Focused on promoting the creation of a European virtual space for interconnecting school repositories and exchanging/sharing teaching resources, based on the Learning Resource Exchange
(LRE) initiative of EUN.

- Organised pilot training and validation activities of both teachers and ICT staff (where possible) from schools all over Europe, exploring suggested methods and strategies on how they can take benefit from organising learning resources in personal portfolios and learning repositories, as well as from exchanging resources and teaching strategies with other teachers around Europe.

- Finally it involved organisations that are active in school education and that particularly work on the promotion and best use of digital learning resources in the classroom on a European level.

The development of the proposed training program is based on the adoption of a user-centred approach.

### 3.3. Cycles of implementation-Timetable

The implementation of the training program included extended cycles of school centred work. Teachers continuously gave feedback to the academic team about their experiences gained in the classroom. This not only increased the motivation of the teachers, and gave weight to their practical experiences, but also provided the necessary cross-links between theory and practice. Upon suggestions of the teachers, the academic team performed the necessary adjustments to the training approach. Finally the METASCHOOL consortium delivered a structured and reusable set of guidelines and recommendations which will further support the development and assessment of teacher training programs on the use of digital content and online resources for teaching and learning.

The whole process of the project was documented and the outcomes are described to the main outcome of the project, namely the METASCHOOL Guide of Good Practice. The teacher training activities of METASCHOOL were implemented in selected pilot schools from Greece, Austria, and Czech Republic, during the project.
### 3.4. Modular format of the training programme

Modularity in the design of the training programme is one of the most important parameters of it. The realization of a project like METASCHOOL is indeed a difficult task to accomplish. This is mainly due to the reason that the project deals with the provision of training to teachers in different European countries, with different professional training backgrounds and with numerous differences in the national educational systems in general. These differences reflect to the design of the METASCHOOL training program and were taken into account in order to provide a really effective training programme that was useful to the teachers participating in it.

In addition there was a need for uniformity in training programmes for facilitating the purposes of the evaluation and comparison study of it. The METASCHOOL project took the previous aspects into account by introducing modularity in the development and the implementation of the training programme.

The modules are in English and are self-contained for flexibility and offer individual learning paths, to take into account different levels of ICT competence and experience with metadata and repositories. Some modules assume little experience with ICT and provide a general practical introduction, others build on previous knowledge. In response to needs for training on specific applications and tools, there are modules covering the most frequently mentioned products. One or two modules aim to showcase good examples of practice to ensure that the pedagogical value of the training is to the forefront and to motivate teachers to apply their training in sustained and effective day to day practice.

#### Training module format

The training modules are having the following structure. But some of the modules might not strictly follow this rule due to the modular design of the training programme.

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<th>Details</th>
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<tbody>
<tr>
<td>The module starts with a small paragraph presenting the subject and the main aim of the training activity. The purpose of the module is revealed while the main aims of the activity are presented in this section.</td>
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<th>Pedagogical objectives</th>
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<td>The theoretical background is illustrated here by clearly presenting the pedagogical objectives of the module. The objective is typically a course of study, lesson plan, or a practical skill.</td>
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<th>Process</th>
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<td>Each module is going to include a section presenting the tasks that must be done by the trainees, the certain reflection needed by the trainees and the time framework of this reflection.</td>
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3.5. **Short and long term benefits for the users**

The school staff taking part in the training programme was profit several different ways:

- They participated in the development of the specialized courses and the course material and thus acquire skills in conceptualising, planning and evaluating their didactical approaches and methodology.

- They gained knowledge, skills and experiences in organising resources, tagging them with metadata, uploading them in some repository, and facilitate their sharing and exchange with other people.

- In this way, they also gained experience on the use of educational technology in the classroom, and provided interesting classroom experiences for their students.

- They gained intercultural awareness through cooperation with partners from different European countries, adding a new dimension to their teaching.

- They also had the opportunity to look beyond their everyday practical problems get fresh input of ideas.
4. Modules for each case

The METASCHOOL project aim was to improve in-service training on topics related to the organisation, sharing, use and re-use of digital learning resources that can be accessed online through learning repositories across Europe, in particular to:

- Improve teachers’ practice in all areas of their work, combining ICT skills with innovations in pedagogy, curriculum, and school organization
- Develop teachers’ use of ICT skills and resources to improve their teaching, to collaborate with colleagues, and ultimately to become innovation leaders in their institutions
- Train technically competent school staff (such as ICT personnel or teachers of Informatics) about the ways they can select some of the existing, easy-to-use, and free-of-cost software tools that various organisations around Europe offer, in order set up their own learning repository (on a school or regional level) and to interconnect it with LRE.

In order for the training to take place successfully it was important to appreciate the context in which took place and the enablers and inhibitors that operate. The factors are common to all countries but there is always local variation.

4.1. The training modules

METASCHOOL training programme was spanned into two implementation phases. The first training cycle was scheduled for the period February 2010 – April 2010 and the second training cycle for the period May 2010 – July 2010.

A detailed description of modules is mentioned on Chapter 5.

4.2. Training scenarios

In this chapter, an example of Training Module is introduced with the content skeleton, each under the same headings: details, pedagogical objectives, process, evaluation, follow up and links.
Module example 1: Searching school’s resources through the LRE portal EUN

Details

In this learning module you will get familiar with search online educational resources by using the Learning Resource Exchange (LRE). The LRE is a service for schools to find educational content from many different countries and providers.

Anyone is free to search and browse content in the LRE. The users, who can be teachers, trainers, lecturers, instructors, tutors or learners can also register to use the LRE social tagging tool. Social tagging makes sharing of resources easy.

LRE is a service from European Schoolnet (EUN) It initially included content from Ministries of Education (MoE) and other partners working with European Schoolnet (EUN).

Pedagogical objectives

1. Teacher preparation of lesson
2. Enhancement of lesson with
   a. Motivational material
   b. Introductory material, demonstrations, simulations and presentations
   c. Drill and practice exercises and activities
**Process**

Resources in the LRE are of a wide range – you find presentation material as well as drill and practice exercises, informative web resources and others. In short there are resources that fit your need to prepare your lesson.

In the samples below we are looking at two scenarios of finding the resource of interest:

**Find a introductory course using the advanced search**

In this example we are looking for a course about the moon that your students could work through by themselves.

Open a browser and type in the address: http://lreforschools.eun.org. First, choose the language that you prefer to use from the top right corner of the portal. In this example, we use the English language. Type “moon” into the top search box on the left and click “Go”. Now, refine your search by clicking on “Resource type” in the “Refine your search box” on the top right. Select “Course” and click “Apply”. Additionally you could filter by language, resource type or age range. If you like you could sort by popularity and rating, so that resources that have been found by other teachers display on top of the result list.

**Find motivational material through social browsing**

When looking for motivational material, the topic might not as be important and a browsing approach might be an easier exploration technique. The advantage of this is that other users have already tagged the resource. Click on “see more tags” on the left sight of the LRE portal. Then restrict the language to English by choosing “Other languages” and “English”.

Let’s imagine you were looking for some material for your astronomy class, click “astronomy”.

If you really like a resource, it might be worthwhile clicking on the “smiley” to find out who bookmarked this resource. By clicking on the name of the user you end up in his/her collection and you can browse through this user’s favourites.

**Evaluation**

The LRE portal allows you to participate by rating resources and sharing your opinion. If you like a resource it is good to put it into your favourites, so that you find them again easily – no matter whether it is from your computer at home or in your school. Rating your favourites also allows you to find your top favourites quicker.

**Follow-up**

Why not share your resources with your colleagues? You will be surprised the conversations and knowledge exchange this can inspire. Check out also “Supporting teachers in sharing resources though social tagging in LRE”.


Module example 2: Practical demonstration of learning objects and their classroom use: “The organic garden content and learning objects”

Details

In learning scenarios where information is stored electronically on servers all over the world, learners have to search, localize, represent and make efficient use of the information, as well as relate the information to their personal knowledge, objectives and planned activities. This module aims to demonstrate that localising and representing the relations between learning objects helps the teacher-participant to acquire strategies for effective interaction with learning resources. Then, introducing these resources in the classroom is more straightforward. The organic garden is, here, the learning context where rich digital resources will enhance and promote the learning experience.

A school garden, with a suitable structure and educational purpose can enhance the sustainable development of an ecological approach to managing agricultural products and resources. Every corner of the garden can become a small lab where students can study how fragile our environment is and what is the impact of the modern way of life on our environment. School activities that are actively related to the structure and development of the garden can be effectively promoted through rich digital content that can be retrieved through web search, identified in relevant content repositories, reused, or created from scratch.
The implementation of the organic school garden scenario draws on existing content and motivates teachers and students to reuse and adapt it to existing needs or create new. On this website http://www.ea.gr/ep/organic/content/ the content is being organised and constantly updated according to 6 main themes: Before planting, Planting, Visits, Greenhouses, Composting, Plant Care, and Harvesting and promoting products.

Figure 1: Content organised around the school organic garden on http://www.ea.gr/ep/organic/content
Pedagogical objectives

The aim of this organisation of content is to enable the learner to consider what resources are available, to show relationships among resources, activities and future tasks, to visualise content as separate and independent learning objects, or grouped into larger collections of content that could be transformed into traditional course structures. The content is structured into maps and interlinked websites with the CompendiumLD tool, an open, resource processing tool. It supports teachers and learning designers to create diagram maps, incorporate content and web addresses, show the relations between resources and activities (Compendium LD: Learning design software: [http://kn.open.ac.uk/public/workspace.cfm?wpid=8690](http://kn.open.ac.uk/public/workspace.cfm?wpid=8690)). It is being developed as a tool to support lecturers, teachers and others involved in education to help them articulate their ideas and map out the design or learning sequence. While in this module we see the exported output of Compendium LD that can be published on the web in a form of inter-linked websites in this Module we will demonstrate the process of creating such maps with CompendiumLD or other resource processing tools. Overall the objective is to instil effective interaction with learning resources and help the participants to cope with the complexity of knowledge and information resources.

Finally the module will introduce the approach of resource-based learning (RBL). RBL is a special kind of self-regulated learning that takes place in contexts when learners have to cope (self-regulated) with the complexity of knowledge and knowledge resources. In resource-based learning settings, one must “recognize and clarify learning needs, plan a strategy to address these needs, locate and access resources, evaluate their veracity and utility, modify approaches based on an assessment of learning progress, and otherwise manage their learning” (Neumann, Graber et al. 2005) (Neumann, A., W. Graber, et al. (2005). “ParIS-visualizing ideas and information in a resource-based learning scenario.” Lecture notes in computer science 3426: 256.).

Process

For every of the 6 themes there exist content that is already uploaded in the Organic Edunet Confolio, while further content is suggested for uploading: a) informational resources that could be added to the Confolio and b) resources generated at school sites, during scenario implementation, which could be added to the Confolio. Going through the content you can witness moments from Ellinogeraniki Agogi and the 9th Rethymnon primary school where the “organic school garden” scenario has been already implemented.

Before the stage of enriching the resources and learning objects with metadata, a mind mapping methodology is employed as a visual-spatial strategy for generating, organizing, and visualizing structures of ideas, thoughts, and concepts, as well as a managing tool for storing and accessing information.

Every node and icon of the map opens another map or lead to content, for example a PDF file, a power point presentation. By clicking on a map icon a new map is invoked. For example the user can access a whole map on how to present the project in the classroom (Figure 4) and to access the presentation the teacher has used in order to discuss in the classroom possible activities that the whole classroom can plan together (Figure 3).
Figure 2: For every of the 6 themes there exist content that is already uploaded in the Organic Edunet Confolio, while further content is suggested for upload-

Figure 3: A slide on constructing greenhouses as part of the activities to plan in the organic school garden
Evaluation

Participants should reflect upon the following questions:

- How do I organise the retrieved or created resources I use in my teaching?
- What is my main concern and difficulty in doing so?
- How did this module affect my usual way of organising content and resources for teaching?
- Participants are also asked to contribute to the following task: “Drawing on your experience from a similar project or motivated by plan to deliver a similar project in your school please suggest further content, or modify existing content according to your specific educational needs”.

Follow-up

After completing Module, where participants are getting familiar with the use of processing tools such as Compendium LD and the LeMill content organisation tool, please return to this module to reflect on the exported data from processing resources and learning objects.

Links

The content you can find here [http://www.ea.gr/ep/organic/content/](http://www.ea.gr/ep/organic/content/) is addressed to the participants who would be interested to implement the “organic school garden” scenario, or parts of it and to add metadata to content. The participants are invited to navigate through these web pages and content (using the back and forth button of the internet explorer browser).
Module example 3: Introduction to tools to describe resources with metadata

Details:

In this learning module, the teachers will be introduced to the COSMOS Authoring tool and NatureNet tools that are used to describe learning resources with metadata. The teachers will be introduced to the tools and will be shown specific examples of usage for describing learning resources. Finally, the teachers will be able to work with the tools themselves by describing learning resources that they find online.

Pedagogical objectives:

This module aims at introducing teachers to the use of tools for describing educational resources with metadata. Two different tool are presented, COSMOS and “Naturnet Redime URM”. “Naturnet Redime URM” repository is for sharing spatial and non spatial context, it allows you to combine learning resources with maps, tools for publishing of data and metadata. This Web-based tool is available in Czech and English languages, and others languages can be added easily.

Process:

The teachers will first follow a presentation about the topic. Then, they can follow the link and be presented with the user interface and the basic functionalities of the Confolio tool for describing educational resources.

In the presentation, simple examples will be provided to the teachers to help them get acquainted with the system. To continue, the teachers will be encouraged to use the Confolio tool to annotate their own learning resources or resources that they find online through learning repositories. These resources will be stored in a temporary repository to be used for educational purposes only. They will be re-examined in a later stage of the training program, to evaluate the progress of the teachers.

Follow up:

Evaluation for Cosmos: Participants should test their knowledge by installing and then using the Metadata Authoring Wizard by adding some metadata to their learning objects.

Links:

Cosmos:


http://www.cosmosportal.eu/cosmos/en


http://www.cosmosportal.eu/cosmos/files/toolbox/COSMOS_ASK-LOM-ATv1.2.msi
Module example 4. Introduction to sharing learning resources

**Details:**
This module will provide a description and rational on why teachers are encouraged to share learning resources. The module also introduces the basics of Creative Commons as an underlying mechanism that allows sharing and makes it easy to understand.

**Pedagogical Objectives:**
This module gives the basic understanding the concept of sharing learning resources and the provisions of copyright in education, including Intellectual Property Rights.

**Process:**
The module first introduces the idea of social media through a simple video. The idea of social media is also applicable for learning resources. Furthermore, the concepts of Creative Commons are introduced, with a glimpse to learning resource repositories that explicitly use such licensing scheme (e.g. LeMill, LRE, OERCommons).
Learning resources and copyright

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Follow up:

Teachers are asked to search on different repositories for resources that they can share with their colleagues. They are asked to use delicious.com (related to module 3.9) to make a collection of resources that they can share and reuse under one of the Creative Commons licensing scheme.

Links:

- Link on Creative Commons (http://wiki.creativecommons.org/Howitworks_Comic1)
- Link to the LRE material on Creative Commons (http://melt.eun.org/ww/en/pub/lre_minisite/pedagogical_support/working_legally_under_%20cc.htm)

Places to share learning resources:

- LeMill: http://lemill.net
- OER Commons: http://www.oercommons.org
- LRE: http://lreforschools.eun.org

Links for Austrian teachers:

- www.eun.org
5. Training for each case

Where can I share my materials and ideas with other school teachers, and combine my digital resources with those of other schools in order to provide richer learning experiences to my students?

I would be interested in trying to share my learning resources with other teachers and students.

How can I get access to learning resources in order to prepare my lesson?

We want to be part in a community of users who share an interest in all these things with us!
### 5.1. Teachers Training

Table below can show the overall training modules and in which cases can be used. The modules follow the eTwinning kits structure [http://www.etwinning.net/en/pub/inspiration/kits.htm](http://www.etwinning.net/en/pub/inspiration/kits.htm) and can be found at the METASCHOOL portal [http://lrefforschools.eun.org/LRE-Portal/METASCHOOL.iface](http://lrefforschools.eun.org/LRE-Portal/METASCHOOL.iface).

<table>
<thead>
<tr>
<th>Topic Area</th>
<th>Topic</th>
<th>Beginner</th>
<th>Average</th>
<th>Expert</th>
<th>Trainers</th>
<th>Pedagogically focused</th>
<th>Generic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction</strong></td>
<td>1 WWW and educational uses for teachers</td>
<td>✓</td>
<td>~</td>
<td></td>
<td>Teachers</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>2 Strategies for searching information online</td>
<td>✓</td>
<td>~</td>
<td></td>
<td>Teachers</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>3 Introduction to the concept of learning objects</td>
<td>✓</td>
<td>~</td>
<td></td>
<td>Teachers</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Learning resources</strong></td>
<td>4 Practical demonstration of learning objects and their classroom use</td>
<td>✓</td>
<td>~</td>
<td></td>
<td>Teachers</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>and repositories</td>
<td>5 Introduction to learning repositories</td>
<td>✓</td>
<td>~</td>
<td></td>
<td>Teachers</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>6 Review and demonstration of popular learning repositories with school resources</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>Teachers</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Metadata</strong></td>
<td>7 Intro to metadata, educational metadata, and metadata-based searching, educational metadata schemas: (DC, ed and IEEE LOM)</td>
<td>✓</td>
<td></td>
<td></td>
<td>Teachers</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>8 Intro to the COSMOS and Organic.Edunet tools for describing resources with metadata</td>
<td>✓</td>
<td></td>
<td></td>
<td>Teachers</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>9 Social metadata and Web 2.0 tools (folksonomies and social tagging)</td>
<td>✓</td>
<td></td>
<td></td>
<td>Teachers</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Social web</strong></td>
<td>10 Web 2.0 tools in education</td>
<td>✓</td>
<td>~</td>
<td></td>
<td>Teachers</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>11 Popular social tools (e.g. Flikr) and scenarios for their use in the classroom</td>
<td>✓</td>
<td>~</td>
<td></td>
<td>Teachers</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Hands-on sessions</strong></td>
<td>12 Intro to share learning resources</td>
<td>✓</td>
<td>~</td>
<td></td>
<td>Teachers</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>13 Intro to preparing, uploading and sharing learning resources (use of lemir, xplora, discoveryspace, curriculumonline, nemed)</td>
<td>✓</td>
<td></td>
<td></td>
<td>Teachers</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>14 Pedagogical strategies and best practices for using digital teaching and learning resources in the classroom</td>
<td>✓</td>
<td>~</td>
<td></td>
<td>Teachers</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>20 Supporting teachers in sharing resources through social tagging in LRE</td>
<td>~</td>
<td>✓</td>
<td>✓</td>
<td>Teacher</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>21 Searching school’s resources through the LRE portal</td>
<td>✓</td>
<td>~</td>
<td></td>
<td>Teachers</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>15 Hands-on session working on resources related to organic agriculture and agroecology (use of Organic.Edunet)</td>
<td>✓</td>
<td></td>
<td></td>
<td>Teachers</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>16 Hands-on session working on resources related to science (use of COSMOS, xplora)</td>
<td>✓</td>
<td></td>
<td></td>
<td>Teachers</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>17 Intro to setting up a portfolio and connecting to the outside world</td>
<td>✓</td>
<td></td>
<td></td>
<td>Teachers, ICT Staff</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Technical session</strong></td>
<td>18 Setting up a repository (e.g using Confolio tool) in the school’s server</td>
<td>~</td>
<td>✓</td>
<td></td>
<td>ICT Staff</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>(for ICT staff or teachers)</td>
<td>19 Connecting educational repositories, e.g. Confolio and LRE as an example</td>
<td>✓</td>
<td></td>
<td></td>
<td>ICT Staff</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
Accessing the METASCHOOL Portal

**What is the METASCHOOL Portal?**

**Who are supposed to use it?**

The METASCHOOL Portal

The METASCHOOL Portal is a web-based environment available at http://lreforschools.eun.org/LRE-Portal/METASCHOOL.iface, in which users can a) search for digital content related to Metadata.

The METASCHOOL Portal is in principle a free user-centred space, in which everyone with an interest can look for content that they find to be of some value in relation to learning about digital learning resources.
How to use METASCHOOL portal

METASCHOOL Portal is a place of free educational resources. The main feature of the METASCHOOL portal is an innovative training programme developed by a group of expert partner organisations across Europe. The 21 modules enable teachers, particularly those teaching science and agricultural topics, to:

• Find digital learning resources on the web;
• Get ideas on how to integrate them into lessons;
• Adapt existing digital content to suit different curriculum requirements;
• Learn about metadata and how it can help every teacher;
• Discover how to share content using social networking tools;
• Increase learning and teaching impact through ICT-based science activities.
At the top of every page, there are two main navigation menus - one on the left hand of the screen beneath the Learning Resources Exchange icon, and one on the top right corner.

**Use shortcuts to quickly and easily navigate**

On the left you'll find three links providing you with a quick way of going to the home page, your favourites, and to the help section.

If you want to go back to the home page of the site, click on “home”.
Check your Favourites? Click on “my favourites”.
Click on “info and advice” to get help.

**Check or modify your account**

On the right you'll find links providing you with a quick way of logging in or out, editing your profile, and to provide feedback on the site.

Once you are logged in, you will get a message under the navigation on the left-hand side saying welcome, and that you are logged in.

If you click on “edit profile” at the top right hand of the screen, you can modify aspects of your account such as your general and logon information.

Finally, if you want to close your session, click on “logout”.

How to find a learning resource

Need to find learning resources and learning assets? The left-hand column is there to help you find the resources you want. There are three search boxes.

a. You can search by keyword by entering terms under “find resources”. If you wish, you can refine your search by specifying the language or the subject of the resource.

b. You can also browse by clicking on a tag in the tag cloud or entering your own tag in the jump to box. You can open out the tag cloud and see more which have been used by clicking on “see more tags”.

c. by clicking on a subject heading listed under “find by subject” box

A tag cloud works by increasing the size of the tag by how often the tag has been used. This way you can see which terms are the most popular. Clicking on the “Travel Well” tab on the home page will enable you to browse resources that have been specially selected by users as those that “travel well” and that have the potential to be used by teachers and learners in different countries or even by users that have limited knowledge of the language in which the resource has been created.
**How to use COSMOS Portal**

COSMOS portal is an experimental laboratory for students and teachers, aiming to improve science instruction by expanding the resources for teaching and learning in schools and universities, providing more challenging and authentic learning experiences. Join the COSMOS educational community and explore new ways of teaching science.

**Create a new account**

This section explains how you can create a new user account in the COSMOS Portal. By being a registered user of the portal you gain access to the COSMOS Repository and the COSMOS Tool-Box.

In order to create a new account, in the first page of the portal click to the “Create new account link”.

This will lead you to the registration form. There, fill in the fields you like and provide a valid email address. To conclude registration click the “Create new account” button at the bottom of the form.

From this point on, when you visit COSMOS Portal, fill in your user name and password in the respective fields to gain access to the portal.

From this point on, when you visit COSMOS Portal, fill in your user name and password in the respective fields to gain access to the portal.
B. How to find a learning resource

After the user registration and authentication, one is able to search through the COSMOS Repository and download the material of his choice.

In the COSMOS Repository one can search for Educational Content and Learning Activities following the respective links in the Explore COSMOS section of the COSMOS Repository.

There by using the provided user interfaces you can find the material you are looking for. You can also browse through the top rated material in each category.

You can download the file from the provided link and also you can view and download the xml file containing the metadata record of the material.
How to use Organic.Edunet Portal

The Organic.Edunet Web portal has been developed in the context of the “Organic.Edunet: A Multilingual Federation of Learning Repositories with Quality Content for the Awareness and Education of European Youth about Organic Agriculture and Agroecology” Targeted Project of the eContent-plus programme (http://ec.europa.eu/information_society/activities/econtentplus/index_en.htm#)

Today, the Organic.Edunet Web portal provides access to 10605 resources, from 11 institutional collections and 2 user communities.
A. How to create a new account

In order to create a new account, in the first page of the portal click to the “Create new account link”.

This will lead you to the registration form. There, fill in the fields you like and provide a valid email address. To conclude registration click the “Register” button at the bottom of the form.

From this point on, when you visit Organic.Edunet Portal, fill in your user name and password in the respective fields to gain access to the portal.
In the Organic.Edunet Web portal, users may search or browse for educational resources on Organic Agriculture and Agroecology using five different mechanisms: Text-Based Search, Browse, Semantic Navigation, Tag-Based Search and Search for educational scenarios:

**Semantic Navigation:** allows users to search for resources according to an ontology of Organic Agriculture concepts, providing results that are related to the particular concepts in the ontology. Users can directly ask for resources that are related to a particular concept in the ontology. For a more elaborated search, users may define a number of interest points upon the ontology, and ask for resources that are related to them.
**Browse:** works by allowing the user to browse through all the educational resources in the federation in a multi-faceted way. Browsing can take place depending on the existing Resource Types, File Formats, Resource Languages, and Educational Levels in the federation.

**Text-Based Search:** works in a typical text-based searching way. It looks for the keywords that the user is typing, into the title and description of all the educational resources in the federation. To facilitate limiting down the results, the Text-Based Search interface also allows users to filter the returned results according to their Learning Resource Type or their targeted Educational Level.
Tag-Based Search: allows users to search for resources according to the way other users have annotated (e.g. tagged or rated) them in the past. Users can either search for resources that have been tagged with a particular word (using a 2-D or 3-D interface), or can see which resources are most popular to other users (i.e. the ones that have been rated highly). For registered users only: when logged-in, registered users have access to more advanced search functionalities related to social navigation, such as receiving recommendations about interesting resources that match their profile.
6. Conclusions

This Initial Trainees’ Guide arises from user needs analysis results which are summarized in a trainee’s guide, and is summarizing both the case study specific aspects and the generic patterns arising from the previous work. This is made available both as a printed document, as well as in electronic format. The report presents a guide containing a description of the participating case studies and the general characteristics/ patterns that differentiate the case. For each case study, there will also be a list of relevant educational activities especially designed for this class of school environments. This guide is addressed to project partners and the school teachers all around Europe and contains a description of the participating case studies and the general characteristics/ patterns that differentiate the case. For each case study, there is also a list of relevant educational activities especially designed for this class of school environments.

This Guide was designed in order to help teachers’ Professional development in:

- Finding educational resources on the web
- Differentiated instruction in order to group students who have similar abilities and provide them with the most appropriate learning activities.
- Collaboration – Effective Community Building
- Classroom management and curriculum organisation

For further future development of the teachers training the project will develop the Guide of Good Practice of the project that will be published is expected to briefly present the project, its implementation, and its main outcomes, as well as discuss benefits and recommendations for the further application, improvement and integration of the project results in training policies and practices. This Guide will be made available from the project web site, and will be communicated to the networks of the project members.

To sum up with certain conclusions for future projects the answer is that there are definitely quite many people eager to implement ambitious ICT projects, in our case many of them are teachers, which is very optimistic itself as parameter, given that teacher can and should work as change agents in a school society. Under this perspective certain focus should be placed in the development of human resources and training facilities widely available for the acquisition of skills, which would guarantee sustainable development of teacher communities.
7. References


